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NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

January 2004

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Hierarchical Listing With Definitions:	

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z

Volume 2 • Rotated Term Display

NASA STI Program ... in Profile

Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA Scientific and Technical Information (STI) Program plays a key part in helping NASA maintain this important role.

The NASA STI Program provides access to the NASA Aeronautics and Space Database, the largest collection of aeronautical and space science in the world. The STI Program is also NASA's institutional mechanism for disseminating the results of its research and development activities. These results are published by NASA in the NASA STI Report Series, which includes the following report types:

- **TECHNICAL PUBLICATION.** Reports of completed research or major significant phases of research that present the results of NASA programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed of continuing reference value. NASA counterpart of peer-reviewed formal professional papers, but has less stringent limitations on manuscript length and extent of graphic presentations.
- **TECHNICAL MEMORANDUM.** Scientific and technical findings that are of preliminary or specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.
- **CONTRACTOR REPORT.** Scientific and technical findings by NASA-sponsored contractors and grantees.
- **CONFERENCE PUBLICATION.** Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or co-sponsored by NASA.

- **SPECIAL PUBLICATION.** Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.
- **TECHNICAL TRANSLATION.** English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services that help round out the STI Program's diverse offerings include creating custom thesauri, building customized databases, organizing and publishing research results ... even providing videos.

The NASA STI Program is managed by the NASA STI Program Office (STIPO). STIPO is the administrative office at Langley Research Center for the NASA STI Program.

For more information about the NASA STI Program, you can:

- Access the NASA STI Program Home Page at <http://www.sti.nasa.gov>
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- Telephone the NASA STI Help Desk at (301) 621-0390
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Introduction

The *NASA Thesaurus* contains the authorized subject terms by which the documents in the NASA Aeronautics & Space Database are indexed and retrieved. The *NASA Thesaurus* comprises two volumes: *Volume 1 – Hierarchical Listing With Definitions* and *Volume 2 – Rotated Term Display*.

The *Hierarchical Listing With Definitions* contains all subject terms and USE cross references currently approved for use, and displays the full hierarchical structure for each term along with a definition when available. In addition, the listing has been developed to serve as an orthographic authority for upper/lowercase forms of all terms and cross references. A ***term-added date***, displayed for all terms added after April 1988, is also given. The listing includes terms appearing in the *NASA Thesaurus, Preliminary Edition* (December 1967), the *NASA Thesaurus Alphabetical Update* (September 1971), the *NASA Thesaurus* (1982, 1985, 1988, 1994, and 1998 editions), and other terms approved for use through the first of January 2004. Over 18,140 terms, 4,171 definitions, and approximately 4,400 USE references are contained in the *Hierarchical Listing With Definitions*.

The *Rotated Term Display* is a ready-reference tool that provides thousands of additional ‘access points’ to the thesaurus terminology. It contains the postable terms and nonpostable terms found in the *Hierarchical Listing* arranged in a KWIC (key-word-in-context) index. It is a useful companion to the *Volume 1* listing, containing more than 41,300 entries.

New editions of the *NASA Thesaurus* CD-ROM are produced annually. Monthly updates are posted on the NASA Thesaurus website (<http://www.sti.nasa.gov/thesfrm1.htm>). Suggestions for term modification, deletion, and addition can be forwarded to the CASI Lexicographer, mgenuardi@sti.nasa.gov or mailed to:

Lexicographer
NASA Center for AeroSpace Information
7121 Standard Drive
Hanover, MD 21076-1320

The terminology of the earliest edition of the *NASA Thesaurus* was based in large part on the actual indexing vocabulary developed by NASA during the 1960’s. Other thesauri, notably the DOD *Thesaurus of Engineering and Scientific Terms* (AD-672000), have provided additional candidate terms. The general guidelines for the initial creation of the *NASA Thesaurus* were based on the COSATI *Guidelines for the Development of Information Retrieval Thesauri* (1 September 1967). Continuing development of the *NASA Thesaurus* conforms to the thesaurus standard of the National Information Standards Organization (*Guidelines for the Construction, Format, and Management of Monolingual Thesauri*, ANSI/NISO Z39.19-1993).

Nomenclature and Conventions

Postable Terms. Subject terms that have been approved for use in indexing, and thus can be ‘posted.’ In *Volume 1*, postable terms are shown in non-italic type.

Nonpostable Terms. Terms that are included for cross reference information and cannot be used for indexing. In *Volume 1*, nonpostable terms are set in italics.

Term Selection. Subject terms have been chosen on the basis of their significance and use in aerospace literature and their effectiveness in representing productive retrieval concepts. Particular consideration has been given to frequency of use in earlier NASA indexing and search vocabularies, to relationships with other terms in the vocabulary, and to precise scientific and technical usage.

Noun Usage. In general, subject terms are presented in the noun form.

Singular vs. Plural. The plural form has, in general, been used for subject terms. The singular form, however, is employed for non-count nouns (such as *snow*), terms that refer to unique entities such as *Mariner 10 Space Probe*, and terms related to specific processes, properties, and conditions.

Term Length. No more than 42 characters, including spaces, are used for any postable subject term. Various words in longer terms are sometimes truncated. Full expanded forms of such truncated terms are generally included in the scope notes.

Term Ambiguity. When subject terms have more than one meaning in aerospace usage, or where distinction between terms must be made, clarification is provided in one of two ways:

a) Parenthetical qualifying expressions or glosses are added, becoming part of the subject term. For example:

sizing (shaping)
sizing (surface treatment)

b) Scope notes are also added for explanation or definition; they do not become part of the subject term. For example:

rotational states

SN (LIMITED TO MOLECULAR ENERGY LEVELS — EXCLUDES
ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)

Word Order. Subject terms that consist of more than one word are listed in *direct order*, i.e., in their natural word order rather than in an inverted form. (The *Rotated Term Display* can be used to access terms by embedded words.)

Abbreviations and Acronyms. Abbreviations and acronyms that are in common usage in the aerospace and general engineering communities are employed for some postable terms in this thesaurus. In most cases, USE cross references are made from the unabbreviated forms. For example:

Orbiting Solar Observatory
USE **OSO**

Synonyms. When candidate subject terms are true synonyms, one is chosen to be the valid, or postable term, and the other is provided with a USE cross reference. For example:

columbium	niobium
USE niobium	UF columbium

Array Terms. Subject terms with meanings either too broad or ambiguous for effective indexing or retrieval of information, have been designated array terms and carry the following scope note (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW). Relationships with other postable terms are shown by the Related Term (RT) reference only. For example:

∞ beams	
SN	(USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT	beams (radiation) beams (supports)

An infinity symbol (∞) precedes an array term in each of its appearances in *Volume 1*.

Identifiers. In the *NASA Thesaurus*, identifiers (i.e., terms that designate unique entities) are treated as regular terms and are provided complete cross references. Most identifiers are proper nouns and many include a numeric or alphabetic designation for a particular model or item. As a general rule, identifiers are added to the Thesaurus only if they have an important relation to the aerospace sciences.

F-111 aircraft	
UF	LASV TFX aircraft
GS	attack aircraft . fighter aircraft . . F-111 aircraft General Dynamics aircraft . F-111 aircraft Grumman aircraft . F-111 aircraft jet aircraft . turbofan aircraft . . F-111 aircraft supersonic aircraft . F-111 aircraft
RT ∞	aircraft mission adaptive wings variable sweep wings

Cross Reference Structure

Cross reference relationships in the *Hierarchical Listing With Definitions* are shown as follows:

Cross References	Notation
Broader Term	GS
Narrower Term	GS
Related Term	RT
Use	USE
Used For	UF

These cross references have the following applications:

Broader Term. This reference indicates that the term represents a more inclusive concept. In the Generic Structure (GS), the broader terms appear above and to the left of the term referenced. For example:

reentry communication
GS telecommunication
 . space communication
 . . spacecraft communication
 . . . **reentry communication**

The terms *telecommunication*, *space communication*, and *spacecraft communication* are broader terms to *reentry communication*.

Narrower Term. This reference indicates that the term represents a more specific concept. In the Generic Structure (GS), the narrower terms appear below and to the right (indented) of the term referenced. For example:

GS **scanners**
 . Coastal Zone Color Scanner
 . horizon scanners
 . infrared scanners
 . ocean color scanner
 . optical scanners
 . . flying spot scanners
 . . multispectral band scanners
 . . . Thematic Mappers (Landsat)
 . ultrasonic scanners

The terms *Coastal Zone Color Scanner*, *horizon scanners*, *infrared scanners*, *ocean color scanners*, *optical scanners*, and *ultrasonic scanners* are narrower terms to *scanners*. The terms *flying spot scanners*, *multispectral band scanners*, and *Thematic Mappers (Landsat)* are narrower to both *optical scanners* and *scanners*.

The number of narrower terms is not limited. For example, *artificial satellites* has nearly 500 narrower terms.

Related Terms (RT). This reference indicates that the two terms are conceptually associated, but not equivalent or generically related. The RT relationship is reciprocal, as illustrated in the following example:

radar equipment	radio equipment
RT radio equipment	RT radar equipment

Use (USE). This reference indicates that the listed term is not ‘postable,’ i.e., not a valid term, and that the term or terms adjacent to the USE indicator should be used instead. Note that all nonpostable terms are set in italics. For example:

jet airstreams
USE **jet streams (meteorology)**

Used For (UF). This relation is the reciprocal of the USE cross reference and indicates that the term listed above the UF indicator is a valid or ‘postable’ term, and term or terms adjacent to the UF indicator are nonpostable. For example:

jet streams (meteorology)
UF *jet airstreams*

Filing Order

The ordering of subject terms into an alphabetical arrangement can be accomplished in several ways. The most commonly used methods are the letter-by-letter, word-by-word, and the computer sorting order. In the absence of any universal agreement on a standardized approach, a word-oriented modification of the computer sorting technique has been adopted in this thesaurus.

A special feature has been added to this technique to sort numeric designations in natural ascending order. Non-alphanumeric characters contained within terms are sorted prior to alphanumeric characters. In *Volume 2*, non-alphanumerics are ignored altogether for the general KWIC sort. Thus, embedded parentheses are filed before the alphabet in *Volume 1*, but are ignored for filing in *Volume 2*. Hyphens, slashes and periods follow blank spaces.

Retrospective Indexing

Between 1984 and 1993, all terms added to the *NASA Thesaurus* were retrospectively assigned to past database records using a method that combined advanced search strategies and manual review. Most of the terms for which this procedure was carried out can be identified by checking the *term-added date* that appears directly below the term in *Volume 1*. Term-added dates are provided for all terms added to the *NASA Thesaurus* after April 1988.

Thesaurus Term Definitions

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the *NASA Thesaurus* predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

Many of the definitions contained in the *Thesaurus* were constructed by lexicographers at the NASA Center for AeroSpace Information, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI Databases, and specialized references. Other definitions were obtained from the following sources:

AGI. *Glossary of Geology*, 3rd edition. Alexandria, VA, American Geological Institute, 1987.

ASTM. *Compilation of ASTM Standard Definitions*, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. The original definitions appeared in the *Annual Book of ASTM Standards*.

DOE. *Energy Data Base Subject Thesaurus* (DOE/TIC-7000-R7). Oak Ridge, TN, Department of Energy, 1987.

IEEE. *Standard Dictionary of Electrical and Electronics Terms*, Fourth ed., New York, NY, IEEE, 1988.

SP-7. *Dictionary of Technical Terms for Aerospace Use*, NASA SP-7. Washington, DC, NASA, 1965.

In some cases, definitions from these sources have been subjected to minor editorial alterations; for example, to make a definition agree in number with the NASA form of the term.

Previous Editions

NASA Thesaurus; Subject Terms for Indexing Scientific and Technical Information. Preliminary Edition, 1967. NASA SP-7030. 3 Vols., *Vol. 1, Alphabetical Listing, A-L; Vol. 2, Alphabetical Listing, M-Z; Vol. 3, Appendixes.*

NASA Thesaurus Alphabetical Update, 1971. NASA SP-7040.

NASA Thesaurus. 1976 Edition. NASA SP-7050. 2 Vols., *Vol. 1, Alphabetical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1982 Edition. NASA SP-7051. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1985 Edition. NASA SP-7053. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1988 Edition. NASA SP-7064. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus. 1994 Edition. NASA SP-7096. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus, 1998 Edition, NASA/SP-1998-7501, 2 Vols., *Vol. 1, Hierarchical Listing With Definitions; Vol. 2, Rotated Term Display.*

Typical Hierarchical Listing With Definition

- ① **microbursts (meteorology)**
- ② *(added January 1993)*
- ③ SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
- ④ DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radially from the impact point.
- ⑤ UF *bow echo microburst events*
- ⑥ GS meteorology
 - . micrometeorology
 - . . **microbursts (meteorology)**
 - storms
 - . storms (meteorology)
 - . . downbursts
 - . . . **microbursts (meteorology)**
- ⑦ RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

Key

1. Postable Term
2. Date Added
3. Scope Note
4. Definition
5. Used For Term
6. Generic Structure
7. Related Term

Typical USE Cross Reference

- ① *vacuum ultraviolet radiation*
- ② USE **far ultraviolet radiation**

Key

1. Nonpostable Term
2. Postable Note

Typical Array Term Listing

- ① ∞ **fields**
- ② SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- ③ RT boson fields
 - electric fields
 - field of view
 - field theory (algebra)
 - field theory (physics)
 - gravitational fields
 - magnetic fields
 - military air facilities
 - self consistent fields
 - visual fields

Key

1. Array Term
2. Scope Note
3. Related Term

NASA THESAURUS

VOLUME 1

HIERARCHICAL LISTING WITH DEFINITIONS

NUMERALS

2001 Mars Odyssey

(added May 2001)

DEF Mars orbiter mission designed to make global observations of Mars to improve our understanding of the Martian climate and geologic history, including the search for liquid water and evidence of past life. The three primary instruments carried onboard are THEMIS (Thermal Emission Imaging System), GRS (Gamma Ray Spectrometer), and MARIE (Mars Radiation Environment Experiment). Launched April 2001.

- GS space missions
 - . Mars missions
 - . . . **2001 Mars Odyssey**
- RT gamma ray spectrometers
 - Mars (planet)
 - Mars exploration
 - Mars surface
 - Mars Surveyor 2001 Mission

A

A stars

- GS celestial bodies
 - . stars
 - . . . early stars
 - hot stars
 - **A stars**
- RT blue stars
 - peculiar stars
 - Wolf-Rayet stars

A-1 aircraft

- UF *Skyraider aircraft*
- GS attack aircraft
 - . **A-1 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-1 aircraft**
 - monoplanes
 - . **A-1 aircraft**
- RT ∞ aircraft

A-2 aircraft

- UF *Savage aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-2 aircraft**
 - jet aircraft
 - . **A-2 aircraft**
 - monoplanes
 - . **A-2 aircraft**
 - North American aircraft
 - . **A-2 aircraft**
- RT ∞ aircraft

A2F aircraft

- USE **A-6 aircraft**

A-3 aircraft

- UF *A3D aircraft*
- Skywarrior aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-3 aircraft**
 - jet aircraft
 - . **A-3 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-3 aircraft**

- monoplanes
- . **A-3 aircraft**
- RT ∞ aircraft

A3D aircraft

- USE **A-3 aircraft**

A3J aircraft

- USE **A-5 aircraft**

A-4 aircraft

- UF *A4D aircraft*
- Skyhawk aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-4 aircraft**
 - jet aircraft
 - . **A-4 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-4 aircraft**
 - monoplanes
 - . **A-4 aircraft**
- RT ∞ aircraft
- J-65 engine

A4D aircraft

- USE **A-4 aircraft**

A-5 aircraft

- UF *A3J aircraft*
- Vigilante aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-5 aircraft**
 - jet aircraft
 - . **A-5 aircraft**
 - monoplanes
 - . **A-5 aircraft**
 - North American aircraft
 - . **A-5 aircraft**
 - supersonic aircraft
 - . **A-5 aircraft**
- RT ∞ aircraft

A-6 aircraft

- UF *A2F aircraft*
- Intruder aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-6 aircraft**
 - Grumman aircraft
 - . **A-6 aircraft**
 - jet aircraft
 - . **A-6 aircraft**
 - monoplanes
 - . **A-6 aircraft**
- RT ∞ aircraft

A-7 aircraft

- UF *Corsair aircraft*
- GS attack aircraft
 - . **A-7 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . . **A-7 aircraft**
 - Ling-Temco-Vought aircraft
 - . **A-7 aircraft**
 - monoplanes
 - . **A-7 aircraft**
- RT ∞ aircraft

A-9 aircraft

- GS attack aircraft
- . **A-9 aircraft**

- Northrop aircraft
- . **A-9 aircraft**
- reconnaissance aircraft
- . **A-9 aircraft**
- RT ∞ aircraft

A-10 aircraft

- GS attack aircraft
 - . **A-10 aircraft**
 - Republic aircraft
 - . **A-10 aircraft**
- RT ∞ aircraft

A-11 satellite

- USE **Echo 1 satellite**

A-12 satellite

- USE **Echo 2 satellite**

A-37 aircraft

- GS attack aircraft
 - . **A-37 aircraft**
 - Cessna aircraft
 - . **A-37 aircraft**
 - monoplanes
 - . **A-37 aircraft**
- RT ∞ aircraft
- ∞ military aircraft
- T-37 aircraft

A-300 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
- RT ∞ aircraft
- international cooperation

A-310 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
- RT international cooperation

A-320 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-320 aircraft**

A-330 aircraft

RT international cooperation

A-330 aircraft

(added September 1994)

GS commercial aircraft

. European Airbus

. . **A-330 aircraft**

jet aircraft

. European Airbus

. . **A-330 aircraft**

passenger aircraft

. European Airbus

. . **A-330 aircraft**

transport aircraft

. European Airbus

. . **A-330 aircraft**

RT ∞ aircraft

international cooperation

A-340 aircraft

(added September 1994)

GS commercial aircraft

. European Airbus

. . **A-340 aircraft**

jet aircraft

. European Airbus

. . **A-340 aircraft**

passenger aircraft

. European Airbus

. . **A-340 aircraft**

transport aircraft

. European Airbus

. . **A-340 aircraft**

RT ∞ aircraft

international cooperation

AABNCP

USE **E-4A aircraft**

AAP 1 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 2 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 3 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 4 mission

RT Apollo applications program

Apollo project

Skylab program

abbreviations

(added December 1994)

UF *acronyms*

initialisms

RT alphabets

coding

dictionaries

symbols

terminology

words (language)

abdomen

GS anatomy

. **abdomen**

RT digestive system

gastrointestinal system

intestines

peritoneum

stomach

ventral sections

viscera

Abel function

GS analysis (mathematics)

. real variables

. . **Abel function**

functions (mathematics)

. Abel function

RT series (mathematics)

aberration

DEF In astronomy, the apparent angular displacement of the position of a celestial body in the direction of motion of the observer, caused by the combination of the velocity of the observer and the velocity of light. In optics, a specific deviation from perfect imagery, as, for example: spherical aberration, coma, astigmatism, curvature of field, and distortion.

RT abnormalities

anisoplanatism

asphericity

blurring

∞ coma

crystal optics

deviation

distortion

grazing incidence

spatial filtering

abilities

UF *proficiency*

skills

GS **abilities**

. aptitude

RT effort

human performance

intelligence

intelligence tests

mental performance

psychomotor performance

transfer of training

abiogenesis

DEF The development of living organisms from lifeless matter.

GS evolution (development)

. biological evolution

. . **abiogenesis**

RT autocatalysis

chemical evolution

life sciences

panspermia

protobiology

self assembly

spermatogenesis

ablated nosetips

USE **PANT program**

ablation

DEF The removal of surface material from a body by vaporization, melting, chipping, or other erosive process; specifically, the intentional removal of material from a nose cone or spacecraft during high speed movement through a planetary atmosphere to provide thermal protection to the underlying structure.

GS **ablation**

. laser ablation

RT ablative materials

ablative nose cones

aerodynamic heat transfer

aerodynamic heating

aerothermochemistry

atmospheric entry

burnthrough (failure)

charring

cooling

decomposition

erosion

gas-metal interactions

heat shielding

impingement

jet impingement

mass transfer

melting

pyrolysis

reentry

reentry effects

reentry physics

reentry shielding

sublimation

temperature effects

thermal absorption

thermal decomposition

vaporizing

ablative materials

DEF Materials, especially coating materials, designed to provide thermal protection to a body in a fluid stream through the loss of mass.

RT ablation

carbon-phenolic composites

cooling

heat shielding

heat sinks

∞ materials

nose cones

nozzle inserts

pyrolytic materials

refractory materials

temperature

thermal control coatings

thermal protection

ablative nose cones

GS cones

. nose cones

. . **ablative nose cones**

forebodies

. noses (forebodies)

. . nose cones

. . . **ablative nose cones**

RT ablation

heat shielding

reentry shielding

reentry vehicles

rocket nose cones

shielding

Ablestar launch vehicle

GS launch vehicles

. **Ablestar launch vehicle**

rocket vehicles

. multistage rocket vehicles

. . **Ablestar launch vehicle**

RT liquid propellant rocket engines

ABM

USE **apogee boost motors**

abnormalities

RT aberration

deviation

distortion

eccentricity

irregularities

uniqueness

aborigines

RT anthropology

human beings

inhabitants

abort apparatus

UF *flight termination systems*

GS safety devices

. **abort apparatus**

RT aborted missions

aircraft safety

arresting gear

∞ barriers

brakes (for arresting motion)

drag devices

ejection seats

∞ equipment

escape capsules

escape rockets

flying ejection seats

abort trajectories

GS trajectories

. **abort trajectories**

RT aborted missions

emergency landing

MATTS (systems)

aborted missions
 RT abort apparatus
 abort trajectories
 destruction
 engine failure
 escape capsules
 escape rockets
 failure
 malfunctions
 ∞ missions

abrasion
 DEF The surface loss of a material due to frictional forces.
 RT abrasives
 chipping
 cleaning
 cutting
 dry friction
 erosion
 files (tools)
 friction
 grinding (material removal)
 lesions
 metallography
 polishing
 scoring
 soil erosion
 tribology
 wear
 wear resistance

abrasion resistance
 GS mechanical properties
 . wear resistance
 . . **abrasion resistance**
 RT hardness
 ∞ resistance
 toughness

abrasives
 DEF Rocks, minerals, or other substances that, owing to their superior hardness, toughness, consistency, or other properties, are suitable for grinding, cutting, polishing, scouring, or similar use.
 RT abrasion
 aluminum oxides
 Carborundum (trademark)
 ceramics
 diamonds
 grit
 paint removal
 pumice
 quartz
 silicon carbides

Abrikosov theory
 RT crystal structure
 electromagnetic fields
 horseshoe vortices
 superconductivity
 superconductors (materials)
 ∞ theories
 vortices

absolute zero
 DEF Temperature of -273. 16 deg. C or -459. 69 deg. F or 0 deg. K at which molecular motion vanishes and a body has no heat energy.
 GS temperature
 . **absolute zero**
 RT cryogenic temperature
 cryogenics
 subzero temperature
 temperature effects
 temperature scales
 zero point energy

absorbents
 UF *molecular sieves*
 GS sorbents
 . **absorbents**
 RT ∞ absorbers

absorbers (equipment)
 absorbers (materials)
 adsorbents
 air conditioning equipment
 desiccants
 low density materials
 material absorption
 ∞ materials

∞ absorbers
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT absorbers
 absorbers (equipment)
 absorbers (materials)
 attenuators
 cleaners
 oscillation dampers
 shock absorbers
 vibration isolators

absorbers (equipment)
 SN (EXCLUDES EQUIPMENT FOR ABSORBING ENERGY)
 RT absorbers
 ∞ absorbers
 absorbers (materials)
 air conditioning equipment
 cleaners
 columns (process engineering)
 condensers (liquefiers)
 cooling systems
 degassing
 drying apparatus
 ∞ equipment
 material absorption
 refrigerating machinery
 shock absorbers

absorbers (materials)
 SN (EXCLUDES ABSORBENTS--LIMITED TO MATERIALS FOR ABSORBING RADIATION RATHER THAN OTHER MATERIALS)
 GS **absorbers (materials)**
 . neutron absorbers
 . radar absorbers
 . . antiradar coatings
 . solar energy absorbers
 RT absorbers
 ∞ absorbers
 absorbers (equipment)
 acoustic retrofitting
 attenuators
 cleaners
 electromagnetic absorption
 electromagnetic wave filters
 energy absorption
 ∞ filters
 heat sinks
 insulation
 jackets
 low density materials
 ∞ materials
 radiation shielding
 refrigerants
 shielding
 sinks
 stopping power
 suppressors

absorbance
 DEF The ratio of the radiant flux absorbed by a body to that incident upon it.
 GS electromagnetic properties
 . optical properties
 . . **absorbance**
 RT albedo
 capture effect
 cosmic ray albedo
 density (mass/volume)
 Earth albedo
 electromagnetic absorption
 light transmission
 lunar albedo
 microwave absorption
 opacity
 reflectance

surface properties
 transmission
 transmissivity
 transmittance
 transparency
 turbidity

∞ absorption
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The process by which radiant energy is absorbed and converted into other forms of energy. In general, the taking up or assimilation of one substance by another. In vacuum technology, gas entering the interior of a solid.
 RT absorption cooling
 absorption cross sections
 absorption spectra
 absorption spectroscopy
 absorptivity
 activated carbon
 adsorption
 atomic collisions
 attenuation
 auroral absorption
 beneficiation
 capture effect
 collision parameters
 cosmic ray albedo
 damping
 desorption
 diffusion
 degassing
 drying
 electromagnetic absorption
 energy absorption
 energy absorption films
 gamma ray absorption
 infrared absorption
 infrared spectra
 material absorption
 materials recovery
 microwave absorption
 moderation (energy absorption)
 molecular absorption
 multiphoton absorption
 permeating
 photoabsorption
 planetary atmospheres
 polar cap absorption
 radiation absorption
 self absorption
 sorption
 sound transmission
 thermal absorption
 ultraviolet absorption
 visible spectrum
 x ray absorption

absorption bands
 USE **absorption spectra**

absorption coefficient
 USE **absorptivity**

absorption cooling
 DEF Refrigeration in which cooling is effected by the expansion of liquid ammonia into gas and the absorption of the gas by water. The ammonia is reused after the water evaporates.
 GS cooling
 . **absorption cooling**
 RT ∞ absorption
 ammonia
 magnetic cooling
 refrigerants

absorption cross sections
 DEF In radar, cross sections characterized by the amount of power removed from a beam by absorption of radio energy by a target to the power in the beam incident upon the target. Used for capture cross sections.
 UF *capture cross sections*
 RT ∞ absorption
 ∞ cross sections
 ionization cross sections

absorption spectra

neutron cross sections
radiation absorption
scattering cross sections
stopping power

absorption spectra

DEF The arrays of absorption lines and absorption bands which result from the passage of radiant energy from a continuous source through a selectively absorbing medium cooler than the source. Used for absorption bands and spectral absorption.

UF *absorption bands*
spectral absorption
GS spectra
. radiation spectra
. . . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
. spectral bands
. . . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
RT ∞ absorption
Balmer series
∞ bands
blue shift
continuous radiation
D lines
differential absorption lidar
electromagnetic absorption
electromagnetic spectra
electron spectroscopy
electronic spectra
emission spectra
energy spectra
Fraunhofer line discriminators
galactic nuclei
gamma ray absorptiometry
H alpha line
H beta line
H gamma line
H lines
ionizing radiation
K lines
laser spectrometers
line spectra
microwave absorption
microwave spectra
molecular spectra
molecular spectroscopy
oscillator strengths
paramagnetic resonance
Paschen series
photoacoustic spectroscopy
photoluminescent bands
photon absorptiometry
Raman spectra
rotational spectra
Rydberg series
Schumann-Runge bands
self absorption
solar spectra
solar spectrometers
spectrum analysis
spin temperature
stellar spectra
symbiotic stars
ultraviolet spectra
visible spectrum

absorption spectroscopy

GS spectroscopy
. **absorption spectroscopy**
. . . optogalvanic spectroscopy
RT ∞ absorption
Fraunhofer lines
infrared spectroscopy
laser-induced breakdown spectroscopy
optical equipment
optical measuring instruments

ultraviolet spectroscopy

absorptive index
USE **absorptivity**

absorptivity

DEF The capacity of a material to absorb incident radiant energy, measured as the absorptance of a specimen of material thick enough to be completely opaque, and having an optically smooth surface. Used for absorption coefficient and absorptive index.

UF *absorption coefficient*
absorptive index
GS electromagnetic properties
. optical properties
. . . **absorptivity**
RT ∞ absorption
Beer law
Bouguer law
density (mass/volume)
electromagnetic absorption
Kirchhoff law of radiation
microwave absorption
opacity
oscillator strengths
photoacoustic spectroscopy
scattering coefficients
self absorption
transmissivity
transparence

abstracts

GS documents
. **abstracts**
summaries
. **abstracts**
RT annotations
bibliographies
indexes (documentation)
information retrieval
technical writing

abundance

DEF The mean concentration of an element in a geochemical reservoir, e. g. , the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the relative average content, e. g. , the order of abundance of elements in the Earth's crust is O, Si, AL, Fe, Ca, etc. Used for element abundance.

UF *element abundance*
RT availability
energy policy
geochemistry
metallic stars
metallicity
reserves
resources
stellar composition

AC (current)

USE **alternating current**

AC generators

DEF Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators).

UF *alternating current generators*
alternators (generators)
GS electric generators
. **AC generators**
. . . linear alternators
. . . static alternators
RT compulsators
free-piston engines
∞ generators
rotating generators
turbogenerators

AC-1 aircraft

USE **DHC 4 aircraft**

accelerated life tests

DEF Methods designed to approximate, in a short time, the deteriorating effects under nor-

mal long-term service conditions.

RT acceptability
evaluation
fatigue life
life (durability)
performance tests
quality control
service life
∞ tests

accelerating agents

RT ∞ accelerators
admixture
∞ agents
catalysts
retardants

∞ acceleration

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF The time rate of change of velocity.

RT acceleration (physics)
acceleration protection
acceleration stresses (physiology)
∞ accelerators
angular acceleration
catalysis
electromagnetic acceleration
electron acceleration
gravimetry
high acceleration
high gravity environments
human tolerances
impact acceleration
particle acceleration
physiological acceleration
plasma acceleration
transverse acceleration

acceleration (physics)

DEF The rate of change of velocity. The act or process of accelerating or the state of being accelerated. Used for boost and G force.

UF *boost*
G force
GS rates (per time)
. **acceleration (physics)**
. . . angular acceleration
. . . deceleration
. . . spin reduction
. . . electron acceleration
. . . high acceleration
. . . high gravity environments
. . . impact acceleration
. . . particle acceleration
. . . plasma acceleration
. . . transverse acceleration

RT ∞ acceleration
acceleration measurement
acceleration stresses (physiology)
accelerometers
body kinematics
expulsion
flight stress (biology)
∞ force
kinematics
kinetics
mechanical shock
∞ motion
physiological acceleration
stress (physiology)
thrust
thrust-weight ratio
velocity

acceleration measurement

(added April 1997)

SN (LIMITED TO TECHNIQUES AND INSTRUMENTATION FOR DETERMINING THE DIRECTION AND MAGNITUDE OF ACCELERATION; USE TERMS FROM THE "ACCELERATION (PHYSICS)" HIERARCHY TO INDICATE THE DATA OBTAINED FROM MEASUREMENT)
RT acceleration (physics)
accelerometers
angular acceleration
inertial navigation

∞ measurement
robot sensors
transverse acceleration
velocity measurement

acceleration protection

GS protection
. **acceleration protection**
RT ∞ acceleration
embedding
supine position

acceleration stresses (physiology)

GS stress (biology)
. **acceleration stresses (physiology)**
. . . centrifuging stress
stress (physiology)
. **acceleration stresses (physiology)**
. . . centrifuging stress
RT ∞ acceleration
acceleration (physics)
aerospace medicine
artificial gravity
body kinematics
gravitational effects
gravitational physiology
head movement
high acceleration
lower body negative pressure
motion sickness
physiological acceleration
transverse acceleration

acceleration tolerance

SN (LIMITED TO ABILITY OF ORGANISMS TO WITHSTAND ACCELERATION--FOR EFFECTS ON EQUIPMENT, USE SHOCK RESISTANCE AND MECHANICAL SHOCK)
GS tolerances (physiology)
. **acceleration tolerance**
RT blackout (physiology)
blackout prevention
centrifuging stress
gravitational effects
high acceleration
human centrifuges
human tolerances
∞ resistance

∞ **accelerators**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Machines that ionize gases and electrically accelerate the ions onto targets.
RT accelerating agents
∞ acceleration
coaxial plasma accelerators
cyclic accelerators
Cyclops plasma accelerator
electron accelerators
geocyclotrons
Hall accelerators
hypervelocity guns
ion accelerators
linear accelerators
mass drivers
Nimrod accelerator
particle accelerator targets
particle accelerators
plasma accelerators
racetracks (particle accelerators)
railgun accelerators
ram accelerators
SEPAC (payload)
storage rings (particle accelerators)
synchrotrons
Van de Graaff accelerators

accelerometers

DEF Transducers which measure acceleration or gravitational forces capable of imparting acceleration.
GS measuring instruments
. **accelerometers**
. . . strain gage accelerometers
RT acceleration (physics)
acceleration measurement

gravimeters
gravimetry
gyroscopic pendulums
mechanical measurement
pendulums
seismographs
shock measuring instruments
speed indicators
thrust measurement
velocity measurement
vibration meters

acceptability

UF *acceptance*
RT accelerated life tests
compatibility
evaluation
examination
figure of merit
inspection
performance tests
proving
quality control
rejection
reliability
risk
samples
standards
suitability
∞ tests
tolerances (mechanics)
total quality management
validity

acceptance

USE **acceptability**

acceptor materials

GS semiconductors (materials)
. **acceptor materials**
RT carrier density (solid state)
electrons
holes (electron deficiencies)
∞ materials

access control

DEF Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system.
RT communication networks
computer information security
computer security
∞ control
data transmission
firewalls (computers)
intrusion detection (computers)
multiple access
multiplexing
radio communication
telecommunication

access time

GS time
. **access time**
RT data processing
rates (per time)
time constant
∞ time response
transmission rate (communications)

accessories

UF *attachments*
RT ∞ components
extensions
fittings
inserts
subassemblies

accident investigation

GS investigation
. **accident investigation**
. . . aircraft accident investigation
RT accidents
automobile accidents

wreckage

accident prevention

UF *precautions*
GS prevention
. **accident prevention**
RT accidents
aerospace safety
air bag restraint devices
automobile accidents
avoidance
fire prevention
hazards
protection
safety
safety devices
safety management
situational awareness
warning
warning systems

accident proneness

RT safety devices
safety factors

accidents

GS **accidents**
. aircraft accidents
. . . bird-aircraft collisions
. automobile accidents
. loss of coolant
RT accident investigation
accident prevention
air bag restraint devices
crash injuries
crashes
destruction
disasters
emergencies
explosions
fires
first aid
hazards
industrial safety
injuries
sabotage
safety
safety devices
traffic
wreckage

acclimatization

DEF The adjustments of a human body or other organism to a new environment; the bodily changes which tend to increase efficiency and reduce energy loss. Used for deacclimatization.
UF *deacclimatization*
GS adaptation
. **acclimatization**
. . . altitude acclimatization
. . . cold acclimatization
. . . heat acclimatization
RT homeostasis
liquid breathing
stress (biology)
stress (physiology)
tolerances (physiology)

accommodation

RT adaptation
correction
eye (anatomy)
focusing
visual accommodation

accommodation coefficient

DEF The ratio of the average energy actually transferred between a surface and impinging gas molecules which are scattered by the surface to the average energy which would theoretically be transferred if the impinging molecules reached complete thermal equilibrium with the surface before leaving the surface. Used for thermal accommodation coefficients.
UF *thermal accommodation coefficients*
GS coefficients

accounting

. accommodation coefficient

RT heat transfer coefficients

accounting

DEF The practice and system of recording and summarizing business and financial transactions, and reporting as well as verifying and analyzing their results.

RT budgeting
costs
finance

accretion

USE **deposition**

accretion disks

DEF Rotation disks of matter surrounding an astronomical object, such as a star, galactic nucleus, black hole, etc., which is accumulated gravitationally by the object.

RT astrophysics
binary stars
black holes (astronomy)
blazars
cooling flows (astrophysics)
disks (shapes)
eclipsing binary stars
galactic nuclei
gravitational binding energy
protoplanetary disks
rotating disks
stellar mass accretion
superhumps (astronomy)
x ray binaries

accumulations

RT acquisition
agglomeration
assemblies
coagulation
collection
concentrating
deposition
filling
growth
increasing
input
nucleation
settling
stockpiling

accumulators

DEF Devices or apparatus that accumulate or store. Used for collectors.

UF *collectors*
GS **accumulators**
. accumulators (computers)
. dust collectors
. solar collectors

RT anodes
concentrators
entrapment
fuel systems
pressure vessels
pressurizing

accumulators (computers)

DEF In computer technology, devices which store a number and upon receipt of another number add it to the number already stored and store the sum.

GS accumulators
. **accumulators (computers)**
computer components
computer storage devices
. registers (computers)
. . . **accumulators (computers)**
RT adding circuits
counters
∞ equipment

accuracy

DEF The degree of agreement of the measurements with the true value of the magnitude of the quantity measured. Used for error band and fidelity.

UF *error band*
fidelity

GS accuracy

. geodetic accuracy
. geometric accuracy
RT angular resolution
calibrating
consistency
correction
definition
drift (instrumentation)
dynamic characteristics
errors
high resolution
hysteresis
linearity
∞ measurement
miss distance
precision
quality
range errors
reliability
resolution
sequential control
standards
surveys
∞ tests
tolerances (mechanics)
validity
virtual properties

ACE satellite

(added December 1999)

USE **Advanced Composition Explorer**

ACEE program

DEF A NASA program started in 1975 to reduce fuel consumption for transport aircraft through the study of structural and aerodynamic energy efficiency as well as engine energy efficiency consisting of engine component improvement, new energy efficient engines, and advanced turbopropellers. The acronym stands for aircraft energy efficiency. Used for Aircraft Energy Efficiency program and energy efficiency transport program.

UF *Aircraft Energy Efficiency program*
Energy Efficiency Transport program

GS programs
. NASA programs
. . **ACEE program**
RT aircraft engines
combustion efficiency

acetaldehyde

GS aldehydes
. **acetaldehyde**

acetals

GS ethers
. **acetals**

acetanilide

UF *phenacetin*
GS nitrogen compounds
. amides
. . **acetanilide**

acetates

GS **acetates**
. cobalt acetates
. lead acetates
. sodium chlorodifluoroacetates
. triacetin
RT acetic acid
acetylsalicylic acid
esters
ethylenediaminetetraacetic acids

acetation

USE **acetylation**

acetazolamide

GS nitrogen compounds
. amides
. . **acetazolamide**

organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . **acetazolamide**
RT carbonic anhydrase
diuretics

acetic acid

GS acids
. carboxylic acids
. . fatty acids
. . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
RT acetates
acetyl compounds
triacetin

acetone

GS ketones
. **acetone**
RT acetylacetone
pentanone

acetonitrile

UF *ethane nitrile*
methyl cyanide
GS cyanides
. **acetonitrile**
methyl compounds
. **acetonitrile**
nitriles
. **acetonitrile**

acetyl compounds

GS organic compounds
. **acetyl compounds**
. . acetylacetone
. . acetylsalicylic acid
RT acetic acid
acetylation
aldehydes
∞ chemical compounds
esters

acetylacetone

GS ketones
. **acetylacetone**
organic compounds
. acetyl compounds
. . **acetylacetone**
RT acetone
pentanone

acetylation

DEF Substitution of an acetyl radical for an active hydrogen. Specifically, formation of cellulose acetate from cellulose. Used for acetation.

UF *acetation*
GS chemical reactions
. acylation
. . **acetylation**
RT acetyl compounds

acetylene

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkynes
. . . . **acetylene**
RT cyanoacetylene
hydrocarbon fuels
oxyacetylene

acetylsalicylic acid

UF *ASA*
GS acids
. carboxylic acids
. . fatty acids

acoustic imaging

noise spectra
pressure oscillations
resonant frequencies
sound waves
subaudible frequencies
ultrasonic radiation
whispering gallery modes

acoustic generators

USE **sound generators**

acoustic imaging

(added February 1993)

GS imaging techniques
. **acoustic imaging**
. . . acoustical holography
RT acoustic measurement
acoustic scattering
nondestructive tests
ultrasonic flaw detection

acoustic impedance

GS acoustic properties
. **acoustic impedance**
impedance
. **acoustic impedance**
RT acoustics
evanescent waves
grazing flow

acoustic instability

GS acoustic properties
. **acoustic instability**
stability
. **acoustic instability**
RT signal fading
thermoacoustic effects

acoustic levitation

DEF Method by which molten materials in space are suspended during processing experiments in the low gravity environment. Also, the use of very intense sound waves to keep a body suspended, thereby eliminating any container contact.

GS levitation
. **acoustic levitation**
RT buoyancy
space processing

acoustic measurement

SN (MEASUREMENT OF PROPERTIES, QUANTITIES OR CONDITIONS ASSOCIATED WITH ELASTIC WAVES)
DEF Measurement of properties, quantities, or conditions of acoustical, i. e. , mechanical waves. Used for sound measurement.
UF *sound measurement*
GS **acoustic measurement**
. noise measurement
RT acoustic emission
acoustic frequencies
acoustic imaging
ambience
anechoic chambers
audio frequencies
audiometry
cepstral analysis
effective perceived noise levels
frequency measurement
grazing flow
∞ measurement
mechanical measurement
noise meters
reverberation chambers
seismographs
sound pressure
sound waves
ultrasonic tests

acoustic microscopes

DEF Instruments which use acoustic radiation at microwave frequencies to allow visualization of microscopic detail exhibited in elastic properties of objects. Used for scanning laser acoustic microscope (SLAM).

UF *scanning laser acoustic microscope (SLAM)*
GS microscopes
. **acoustic microscopes**
RT acoustic propagation
imaging techniques
microwave frequencies
optical equipment
photoacoustic microscopy
wave propagation

acoustic nozzles

RT ∞ nozzles
sonic nozzles
sound generators

acoustic propagation

GS transmission
. wave propagation
. . **acoustic propagation**
. . . sound propagation
RT acoustic microscopes
acoustical holography
acoustics
elastic waves
∞ propagation
whispering gallery modes

acoustic properties

GS **acoustic properties**
. acoustic impedance
. acoustic instability
. acoustic scattering
. . reverberation
. acoustic velocity
. sound intensity
. . zero sound
RT acoustic frequencies
field strength
grazing flow
Lamb waves
mechanical properties
∞ physical properties
∞ properties
∞ resistance
sound waves
wave dispersion

acoustic radiation

USE **sound waves**

acoustic resonance

(added June 1997)
GS resonance
. **acoustic resonance**
RT acoustic excitation
acoustic frequencies
acoustics
resonant frequencies
resonant vibration

acoustic retrofitting

DEF Modification, especially of aircraft, to effect noise reduction; specifically, the introduction of absorber materials and jet noise silencers.

GS retrofitting
. **acoustic retrofitting**
RT absorbers (materials)
aerodynamic noise
aircraft design
aircraft noise
jet aircraft noise
mufflers
noise reduction
propeller noise
vibration isolators

acoustic scattering

GS acoustic properties
. **acoustic scattering**
. . reverberation
scattering
. wave scattering
. . **acoustic scattering**
. . . reverberation

RT acoustic imaging
acoustic sounding
acoustics
deep scattering layers
reciprocity theorem
sodar
sound detecting and ranging
surface noise interactions
underwater acoustics

acoustic simulation

GS simulation
. environment simulation
. . **acoustic simulation**
RT elastic waves
flight simulation
reverberation chambers

acoustic sounding

GS sounding
. **acoustic sounding**
RT acoustic scattering
acoustics
Earth atmosphere
meteorology
rocket sounding
rocket vehicles
sounding rockets
ultrasonic tests
underground acoustics
upper atmosphere

acoustic stability

USE **frequency stability**

acoustic streaming

DEF Unidirectional flow currents in a fluid that are due to the presence of sound waves.

RT fluid flow
fluid switching elements
fragmentation
sound waves
streamlining

acoustic velocity

DEF The speed of propagation of sound waves. Used for sonic speed, sound barrier, and sound velocity.

UF *sonic speed*
sound barrier
sound velocity
GS acoustic properties
. **acoustic velocity**
rates (per time)
. **acoustic velocity**
velocity
. **acoustic velocity**
RT ∞ barriers
exhaust velocity
Gutenberg zone
Mach cones
Mach number
sonic booms
sound pressure
subsonic speed
supersonic speed
transonic speed

acoustic vibrations

USE **sound waves**

acoustical holography

UF *sonoholography*
sound holography
GS imagery
. photography
. . holography
. . . **acoustical holography**
imaging techniques
. acoustic imaging
. . **acoustical holography**
RT acoustic propagation
imaging techniques
sound waves

wave front reconstruction

acoustics

DEF The study of sound, including its production, transmission, and effects. Those qualities of an enclosure that together determine its character with respect to distinct hearing. Used for sound.

UF *sound*

GS **acoustics**

- . aeroacoustics
- . bioacoustics
- . electroacoustics
- . geometrical acoustics
- . magnetoacoustics
- . microsonics
- . psychoacoustics
- . underwater acoustics

RT

- acoustic attenuation
- acoustic coupling
- acoustic excitation
- acoustic fatigue
- acoustic frequencies
- acoustic impedance
- acoustic propagation
- acoustic resonance
- acoustic scattering
- acoustic sounding
- anechoic chambers
- architecture
- audio tapes
- auditory perception
- auditory stimuli
- auditory tasks
- comfort
- earphones
- echoes
- effective perceived noise levels
- elastic waves
- harmonic excitation
- harmonic generations
- harmonic oscillation
- harmonics
- hum
- infrasound frequencies
- Lamb waves
- Lame wave equations
- loudness
- noise (sound)
- noise pollution
- noise propagation
- noise reduction
- octaves
- opacity
- phonetics
- power spectra
- ∞ science
- simple harmonic motion
- sonic anemometers
- sound amplification
- sound fields
- sound propagation
- sound transmission
- sound waves
- speech
- stereophonics
- thermoacoustic effects
- ultrasonic cleaning
- ultrasonic scanners
- ultrasonics
- verbal communication
- vibration
- vibration damping
- voice communication
- zero sound

acousto-optics

RT Bragg cells
crystal optics
electro-optics
geometrical optics
imagery
light modulators
magneto-optics
optical properties
optical switching
∞ optics

photoacoustic microscopy
photoacoustic spectroscopy
thermoacoustic effects
tunable filters

ACPL (*Spacelab*)

USE **Atmospheric Cloud Physics Lab (Spacelab)**

acquired immunodeficiency syndrome

(*added August 1991*)

DEF A condition caused by the human immunodeficiency virus (HIV) attacking the human body's T-cells, thereby rendering an infected individual defenseless against diseases.

UF *AIDS (disease)*

GS diseases

- . infectious diseases
- . . . viral diseases

- . . . **acquired immunodeficiency syndrome**

signs and symptoms

- . **acquired immunodeficiency syndrome**

RT

- antibodies
- hepatitis
- human immunodeficiency virus
- immune systems
- immunology
- interferon
- meningitis
- physiological defenses
- pneumonia
- vaccines

acquisition

GS **acquisition**

- . data acquisition
- . target acquisition

RT

- accumulations
- collection
- detection
- documentation
- ∞ receiving
- recognition

acriflavine

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **acriflavine**

RT

- antiseptics
- dyes

acrobatics (aircraft)

USE **aerobatics**

acroleins

GS aldehydes
. **acroleins**

RT

- toxicity and safety hazard

acronyms

USE **abbreviations**

ACRV

USE **Assured Crew Return Vehicle**

acrylates

GS esters
. **acrylates**

RT

- resins

acrylic acid

GS acids
. carboxylic acids
. . **acrylic acid**
organic compounds
. carboxylic acids
. . **acrylic acid**

acrylic resins

UF *methacrylate resins*
polyacrylates
GS plastics
. synthetic resins

- . . addition resins
- . . . **acrylic resins**
- resins
- . synthetic resins
- . . addition resins
- . . . **acrylic resins**
- RT latex
- polyacrylonitrile
- thermoplastic resins

acrylonitriles

UF *vinyl cyanide*
GS nitriles
. **acrylonitriles**
. . polyacrylonitrile
RT plastics

ACTH

USE **adrenocorticotropin (ACTH)**

actinide series

DEF The series of elements beginning with actium, Element No. 89, and continuing through lawrencium, Element No. 103.

GS chemical elements
. **actinide series**
. . actinium
. . radium
. . . radium isotopes
. . . . radium 226
. . thorium
. . . thorium isotopes
. . transuranium elements
. . . americium
. . . . americium isotopes
. americium 241
. . . berkelium
. . . californium
. . . . californium isotopes
. . . curium
. . . . curium isotopes
. curium 242
. curium 244
. . . einsteinium
. . . fermium
. . . lawrencium
. . . mendelevium
. . . neptunium
. . . . neptunium isotopes
. . . nobelium
. . . plutonium
. . . . plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. . . sergenium
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
metals
. **actinide series**
. . actinium
. . radium
. . . radium isotopes
. . . . radium 226
. . thorium
. . . thorium isotopes
. . transuranium elements
. . . americium
. . . . americium isotopes
. americium 241
. . . berkelium
. . . californium
. . . . californium isotopes
. . . curium
. . . . curium isotopes
. curium 242
. curium 244
. . . einsteinium
. . . fermium
. . . lawrencium

actinide series compounds

- ... mendelevium
- ... neptunium
- ... neptunium isotopes
- ... nobelium
- ... plutonium
- ... plutonium isotopes
- ... plutonium 238
- ... plutonium 239
- ... plutonium 240
- ... plutonium 241
- ... plutonium 244
- ... sergenium
- .. uranium
- ... uranium isotopes
- ... uranium 232
- ... uranium 233
- ... uranium 234
- ... uranium 235
- ... uranium 238

RT radioactive isotopes
radioactive materials
transition metals

actinide series compounds

GS **actinide series compounds**

- . californium compounds
- . curium compounds
- . einsteinium compounds
- . neptunium compounds
- . plutonium compounds
- . plutonium fluorides
- . plutonium oxides
- . thorium compounds
- . thorium fluorides
- . thorium oxides
- . uranium compounds
- . uranium carbides
- . uranium fluorides
- . uranium oxides

RT ∞ chemical compounds
∞ Group 3B compounds

actinium

GS chemical elements

- . actinide series
- .. **actinium**
- metals
- . actinide series
- .. **actinium**

actinographs

USE **actinometers**

actinometers

DEF The general name for instruments used to measure the intensity of radiant energy, particularly that of the sun. Used for actinographs and emissographs.

UF *actinographs*
emissographs

GS measuring instruments

- . radiation measuring instruments
- .. **actinometers**
- ... infrared spectrometers
- ... filter wheel infrared spectrometers
- ... pyranometers
- ... radiometers
- ... Dicke radiometers
- ... infrared detectors
- ... FLIR detectors
- ... infrared radiometers
- ... Advanced Very High Resolution Radiometer
- ... infrared scanners
- ... visible infrared spin scan radiometer
- ... microwave radiometers
- ... Advanced Microwave Sounding Unit
- ... passive L-band radiometers
- ... pressure modulator radiometers
- ... spectroradiometers
- ... MODIS (radiometry)
- ... solar spectrometers
- ... spectroheliographs

- ... spectrophotometers
- ... infrared spectrophotometers
- ... ultraviolet spectrophotometers
- ... ultraviolet detectors
- ... ultraviolet spectrometers
- ... high dispersion spectrographs
- ... Total Ozone Mapping Spectrometer
- ... ultraviolet spectrophotometers
- ... x ray detectors

RT dosimeters
Fabry-Perot spectrometers
field intensity meters
spectrometers

actinomycetes

GS microorganisms

- . bacteria
- .. **actinomycetes**

actinomycin

GS drugs

- . antibiotics
- .. **actinomycin**

activated carbon

GS charcoal

- . **activated carbon**

RT ∞ absorption
carbon
filtration
hemoperfusion
water treatment

activated sludge

DEF A semiliquid mass removed from the liquid flow of sewage and subjected to aeration and aerobic microbial action. The end product is dark to golden brown, partially decomposed, granular and flocculent, and has an earthy odor when fresh.

GS sludge

- . **activated sludge**

RT biodegradation
human wastes
metabolic wastes
sewage
wastes

activation

RT actuation
catalysis
deactivation
electromagnetic absorption
excitation
flotation
initiation
ionization potentials
irradiation
microwave absorption
sensitizing
starting
stimulation

activation (biology)

RT activation energy

- ∞ biology
- ∞ cells
- enzymes
- stimulation

activation analysis

DEF A method of chemical analysis, especially for small traces of materials, based on the detection of characteristic radiations following a nuclear bombardment.

GS **activation analysis**

- . neutron activation analysis

RT ∞ analyzing

activation energy

RT activation (biology)
binding energy
Damkohler number
electron energy
∞ energy

- heat
- nuclear binding energy
- nuclear capture
- proton energy
- rotors
- surface energy

active control

DEF The automatic activation of various control surface functions in aircraft.

GS automatic control

- . adaptive control
- .. **active control**

RT aeroservoelasticity
aircraft control

∞ control
interactive control
piezoelectric actuators
self adaptive control systems
self alignment
servomechanisms
smart structures

active galactic nuclei

GS galactic nuclei

- . **active galactic nuclei**

RT active galaxies
blazars
galactic radiation

∞ nuclei
quasars
radio galaxies
Seyfert galaxies

active galaxies

GS celestial bodies

- . galaxies
- .. **active galaxies**
- ... Markarian galaxies
- ... radio galaxies
- ... Seyfert galaxies

RT active galactic nuclei
blazars
galactic nuclei
galactic radiation
quasars

active glaciers

USE **glaciers**

Active Magneto Particle Tracer Explorers

USE **AMPTE (satellites)**

active satellites

DEF Satellites which transmit a signal, in contrast to passive satellites.

GS artificial satellites

- . **active satellites**
- .. SYNCOM satellites
- ... Early Bird satellites
- ... SYNCOM 1 satellite
- ... SYNCOM 2 satellite
- ... SYNCOM 3 satellite
- ... SYNCOM 4 satellite

RT Advent Project
Explorer 29 satellite
Explorer 36 satellite
geodetic satellites
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite
navigation satellites
NAVSTAR satellites
passive satellites
synchronous satellites

active volcanoes

USE **volcanoes**

∞ activity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT activity (biology)
extravehicular activity
faculae
intravehicular activity

radioactivity
solar activity

activity (biology)
UF *biological activity*
RT ∞ activity
biological effects
∞ biology
catalytic activity

activity cycles (biology)
GS cycles
. **activity cycles (biology)**
RT ∞ biology
circadian rhythms
phenology
rhythm (biology)
zeitgebers

ACTS
SN (ADVANCED COMMUNICATIONS TECHNOLOGY SATELLITE)
UF *Advanced Communications Technology Sat*
GS artificial satellites
. communication satellites
. . **ACTS**
RT extremely high frequencies
microwave transmission
satellite communication

actuation
RT activation
actuators
excitation
initiation
nutiation
sensitizing
starting
stimulation

actuator disks
GS disks (shapes)
. **actuator disks**
RT ∞ disks
∞ fans
propellers

actuators
DEF Mechanisms to activate process control equipment, e. g. , valves. Used for cartridge actuated devices, hydraulic actuators, and triggers.
UF *cartridge actuated devices*
hydraulic actuators
triggers
GS **actuators**
. piezoelectric actuators
RT actuation
aeroservoelasticity
aircraft hydraulic systems
automatic control valves
cams
control valves
controllers
∞ effectors
electroactive polymers
explosive devices
∞ instruments
missile control
propellant actuated instruments
regulators
servomechanisms
servomotors
shape control
smart materials
solenoids
starters
stepping motors
torque motors

acuity
DEF The keenness of ability to detect and discriminate.
GS **acuity**
. visual acuity

. . hyperopia
RT adaptation
discrimination
frequency response
perception
sensitivity
thresholds (perception)

acylation
GS chemical reactions
. **acylation**
. . acetylation
RT Friedel-Craft reaction

AD/I B
USE **Explorer 25 satellite**

AD/I satellite
USE **Explorer 24 satellite**

Ada (programming language)
DEF A programming language based on PASCAL, originally developed on behalf of the US Department of Defense for use in embedded computer systems. It is named Ada in honor of Augusta Ada Byron, countess of Lovelace, primarily due to the fact that she was the assistant and patron of Charles Babbage and is considered the world's first programmer.
GS languages
. programming languages
. . high level languages
. . . **Ada (programming language)**
RT computer programming
embedded computer systems
object-oriented programming

AD-A satellite
USE **Explorer 19 satellite**

adaptation
DEF The adjustment, alteration or modification of an organism to fit it more perfectly for existence in its environment.
GS **adaptation**
. acclimatization
. . altitude acclimatization
. . cold acclimatization
. . heat acclimatization
. desert adaptation
. retinal adaptation
. . dark adaptation
. . light adaptation
RT accommodation
acuity
correction
fitting
hibernation
homeostasis
perception
reaction time
retraining
sensitivity
thresholds (perception)
vision

adapters
DEF Devices or contrivances used or designed primarily to fit or adjust one thing to another. Devices, appliances or the like used to alter something so as to make it suitable for a use for which it was not originally designed.
GS **adapters**
. multiple docking adapters
RT connectors
extensions
fittings
joints (junctions)

adaptive control
UF *adaptive control systems*
GS automatic control
. **adaptive control**
. . active control
. . model reference adaptive control
. . self adaptive control systems

RT automata theory
autonomy
∞ control
control theory
cybernetics
dynamic control
feedback control
feedforward control
machine learning
mission adaptive wings
optimal control
robot control
sampled data systems
self alignment
smart structures

adaptive control systems
USE **adaptive control**

adaptive filters
RT bandpass filters
bandstop filters
electric filters
electromagnetic wave filters
∞ filters
IIR filters
linear filters
optical filters
space-time adaptive processing
tracking filters
tunable filters

adaptive optics
DEF Real-time optical correction for atmospheric perturbations and other system error sources.
RT anisoplanatism
atmospheric optics
computer techniques
deformable mirrors
feedback control
honeycomb mirrors
imaging techniques
instrument compensation
laser guide stars
optical correction procedure
optical transfer function
∞ optics
segmented mirrors
self adaptive control systems

adatoms
(added September 2002)
DEF Atoms adsorbed on a solid surface. Adatoms and their associated properties are often exploited in the development of microelectronic and nanoelectronic structures.
UF *adsorbed atoms*
GS atoms
. **adatoms**
RT adsorption
atomic clusters
chemisorption
metal surfaces
molecular electronics
nanostructures (devices)
nanotechnology
surface diffusion

adders (circuits)
USE **adding circuits**

adding circuits
UF *adders (circuits)*
binary summators
GS circuits
. **adding circuits**
computer components
. **adding circuits**
RT accumulators (computers)
binary integration
logic circuits

addition
RT addition theorem
amount

addition resins

arithmetic
computation
number theory
restoration

addition resins

SN (CARBON CHAIN POLYMERS--FOR
HETEROATOM CHAIN POLYMERS, USE
POLYETHER RESINS)

GS plastics
. synthetic resins
. . . **addition resins**
. . . acrylic resins
. . . vinyl copolymers
resins

. synthetic resins
. . . **addition resins**
. . . acrylic resins
. . . vinyl copolymers

RT crosslinking
polybutadiene
polyethylene terephthalate
polyethylenes
polyisobutylene
polypropylene
polystyrene
polyvinyl alcohol
polyvinyl chloride
synthesis (chemistry)
synthetic fibers
vulcanized elastomers

addition theorem

GS number theory
. **addition theorem**
theorems
. **addition theorem**
RT addition

additives

DEF Materials or substances added to something else for a specific purpose. Used for doping (additives).

UF *doping (additives)*

GS **additives**
. admixtures
. antifreezes
. antiicing additives
. antiknock additives
. antioxidants
. oil additives
. opacifiers
. plasticizers
. propellant additives
. . . propellant binders
. . . solid rocket binders

RT ∞ agents
alloying
antimisting fuels
binders (materials)
carrier injection
catalysts
coatings
diluents
dopes
doping (materials)
fillers
high energy fuels
inhibitors
interstitials
lubricants
majority carriers
minority carriers
modulation doping
neutralizers
neutron transmutation doping
pigments
preservatives
retardants
solvents
stabilizers (agents)
suppressors
tetrahydrofuran
thickeners (materials)
traveling solvent method

vinyl copolymers

addressing

RT coding
computer programming

adducts

DEF Chemical compounds with weak bonds, e. g. , occlusive or Van der Waal bonds.
RT ∞ chemical compounds

Aden

USE **Southern Yemen**

adenines

GS bases (chemical)
. **adenines**
organic compounds
. carbohydrates
. . . glucosides
. . . nucleosides
. . . . **adenines**
. cyclic compounds
. . . heterocyclic compounds
. . . purines
. . . . **adenines**
. nucleotides
. . **adenines**
phosphorus compounds
. phosphates
. . **adenines**
RT ribonucleic acids

adenosine diphosphate

UF *ADP*
GS organic compounds
. coenzymes
. . **adenosine diphosphate**
. cyclic compounds
. . . heterocyclic compounds
. . . adenosines
. . . . **adenosine diphosphate**
. nucleotides
. . . adenosines
. . . . **adenosine diphosphate**
phosphorus compounds
. phosphates
. . . diphosphates
. . . **adenosine diphosphate**

adenosine triphosphate

UF *ATP*
GS organic compounds
. coenzymes
. . **adenosine triphosphate**
. cyclic compounds
. . . heterocyclic compounds
. . . adenosines
. . . . **adenosine triphosphate**
. nucleotides
. . . adenosines
. . . . **adenosine triphosphate**
phosphorus compounds
. phosphates
. . **adenosine triphosphate**
RT amino acids

adenosines

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . **adenosines**
. adenosine diphosphate
. adenosine triphosphate
. cyclic AMP
. nucleotides
. . **adenosines**
. . . adenosine diphosphate
. . . adenosine triphosphate
. . . cyclic AMP

adenoviruses

GS microorganisms
. viruses

. . **adenoviruses**

adequacy

RT quality
validity

adherometers

USE **adhesion tests**

adhesion

GS surface properties
. **adhesion**
. . . stiction
RT adhesion tests
adhesive bonding
agglutination
bonding
cold welding
fusion (melting)
interfacial energy
internal pressure
 ∞ joining
metal bonding
peeling
sealing
spreading
tackiness
traction
wettability

adhesion tests

UF *adherometers*
Fokker bond testers
RT adhesion
bonding
nondestructive tests
 ∞ tests
wettability

adhesive bonding

GS bonding
. **adhesive bonding**
RT adhesion
agglutination
bonded joints
cementation
fiber pullout
 ∞ joining
metal bonding
metal-metal bonding
resin bonding
sealing

adhesives

UF *binders (adhesives)*
GS **adhesives**
. glues
. pastes
. tetraethyl orthosilicate
RT agglutination
alkyd resins
binders (materials)
cements
epoxy resins
fasteners
furan resins
joints (junctions)
metal-metal bonding
phenolic epoxy resins
plastic tapes
sealers
seams (joints)
 ∞ tapes

ADI methods

USE **alternating direction implicit methods**

adiabatic conditions

GS conditions
. **adiabatic conditions**
RT Carnot cycle
compressing
enthalpy
environments
expansion

isentropes
 isoenergetic processes
 isothermal processes
 polytropic processes
 temperature
 thermal environments
 thermodynamic cycles
 thermodynamic equilibrium

adiabatic demagnetization cooling

DEF Use of paramagnetic salts cooled to the boiling point of helium in a strong magnetic field, then thermally isolated and removed from the field to demagnetize the salts and attain temperatures of 10(-3) K.
 RT magnetic cooling

adiabatic equations

RT ∞ equations
 equations of state
 heat transmission
 nonadiabatic theory
 shock waves

adiabatic flow

GS fluid flow
 . **adiabatic flow**
 RT stagnation temperature

adipose tissues

GS tissues (biology)
 . connective tissue
 . . **adipose tissues**
 RT fats

Adiprene (trademark)

GS elastomers
 . rubber
 . . synthetic rubbers
 . . . **Adiprene (trademark)**

Adirondack Mountains (NY)

GS landforms
 . mountains
 . . **Adirondack Mountains (NY)**
 RT New York

adjoints

GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **adjoints**
 RT data processing
 numerical analysis

adjusting

UF *adjustment*
readjustment
 RT alignment
 clearances
 collimation
 correction
 fitting
 focusing
 leveling
 matching
 optical correction procedure
 positioning
 revisions
 ∞ setting
 smoothing

adjustment

USE **adjusting**

administration

USE **management**

admittance

USE **electrical impedance**

admixtures

GS additives
 . **admixtures**
 mixtures

. **admixtures**
 RT accelerating agents
 catalysts
 ∞ combination
 concretes
 formulations
 ingredients
 mixers
 mortars (material)
 surfactants

adobe flats

USE **flats (landforms)**

ADP

USE **adenosine diphosphate**

Adrastea

(*added January 1996*)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 129,980 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Adrastea**
 RT Jupiter (planet)

adrenal gland

GS anatomy
 . glands (anatomy)
 . . endocrine glands
 . . . **adrenal gland**
 RT adrenocorticotropin (ACTH)
 epinephrine
 glucocorticoids

adrenal metabolism

GS metabolism
 . **adrenal metabolism**
 RT aldosterone
 corticosteroids
 cortisone
 hydroxycorticosteroid

adrenaline

USE **epinephrine**

adrenergics

UF *sympathomimetics*
 GS drugs
 . **adrenergics**
 RT antiadrenergics
 anticoagulants
 cyclic AMP

adrenocorticotropin (ACTH)

UF *ACTH*
 GS secretions
 . endocrine secretions
 . . hormones
 . . . pituitary hormones
 **adrenocorticotropin (ACTH)**
 RT acids
 adrenal gland
 amino acids
 proteins

Adriatic Sea

GS seas
 . Mediterranean Sea
 . . **Adriatic Sea**
 RT Italy
 Yugoslavia

adsorbed atoms

(*added September 2002*)
 USE **adatoms**

adsorbents

DEF Materials which take up gases by adsorption.
 GS sorbents
 . **adsorbents**
 RT absorbents
 adsorption
 air conditioning equipment

charcoal
 desiccants
 hemoperfusion

adsorption

DEF The adhesion of a thin film of liquid or gas to the surface of a solid substance. The solid does not combine chemically with the adsorbed substance.

GS sorption
 . **adsorption**
 . . chemisorption
 RT ∞ absorption
 adatoms
 adsorbents
 adsorptivity
 beneficiation
 bioavailability
 chromatography
 concentrating
 desorption
 diffusion
 electrostatic precipitators
 elution
 gas chromatography
 gas-metal interactions
 Gibbs adsorption equation
 hydrophobicity
 ∞ separation
 water treatment

adsorptivity

GS surface properties
 . **adsorptivity**
 RT adsorption
 chemical properties
 chemisorption
 ∞ physical properties

Advanced Airborne Command Post

USE **E-4A aircraft**

Advanced Communications Technology Sat

USE **ACTS**

Advanced Composition Explorer

(*added December 1999*)
 DEF Explorer spacecraft (launched August 25, 1997) carrying six high-resolution sensors and three monitoring instruments for sampling low-energy particles of solar origin and high-energy galactic particles. From a vantage point approximately 1/100 of the distance from the Earth to the Sun, the Advanced Composition Explorer (ACE) can perform measurements over a wide range of energy and nuclear mass, under all solar wind flow conditions and during both large and small particle events including solar flares. When reporting space weather ACE can provide an advance warning of geomagnetic storms.

UF *ACE satellite*
Explorer 71 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Advanced Composition Explorer**
 RT energetic particles
 galactic cosmic rays
 interplanetary medium
 solar corpuscular radiation
 solar cosmic rays
 solar wind
 space weather

Advanced EVA Protection Systems

USE **AEPS**

Advanced Launch System (STS)

(*added October 1989*)
 UF *ALS (launch system)*
 GS transportation
 . space transportation
 . . space transportation system

Advanced Microwave Sounding Unit

Advanced Launch System (STS)

RT heavy lift launch vehicles
 launch vehicle configurations
 launch vehicles
 NASA programs
 NASA space programs
 payload delivery (STS)
 reusable launch vehicles
 Shuttle Derived Vehicles
 space shuttles
 spacecraft design

Advanced Microwave Sounding Unit

(added July 1997)

DEF A line-scan instrument on the Advanced TIROS-N (ATN) NOAA K-N series of operational meteorological satellites. The AMSU consists of two functionally independent units, AMSU-A and AMSU-B. The AMSU-A is designed to measure scene radiance in 15 channels, ranging from 23.8 to 89 GHz, to derive atmospheric temperature profiles from the Earth surface to about 3 millibar pressure height. The AMSU-B is designed to measure scene radiance in five channels, ranging from 89 GHz to 183 GHz for the computation of atmospheric water vapor profiles.

UF AMSU (radiometer)

GS measuring instruments
 . microwave sensors

Advanced Microwave Sounding Unit

. radiation measuring instruments
 . . . actinometers
 radiometers
 microwave radiometers

Advanced Microwave Sounding Unit

. satellite-borne instruments

Advanced Microwave Sounding Unit

microwave equipment
 . microwave radiometers

Advanced Microwave Sounding Unit

RT atmospheric moisture
 atmospheric sounding
 atmospheric temperature
 Earth Observing System (EOS)
 microwave sounding
 NOAA satellites
 remote sensors
 satellite sounding
 TIROS N series satellites

Advanced Orbiting Solar Observatory

USE AOSO

Advanced Range Instrumentation Aircraft

DEF An EC-135 aircraft configured for reception recording and real-time relay of telemetry data.

RT airborne equipment
 ∞ aircraft
 Apollo project
 C-135 aircraft
 data acquisition
 telemetry

Advanced Range Instrumentation Ship

UF ARIS instrumentation ship

GS water vehicles
 . ships

Advanced Range Instrumentation Ship

RT ∞ instruments
 manned space flight network
 spacecraft tracking
 tracking networks

Advanced Recon Electric Spacecraft

UF ARES (spacecraft)

GS interplanetary spacecraft
 . Mars probes

Advanced Recon Electric Spacecraft

unmanned spacecraft
 . space probes
 . . Mars probes

Advanced Recon Electric Spacecraft

RT ∞ spacecraft

advanced sodium cooled reactor

UF ASCR reactor

GS nuclear reactors
 . liquid cooled reactors
 . . liquid metal cooled reactors
 . . . advanced sodium cooled reactor

Advanced Solid Rocket Motor (STS)

(added October 1989)

UF ASRM (STS)

GS engines
 . rocket engines
 . . booster rocket engines
 . . . Space Shuttle Boosters

Advanced Solid Rocket Motor (STS)

. solid propellant rocket engines
 . . Space Shuttle Boosters

Advanced Solid Rocket Motor (STS)

RT Space Shuttle Ascent Stage
 space transportation system

advanced tactical fighter

USE F-22 aircraft

Advanced Technology Laboratory

DEF An all-pallet payload utilizing the Space Shuttle and the European Spacelab and designed to accommodate 8 to 15 experiments per mission.

GS laboratories
 . space laboratories

Advanced Technology Laboratory

payloads
 . Space Shuttle payloads

Advanced Technology Laboratory

RT Spacelab

Advanced Technology Light Twin aircraft

USE ATLIT project

advanced test reactors

UF ATR reactor

GS nuclear reactors
 . nuclear research and test reactors
 . . advanced test reactors

Advanced Very High Resolution Radiometer

(added July 1988)

DEF A five channel scanning instrument that quantitatively measures electromagnetic radiation.

UF AVHRR

GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers

. . . . infrared detectors

. infrared radiometers

Advanced Very High Resolution Radiometer

. . infrared instruments

. . . infrared detectors

. . . . infrared radiometers

Advanced Very High Resolution Radiometer

. satellite-borne instruments

Advanced Very High Resolution Radiometer

RT infrared instruments
 NOAA 6 satellite
 NOAA 7 satellite
 NOAA 8 satellite

NOAA 11 satellite
 NOAA 12 satellite
 remote sensors
 TIROS N series satellites

Advanced Vidicon Camera System (AVCS)

UF AVCS

GS communication equipment

Advanced Vidicon Camera System (AVCS)

television systems

Advanced Vidicon Camera System (AVCS)

RT ∞ systems
 video equipment
 vidicons

Advanced X Ray Astrophysics Facility

USE X Ray Astrophysics Facility

advancing glaciers

USE glaciers

advancing shorelines

USE beaches

advection

DEF The process of transport of an atmospheric property solely by the mass motion of the atmosphere; also, the rate of change of the value of the advected property at a given point.

RT atmospheric circulation
 convection
 heat transfer
 mixing layers (fluids)
 Peclet number

Advent Project

GS programs

. projects

Advent Project

RT active satellites
 communication satellites
 Courier satellite
 Relay satellites

AE-A satellite

USE Explorer 17 satellite

AE-B satellite

USE Explorer 32 satellite

AE-C satellite

USE Explorer 51 satellite

AE-D satellite

USE Explorer 54 satellite

AE-E satellite

USE Explorer 55 satellite

aeolian tones

RT elastic waves
 frequencies
 Karman vortex street
 noise (sound)
 sound waves
 wind (meteorology)

aeotropism

GS tropism

. aeotropism

RT anisotropy

AEPS

UF Advanced EVA Protection Systems

GS support systems

. life support systems

. . emergency life sustaining systems

. . . AEPS

. . . portable life support systems

. . . AEPS

RT Columbus space station
 extravehicular activity
 lunar bases

Mars landing
oxygen supply equipment
space shuttles
space stations
survival equipment

aeration

RT agitation
beneficiation
blowing
bubbles
corrosion prevention
degassing
dissolved gases
dissolving
entrainment
mixers
mixing
oxygenation
purification
∞ separation
spraying
stirring
suspending (mixing)
water treatment

aerial acrobatics

USE **aerobatics**

aerial explosions

SN (LIMITED TO EXPLOSIONS OCCURRING AT HEIGHTS LESS THAN 50 KM)
UF *air blasts*
GS explosions
. **aerial explosions**
RT blast loads
chemical explosions
nuclear explosions
thermonuclear explosions

aerial imagery

USE **aerial photography**

aerial photography

UF *aerial imagery*
GS imagery
. photography
. . **aerial photography**
RT astronomical photography
change detection
cloud photographs
cloud photography
color photography
Earth observations (from space)
Earth Resources Survey aircraft
forest fire detection
geographic information systems
gray scale
ground truth
ice mapping
image motion compensation
infrared photography
orthophotography
photogeology
photogrammetry
photointerpretation
photomapping
photomaps
pixels
plant stress
rocket-borne photography
satellite-borne photography
sea truth
spaceborne photography
stereophotography
timber inventory
ultraviolet photography

aerial reconnaissance

GS reconnaissance
. **aerial reconnaissance**
. . Airborne Integrated Reconnaissance System
RT aeromagnetism
change detection
Earth Resources Survey aircraft
ground truth

HS-801 aircraft
infrared radiometers
meteorological flight
photoreconnaissance
reconnaissance aircraft
reconnaissance spacecraft
thermal mapping

aerial rudders

GS airfoils
. **aerial rudders**
control surfaces
. rudders
. . **aerial rudders**
RT fins
horizontal tail surfaces
marine rudders
stabilizers (fluid dynamics)
tabs (control surfaces)
tail assemblies

aeroacoustics

GS acoustics
. **aeroacoustics**
RT aerodynamics
∞ aeronautics
aircraft noise
flow noise
grazing flow
noise prediction (aircraft)
propeller noise
∞ science
screech tones
space-time CE/SE method
surface noise interactions

aeroassist

DEF Changing orbit size by utilizing aerobraking, aerocapture, or aeromaneuvering.
RT aerobraking
aerocapture
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerobatics

UF *acrobatics (aircraft)*
aerial acrobatics
stunt flying
RT flight control
formation flying
maneuvers

Aerobee rocket vehicle

GS rocket vehicles
. sounding rockets
. . **Aerobee rocket vehicle**

aerobes

RT anaerobes
bacteria
microorganisms
sewage treatment

aerobiology

DEF The study of the distribution of living organisms freely suspended in the atmosphere.
RT air pollution
airborne infection
∞ biology
environment pollution
pollen

aerobraking

DEF Changing orbit size by using the upper atmosphere to create drag.
RT aeroassist
aerocapture
aeromaneuvering
interplanetary transfer orbits
transfer orbits

aerocapture

DEF Making use of the atmosphere of a planet or planetary satellite by capturing the

object and reducing the orbit size so that it remains in orbit or lands on the body.

RT aeroassist
aerobraking
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerodontalgia

USE **tooth diseases**

aerodynamic axis

USE **aerodynamic balance**

aerodynamic balance

UF *aerodynamic axis*
aerodynamic center
drag balance
trim (balance)
GS aerodynamic characteristics
. **aerodynamic balance**
balance
. **aerodynamic balance**
RT aircraft stability
dynamic characteristics
horizontal flight
lift drag ratio
mass distribution
spacecraft motion
spacecraft stability
static aerodynamic characteristics
turning flight

aerodynamic brakes

GS brakes (for arresting motion)
. **aerodynamic brakes**
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
drag devices
. **aerodynamic brakes**
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aircraft brakes
control surfaces
flaperons
flaps (control surfaces)
parachutes
parafoils
retractable equipment
spoilers

aerodynamic buzz

USE **flutter**

aerodynamic center

USE **aerodynamic balance**

aerodynamic characteristics

GS **aerodynamic characteristics**
. aerodynamic balance
. aerodynamic drag
. . supersonic drag
. aerodynamic stability
. interference drag
. lift
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
. static aerodynamic characteristics
RT aerodynamic noise
angle of attack
aspect ratio

aerodynamic coefficients

- ∞ characteristics
- cross flow
- dynamic characteristics
- engine airframe integration
- flight envelopes
- induced drag
- rotor body interactions
- under surface blowing
- unsteady aerodynamics
- upper surface blowing
- wind tunnel tests

aerodynamic chords

- USE **airfoil profiles**
chords (geometry)

aerodynamic coefficients

DEF Any nondimensional coefficients relating to aerodynamic forces or moments, such as a coefficient of drag, a coefficient of lift, etc. Used for lift coefficients.

- UF *lift coefficients*
GS coefficients
. **aerodynamic coefficients**

- RT ∞ drag coefficients
flow coefficients
flow distortion
force distribution
lift
lift drag ratio
pitching moments
pressure distribution
rolling moments
yawing moments

aerodynamic configurations

SN (LIMITED TO AERODYNAMIC VEHICLE SHAPES--FOR LIFTING OR THRUSTING SURFACES USE AIRFOILS)

- GS **aerodynamic configurations**
. body-wing and tail configurations
. body-wing configurations
. blended-wing-body configurations
. aeroshells
. canard configurations
. drooped airfoils
. waveriders
. wing nacelle configurations

- RT aircraft configurations
aircraft design
airfoils
blunt bodies
bodies of revolution
channel wings
cones
∞ configurations
control surfaces
∞ design
disks (shapes)
drag
engine airframe integration
fairings
finned bodies
half cones
∞ hemispheres
intake systems
launch vehicle configurations
lift
lifting bodies
missile configurations
monoplanes
nacelles
nose tips
oblique wings
propulsion system configurations
protuberances
pylon mounting
Reynolds equation
ring structures
rotor body interactions
satellite configurations
scale models
semispan models
slender bodies
slender cones
spacecraft configurations
spheres

- strakes
- streamlined bodies
- three dimensional bodies
- wedges
- wind tunnel models
- wing roots

aerodynamic drag

- GS aerodynamic characteristics
. **aerodynamic drag**
. . . supersonic drag
aerodynamic forces
. **aerodynamic drag**
. . . supersonic drag
dynamic characteristics
. drag
. . . friction drag
. . . . **aerodynamic drag**
. supersonic drag
friction
. flow resistance
. . . friction drag
. . . . **aerodynamic drag**
. supersonic drag
. skin friction
. . . friction drag
. . . . **aerodynamic drag**
. supersonic drag
- RT ballistics
base pressure
∞ drag coefficients
drag measurement
drag reduction
ground effect (aerodynamics)
hypersonic forces
induced drag
lift
lift drag ratio
orbit decay
pressure drag
∞ resistance
satellite drag
turbulence
vortex flaps

aerodynamic forces

DEF The force exerted by a moving gaseous fluid upon a body completely immersed in it. Used for Glauert coefficient.

- UF *Glauert coefficient*
GS **aerodynamic forces**
. aerodynamic drag
. . . supersonic drag
. aerodynamic interference
. aerodynamic loads
. . . blast loads
. . . gust loads
. . . hypersonic forces
. lift
. . . interference lift
. . . jet lift
. . . rotor lift
. . . zero lift
. wing loading
- RT ∞ force
leading edge thrust
thrust distribution
unsteady aerodynamics

aerodynamic heat transfer

- GS transmission
. heat transmission
. . . heat transfer
. . . . **aerodynamic heat transfer**
. hypersonic heat transfer
. supersonic heat transfer
- RT ablation
aerothermodynamics
turbulent heat transfer

aerodynamic heating

DEF The heating of a body produced by the passage of air or other gases over its surface.

- GS heating
. kinetic heating
. . . **aerodynamic heating**

- . . . shock heating
- RT ablation
aerodynamics
aerothermochemistry
aerothermodynamics
atmospheric entry
boundary layer plasmas
compressible fluids
convective heat transfer
hypersonic reentry
reentry
reentry effects
reentry shielding
skin friction
skin temperature (non-biological)
temperature sensitive paints
transient heating
uncontrolled reentry (spacecraft)

aerodynamic interference

- GS aerodynamic forces
. **aerodynamic interference**
- RT aerodynamics
air flow
aircraft configurations
aircraft structures
airfoil profiles
control surfaces
∞ interference
protuberances
rotor stator interactions
turbulent flow
wing profiles

aerodynamic lift

- USE **lift**

aerodynamic loads

- GS aerodynamic forces
. **aerodynamic loads**
. . . blast loads
. . . gust loads
loads (forces)
. dynamic loads
. . . **aerodynamic loads**
. blast loads
. gust loads
- RT axial compression loads
axial loads
compression loads
critical loading
edge loading
force distribution
loading moments
pressure distribution
shock loads
static loads
structural design criteria
thrust loads
transient loads
vibratory loads
wing loading

aerodynamic moments

- USE **stability derivatives**

aerodynamic noise

- UF *boundary layer noise*
GS elastic waves
. sound waves
. . . noise (sound)
. . . . flow noise
. **aerodynamic noise**
. blade slap noise
. propeller noise
. screech tones
- RT acoustic retrofitting
aerodynamic characteristics
aeroelasticity
aircraft noise
flutter
jet aircraft noise
noise measurement
noise reduction
panel flutter
shock waves

sonic booms
surface noise interactions

aerodynamic stability

UF *flying platform stability*
GS aerodynamic characteristics
. **aerodynamic stability**
dynamic characteristics
. dynamic stability
. . . motion stability
. . . **aerodynamic stability**
stability
. dynamic stability
. . . motion stability
. . . **aerodynamic stability**
RT aeroelasticity
aircraft stability
airfoil oscillations
attitude stability
ballast (mass)
boundary layer stability
buffeting
directional stability
dynamic tests
flight envelopes
flight stability tests
flow stability
flutter
ground resonance
helicopter performance
hovering
lateral stability
liquid sloshing
longitudinal stability
low speed stability
mass distribution
pilot induced oscillation
pressure distribution
reentry
Richardson number
spacecraft motion
spacecraft stability
stability augmentation
static aerodynamic characteristics
turbulence effects
unsteady aerodynamics
vortex avoidance
wind tunnel stability tests
wing oscillations
wing rock
yaw

aerodynamic stalling

RT aircraft performance
aircraft spin
airspeed
angle of attack
boundary layer separation
lift drag ratio
low speed stability
rotating stalls
∞ stalling
sweep angle
zero lift

aerodynamic vehicles

USE **aircraft**

aerodynamics

DEF The science that deals with the motion of air and other gaseous fluids, and the forces acting on bodies when the bodies move through such fluids, or when such fluids move against or around the bodies. Used for hydroaeromechanics.

UF *hydroaeromechanics*
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . **aerodynamics**
. . . . aerothermodynamics
. . . . hypersonics
. . . . rotor aerodynamics
. . . . supersonics
. . . . unsteady aerodynamics
RT aeroacoustics

aerodynamic heating
aerodynamic interference
aeroelasticity
aeronautical engineering
∞ aeronautics
∞ aerospace sciences
∞ aircraft
airfoils
blunt bodies
bodies of revolution
boundary layer control
compressible flow
control surfaces
drag
∞ dynamics
∞ flight
flight characteristics
flight mechanics
∞ flow
flow theory
free wing aircraft
ground effect (aerodynamics)
hypersonic flight
hypersonic flow
incompressible flow
inviscid flow
laminar flow
lift
Mach number
Mach-Zehnder interferometers
reentry
∞ science
slender bodies
subsonic flow
supersonic flow
thermodynamics
transonic flow
turbulent flow
uniform flow
unsteady flow
viscous flow
wind measurement
wind tunnels

aeroelastic research wings

DEF Wings that are designed with less than normal stiffness to test devices that suppress flutter.

GS airfoils
. wings
. . **aeroelastic research wings**
RT aircraft design
flutter
flutter analysis
structural design
wing oscillations

aeroelasticity

DEF The study of the response of structurally elastic bodies to aerodynamic loads.

GS mechanical properties
. elastic properties
. . **aeroelasticity**
. . . aeroservoelasticity
. . . aerothermoelasticity
RT aerodynamic noise
aerodynamic stability
aerodynamics
aerothermodynamics
aircraft structures
airfoil oscillations
DAST program
flutter
influence coefficient
panel flutter
rigid wings
thermoelasticity
unsteady aerodynamics
wing loading

aeroembolism

DEF The formation or liberation of gases in the blood vessels of the body, as brought on by a too-rapid change from a high, or relatively high, atmospheric pressure to a lower one.

GS embolisms
. **aeroembolism**

RT altitude sickness
decompression sickness
fat embolisms
stress (physiology)

aerogels

(added June 1990)
RT foams
gels
porous materials
silica gel
xerogels

aerogyro helicopters

USE **XH-51 helicopter**

aerology

DEF The study of the free atmosphere throughout its vertical extent, as distinguished from studies confined to the layer of the atmosphere adjacent to the Earth's surface.

GS meteorology
. **aerology**
RT Atmospheric & Oceanographic Inform Sys
Global Atmospheric Research Program
meteorological parameters
polar meteorology
sea breeze
wind (meteorology)

aeromagnetism

RT aerial reconnaissance
geomagnetism
magnetic anomalies
magnetic surveys
magnetic variations
remote sensing

aeromagneto flutter

USE **flutter**

aeromaneuvering

DEF Changing orbit size or plane or both by entering the upper atmosphere to create drag or lift or both.

RT aeroassist
aerobraking
aerocapture
aeroshells
atmospheric entry
interplanetary transfer orbits
transfer orbits

Aeromaneuvering Orbit to Orbit Shuttle

DEF Proposed reusable upper stage for the Space Shuttle superseded by the orbit transfer vehicle. Used for AMOOS.

UF *AMOOS*
GS orbit transfer vehicles
. **Aeromaneuvering Orbit to Orbit Shuttle**
RT Orbit Maneuvering Engine (Space Shuttle)
orbital mechanics
reusable launch vehicles
space shuttles

aeronautical engineering

GS aerospace engineering
. **aeronautical engineering**
RT aerodynamics
∞ aeronautics
∞ aircraft
aircraft design
aircraft industry
auxiliary propulsion
compound helicopters
∞ engineering
functional design specifications
mechanical engineering
propulsion

aeronautical satellites

- structural engineering
- aeronautical satellites**
 - GS artificial satellites
 - . communication satellites
 - . . **aeronautical satellites**
 - . . . Aerosat satellites
 - RT ∞ aeronautics
 - air traffic control
 - aircraft approach spacing
 - aircraft communication
 - ground-air-ground communication
 - rescue operations
 - satellite networks
- ∞ **aeronautics**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - UF *aviation*
 - RT aeroacoustics
 - aerodynamics
 - aeronautical engineering
 - aeronautical satellites
 - aerospace engineering
 - ∞ aerospace sciences
 - air law
 - ∞ aircraft
 - airports
 - avionics
 - civil aviation
 - ∞ flight
 - general aviation aircraft
 - human factors engineering
 - ∞ military aviation
 - ∞ science
 - TACT program
- aeronomy**
 - DEF The study of the upper regions of the atmosphere where ionization, dissociation, and chemical reactions take place.
 - RT airglow
 - Alpine meteorology
 - atmospheric composition
 - atmospheric physics
 - auroras
 - DIAL satellite
 - field aligned currents
 - flux transfer events
 - geophysics
 - magnetosphere-ionosphere coupling
 - mesometeorology
 - meteorology
 - Nozomi Mars Orbiter
 - polar cusps
 - upper atmosphere
- aerophysics*
 - USE **atmospheric physics**
- aeroquatic vehicles**
 - RT aircraft design
 - attack aircraft
 - ∞ military vehicles
 - underwater propulsion
 - underwater vehicles
- AEROS satellite**
 - GS artificial satellites
 - . meteorological satellites
 - . . **AEROS satellite**
 - . synchronous satellites
 - . . **AEROS satellite**
- Aerosat satellites**
 - GS artificial satellites
 - . communication satellites
 - . . aeronautical satellites
 - . . . **Aerosat satellites**
 - . ESA satellites
 - . . **Aerosat satellites**
 - . navigation satellites
 - . . **Aerosat satellites**
 - . synchronous satellites
 - . . **Aerosat satellites**
 - ESA spacecraft

- . ESA satellites
- . . **Aerosat satellites**
- RT European space programs
- satellite networks

- aeroservoelasticity**
 - (added September 1993)
 - UF *ASE (aerodynamics)*
 - GS mechanical properties
 - . elastic properties
 - . . aeroelasticity
 - . . . **aeroservoelasticity**
 - RT active control
 - actuators
 - airfoil oscillations
 - dynamic control
 - dynamic response
 - dynamic structural analysis
 - flutter
 - servocontrol
 - unsteady aerodynamics

- aeroshells**
 - (added May 1999)
 - DEF Aerodynamic structural shells that attach to, or comprise a portion of, the exterior of an aerospace vehicle or space probe; especially such structures that support atmospheric entry, aerobraking, aeroassist, or hypersonic flight.
 - GS aerodynamic configurations
 - . **aeroshells**
 - RT aeromaneuvering
 - nose cones
 - reentry vehicles
 - spacecraft design
 - spacecraft shielding
 - spacecraft structures

- aerosinusitis**
 - GS diseases
 - . respiratory diseases
 - . . **aerosinusitis**
 - RT aerospace medicine
 - altitude sickness

- aerosols**
 - DEF Dispersions of solid or liquid particles in gaseous media.
 - GS mixtures
 - . dispersions
 - . . colloids
 - . . . **aerosols**
 - fog
 - . . liquid-gas mixtures
 - . . . **aerosols**
 - fog particles
 - . . **aerosols**
 - . . fog
 - RT air pollution
 - Aitken nuclei
 - atmospheric effects
 - atomizing
 - condensation nuclei
 - crop dusting
 - dust
 - entrainment
 - environment pollution
 - environmental surveys
 - exhaust clouds
 - fog dispersal
 - fumes
 - gas atomization
 - mist
 - mixers
 - particulates
 - photophoresis
 - pollution transport
 - SAGE satellite
 - smoke
 - smoke abatement
 - spraying

thermophoresis

- aerospace engineering**
 - UF *space systems engineering*
 - GS **aerospace engineering**
 - . aeronautical engineering
 - RT ∞ aeronautics
 - ∞ aerospace sciences
 - ∞ aircraft
 - ∞ engineering
 - mechanical engineering
 - missile design
 - structural engineering
- aerospace environments**
 - SN (EXCLUDES SPACECRAFT INTRAVEHICULAR ENVIRONMENTS)
 - UF *space environment*
 - GS environments
 - . **aerospace environments**
 - . . cislunar space
 - . . deep space
 - . . . interplanetary space
 - . . . interstellar space
 - . . Earth orbital environments
 - RT ∞ aerospace sciences
 - argon-oxygen atmospheres
 - ∞ astronautics
 - bioastronautics
 - bioprocessing
 - biosatellites
 - cosmic rays
 - Earth atmosphere
 - electromagnetic radiation
 - exobiology
 - extraterrestrial environments
 - extraterrestrial life
 - extraterrestrial radiation
 - extravehicular activity
 - geophysical fluid flow cells
 - hazardous material disposal (in space)
 - helium-oxygen atmospheres
 - Jupiter atmosphere
 - life support systems
 - lunar environment
 - manned space flight
 - Mars atmosphere
 - Neptune atmosphere
 - panspermia
 - planetary environments
 - radiation belts
 - solar radiation
 - space exploration
 - space flight
 - space habitats
 - space manufacturing
 - space weather
 - space weathering
 - spaceborne experiments
 - spacecraft cabin simulators
 - thermal environments
 - Uranus atmosphere
 - vacuum
 - Venus atmosphere

- aerospace industry**
 - GS industries
 - . **aerospace industry**
 - . . aircraft industry
 - RT ∞ aircraft
 - commercial spacecraft
 - space commercialization

- aerospace medicine**
 - DEF That branch of medicine dealing with the effects of flight through the atmosphere or in space upon the human body and with the prevention or cure of physiological or psychological malfunctions arising from these effects.
 - UF *space medicine*
 - GS medical science
 - . **aerospace medicine**
 - . . aviation psychology
 - . . space psychology
 - RT acceleration stresses (physiology)
 - aerosinusitis

∞ aerospace sciences
 altitude sickness
 bioastronautics
 biofeedback
 ∞ biology
 biomedical data
 Chlorella
 closed ecological systems
 electrolyte metabolism
 fasting
 flight fatigue
 gravitational physiology
 head down tilt
 head movement
 head up tilt
 hindlimb suspension
 ∞ medicine
 mobile quarantine facility
 motion sickness
 radiology
 ∞ science
 space adaptation syndrome
 spacecraft environments
 sports medicine
 telemedicine
 weightlessness

aerospace planes
 GS aerospace vehicles
 . **aerospace planes**
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 maneuverable spacecraft
 . **aerospace planes**
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . **aerospace planes**
 HOPE aerospace plane
 HOTOL launch vehicle
 VentureStar launch vehicle
 X-30 vehicle
 X-37 vehicle
 X-40A vehicle
 soft landing spacecraft
 . **aerospace planes**
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 RT ∞ aircraft
 Astro vehicle
 boostglide vehicles
 Buran space shuttle
 Delta Clipper
 gliders
 hypersonic aircraft
 hypersonic gliders
 launch vehicles
 lifting reentry vehicles
 liquid air cycle engines
 military spacecraft
 National Aerospace Plane Program
 research aircraft
 rocket planes
 Saenger space transportation system
 transatmospheric vehicles
 X-20 aircraft

aerospace safety
 DEF The engineering assessment and analysis of systems, subsystems, and functions of spacecraft, missiles, advanced aircraft and ground support in order to identify hazards associated with such systems and to design pro-

cedures that eliminate those hazards or determine tolerable safety levels.

GS safety
 . **aerospace safety**
 RT accident prevention
 aircraft safety
 flight safety
 range safety
 safety factors
 safety management
 space weather

∞ **aerospace sciences**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *space sciences*
 RT aerodynamics
 ∞ aeronautics
 aerospace engineering
 aerospace environments
 aerospace medicine
 aerospace systems
 astronomy
 Committee on Space Research
 environmental engineering
 extraterrestrial radiation
 International Space Year
 space laboratories

aerospace systems

RT ∞ aerospace sciences
 control systems design
 missile systems
 ∞ systems
 systems engineering

aerospace technology transfer

DEF Technology transfer germane to aircraft and space vehicles, their propulsion, guidance, etc.

GS technology transfer
 . **aerospace technology transfer**
 RT Canadian space program
 information flow
 reports
 technological forecasting
 technology utilization

aerospace vehicles

DEF Vehicles capable of flight within and outside the sensible atmosphere.

GS **aerospace vehicles**
 . aerospace planes
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 . flexible spacecraft
 . X-43 vehicle
 RT ∞ aircraft
 commercial spacecraft
 ∞ spacecraft
 transatmospheric vehicles

aerospike engines

(added July 1997)

DEF Rocket engines incorporating a radial in-flow (aerospike) nozzle for altitude compensation. Since the nozzle is open to the ambient atmosphere, the plume compensates for decreasing atmospheric pressure as the vehicle ascends.

GS engines
 . rocket engines
 . . **aerospike engines**
 RT nozzle design
 plug nozzles
 propulsion system configurations
 rocket engine design
 rocket exhaust
 rocket nozzles
 spike nozzles

VentureStar launch vehicle

aerostatics

GS statics
 . **aerostatics**
 RT buoyancy
 ∞ dynamics
 ∞ equilibrium
 fluid mechanics
 hydrostatics

aerostats

USE **airships**

aerothermochemistry

GS environmental chemistry
 . **aerothermochemistry**
 thermochemistry
 . **aerothermochemistry**
 RT ablation
 aerodynamic heating
 aerothermodynamics
 atmospheric chemistry
 chemical engineering
 ∞ chemistry
 nozzle flow
 physical chemistry
 pyrometallurgy
 reentry physics
 reentry shielding
 reentry vehicles

aerothermodynamics

DEF The study of aerodynamic phenomena at sufficiently high gas velocities that thermodynamic properties of the gas are important.

GS fluid mechanics
 . fluid dynamics
 . . gas dynamics
 . . . aerodynamics
 **aerothermodynamics**
 thermodynamics
 . **aerothermodynamics**
 RT aerodynamic heat transfer
 aerodynamic heating
 aeroelasticity
 aerothermochemistry
 ASSET project
 boundary layer plasmas
 ∞ chemistry
 combustion physics
 ∞ dynamics
 hypersonic heat transfer
 hypersonic reentry
 hypersonics
 Rankine-Hugoniot relation
 reentry
 reentry physics
 ∞ science
 skin temperature (non-biological)
 supersonics
 thermoelasticity

aerothermoelasticity

DEF The study of the response of elastic structures to the combined effects of aerodynamic heating and loading.

GS mechanical properties
 . elastic properties
 . . aeroelasticity
 . . . **aerothermoelasticity**
 . . thermoelasticity
 . . . **aerothermoelasticity**

aerozine

DEF A rocket fuel consisting of a mixture of hydrazine and unsymmetrical dimethylhydrazine (UDMH).

GS propellants
 . rocket propellants
 . . liquid rocket propellants
 . . . **aerozine**
 RT dimethylhydrazines

afferent nervous systems

hydrazines

AFC (control)
USE **automatic frequency control**

AFCS (control system)
USE **automatic flight control**

affects
USE **effects**

afferent nervous systems
GS anatomy
. nervous system
. . **afferent nervous systems**
RT sensorimotor performance
∞ systems

affinity
GS **affinity**
. electron affinity
. negative electron affinity
RT attraction
chemical compatibility
compatibility

Afghanistan
GS nations
. **Afghanistan**
RT Asia

AFM (microscopy)
USE **atomic force microscopy**

Africa
GS continents
. **Africa**
RT African rift system
Algeria
Angola
Arcomsat
Benin
Botswana
Burkina
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Congo (Brazzaville)
Cote d'Ivoire
Democratic Republic of Congo
Djibouti
Egypt
Ethiopia
Gabon
Gambia
Ghana
Guinea
Kalahari Basin (Africa)
Kenya
Lesotho
Liberia
Libya
Libyan desert
Madagascar
Malawi
Mali
Mauritania
Mauritius
Middle East
Morocco
Mozambique
Namibia
nations
Niger
Nigeria
Red Sea
Republic of South Africa
Rwanda
Sahara Desert (Africa)
Senegal
Seychelles
Sierra Leone
Somalia
Spanish Sahara

Sudan
Swaziland
Tanzania
Togo
Tunisia
Uganda
Zambia
Zimbabwe

African rift system
GS geological faults
. **African rift system**
RT Africa
∞ systems

afterbodies
DEF Companion bodies that trail satellites. Sections or pieces of rockets or spacecraft that enter the atmosphere unprotected behind nose cones or other bodies that are protected for entry. Afterparts of vehicles. Used for cylindrical afterbodies and stems.
UF *cylindrical afterbodies*
stems
RT aircraft structures
base heating
boattails
∞ bodies
centerbodies
conical bodies
cylindrical bodies
flared bodies
forebodies
skirts
swing tail assemblies
tail assemblies

afterburners
USE **afterburning**

afterburning
DEF Irregular burning of fuel left in the firing chamber of a rocket after cutoff. The function of an afterburner, a device for augmenting the thrust of a jet engine by burning additional fuel in the uncombined oxygen in the gases from the turbine. Used for afterburners.
UF *afterburners*
GS combustion
. **afterburning**
RT burners
exhaust systems
infrared suppression
internal combustion engines
J-57 engine
jet engines
thrust augmentation

afterglows
DEF Broad, high arches of radiance or glow seen occasionally in the western sky above the highest clouds in deepening twilight, caused by the scattering effect of very fine particles of dust suspended in the upper atmosphere. Also, the transient decay of a plasma after the power has been turned off.
GS **afterglows**
. helium afterglow
. oxygen afterglow
RT atmospheric ionization
gas discharges
gas ionization
light scattering
luminescence
phosphorescence
plasma decay

afterimages
GS images
. **afterimages**
RT critical flicker fusion
illusions
psychological effects
sensory perception

visual perception

AGB stars
USE **asymptotic giant branch stars**

AGC (control)
USE **automatic gain control**

age determination
USE **chronology**

age factor
RT aging (biology)
gerontology
life span

age hardening
USE **precipitation hardening**

Agena A rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . . Agena rocket vehicles
. . . **Agena A rocket vehicle**
RT Discoverer satellites
Thor Agena launch vehicle

Agena B Ranger Program
GS programs
. NASA programs
. . . NASA space programs
. . . Ranger project
. . . **Agena B Ranger Program**
. projects
. . . Ranger project
. . . **Agena B Ranger Program**
. space programs
. . . NASA space programs
. . . Ranger project
. . . **Agena B Ranger Program**
RT Thor Agena launch vehicle

Agena B rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . . Agena rocket vehicles
. . . **Agena B rocket vehicle**
RT Discoverer satellites
Echo satellites
EGO
Gemini project
Mariner program
OAO
POGO
Ranger project

Agena C rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . . Agena rocket vehicles
. . . **Agena C rocket vehicle**

Agena D rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . . Agena rocket vehicles
. . . **Agena D rocket vehicle**

Agena rocket vehicles
GS rocket vehicles
. single stage rocket vehicles
. . . **Agena rocket vehicles**
. . . Agena A rocket vehicle
. . . Agena B rocket vehicle
. . . Agena C rocket vehicle
. . . Agena D rocket vehicle
RT Atlas Agena B launch vehicle
Atlas Agena launch vehicles
Discoverer satellites
Echo satellites
Gemini project
Mariner program
Ranger project

Thor Agena launch vehicle

∞ agents

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT accelerating agents
- additives
- anticoagulants
- antifouling
- antioxidants
- diluents
- neutralizers
- opacifiers
- oxidizers
- penetrants
- preservatives
- stabilizers (agents)
- surfactants

agglomeration

- RT accumulations
- atomic clusters
- cementation
- clumps
- coagulation
- coalescing
- compacting
- concentrating
- crystallization
- densification
- flocculating
- galactic clusters
- lumping
- metal clusters
- micelles
- molecular clusters
- plugging
- precipitation (chemistry)
- ∞ separation
- settling
- sintering
- Virgo galactic cluster

agglutination

- GS bonding
- . **agglutination**
- RT adhesion
- adhesive bonding
- adhesives
- cementation
- chemical bonds
- cohesion

aggregates

- RT concrete structures
- concretes
- ∞ construction materials
- dolomite (mineral)
- gravels
- lava
- limestone
- micelles
- rocks
- sands
- slags

∞ aging

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aging (biology)
- aging (materials)
- aging (metallurgy)
- radioactive age determination

aging (biology)

- RT age factor
- ∞ aging
- ∞ biology
- geriatrics
- gerontology
- life sciences
- life span
- mortality

physiology

aging (materials)

- GS **aging (materials)**
- . aging (metallurgy)
- RT ∞ aging
- hardening (materials)
- ∞ materials
- mechanical properties
- microstructure
- strain hardening

aging (metallurgy)

- GS aging (materials)
- . **aging (metallurgy)**
- RT ∞ aging
- hardening (materials)
- heat treatment
- microstructure
- solid solutions
- strain hardening
- supercooling
- time temperature parameter

agitation

- GS **agitation**
- . ultrasonic agitation
- RT aeration
- blowing
- chemical reaction control
- coalescing
- colloiding
- dispersing
- disposal
- homogenizing
- mixers
- mixing
- ∞ separation
- settling
- shaking
- sizing screens
- splashing
- suspending (mixing)
- swirling
- turbulent mixing
- vortices
- water treatment

agreements

- RT contracts
- conventions
- insurance (contracts)
- subcontracts

agricultural aircraft

- DEF Light aircraft specially equipped for agricultural applications such as crop dusting.
- UF *Snow aerial applicator aircraft S-2B*
- Snow S-2 aircraft*
- GS general aviation aircraft
- . **agricultural aircraft**
- RT agriculture
- ∞ aircraft
- AN-2 aircraft
- crop dusting
- light aircraft
- swath width

agriculture

- GS **agriculture**
- . aquiculture
- . silviculture
- RT agricultural aircraft
- AgRISTARS project
- agroclimatology
- agrometeorology
- agrophysical units
- alfalfa
- barley
- ∞ biology
- botany
- citrus trees
- conservation
- corn
- crop dusting
- crop growth

- crop identification
- crop inventories
- crop vigor
- ∞ crops
- farm crops
- farmlands
- fruits
- grasslands
- Great Plains Corridor (North America)
- halophiles
- hay
- hydrocarbon fuel production
- hydroponics
- irrigation
- Large Area Crop Inventory Experiment
- leguminous plants
- oats
- orchards
- plant diseases
- plant stress
- planting
- planting (botany)
- plowing
- plows
- rural areas
- rural land use
- soil science
- sorghum
- sugar beets
- sugar cane
- sunflowers
- tomatoes
- tractors
- vegetation growth
- vineyards

AgRISTARS project

- DEF A multiagency program utilizing Landsat remote sensing data to predict crop yields, land use, and detect pollution. Used for Crop Inventories by Remote Sensing.
- UF *Crop Inventories by Remote Sensing*
- GS programs
- . projects
- . . **AgRISTARS project**
- RT agriculture
- agrophysical units
- crop inventories
- farm crops
- fresh water
- land use
- Landsat satellites
- meteorological satellites
- NASA programs
- remote sensors
- vegetative index

agroclimatology

- GS climatology
- . **agroclimatology**
- RT agriculture
- agrometeorology
- hydroclimatology
- meteorological parameters
- meteorology
- microclimatology

agrometeorology

- GS meteorology
- . **agrometeorology**
- RT agriculture
- agroclimatology
- hydrometeorology
- micrometeorology
- thermal resources
- tropical meteorology

agrophysical units

- DEF Geographic areas defined for statistical purposes by AgRISTARS personnel whose boundaries are based on natural rather than political lines for the purpose of comparing similar agricultural regions.
- RT agriculture
- AgRISTARS project

AH-1G helicopter

farmlands
Large Area Crop Inventory
Experiment

AGT

USE **automated guideway transit vehicles**

AH-1G helicopter

DEF US Army designation for the Bell Model 209 Hueycobra attack helicopter powered by a single Avco Lycoming T53-L-13 turboshaft engine.

GS attack aircraft
 . **AH-1G helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **AH-1G helicopter**
RT ∞ military aircraft

AH-1S helicopter

(added April 1997)

GS attack aircraft
 . **AH-1S helicopter**
 Bell aircraft
 . **AH-1S helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **AH-1S helicopter**
RT ∞ aircraft
 ∞ military aircraft

AH-1W helicopter

(added April 1997)

UF *SuperCobra*
GS attack aircraft
 . **AH-1W helicopter**
 Bell aircraft
 . **AH-1W helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **AH-1W helicopter**
RT ∞ aircraft
 ∞ military aircraft

AH-63 helicopter

GS attack aircraft
 . **AH-63 helicopter**
 Bell aircraft
 . **AH-63 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **AH-63 helicopter**
RT ∞ military aircraft

AH-64 helicopter

GS attack aircraft
 . **AH-64 helicopter**
 Hughes aircraft
 . **AH-64 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **AH-64 helicopter**
RT ∞ military aircraft

∞ aids

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT landing aids
navigation aids

visual aids

AIDS (disease)

USE **acquired immunodeficiency syndrome**

ailerons

GS airfoils
 . **ailerons**
 . . . flaperons
 . . . spoiler slot ailerons
 control surfaces
 . **ailerons**
 . . . flaperons
 . . . spoiler slot ailerons
RT elevators (control surfaces)
elevons
lateral control
tabs (control surfaces)

AIMP-1

USE **Explorer 33 satellite**

AIMP-2

USE **Explorer 35 satellite**

AIMP-D

USE **Explorer 33 satellite**

AIMP-E

USE **Explorer 35 satellite**

air

DEF The mixture of gases comprising the Earth's atmosphere.

GS gases
 . gas mixtures
 . . . **air**
 . . . alveolar air
 . . . compressed air
 . . . expired air
 . . . high temperature air
 . . . liquid air
 mixtures
 . solutions
 . . gas mixtures
 . . . **air**
 . . . alveolar air
 . . . compressed air
 . . . expired air
 . . . high temperature air
 . . . liquid air
RT air data systems
∞ atmospheres
atmospheric composition
Earth atmosphere
environments
middle atmosphere

air bag restraint devices

GS bags
 . **air bag restraint devices**
 expandable structures
 . inflatable structures
 . . **air bag restraint devices**
 safety devices
 . **air bag restraint devices**
RT accident prevention
accidents
automobiles
collisions
crashes
∞ devices
highways
pneumatic equipment
safety

air bearings

USE **gas bearings**

air blasts

USE **aerial explosions**

air breathing boosters

DEF Boosters which are possible substitutes for rocket engines and which have inlets

for oxygen sources for their engines rather than carrying their own oxygen as in a conventional rocket.

RT air breathing engines
booster rocket engines
∞ boosters
rocket-based combined-cycle engines

air breathing engines

GS engines
 . **air breathing engines**
 . . gas turbine engines
 . . . hydrogen engines
 . . . jet engines
 ramjet engines
 integral rocket ramjets
 low volume ramjet engines
 pulsejet engines
 supersonic combustion ramjet engines
 turbooramjet engines
 . . . turbojet engines
 Bristol-Siddeley Olympus 593 engine
 Bristol-Siddeley Viper engine
 ducted fan engines
 J-33 engine
 J-34 engine
 J-47 engine
 J-52 engine
 J-57 engine
 J-58 engine
 J-65 engine
 J-69-T-25 engine
 J-71 engine
 J-73 engine
 J-75 engine
 J-79 engine
 J-85 engine
 J-93 engine
 RA-28 engine
 turbofan engines
 Bristol-Siddeley BS 53 engine
 CF-700 engine
 convertible fan-shaft engines
 J-97 engine
 TF-30 engine
 TF-34 engine
 TF-41 engine
 turboprop engines
 T-34 engine
 T-38 engine
 T-53 engine
 T-55 engine
 T-56 engine
 T-63 engine
 T-64 engine
 T-74 engine
 T-76 engine
 T-78 engine
 turbooramjet engines
 . . . T-58 engine
RT air breathing boosters
pulse detonation engines
rocket-based combined-cycle engines

air cargo

UF *air freight*
GS cargo
 . **air cargo**
 . . air mail
RT airdrops
airfield surface movements
airline operations
baggage
cargo aircraft
ground handling
heavy lift helicopters

air conditioning

DEF The simultaneous control of all, or at least three, of those factors affecting both the physical and chemical conditions of the atmosphere within any structure. These factors include temperature, humidity, motion, distribution, dust, bacteria, odor, and toxic gases.

RT blowers

- comfort
 - condensers (liquefiers)
 - controlled atmospheres
 - coolants
 - coolers
 - cooling
 - cooling systems
 - ∞ diffusers
 - ∞ exhaust systems
 - freon
 - heat pumps
 - heating
 - heating equipment
 - humidity
 - infiltration
 - life support systems
 - Modular Integrated Utility System
 - refrigerants
 - refrigerating
 - refrigerating machinery
 - space heating (buildings)
 - temperature
 - temperature control
 - temperature distribution
 - thermal insulation
 - ∞ treatment
 - ventilation
- air conditioning equipment**
- RT absorbents
 - absorbers (equipment)
 - adsorbents
 - blowers
 - compressors
 - condensers (liquefiers)
 - coolers
 - cooling systems
 - ∞ diffusers
 - ∞ equipment
 - ∞ evaporators
 - ∞ fans
 - heat pumps
 - heating equipment
 - oxygen supply equipment
 - refrigerating machinery
- air conductivity**
- RT atmospheric conductivity
 - electrical resistivity
 - thermal conductivity
- air cooling**
- SN (COOLING WITH AIR)
 - GS cooling
 - . **air cooling**
 - RT coolants
 - coolers
 - cooling systems
 - liquid cooling
 - refrigerating
 - ventilation
- air currents**
- GS fluid flow
 - . gas flow
 - . . air flow
 - . . . **air currents**
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
 - RT atmospheric circulation
 - barotropic flow
 - boundary layer flow
 - boundary layer transition
 - Brunt-Vaisala frequency
 - convection clouds
 - convection currents
 - ∞ currents
 - ground wind
 - lee waves
 - sea breeze
 - upstream
 - wind (meteorology)
 - windpower utilization
- zonal flow (meteorology)
- air cushion landing systems**
- DEF Landing systems based on the ground effect principle whereby a stratum of air is utilized as the aircraft ground contacting medium (in place of landing gear).
 - RT aircraft landing
 - cushions
 - ground effect (aerodynamics)
 - skid landings
 - ∞ systems
- air cushion vehicles*
- USE **ground effect machines**
- air data systems**
- SN (LIMITED TO FLIGHT DATA SYSTEMS)
 - DEF Sets of aerodynamic and thermodynamic sensors, and a computer which provide flight characteristics such as airspeed, static pressure, air temperature and Mach number.
 - GS data systems
 - . **air data systems**
 - RT air
 - ∞ aircraft
 - ∞ spacecraft
 - tables (data)
 - wind tunnel tests
- air defense**
- GS **air defense**
 - . antimissile defense
 - . SAGE air defense system
 - RT antiradiation missiles
 - Ballistic Missile Early Warning System
 - camouflage
 - civil defense
 - deception
 - ∞ defense
 - defense program
 - DMSF satellites
 - early warning systems
 - electronic warfare
 - jammers
 - optical countermeasures
 - sabotage
 - space surveillance (ground based)
 - space surveillance (spaceborne)
 - weapons delivery
- Air Density Explorer A*
- USE **Explorer 19 satellite**
- Air Density/Injun Explorer B*
- USE **Explorer 25 satellite**
- air drop operations**
- RT bailout
 - ballutes
 - cargo
 - delivery
 - free fall
 - ∞ operations
 - parachutes
 - parawings
- air ducts**
- GS ducts
 - . **air ducts**
 - RT annular ducts
 - blowers
 - exhaust nozzles
 - ∞ fans
 - gas flow
 - ventilators
- air filters**
- GS cleaners
 - . **air filters**
 - separators
 - . fluid filters
 - . . **air filters**
 - RT cooling systems
 - dust collectors
 - ∞ filters
- precipitators
 - ventilation
- air flow**
- GS fluid flow
 - . gas flow
 - . . **air flow**
 - . . . air currents
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
 - RT aerodynamic interference
 - atmospheric boundary layer
 - barotropic flow
 - Brunt-Vaisala frequency
 - compressible flow
 - ∞ currents
 - duct geometry
 - ducted flow
 - streamlining
 - streams
 - ventilation
- air freight*
- USE **air cargo**
- air inlets*
- USE **air intakes**
- air intakes**
- UF *air inlets*
 - GS intake systems
 - . **air intakes**
 - . . engine inlets
 - . . hypersonic inlets
 - . . inlet airframe configurations
 - . . supersonic inlets
 - RT bypass ratio
 - conical inlets
 - cowlings
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - manifolds
 - nacelles
 - nose inlets
 - plenum chambers
 - scoops
 - side inlets
 - superchargers
 - supersonic diffusers
 - ventilation
 - ventilators
 - ∞ water intakes
- air jets**
- GS fluid flow
 - . jet flow
 - . . **air jets**
 - fluid jets
 - . **air jets**
 - RT gas flow
 - gas jets
 - jet streams (meteorology)
 - ∞ jets
 - vapor jets
- air land interactions**
- RT atmospheric boundary layer
 - atmospheric circulation
 - Earth cryosphere
 - gas-solid interactions
 - ∞ interactions
 - land surface temperature
 - meteorology
- air launching**
- GS launching
 - . **air launching**
 - RT multistage rocket vehicles
 - Pegasus air-launched booster
 - piggyback systems
 - X-34 reusable launch vehicle
- air law**
- DEF The body of domestic and/or interna-

air locks

tional laws dealing with regulations and liabilities in civil or military aviation.

GS law (jurisprudence)
. international law

. . **air law**

RT ∞ aeronautics
airspace
civil aviation
conventions
insurance (contracts)
legal liability
liabilities
∞ military aviation
National Airspace Utilization System
penalties
politics
public law
regulations
space law

air locks

DEF A stoppage or diminution of flow in a fuel system, hydraulic system, or the like, caused by pockets of air or vapor. Also chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.

GS compartments
. **air locks**
. . airlock modules

RT doors
egress
enclosures
hatches
ingress (spacecraft passageway)
∞ locks
pressure chambers
seals (stoppers)

air mail

GS cargo
. air cargo
. . **air mail**

air masses

DEF Large widespread volumes of air having particular characteristics of temperature and moisture content that were acquired at its source region and are modified as they move away from their source.

RT anticyclones
atmospheric circulation
Brunt-Vaisala frequency
cold fronts
fronts (meteorology)
meteorology
synoptic meteorology
warm fronts
weather forecasting
windpower utilization

air navigation

DEF The art, science, or action of plotting and directing the course of an aircraft through the air from one place to another.

GS navigation
. **air navigation**
. . all-weather air navigation
. . area navigation
. . nap-of-the-earth navigation
. . . terrain following

RT astronavigation
boresight error
celestial navigation
celestial reference systems
collision avoidance
∞ control
dead reckoning
digital navigation
Doppler navigation
flight instruments
flight management systems
flight paths
flight plans
flight rules

formation flying
guidance (motion)
hyperbolic navigation
inertial navigation
instrument flight rules
loran
loran C
loran D
National Airspace Utilization System
navigation aids
Omega Navigation System
polar navigation
radar navigation
radio navigation
Shoran
solar compasses
space navigation
Tacan
VHF omnirange navigation
visual flight

air piracy

UF *hijacking*
GS crime
. **air piracy**
RT aircraft safety
airport security
flight hazards
flight safety
operational hazards
terrorism

air pollution

DEF The presence of unwanted material in the air. The term "unwanted material" here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use and enjoyment of property. Used for atmospheric impurities.

UF *atmospheric impurities*
GS pollution
. environment pollution
. . **air pollution**
. . . global air pollution
. . . indoor air pollution

RT acid rain
aerobiology
aerosols
ashes
atmospheric chemistry
atmospheric composition
atmospheric density
atmospheric effects
biomass burning
chlorofluorocarbons
chlorofluoromethane
clean energy
climate change
combustion products
contamination
diffusion
drops (liquids)
dust
Earth atmosphere
Earth environment
effluents
environment effects
environment protection
environmental chemistry
environmental quality
environmental surveys
environments
exhaust gases
exhaust systems
fallout
flue gases
fly ash
forest fires
Global Air Sampling Program
haze
human wastes
metabolic wastes
middle atmosphere
mixing height
mutagens

nitrous acid
odors
organic peroxides
oxidizers
ozone depletion
particles
particulates
photochemical oxidants
pollen
pollution monitoring
pollution transport
polynuclear organic compounds
smog
smoke
smoke abatement
soot
temperature inversions
volatile organic compounds
waste disposal
wastes
wind (meteorology)

air purification

GS purification
. **air purification**
RT carbon dioxide concentration
carbon dioxide removal
decontamination
electrostatic precipitators
Hopcalite (trademark)
rebreathing
sterilization
ventilation

air quality

GS quality
. environmental quality
. . **air quality**
RT Earth atmosphere
environments
indoor air pollution
particulates
pollution control
pollution monitoring
volatile organic compounds

air sampling

GS sampling
. **air sampling**
RT electrostatic precipitators
environment pollution
gas analysis
Global Air Sampling Program
indoor air pollution
particulates
smog

air sea ice interactions

GS gas-liquid interactions
. air water interactions
. . **air sea ice interactions**
RT ∞ interactions
polynyas
sea ice

air sea interactions

USE **air water interactions**

air showers

(added August 1997)
USE **cosmic ray showers**

air sickness

USE **motion sickness**

air slew missiles

DEF Solid propellant rockets utilizing thrust vector control.
GS missiles
. **air slew missiles**
RT maneuverability
∞ rockets
solid propellant rocket engines

thrust vector control

air start

UF *engine relight (in-flight)*
in-flight starting

GS starting
. **air start**

RT aircraft control
aircraft engines
engine control
flight tests

air to air missiles

UF *air to air rockets*

GS missiles
. **air to air missiles**
. . Falcon missile
. . Matra missile
. . Sidewinder missiles
. . Sparrow missiles
. . . Sparrow 2 missile
. . . Sparrow 3 missile

RT anti-aircraft missiles
ramjet missiles
SIAM missiles
space weapons
surface to air missiles

air to air refueling

GS refueling
. **air to air refueling**

RT tanker aircraft

air to air rockets

USE **air to air missiles**

air to surface missiles

GS missiles
. **air to surface missiles**
. . Bullpup missiles
. . Condor missile
. . Harpoon missile
. . Hound Dog missile
. . Maverick missiles
. . quail missile
. . Shrike missile

RT miss distance
ordnance
surface to air missiles
surface to surface missiles
∞ surfaces
weapon systems

air traffic

GS traffic
. **air traffic**

RT aircraft hazards
airline operations
airspace
collision avoidance
flight hazards
flight paths
flight plans
National Airspace Utilization System
National Aviation System

air traffic control

DEF A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

GS ground based control
. **air traffic control**
. . automated en route ATC
. . radar approach control
traffic control
. **air traffic control**
. . automated en route ATC
. . radar approach control

RT aeronautical satellites
airborne radar approach
aircraft approach spacing
aircraft communication
aircraft guidance
aircraft safety
airport surface detection equipment
airport towers

airports
airspace
approach
approach control
approach indicators
attitude control
automated pilot advisory system
automated radar terminal system
Beacon Collision Avoidance System
collision avoidance
collisions
∞ control
discrete address beacon system
flight altitude
flight control
flight management systems
flight paths
flight plans
flight rules
flight safety
flight time
ground support equipment
ground-air-ground communication
heliports
instrument flight rules
instrument landing systems
landing
landing aids
landing instruments
landing radar
LOCATES system
microwave landing systems
midair collisions
military air facilities
National Airspace System
National Airspace Utilization System
National Aviation System
navigation aids
∞ operations
radar navigation
radio navigation
routes
situational awareness
solar compasses
surveillance radar
takeoff
taxiing
towers
tracking (position)
transponders
vortex advisory system
vortex avoidance

air traffic controllers (personnel)

GS personnel
. **air traffic controllers (personnel)**

RT airport towers
ground based control
landing aids
traffic control

air transportation

DEF The conveyance of cargo and passengers by means of airplanes, helicopters, and other airborne vehicles.

GS transportation
. **air transportation**

RT airline operations
commercial aircraft
commuter aircraft
compound helicopters
general aviation aircraft
marine transportation
National Aviation System
passenger aircraft
rapid transit systems
short haul aircraft
transport aircraft

air water interactions

UF *air sea interactions*

GS gas-liquid interactions
. **air water interactions**
. . air sea ice interactions

RT Atmospheric & Oceanographic Inform Sys
Earth cryosphere

el Nino
gyres
hydrological cycle
∞ interactions
liquid-gas mixtures
liquid-vapor interfaces
Madden-Julian Oscillation
ocean dynamics
ocean models
sea surface temperature
water tunnel tests

airborne equipment

GS onboard equipment
. **airborne equipment**
. . airborne/spaceborne computers
. . Light Airborne Multipurpose System
. . TERCOM

RT Advanced Range Instrumentation Aircraft
airborne radar
aircraft communication
aircraft equipment
Astroplane
automatic landing control
avionics
balloon-borne instruments
cockpit weather information systems
∞ electric equipment
∞ equipment
flight instruments
hydraulic equipment
Kuiper Airborne Observatory
map matching guidance
MATTs (systems)
radar equipment
radio equipment
SOFIA (airborne observatory)
vacuum arc switches

airborne infection

GS diseases
. infectious diseases
. . **airborne infection**

RT aerobiology
parasitic diseases

Airborne Integrated Reconnaissance System

DEF Aerial reconnaissance system incorporating various modes of detection. Used for AIRS (reconnaissance sys).

UF *AIRS (reconnaissance sys)*

GS reconnaissance
. aerial reconnaissance
. . **Airborne Integrated Reconnaissance System**

RT ground truth
photoreconnaissance
∞ systems
targets

airborne lasers

GS onboard equipment
. **airborne lasers**
stimulated emission devices
. lasers
. . **airborne lasers**

RT laser applications
laser ranger/tracker
remote sensors
spaceborne lasers

airborne radar
(added August 1992)

GS radar
. **airborne radar**
. . airborne surveillance radar

RT airborne equipment
clutter
digital radar systems
Doppler radar
radar echoes
radar equipment
radar imagery

airborne radar approach

- radar maps
- radar receivers
- radar targets
- remote sensing
- remote sensors
- side-looking radar
- space based radar
- space-time adaptive processing
- synthetic aperture radar

airborne radar approach

DEF The use of airborne radar for helicopter approach control -- the radar cursor technique.

GS approach

- . **airborne radar approach**

RT

- air traffic control
- aircraft approach spacing
- helicopter control
- helicopters
- landing aids
- radar approach control

airborne range and orbit determination

UF *AROD (range-orbit determination)*

GS orbit determination

- . **airborne range and orbit determination**

- rangefinding

- . **airborne range and orbit determination**

RT ∞ measurement orbits

airborne surveillance radar

GS radar

- . airborne radar
- . . **airborne surveillance radar**
- . surveillance radar
- . . **airborne surveillance radar**

RT

- aircraft instruments
- display devices
- onboard equipment

Airborne Warning and Control System

USE **AWACS aircraft**

airborne/spaceborne computers

UF *flight computers*
onboard computers
spacecraft computers

GS data processing equipment

- . computers
- . . embedded computer systems
- . . . **airborne/spaceborne computers**

- onboard equipment
- . airborne equipment
- . . **airborne/spaceborne computers**

RT

- data processing
- flight management systems
- highly maneuverable aircraft
- minicomputers
- onboard data processing
- spacecraft components
- spacecraft electronic equipment
- systems integration

Airbus

USE **European Airbus**

∞ aircraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *aerodynamic vehicles*

RT

- A-1 aircraft
- A-2 aircraft
- A-3 aircraft
- A-4 aircraft
- A-5 aircraft
- A-6 aircraft
- A-7 aircraft
- A-9 aircraft
- A-10 aircraft
- A-37 aircraft
- A-300 aircraft
- A-330 aircraft

A-340 aircraft
Advanced Range Instrumentation Aircraft

aerodynamics
aeronautical engineering

∞ aeronautics

- aerospace engineering
- aerospace industry
- aerospace planes
- aerospace vehicles
- agricultural aircraft
- AH-1S helicopter
- AH-1W helicopter
- air data systems
- aircraft accident investigation
- aircraft accidents
- aircraft antennas
- aircraft approach spacing
- aircraft brakes
- aircraft carriers
- aircraft communication
- aircraft compartments
- aircraft configurations
- aircraft construction materials
- aircraft control
- aircraft design
- aircraft detection
- aircraft engines
- aircraft equipment
- aircraft fuel systems
- aircraft fuels
- aircraft guidance
- aircraft hazards
- aircraft hydraulic systems
- aircraft industry
- aircraft instruments
- aircraft lights
- aircraft maintenance
- aircraft maneuvers
- aircraft noise
- aircraft parts
- aircraft performance
- aircraft pilots
- aircraft production
- aircraft production costs
- aircraft reliability
- aircraft runup
- aircraft safety
- aircraft specifications
- aircraft spin
- aircraft stability
- aircraft structures
- aircraft survivability
- aircraft tires
- aircraft wakes
- airships
- Aladin 2 aircraft
- Alouette helicopters
- Alpha jet aircraft
- amphibious aircraft
- AN-2 aircraft
- AN-22 aircraft
- AN-24 aircraft
- antisubmarine warfare aircraft
- Antonov aircraft
- Argosy MK-1 aircraft
- ASSET gliders
- ATLIT project
- ATR-72 aircraft
- attack aircraft
- AVRO 707 aircraft
- AWACS aircraft
- B-1 aircraft
- B-2 aircraft
- B-26 aircraft
- B-47 aircraft
- B-50 aircraft
- B-52 aircraft
- B-57 aircraft
- B-58 aircraft
- B-66 aircraft
- B-70 aircraft
- BAC 111 aircraft
- BAC aircraft
- balloons
- Beagle aircraft
- Beech 99 aircraft

- Beechcraft 18 aircraft
- Beechcraft aircraft
- Bell 214A helicopter
- Bell aircraft
- biplanes
- bird-aircraft collisions
- Boeing 707 aircraft
- Boeing 717 aircraft
- Boeing 720 aircraft
- Boeing 727 aircraft
- Boeing 733 aircraft
- Boeing 737 aircraft
- Boeing 747 aircraft
- Boeing 757 aircraft
- Boeing 767 aircraft
- Boeing 777 aircraft
- Boeing 2707 aircraft
- Boeing aircraft
- Bolkow aircraft
- bomber aircraft
- boostglide vehicles
- Breguet 940 aircraft
- Breguet 941 aircraft
- Breguet 1150 aircraft
- Breguet aircraft
- Buccaneer aircraft
- C-1A aircraft
- C-2 aircraft
- C-5 aircraft
- C-8A augmentor wing aircraft
- C-9 aircraft
- C-15 aircraft
- C-17 aircraft
- C-33 aircraft
- C-35 aircraft
- C-46 aircraft
- C-47 aircraft
- C-54 aircraft
- C-118 aircraft
- C-119 aircraft
- C-121 aircraft
- C-123 aircraft
- C-124 aircraft
- C-130 aircraft
- C-131 aircraft
- C-133 aircraft
- C-135 aircraft
- C-140 aircraft
- C-141 aircraft
- C-160 aircraft
- Canadair aircraft
- Canberra aircraft
- cargo aircraft
- ceiling (aircraft capability)
- Cessna 172 aircraft
- Cessna 205 aircraft
- Cessna 402B aircraft
- Cessna aircraft
- Cessna L-19 aircraft
- Chance-Vought aircraft
- Chinese aircraft
- CL-41 aircraft
- CL-44 aircraft
- CL-84 aircraft
- CL-600 challenger aircraft
- CL-823 aircraft
- COIN aircraft
- Comet 4 aircraft
- commercial aircraft
- commuter aircraft
- compound helicopters
- Concorde aircraft
- Curtiss-Wright aircraft
- CV-340 aircraft
- CV-440 aircraft
- CV-880 aircraft
- CV-990 aircraft
- D-558 aircraft
- Dassault aircraft
- DC 3 aircraft
- DC 7 aircraft
- DC 8 aircraft
- DC 9 aircraft
- DC 10 aircraft
- de Havilland aircraft
- DH 112 aircraft
- DH 115 aircraft

DH 121 aircraft
 DH 125 aircraft
 DHC 2 aircraft
 DHC 4 aircraft
 DHC 5 aircraft
 DO-27 aircraft
 DO-28 aircraft
 DO-31 aircraft
 DO-328 aircraft
 Dornier aircraft
 Douglas aircraft
 drone aircraft
 E-2 aircraft
 E-3A aircraft
 E-4A aircraft
 Earth Resources Survey aircraft
 EH-101 helicopter
 Electra aircraft
 electronic aircraft
 European Airbus
 F-2 aircraft
 F-4 aircraft
 F-5 aircraft
 F-8 aircraft
 F-9 aircraft
 F-14 aircraft
 F-15 aircraft
 F-16 aircraft
 F-17 aircraft
 F-18 aircraft
 F-22 aircraft
 F-27 aircraft
 F-28 transport aircraft
 F-84 aircraft
 F-86 aircraft
 F-89 aircraft
 F-94 aircraft
 F-100 aircraft
 F-101 aircraft
 F-102 aircraft
 F-104 aircraft
 F-105 aircraft
 F-106 aircraft
 F-111 aircraft
 F-117A aircraft
 Fairchild-Hiller aircraft
 Fairey aircraft
 fan in wing aircraft
 FD 2 aircraft
 Fiat aircraft
 fighter aircraft
 Firebee 2 target drone aircraft
 flight test vehicles
 flying platforms
 Fokker aircraft
 Folding Fin aircraft rocket vehicle
 free wing aircraft
 FV-12A aircraft
 G-1 aircraft
 G-91 aircraft
 G-95/4 aircraft
 G-222 aircraft
 GA-5 aircraft
 general aviation aircraft
 General Dynamics aircraft
 GETOL aircraft
 gliders
 ground effect machines
 Grumman aircraft
 Gyrodyne aircraft
 H-17 helicopter
 H-19 helicopter
 H-43 helicopter
 H-53 helicopter
 H-54 helicopter
 H-56 helicopter
 H-60 Helicopter
 H-126 aircraft
 Hamburger aircraft
 Handley Page aircraft
 hang gliders
 Harrier aircraft
 Hawker Siddeley aircraft
 heavy lift helicopters
 Heinkel aircraft
 helicopters
 Helio aircraft
 HFB-320 aircraft
 HH-65 helicopter
 highly maneuverable aircraft
 Hiller aircraft
 hovercraft ground effect machines
 HP-115 aircraft
 HS-748 aircraft
 HS-801 aircraft
 Hughes aircraft
 hypersonic aircraft
 hypersonic gliders
 IL-14 aircraft
 IL-62 aircraft
 IL-76 aircraft
 IL-86 aircraft
 IL-96 aircraft
 Ilyushin aircraft
 inflatable gliders
 Jaguar aircraft
 JAS-39 aircraft
 jet aircraft
 jet aircraft noise
 jet provost aircraft
 Jetstream aircraft
 Jindivik target aircraft
 Kaman aircraft
 Kawasaki aircraft
 L-1011 aircraft
 L-2000 aircraft
 Lear jet aircraft
 lifting reentry vehicles
 light aircraft
 light helicopters
 light intratheater transport
 light transport aircraft
 Ling-Temco-Vought aircraft
 Lockheed aircraft
 Lockheed model 18 aircraft
 ∞ low wing aircraft
 man powered aircraft
 Martin aircraft
 McDonnell aircraft
 McDonnell Douglas aircraft
 MD 11 aircraft
 MD 80 aircraft
 Mercure aircraft
 meteorological research aircraft
 MH-262 aircraft
 MiG aircraft
 Mil aircraft
 military air facilities
 ∞ military aircraft
 military helicopters
 monoplanes
 MRCA aircraft
 multiengine vehicles
 Mystere 50 aircraft
 Navion aircraft
 night flights (aircraft)
 Nihon aircraft
 noise prediction (aircraft)
 Nord 1500 aircraft
 Nord aircraft
 North American aircraft
 Northrop aircraft
 nuclear propelled aircraft
 observation aircraft
 onboard equipment
 OV-1 aircraft
 OV-10 aircraft
 P-3 aircraft
 P-51 aircraft
 P-160 aircraft
 P-166 aircraft
 P-308 aircraft
 P-1127 aircraft
 P-1154 aircraft
 PA-34 Seneca aircraft
 passenger aircraft
 PD-808 aircraft
 Piaggio aircraft
 Piasecki aircraft
 pilotless aircraft
 Piper aircraft
 Potez aircraft
 powered lift aircraft
 propulsion
 Questol aircraft
 reconnaissance aircraft
 remotely piloted vehicles
 Republic aircraft
 research aircraft
 rigid rotor helicopters
 rocket planes
 rotary wing aircraft
 rotor systems research aircraft
 Ryan aircraft
 S-2 aircraft
 S-3 aircraft
 S-61 helicopter
 S-67 helicopter
 SA-321 helicopter
 SA-330 helicopter
 Saab 37 aircraft
 Saab 105 aircraft
 Saab aircraft
 SC-1 aircraft
 SC-5 aircraft
 SC-7 aircraft
 Schleicher aircraft
 Scimitar aircraft
 SE-210 aircraft
 short haul aircraft
 short takeoff aircraft
 Siebel aircraft
 Sikorsky aircraft
 Sikorsky Whirlwind helicopter
 single engine aircraft
 solar powered aircraft
 spanloader aircraft
 SR-71 aircraft
 submersible aircraft
 ∞ subsonic aircraft
 Sud Aviation aircraft
 Sukhoi aircraft
 supersonic aircraft
 supersonic cruise aircraft research
 T-2 aircraft
 T-28 aircraft
 T-33 aircraft
 T-37 aircraft
 T-38 aircraft
 T-39 aircraft
 TACT program
 tailless aircraft
 tandem rotor helicopters
 tandem wing aircraft
 tanker aircraft
 target drone aircraft
 test vehicles
 tilt rotor aircraft
 Tilt Rotor Research Aircraft Program
 tilt wing aircraft
 training aircraft
 transatmospheric vehicles
 transport aircraft
 TS-11 aircraft
 TSR-2 aircraft
 TU-104 aircraft
 TU-124 aircraft
 TU-134 aircraft
 TU-144 aircraft
 TU-154 aircraft
 TU-204 aircraft
 Tupolev aircraft
 turbofan aircraft
 turboprop aircraft
 U-2 aircraft
 U-10 aircraft
 ultralight aircraft
 unidentified flying objects
 utility aircraft
 V-22 aircraft
 V/STOL aircraft
 Valiant aircraft
 Vampire MK 35 aircraft
 VATOL aircraft
 VC-10 aircraft
 vertical takeoff aircraft
 Victor MK-1 aircraft
 Viscount aircraft
 VJ-101 aircraft
 Vulcan aircraft
 VZ-2 aircraft

aircraft accident investigation

VZ-8 aircraft
water takeoff and landing aircraft
weapons delivery
weather reconnaissance aircraft
Weser aircraft
Westland aircraft
Westland ground effect machines
Westland Whirlwind helicopter
wing nacelle configurations
∞ winged vehicles
X-1 aircraft
X-2 aircraft
X-3 aircraft
X-5 aircraft
X-13 aircraft
X-14 aircraft
X-15 aircraft
X-19 aircraft
X-20 aircraft
X-21 aircraft
X-21A aircraft
X-22 aircraft
X-22A aircraft
X-24 aircraft
X-29 aircraft
X-31 aircraft
X-36 aircraft
XC-142 aircraft
XV-3 aircraft
XV-4 aircraft
XV-5 aircraft
XV-8A aircraft
XV-9A aircraft
XV-11A aircraft
XV-15 aircraft
Yak 40 aircraft
Yakovlev aircraft
YC-14 aircraft
YF-12 aircraft

aircraft accident investigation

GS investigation
. accident investigation
. . **aircraft accident investigation**
RT ∞ aircraft
aviation meteorology
insurance (contracts)

aircraft accidents

GS accidents
. **aircraft accidents**
. . bird-aircraft collisions
RT ∞ aircraft
aircraft safety
aviation meteorology
collisions
crash landing
crashes
crashworthiness
ditching (landing)
emergency landing
flight hazards
flight safety
human factors engineering
insurance (contracts)
malfunctions
midair collisions
pilot error
weather

aircraft antennas

GS antennas
. **aircraft antennas**
RT ∞ aircraft
loop antennas
microwave antennas
missile antennas
protuberances
radar antennas
radio antennas

aircraft approach spacing

GS spacing
. **aircraft approach spacing**
RT aeronautical satellites
air traffic control

airborne radar approach
∞ aircraft
aircraft safety
airspace
approach
approach control
collision avoidance
flight safety
glide paths
ground based control
instrument approach
National Airspace Utilization System
National Aviation System
vortex advisory system
vortex avoidance

aircraft bases

USE **military air facilities**

aircraft brakes

GS brakes (for arresting motion)
. **aircraft brakes**
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aerodynamic brakes
∞ aircraft
antiskid devices
ballutes
drag chutes
drag devices
thrust reversal
towed bodies
wheel brakes

aircraft cabins

USE **aircraft compartments**

aircraft carriers

GS surface vehicles
. **aircraft carriers**
water vehicles
. ships
. . **aircraft carriers**
RT ∞ aircraft
arresting gear
∞ carriers
military air facilities
∞ military aircraft
∞ military vehicles
navy
nuclear powered ships

aircraft communication

DEF The conveyance of information to or from aircraft by radio or other signals.

GS communicating
. **aircraft communication**
telecommunication
. **aircraft communication**
RT aeronautical satellites
air traffic control
airborne equipment
∞ aircraft
approach control
avionics
ground-air-ground communication
radar beacons
radio communication
wireless communication

aircraft compartments

UF *aircraft cabins*
aircraft interiors
GS compartments
. **aircraft compartments**
RT ∞ aircraft
bays (structural units)
cabin atmospheres
∞ cabins
cockpits
gondolas
pressurized cabins

windshields

aircraft configurations

UF *fixed-wing aircraft*
GS **aircraft configurations**
. drooped airfoils
RT aerodynamic configurations
aerodynamic interference
∞ aircraft
blended-wing-body configurations
compound helicopters
∞ configurations
control configured vehicles
flared bodies
∞ flight vehicles
joined wings
∞ low wing aircraft
missile configurations
propulsion system configurations
spacecraft configurations
under surface blowing
upper surface blowing
wing roots

aircraft construction

USE **aircraft structures**

aircraft construction materials

DEF A general term designating the materials used in manufacturing an aircraft.
GS **aircraft construction materials**
. airframe materials
RT ∞ aircraft
airframes
aluminum-lithium alloys
ceramic matrix composites
composite materials
∞ construction materials
functionally gradient materials
fuselages
lithium alloys
∞ materials
materials selection
plastic aircraft structures
skin (structural member)
structural members
wings

aircraft control

DEF To direct the movements of an aircraft with particular reference to changes in attitude and speed.

UF *flap control*
GS **aircraft control**
. helicopter control
RT active control
air start
∞ aircraft
attitude control
automatic control
automatic flight control
∞ control
control equipment
control simulation
control stability
control sticks
controllability
DAST program
directional control
engine control
flight control
flight envelopes
flight instruments
fly by light control
fly by tube control
fly by wire control
ground based control
in-flight simulation
lateral control
longitudinal control
maneuverability
manual control
minor circle turning flight
pilot induced oscillation
radio control
remote control

stability augmentation
turbojet engine control
visual control

aircraft design

DEF The act of conceiving and planning the structure, systems, and performance characteristics of an aircraft vehicle or any other apparatus, machine or contrivance intended to be borne up either by dynamic action of the air upon the object's surfaces, or by the object's own buoyancy.

GS **aircraft design**

. helicopter design

RT

acoustic retrofitting
aerodynamic configurations
aeroelastic research wings
aeronautical engineering
aeroquatic vehicles

∞ aircraft

airfoils

blended-wing-body configurations

channel wings

compound helicopters

computer aided design

control configured vehicles

DAST program

∞ design

design optimization

engine airframe integration

engine design

flight tests

free wing aircraft

induced drag

lofting

missile design

multidisciplinary design optimization

product development

rotor systems research aircraft

shape optimization

short haul aircraft

streamlining

structural design

systems engineering

Terminal Configured Vehicle Program

transatmospheric vehicles

vortex sheets

weight reduction

YF-12 aircraft

aircraft detection

GS detection

. **aircraft detection**

RT ∞ aircraft

∞ detectors

F-117A aircraft

IFF systems (identification)

infrared suppression

tracking (position)

Aircraft Energy Efficiency program

USE **ACEE program**

aircraft engines

UF *aircraft power sources*

GS engines

. **aircraft engines**

. . convertible fan-shaft engines

. . helicopter engines

. . J-52 engine

. . J-58 engine

. . J-97 engine

. . T-34 engine

. . T-38 engine

. . T-55 engine

. . T-63 engine

. . T-76 engine

. . T-78 engine

. . TF-30 engine

. . TF-34 engine

. . TF-41 engine

. . variable cycle engines

. . variable stream control engines

RT ACEE program

air start

∞ aircraft

engine airframe integration
gas turbine engines
hydrogen engines
infrared suppression
internal combustion engines
jet engines
jet propulsion
laser propulsion
nuclear propulsion
piston engines
∞ power supplies
quiet engine program
rocket engines
rotary engines
T-58 engine
topping cycle engines
turbine engines
Wankel engines

aircraft equipment

GS onboard equipment

. **aircraft equipment**

. . bombing equipment

. . ejection seats

. . . flying ejection seats

. . . TERCOM

RT

airborne equipment

∞ aircraft

aircraft hydraulic systems

aircraft lights

aircraft power supplies

aircraft tires

automatic landing control

automatic pilots

avionics

commonality

display devices

∞ equipment

flight instruments

landing aids

landing instruments

Light Airborne Multipurpose System

navigation aids

navigation instruments

radio direction finders

aircraft fuel systems

GS fuel systems

. **aircraft fuel systems**

RT ∞ aircraft

fuel pumps

fuel tank pressurization

fuel tanks

fuel valves

∞ systems

aircraft fuels

GS fuels

. **aircraft fuels**

RT ∞ aircraft

antimisting fuels

automobile fuels

hydrocarbon fuels

jet engine fuels

liquid fuels

liquid rocket propellants

monopropellants

slurry propellants

solid propellants

tanker aircraft

aircraft guidance

GS guidance (motion)

. **aircraft guidance**

RT

air traffic control

∞ aircraft

approach control

automated en route ATC

collision avoidance

∞ indicators

instrument landing systems

radar approach control

radar navigation

radarscopes

radio navigation

aircraft hangars

USE **hangars**

aircraft hazards

GS hazards

. **aircraft hazards**

RT air traffic

∞ aircraft

aircraft icing

aviation meteorology

bird-aircraft collisions

birds

collisions

crash landing

crashes

flight hazards

flight safety

foreign bodies

human factors engineering

malfunctions

midair collisions

noise (sound)

operational hazards

refueling

threat evaluation

toxic hazards

weather

aircraft hydraulic systems

GS hydraulic equipment

. **aircraft hydraulic systems**

RT actuators

∞ aircraft

aircraft equipment

servocontrol

servomechanisms

∞ systems

aircraft icing

(added August 1991)

DEF Accumulation of ice on aircraft external surfaces, propellers and engine inlets from freezing rain or flight through inclement weather.

UF *wing icing*

GS ice formation

. **aircraft icing**

RT aircraft hazards

aircraft safety

aviation meteorology

deicers

deicing

flight conditions

flight hazards

flight safety

ice prevention

aircraft industry

GS industries

. aerospace industry

. . **aircraft industry**

RT aeronautical engineering

∞ aircraft

aircraft production costs

aircraft instruments

DEF Any electronic or mechanically-based instrument or instrument system designed for detecting, measuring, displaying, recording, telemetering, processing, or analyzing different values or quantities encountered in the flight of an aircraft; often supporting the general control of the aircraft.

GS **aircraft instruments**

. approach indicators

. automatic pilots

. flight recorders

. . flight load recorders

. rate of climb indicators

RT airborne surveillance radar

∞ aircraft

altimeters

anemometers

attitude indicators

automatic flight control

aircraft landing

- avionics
- compasses
- display devices
- flight control
- flight instruments
- flight paths
- flight test instruments
- I2S cameras
- indicating instruments
- instrument approach
- instrument landing systems
- ∞ instruments
- landing aids
- landing instruments
- laser altimeters
- light emitting diodes
- ∞ measurement
- measuring instruments
- monitors
- navigation aids
- navigation instruments
- position indicators
- radar
- radio altimeters
- recording instruments
- speed indicators
- tachometers

aircraft interiors

USE **aircraft compartments**

aircraft landing

- GS landing
- . **aircraft landing**
- RT air cushion landing systems
- all-weather landing systems
- blind landing
- ceilings (meteorology)
- crashworthiness
- emergency landing
- enhanced vision
- glide landings
- hard landing
- instrument landing systems
- landing aids
- landing mats
- landing radar
- low visibility
- microwave landing systems
- runway alignment
- soft landing
- spacecraft landing
- touchdown
- vertical landing
- vortex avoidance
- water landing

aircraft launching devices

- UF *takeoff systems*
- GS launchers
- . **aircraft launching devices**
- . . JATO engines
- RT catapults

aircraft lights

- GS lighting equipment
- . luminaires
- . . **aircraft lights**
- RT ∞ aircraft
- aircraft equipment
- beacons

aircraft maintenance

- GS maintenance
- . **aircraft maintenance**
- RT ∞ aircraft
- checkout
- flight operations
- ground support equipment
- logistics
- preventive maintenance

aircraft maneuvers

- GS maneuvers
- . **aircraft maneuvers**
- RT ∞ aircraft

- approach control
- flight characteristics
- flight envelopes
- flight paths
- formation flying
- highly maneuverable aircraft
- maneuverability
- obstacle avoidance
- trajectory optimization
- transition flight
- turning flight
- X-31 aircraft

aircraft models

- GS models
- . **aircraft models**
- RT dynamic models
- mathematical models
- powered models
- scale models
- semispan models
- spacecraft models
- wind tunnel models

aircraft noise

- GS elastic waves
- . sound waves
- . . noise (sound)
- . . . **aircraft noise**
- blade slap noise
- jet aircraft noise
- propeller noise
- sonic booms
- RT acoustic retrofitting
- aeroacoustics
- aerodynamic noise
- ∞ aircraft
- coaxial nozzles
- engine noise
- footprints
- jet aircraft
- mufflers
- noise intensity
- noise measurement
- noise prediction (aircraft)
- noise reduction
- synchrophasing

aircraft noise prediction

USE **noise prediction (aircraft)**

aircraft parts

- RT ∞ aircraft
- airfoils
- airframes
- channel wings
- control surfaces
- fuselages
- landing gear
- oblique wings
- protuberances
- swing tail assemblies
- swing wings
- tail assemblies
- wings

aircraft performance

DEF The manner or effectiveness with which an aircraft vehicle or any airborne structure, machine, or contrivance functions while in operation.

- GS **aircraft performance**
- . helicopter performance
- RT aerodynamic stalling
- ∞ aircraft
- aircraft spin
- airspeed
- controllability
- Cooper-Harper ratings
- distance
- flight characteristics
- flight envelopes
- maneuverability
- minimum drag
- payloads
- ∞ performance

- pilot performance
- pilot ratings
- specifications
- takeoff runs

aircraft pilots

- UF *aviators*
- copilots*
- jet pilots*
- GS personnel
- . flying personnel
- . . pilots (personnel)
- . . . **aircraft pilots**
- test pilots
- operators (personnel)
- pilots (personnel)
- **aircraft pilots**
- test pilots
- RT ∞ aircraft
- aviation psychology
- flight crews
- ∞ pilots

aircraft power sources

USE **aircraft engines**

aircraft power supplies

- DEF Electric power sources for the normal operation of aircraft.
- GS electric power supplies
- . **aircraft power supplies**
- RT aircraft equipment
- auxiliary power sources
- electric generators
- ∞ power supplies

aircraft production

- UF *fuselage mounting*
- RT ∞ aircraft
- costs
- equipment specifications
- product development
- ∞ production
- production engineering

aircraft production costs

- GS costs
- . production costs
- . . **aircraft production costs**
- RT ∞ aircraft
- aircraft industry
- cost estimates
- efficiency
- ∞ engineering
- financial management
- industries
- manufacturing
- production engineering
- production management
- productivity

aircraft reliability

- UF *airworthiness*
- airworthiness requirements*
- GS reliability
- . **aircraft reliability**
- RT ∞ aircraft
- certification
- circuit reliability
- component reliability
- helicopter performance
- quality control
- structural reliability
- total quality management
- vulnerability

aircraft runup

- DEF Final engine check prior to takeoff.
- GS preflight operations
- . **aircraft runup**
- RT ∞ aircraft
- engine noise
- engine tests
- ground tests

jet aircraft noise

aircraft safety

DEF Techniques used to prevent aircraft failures or accidents; the degree to which an aircraft is free of the risk of malfunction or accidents.

GS safety

. **aircraft safety**

- RT abort apparatus
- aerospace safety
- air piracy
- air traffic control
- ∞ aircraft
 - aircraft accidents
 - aircraft approach spacing
 - aircraft icing
 - aircraft spin
 - all-weather landing systems
 - arresting gear
 - Beacon Collision Avoidance System
 - collision avoidance
 - collisions
 - crash landing
 - crashes
 - crashworthiness
 - ejection seats
 - emergency landing
 - flight hazards
 - flight safety
 - flying ejection seats
 - landing aids
 - landing radar
 - microwave landing systems
 - midair collisions
 - National Airspace System
 - navigation aids
 - safety devices
 - solar compasses
 - terrorism
 - threat evaluation
 - weather
 - wheel brakes

aircraft specifications

GS specifications

. **aircraft specifications**

- RT ∞ aircraft
 - airspeed
 - ceiling (aircraft capability)
 - controllability
 - distance
 - flight characteristics
 - payloads

aircraft spin

DEF A prolonged stall in fixed-wing aircraft characterized by a sustained spiral descent, usually with the nose down.

RT aerodynamic stalling

- ∞ aircraft
 - aircraft performance
 - aircraft safety
 - control stability
 - controllability
 - crash landing
 - flight hazards
 - flight safety
 - hazards
 - maneuvers
 - spin dynamics

aircraft stability

DEF The property of an aircraft to maintain its attitude or to resist displacement, and if displaced, to develop forces and moments tending to restore the original condition.

GS dynamic characteristics

- . dynamic stability
- . . motion stability
- . . . **aircraft stability**
- hovering stability
- stability
 - . dynamic stability
 - . . motion stability
 - . . . **aircraft stability**

. . . . hovering stability

RT aerodynamic balance

- aerodynamic stability
- ∞ aircraft
 - attitude stability
 - buffeting
 - control stability
 - controllability
 - counterbalances
 - directional stability
 - flight envelopes
 - horizontal flight
 - lateral stability
 - liquid sloshing
 - longitudinal stability
 - low speed stability
 - pilot induced oscillation
 - static stability
 - structural stability
 - turning flight
 - upper surface blown flaps
 - wind tunnel stability tests
 - wing rock

aircraft structures

UF *aircraft construction*

GS **aircraft structures**

- . airframes
- . fuselages
- . plastic aircraft structures
- RT aerodynamic interference
- aeroelasticity
- afterbodies
- ∞ aircraft
 - airfoils
 - boron-epoxy composites
 - canard configurations
 - canopies
 - centerbodies
 - channel wings
 - control surfaces
 - fairings
 - forebodies
 - hulls (structures)
 - interference fit
 - leading edge flaps
 - noses (forebodies)
 - oblique wings
 - pylon mounting
 - shells (structural forms)
 - spacecraft structures
 - streamlining
 - ∞ structures
 - swing tail assemblies
 - swing wings
 - tail assemblies
 - wings

aircraft survivability

RT ∞ aircraft

- combat
- ∞ construction materials
- durability
- flight control
- helicopters
- life (durability)
- ∞ military aircraft
 - plastic aircraft structures
 - reinforced plastics
 - reliability
 - spacecraft survivability
 - survival
 - survival equipment
 - vulnerability

aircraft tires

GS tires

. **aircraft tires**

- RT ∞ aircraft
 - aircraft equipment
 - landing gear
 - vehicle wheels

aircraft wakes

GS wakes

. **aircraft wakes**

. . helicopter wakes

- . . slipstreams
- . . . propeller slipstreams
- RT ∞ aircraft
 - hypersonic wakes
 - laminar wakes
 - supersonic wakes
 - turbulent wakes
 - vortex advisory system
 - vortex alleviation

aircrews

USE **flight crews**

airdrops

RT air cargo

- cargo
- delivery
- drag chutes
- parachutes
- parafoils

airfield surface movements

RT air cargo

- airports
- hangars
- materials handling
- mobile lounges
- runways
- ∞ surfaces
- taxiing

airfields

USE **airports**

airfoil characteristics

USE **airfoils**

airfoil fences

GS airfoils

. **airfoil fences**

- RT boundary layer control
- ∞ fences
- vortex generators
- wings

airfoil oscillations

DEF Periodic motions experienced by airfoils in aerodynamic conditions.

GS oscillations

. **airfoil oscillations**

. . wing oscillations

. . . wing rock

RT aerodynamic stability

- aeroelasticity
- aeroservoelasticity
- flapping
- flutter
- flutter analysis
- rotary stability
- structural vibration
- undamped oscillations
- vibration
- vibration mode

airfoil profiles

UF

- aerodynamic chords*
- airfoil sections*
- airfoil thickness*
- Clark Y airfoil*

GS **airfoil profiles**

. wing profiles

. . wing span

RT aerodynamic interference

- airfoils
- blade tips
- ∞ cross sections
- Joukowski transformation
- Kutta-Joukowski condition
- Lighthill method
- nose tips
- ∞ profiles
- shape optimization
- streamlining
- supercritical airfoils
- Theodorsen transformation

airfoils

- thickness
- thickness ratio
- thin airfoils
- thin wings
- tips
- wedges
- wing tips

airfoil sections

USE **airfoil profiles**

airfoil thickness

USE **airfoil profiles**

airfoils

DEF Structures, pieces, or bodies, originally likened to foils or leaves in being wide and thin, designed to obtain a useful reaction on themselves in their motion through the air. Used for airfoil characteristics.

UF *airfoil characteristics*

GS **airfoils**

- . aerial rudders
- . ailerons
- . . flaperons
- . . spoiler slot ailerons
- . airfoil fences
- . circulation control airfoils
- . . circulation control rotors
- . drooped airfoils
- . elevators (control surfaces)
- . elevons
- . flaps (control surfaces)
- . . externally blown flaps
- . . . upper surface blown flaps
- . . flaperons
- . . jet flaps
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . horizontal tail surfaces
- . laminar flow airfoils
- . propeller blades
- . spoilers
- . supercritical airfoils
- . . supercritical wings
- . supersonic airfoils
- . tabs (control surfaces)
- . thin airfoils
- . . thin wings
- . . infinite span wings
- . wings
- . . aeroelastic research wings
- . . cambered wings
- . . caret wings
- . . channel wings
- . . cruciform wings
- . . fixed wings
- . . flexible wings
- . . . parawings
- . . GAW-1 airfoil
- . . GAW-2 airfoil
- . . joined wings
- . . low aspect ratio wings
- . . . delta wings
- . . . trapezoidal wings
- . . mission adaptive wings
- . . oblique wings
- . . rigid wings
- . . rotary wings
- . . . circulation control rotors
- . . . lifting rotors
- bearingless rotors
- . . . rigid rotors
- . . . tilting rotors
- . . . tip driven rotors
- . . . x wing rotors
- . . slender wings
- . . . infinite span wings
- . . supercritical wings
- . . swept wings
- . . . swept forward wings
- trapezoidal wings
- . . . sweptback wings

- arrow wings
- delta wings
- trapezoidal wings
- . . swing wings
- . . thin wings
- . . . infinite span wings
- . . twisted wings
- . . uncambered wings
- . . ring wings
- . . unswept wings
- . . . infinite span wings
- . . . rectangular wings
- . . . ring wings
- . . variable sweep wings

RT aerodynamic configurations

- aerodynamics
- aircraft design
- aircraft parts
- aircraft structures
- airfoil profiles
- aspect ratio
- ∞ blades
- blade-vortex interaction
- blunt leading edges
- blunt trailing edges
- body-wing configurations
- camber
- control surfaces
- deicers
- deicing
- fins
- ∞ foils
- foils (materials)
- guide vanes
- hydrofoils
- interactional aerodynamics
- jet vanes
- leading edge thrust
- leading edges
- lift
- lifting bodies
- Lighthill method
- monoplanes
- rotor blades (turbomachinery)
- rotors
- rudders
- sharp leading edges
- stabilizers (fluid dynamics)
- streamlined bodies
- streamlining
- tail assemblies
- thickness ratio
- trailing edges
- turbomachine blades
- vanes
- waveriders
- wedges

airframe materials

GS aircraft construction materials

. **airframe materials**

RT airframes

- aluminum-lithium alloys
- composite materials
- ∞ construction materials
- functionally gradient materials
- glass fiber reinforced plastics
- ∞ materials
- materials selection
- structural design
- structural members

airframes

DEF The assembled structural and aerodynamic components of an aircraft or rocket vehicle that support the different systems and subsystems integral to the vehicle.

GS aircraft structures

. **airframes**

frames

. **airframes**

RT aircraft construction materials

- aircraft parts
- airframe materials
- bays (structural units)
- canopies
- control surfaces

- engine airframe integration
- fins
- fuselages
- landing gear
- missile bodies
- missile structures
- nacelles
- protuberances
- tail assemblies
- wing nacelle configurations
- wings

Airgeep aircraft

USE **VZ-8 aircraft**

airglow

DEF The quasi-steady radiant emission from the upper atmosphere as distinguished from the sporadic emission of the auroras. Used for atmospheric emission.

UF *atmospheric emission*

GS atmospheric radiation

. sky radiation

. . **airglow**

. . . geocoronal emissions

. . . nightglow

. . . twilight glow

electromagnetic radiation

. light (visible radiation)

. . sky radiation

. . . **airglow**

. . . . geocoronal emissions

. . . . nightglow

. . . . twilight glow

RT

aeronomy

atmospheric ionization

auroras

chemiluminescence

Earth atmosphere

emission

Fabry-Perot spectrometers

light emission

night sky

oxygen spectra

radiative recombination

Rayleigh scattering

sky brightness

airline operations

RT

air cargo

air traffic

air transportation

civil aviation

commercial aircraft

operating costs

operational problems

∞ operations

passengers

short haul aircraft

airlock modules

DEF Modular chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.

GS compartments

. air locks

. . **airlock modules**

modules

. **airlock modules**

RT

Apollo applications program

multiple docking adapters

Saturn 1 workshop

Saturn 5 workshop

Saturn workshops

Skylab 1

Skylab 2

Skylab 3

Skylab 4

Skylab program

space station modules

spacecraft docking modules

airport beacons

GS landing aids

. **airport beacons**
 . . discrete address beacon system
 navigation aids
 . beacons
 . . **airport beacons**
 . . . discrete address beacon system
 RT radio beacons
 solar compasses

airport lights
 GS landing aids
 . **airport lights**
 . . runway lights
 lighting equipment
 . luminaires
 . . **airport lights**
 . . . runway lights
 RT searchlights

airport planning
 GS planning
 . **airport planning**
 RT ground support equipment
 heliports
 land use
 sites

airport security
 DEF Organization of trained security personnel, surveillance and screening devices, and procedures used for the protection of airport and airline property, aircraft, passengers, employees, and visitors from injury, air piracy, and other unauthorized acts.
 GS security
 . **airport security**
 RT air piracy
 airports
 explosives detection
 ion mobility spectroscopy
 protection
 terrorism
 vulnerability

airport surface detection equipment
 UF *ASDE*
 RT air traffic control
 ∞ equipment
 ground based control
 radar equipment
 search radar
 ∞ surfaces
 surveillance radar

airport towers
 GS towers
 . **airport towers**
 RT air traffic control
 air traffic controllers (personnel)
 airports
 ground based control
 heliports
 landing aids
 traffic control

airports
 DEF An area of land or water that is used, or intended to be used, for the landing and takeoff of aircraft, including buildings and facilities, if any.
 UF *airfields*
 GS **airports**
 . heliports
 RT ∞ aeronautics
 air traffic control
 airfield surface movements
 airport security
 airport towers
 ∞ facilities
 hangars
 instrument landing systems
 landing aids
 landing mats
 military air facilities
 mobile lounges
 mooring
 National Airspace System

navigation aids
 ∞ ports
 runways
 site selection
 ∞ strip
AIRS (reconnaissance sys)
 USE **Airborne Integrated Reconnaissance System**

airships
 DEF Propelled and steerable dirigibles dependent on gases for flotation. Used for aerostats and dirigibles.
 UF *aerostats*
dirigibles
 GS **airships**
 . heavy lift airships
 RT ∞ aircraft
 balloons
 gondolas
 inflatable structures
 ∞ military aircraft

airspace
 DEF The atmosphere above a particular portion of the earth, usually defined by the boundaries of an area on the surface projected perpendicularly upward.
 RT air law
 air traffic
 air traffic control
 aircraft approach spacing
 boundaries
 collision avoidance
 flight paths
 National Airspace System
 National Airspace Utilization System

airspeed
 GS rates (per time)
 . **airspeed**
 velocity
 . **airspeed**
 RT aerodynamic stalling
 aircraft performance
 aircraft specifications
 boundary layer separation
 flight characteristics
 ground speed
 high speed
 low speed
 Mach number
 wind velocity

airworthiness
 USE **aircraft reliability**

airworthiness requirements
 USE **aircraft reliability**

Airy function
 GS analysis (mathematics)
 . complex variables
 . . **Airy function**
 functions (mathematics)
 . **Airy function**
 RT cylindrical bodies
 differential equations
 elastic properties
 harmonic functions
 Poisson ratio
 stress analysis

Aitken nuclei
 DEF Microscopic particles in the atmosphere which serve as condensation nuclei for droplet growth during the rapid adiabatic expansion produced by an Aitken dust counter.
 GS condensation nuclei
 . **Aitken nuclei**
 RT aerosols
 atmospheric chemistry
 atmospheric composition
 cloud physics
 coagulation

condensates
 crystal growth
 dust
 ice nuclei
 nucleation
 ∞ nuclei
 supercooling

AJ-10 engine
 GS engines
 . rocket engines
 . . booster rocket engines
 . . . **AJ-10 engine**
 . . liquid propellant rocket engines
 . . . **AJ-10 engine**
 RT tartar missile

AJ-1000 engine
 USE **M-1 engine**

Akebono satellite
 USE **EXOS-D satellite**

akermanite
 DEF A mineral of the melilite group. It is isomorphous with gehlenite.
 GS calcium compounds
 . calcium carbonates
 . . **akermanite**
 . calcium oxides
 . . **akermanite**
 carbon compounds
 . carbonates
 . . calcium carbonates
 . . . **akermanite**
 chalcogenides
 . oxides
 . . metal oxides
 . . . alkaline earth oxides
 calcium oxides
 **akermanite**
 magnesium oxides
 **akermanite**
 magnesium compounds
 . magnesium oxides
 . . **akermanite**
 minerals
 . **akermanite**
 RT silicates
 silicon compounds
 silicon oxides

Alabama
 GS nations
 . United States
 . . **Alabama**
 RT Gulf of Mexico
 Tennessee Valley (AL-KY-TN)

Aladin 2 aircraft
 GS transport aircraft
 . **Aladin 2 aircraft**
 V/STOL aircraft
 . short takeoff aircraft
 . . **Aladin 2 aircraft**
 RT ∞ aircraft

Alais meteorite
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 **Alais meteorite**
 . . . chondrites
 carbonaceous chondrites
 **Alais meteorite**

alanine
 GS acids
 . amino acids
 . . **alanine**
 . . . phenylalanine
 . carboxylic acids
 . . **alanine**
 . . . phenylalanine

Alaska

organic compounds
. amino acids
. . . **alanine**
. . . phenylalanine
. carboxylic acids
. . . **alanine**
. . . phenylalanine
RT proteins

alarms

USE **warning systems**

Alaska

GS nations
. United States
. . . **Alaska**
RT Aleutian Islands (US)
Beaufort Sea (North America)
Chena River Basin (AK)
Cook Inlet (AK)
Gulf of Alaska
Prince William Sound (AK)
Wrangell Mountains (AK)

Albania

GS nations
. **Albania**
RT Europe

albedo

DEF The ratio of the amount of electromagnetic radiation reflected by a body to the amount incident upon it. It is often expressed as a percentage, as, the albedo of the Earth is 34 percent.

GS **albedo**
. cosmic ray albedo
. Earth albedo
. lunar albedo
RT absorptance
cosmic rays
Earth radiation budget experiment
optical properties
planetary radiation
reflectance
solar radiation
surface properties

Alberta

GS nations
. Canada
. . . **Alberta**

albinism

GS diseases
. **albinism**
RT pigments
skin (anatomy)

albumins

GS biopolymers
. proteins
. . . **albumins**
organic compounds
. proteins
. . . **albumins**
RT elastin

alcoholates

USE **alkoxides**

alcohols

GS hydroxyl compounds
. **alcohols**
. . . ethyl alcohol
. . . glycols
. . . isopropyl alcohol
. . . methyl alcohol
. . . phenols
. . . bisphenols
. . . cresols
. . . phloroglucinol
. . . thymol
. . . polyvinyl alcohol
. . . triols
. . . cyanuric acid

RT alkoxides
carbohydrates
gasohol (fuel)
glycerols
hydroxyl radicals
methoxy systems
organic compounds
thiols

aldehydes

DEF Carbonyl groups to which a hydrogen atom is attached; the first stage of an alcohol; -CHO.

GS **aldehydes**
. acetaldehyde
. acroleins
. chloral
. formaldehyde
RT acetyl compounds
furfuryl alcohol
organic compounds
retinene

aldolase

GS biopolymers
. proteins
. . . enzymes
. . . **aldolase**
organic compounds
. proteins
. . . enzymes
. . . **aldolase**
RT muscles

aldosterone

GS organic compounds
. lipids
. . . steroids
. . . corticosteroids
. . . . **aldosterone**
secretions
. endocrine secretions
. . . hormones
. . . corticosteroids
. . . . **aldosterone**
RT adrenal metabolism
electrolyte metabolism

alertness

RT arousal
attention
situational awareness
wakefulness

Aleutian Islands (US)

GS landforms
. islands
. . . **Aleutian Islands (US)**
RT Alaska
archipelagoes
island arcs
United States

alexandrite

(added November 1992)

DEF A transparent variety of chrysoberl that has a grass-green or emerald green color in daylight and wine-red to brownish-red color by transmitted or incandescent artificial light.

GS aluminum compounds
. aluminum oxides
. . . **alexandrite**
. beryl
. . . **alexandrite**
beryllium compounds
. beryl
. . . **alexandrite**
. beryllium oxides
. . . **alexandrite**
chalcogenides
. oxides
. . . metal oxides
. . . alkaline earth oxides
. . . . beryllium oxides
. **alexandrite**
. . . aluminum oxides

. . . . **alexandrite**
minerals
. beryl
. . . **alexandrite**
silicon compounds
. silicates
. beryl
. . . . **alexandrite**
RT laser materials

alfalfa

GS farm crops
. **alfalfa**
plants (botany)
. **alfalfa**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
curing
Earth resources
∞ food
grasses
irrigation
seeds

Alfven waves

USE **magnetohydrodynamic waves**

AlGaAs

USE **aluminum gallium arsenides**

algae

DEF Any plants of a group of unicellular and multicellular primitive organisms that include the Chlorella, Scenedesmus, and other genera. Used for algal bloom.

UF *algal bloom*
diatoms (unicellular plants)
GS plants (botany)
. **algae**
. . . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. . . Chlorella
. . . Dunaliella
. . . porphyra
. . . scenedesmus
RT biochemical oxygen demand
bioconversion
chlorophylls
Euglena
lichens
marine biology
microorganisms
photosynthesis
phytoplankton
plankton
thermophiles
thermophilic plants
water pollution

algal bloom

USE **algae**

algebra

GS **algebra**
. binomial theorem
. current algebra
. determinants
. group theory
. . . homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
. lie groups
. . . spinor groups
. linear equations
. . . linear evolution equations
. . . Riccati equation
. linear transformations
. nonlinear equations
. . . cubic equations

- .. Duffing differential equation
- .. Monge-Ampere equation
- .. nonlinear evolution equations
- .. quadratic equations
- .. quartic equations
- . polynomials
- .. binomials
- .. dyadics
- .. Hermitian polynomial
- . tensors
- .. stress tensors
- . vector spaces
- .. Banach space
- .. Hilbert space
- ... Sobolev space
- .. matrices (mathematics)
- ... adjoints
- ... canonical forms
- ... eigenvalues
- ... eigenvectors
- ... Hessian matrices
- ... Jordan form
- ... stiffness matrix
- .. Stokes theorem (vector calculus)
- .. U spin space
- .. vectors (mathematics)
- ... eigenvectors
- ... state vectors
- ... vorticity
- RT analysis (mathematics)
- ∞ analyzing
- ∞ Boolean algebra
- ∞ coordinates
- ∞ functions (mathematics)
- ∞ homotropy
- ∞ mathematics
- ∞ Schwartz inequality
- ∞ science
- ∞ semiempirical equations
- ∞ space
- ∞ sums
- ∞ uniqueness theorem

Algeria

- GS nations
- . **Algeria**
- RT Africa

ALGOL

- UF *algorithmic oriented language*
- GS languages
- . programming languages
- .. **ALGOL**
- RT computer programming
- machine oriented languages

Algol engine

- GS engines
- . rocket engines
- .. booster rocket engines
- ... **Algol engine**
- ... solid propellant rocket engines
- ... **Algol engine**
- RT Blue Scout rocket vehicle
- Little Joe 2 launch vehicle
- Scout launch vehicle

algorithmic oriented language

USE **ALGOL**

algorithms

- DEF Special mathematical procedures for solving a particular type of problem.
- GS mathematical logic
- . **algorithms**
- .. backpropagation (artificial intelligence)
- .. genetic algorithms
- .. greedy algorithms
- .. parsing algorithms
- .. simplex method
- .. sorting algorithms
- RT computer programming
- computer programs
- computer systems programs
- computerized simulation

- conjugate gradient method
- data conversion routines
- differential analyzers
- factorization
- fuzzy sets
- fuzzy systems
- Hessian matrices
- mean square values
- numerical analysis
- numerical differentiation
- parameterization
- robustness (mathematics)
- state estimation
- systolic arrays

alignment

- GS **alignment**
- . self alignment
- RT adjusting
- bearing (direction)
- clearances
- collimation
- correction
- directivity
- fitting
- horizontal orientation
- instrument orientation
- look angles (electronics)
- ∞ orientation
- ply orientation
- polarization (spin alignment)
- positioning
- vertical orientation

aliphatic compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aliphatic hydrocarbons
- amines
- fatty acids
- molecular chains
- organic compounds

aliphatic hydrocarbons

- GS organic compounds
- . hydrocarbons
- .. **aliphatic hydrocarbons**
- ... alkanes
- ... butanes
- ... cetane
- ... ethane
- ... heptanes
- ... methane
- ... nitropropane
- ... nonanes
- ... octanes
- ... paraffins
- ... ceresin
- ... pentanes
- ... neopentane
- ... propane
- ... alkenes
- ... butenes
- ... ethylene
- ... vinylidene
- ... hexenes
- ... propylene
- ... trienes
- ... alkynes
- ... acetylene
- ... oxyacetylene
- ... dienes
- ... butadiene
- ... heptadiene
- ... hexadiene
- ... polybutadiene
- RT ∞ aliphatic compounds
- terpenes

alkali halides

- GS halogen compounds
- . halides
- .. metal halides
- ... **alkali halides**
- ... cesium halides
- ... cesium bromides

- ... cesium fluorides
- ... cesium iodides
- ... potassium iodides
- ... sodium bromides
- ... sodium chlorides
- ... sodium fluorides
- ... sodium iodides

alkali metal compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *Group 1A compounds*
- RT cesium compounds
- ∞ chemical compounds
- fullerides
- lithium compounds
- ∞ metal compounds
- potassium compounds
- rubidium compounds
- sodium compounds

alkali metals

DEF Metals in group IA of the periodic system; namely, lithium, sodium, potassium, rubidium, cesium, and francium.

- GS chemical elements
- . **alkali metals**
- .. cesium
- ... cesium isotopes
- ... cesium 133
- ... cesium 134
- ... cesium 137
- ... cesium 144
- .. cesium vapor
- .. francium
- .. lithium
- .. liquid lithium
- .. lithium isotopes
- .. potassium
- .. liquid potassium
- .. potassium isotopes
- ... potassium 38
- ... potassium 39
- ... potassium 40
- .. rubidium
- .. rubidium isotopes
- ... rubidium 86
- .. sodium
- .. liquid sodium
- .. sodium isotopes
- ... sodium 22
- ... sodium 24
- .. sodium vapor
- metals
- . **alkali metals**
- .. cesium
- ... cesium isotopes
- ... cesium 133
- ... cesium 134
- ... cesium 137
- ... cesium 144
- .. cesium vapor
- .. francium
- .. lithium
- .. liquid lithium
- .. lithium isotopes
- .. potassium
- .. liquid potassium
- .. potassium isotopes
- ... potassium 38
- ... potassium 39
- ... potassium 40
- .. rubidium
- .. rubidium isotopes
- ... rubidium 86
- .. sodium
- .. liquid sodium
- .. sodium isotopes
- ... sodium 22
- ... sodium 24
- .. sodium vapor
- RT cesium alloys
- metal vapors

alkali vapor lamps

DEF Lamps in which light is produced by an

alkalies

electric discharge between electrodes in an alkali vapor at low or high pressures.

GS lighting equipment
 . luminaires
 . . . flash lamps
 . . . **alkali vapor lamps**

RT lasers
 luminescence
 metal vapors
 rare earth elements

alkalies

UF *caustics*
 GS bases (chemical)
 . **alkalies**
 . . lithium hydroxides
 . . potassium hydroxides
 . . sodium hydroxides

RT alkalinity
 carbonates
 hydroxides

alkaline batteries

GS electric generators
 . direct power generators
 . . primary batteries
 . . . **alkaline batteries**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **alkaline batteries**

RT storage batteries
 thermal batteries

∞ **alkaline earth compounds**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *Group 2A compounds*

RT alkaline earth metals
 alkaline earth oxides
 barium compounds
 beryllium compounds
 calcium compounds
 ∞ chemical compounds
 magnesium compounds
 strontium compounds
 strontium oxides

alkaline earth metals

GS chemical elements
 . **alkaline earth metals**
 . . barium isotopes
 metals
 . **alkaline earth metals**
 . . barium isotopes

RT ∞ alkaline earth compounds

alkaline earth oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **alkaline earth oxides**
 barium oxides
 beryllium oxides
 alexandrite
 calcium oxides
 akermanite
 magnesium oxides
 akermanite
 periclase

RT ∞ alkaline earth compounds

alkalinity

DEF The state of being alkaline.

RT alkalies
 bases (chemical)
 chemical analysis
 chemical composition
 pH
 salinity
 soil sampling
 water pollution
 water quality

alkaloids

GS bases (chemical)

. **alkaloids**
 . . atropine
 . . betaines
 . . caffeine
 . . colchicine
 . . ergotamine
 . . hyoscine
 . . lysergine
 . . morphine
 . . nicotinamide
 . . nicotine
 . . pilocarpine
 . . reserpine
 . . strychnine
 . . tropanyl compounds
 nitrogen compounds

alkaloids

. . atropine
 . . betaines
 . . caffeine
 . . colchicine
 . . ergotamine
 . . hyoscine
 . . lysergine
 . . morphine
 . . nicotinamide
 . . nicotine
 . . pilocarpine
 . . reserpine
 . . strychnine
 . . tropanyl compounds
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **alkaloids**
 atropine
 betaines
 caffeine
 colchicine
 ergotamine
 hyoscine
 lysergine
 morphine
 nicotinamide
 nicotine
 pilocarpine
 reserpine
 strychnine
 tropanyl compounds

RT curare
 drugs
 marijuana
 quinoline

alkalosis

RT acidosis
 hyperventilation
 pH
 pH factor
 toxicity

alkanes

UF *saturated hydrocarbons*
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . **alkanes**
 butanes
 cetane
 ethane
 heptanes
 methane
 nitropropane
 nonanes
 octanes
 paraffins
 ceresin
 pentanes
 neopentane
 propane

RT hydrocarbon fuels
 waxes

alkenes

UF *olefins*
 GS organic compounds
 . hydrocarbons

. . aliphatic hydrocarbons
 . . . **alkenes**
 butenes
 ethylene
 vinylidene
 hexenes
 propylene
 trienes

RT alkynes
 oxetane polymers
 terpenes

alkoxides

(added January 1995)

UF *alcoholates*
 GS chalcogenides
 . oxides
 . . **alkoxides**

RT alcohols
 organometallic compounds
 sol-gel processes

alkyd resins

GS resins
 . **alkyd resins**

RT adhesives
 protective coatings

alkyl compounds

GS **alkyl compounds**
 . alkylidene
 . cetyl compounds
 . dibutyl compounds
 . hexyl compounds
 . isopropyl nitrate
 . methyl nitrate
 . propyl nitrate
 . tetrabutyls
 . triethyl compounds
 . trimethyl compounds

RT ∞ chemical compounds
 organic compounds

alkylates

GS esters
 . **alkylates**

RT alkylation

alkylation

UF *oxyalkylation*
 GS chemical reactions
 . **alkylation**

RT alkylates
 Friedel-Craft reaction
 methylation
 refining

alkylferrocene

GS iron compounds
 . ferrocenes
 . . **alkylferrocene**
 organometallic compounds
 . ferrocenes
 . . **alkylferrocene**

alkylidene

GS alkyl compounds
 . **alkylidene**

alkynes

GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . **alkynes**
 acetylene
 oxyacetylene

RT alkenes
 cyclic AMP
 cyclic hydrocarbons

all sky photography

GS imagery
 . photography
 . . **all sky photography**

RT black and white photography
 cloud photographs

- cloud photography
- wide angle lenses
- Allegheny Plateau (US)**
 - GS land
 - . **Allegheny Plateau (US)**
 - landforms
 - . terraces (landforms)
 - . . . plateaus
 - . . . **Allegheny Plateau (US)**
 - RT Maryland
 - Pennsylvania
 - Virginia
 - West Virginia
- Allende meteorite**
 - GS celestial bodies
 - . meteorites
 - . . . stony meteorites
 - . . . carbonaceous meteorites
 - . . . carbonaceous chondrites
 - **Allende meteorite**
 - . . . chondrites
 - . . . carbonaceous chondrites
 - **Allende meteorite**
- allergic diseases**
 - RT anaphylaxis
 - contact dermatitis
 - immunology
- allocations**
 - UF *assignment*
 - GS **allocations**
 - . resource allocation
 - RT allowances
 - budgeting
 - commercial energy
 - cost effectiveness
 - distributing
 - ∞ distribution
 - . domestic energy
 - . economic analysis
 - . economic factors
 - . engineering management
 - . estimates
 - . federal budgets
 - . financial management
 - . industrial energy
 - . matrix management
 - . procurement management
 - . project planning
 - . research management
 - . revenue
 - . transportation energy
- allotropy**
 - RT austenite
 - crystal structure
 - polymorphism
- allowances**
 - RT allocations
 - clearances
 - ∞ compensation
 - . precision
 - . productivity
 - . regulations
 - . reliability
 - . sampling
 - . tolerances (mechanics)
- alloxan**
 - GS organic compounds
 - . cyclic compounds
 - . . . heterocyclic compounds
 - . . . pyrimidines
 - . . . **alloxan**
 - RT thymidine
 - thymine
 - uracil
 - uric acid
- alloying**
 - RT additives
 - alloys
- aluminum-lithium alloys
- bimetal
- binary alloys
- eutectic alloys
- eutectics
- intermetallics
- ∞ metallurgy
- mischmetal
- powder metallurgy
- pyrometallurgy
- quaternary alloys
- solid solutions
- ternary alloys
- alloys**
 - DEF Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.
 - GS **alloys**
 - . antimony alloys
 - . . . babbitt metal
 - . arsenic alloys
 - . barium alloys
 - . bearing alloys
 - . binary alloys
 - . bismuth alloys
 - . boron alloys
 - . cadmium alloys
 - . cast alloys
 - . cesium alloys
 - . chromium alloys
 - . . . Astroloy (trademark)
 - . . . chromium steels
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . . cobalt alloys
 - . . . Astroloy (trademark)
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . . constantan
 - . . . copper alloys
 - . . . babbitt metal
 - . . . brasses
 - . . . bronzes
 - . . . Manganin (trademark)
 - . . . eutectic alloys
 - . . . gallium alloys
 - . . . germanium alloys
 - . . . gold alloys
 - . . . hafnium alloys
 - . . . heat resistant alloys
 - . . . nimonic alloys
 - . . . refractory metal alloys
 - . . . molybdenum alloys
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - . . . niobium alloys
 - . . . osmium alloys
 - . . . rhenium alloys
 - . . . tantalum alloys
 - . . . tungsten alloys
 - . . . Udimet alloys
 - . . . Waspaloy
 - . . . high strength alloys
 - . . . Astroloy (trademark)
 - . . . high strength steels
 - . . . maraging steels
 - . . . indium alloys
 - . . . iridium alloys
 - . . . iron alloys
 - . . . steels
 - . . . bainitic steel
 - . . . carbon steels
 - low carbon steels
 - . . . chromium steels
 - . . . Croloy
 - . . . high strength steels
 - maraging steels
 - . . . nickel steels
 - . . . stainless steels
 - . . . austenitic stainless steels
 - . . . ferritic stainless steels
 - . . . martensitic stainless steels
 - . Kovar (trademark)
 - . lead alloys
 - . light alloys
 - . . aluminum alloys
 - . . . aluminum-lithium alloys
 - . . . beryllium alloys
 - . . . magnesium alloys
 - . liquid alloys
 - . lithium alloys
 - . . aluminum-lithium alloys
 - . . manganese alloys
 - . . Manganin (trademark)
 - . mercury alloys
 - . . mercury amalgams
 - . monotectic alloys
 - . mulberry (alloy)
 - . nickel alloys
 - . . Astroloy (trademark)
 - . . Hastelloy (trademark)
 - . . Inconel (trademark)
 - . . kamacite
 - . . Monel (trademark)
 - . . Nichrome (trademark)
 - . . nitinol alloys
 - . . Rene 41
 - . . Rene 63
 - . . Rene 77
 - . . Rene 95
 - . . Udimet alloys
 - . . Waspaloy
 - . palladium alloys
 - . Permalloys (trademark)
 - . platinum alloys
 - . plutonium alloys
 - . potassium alloys
 - . quaternary alloys
 - . rare earth alloys
 - . . erbium alloys
 - . . gadolinium alloys
 - . . lanthanum alloys
 - . . mischmetal
 - . . neodymium alloys
 - . rhodium alloys
 - . ruthenium alloys
 - . selenium alloys
 - . shape memory alloys
 - . . nitinol alloys
 - . . silicon alloys
 - . . silver alloys
 - . . sodium alloys
 - . . solders
 - . . syntectic alloys
 - . . tellurium alloys
 - . . ternary alloys
 - . . Astroloy (trademark)
 - . . thallium alloys
 - . . thorium alloys
 - . . tin alloys
 - . . babbitt metal
 - . . titanium alloys
 - . . . nitinol alloys
 - . . uranium alloys
 - . . vanadium alloys
 - . wrought alloys
 - . yttrium alloys
 - . zinc alloys
 - . zirconium alloys
 - . . Zircaloy (trademark)
 - . . . Zircaloy 2 (trademark)
- RT alloying
- bimetal
- binary systems (materials)
- dispersion strengthening
- embedded atom method
- eutectic composites
- eutectics
- ferrous metals
- hardeners
- heat treatment
- intermetallics
- Kondo effect
- Laves phases
- liquid phases
- metallography

alluvium

- metalloids
- ∞ metallurgy
- metals
- mixtures
- oxide dispersion strengthening
- phase diagrams
- powder metallurgy
- precipitates
- rheocasting
- solid solutions
- stress relieving
- ternary systems

alluvium

DEF Soil, the constituents of which have been transported in suspension by flowing water and subsequently deposited by sedimentation.

GS soils

- . **alluvium**

RT clays

- deltas
- fans (landforms)
- floods
- gravels
- hydrology
- mud
- rivers
- sands
- sedimentary rocks
- sediments
- streams
- water flow

all-weather air navigation

GS navigation

- . air navigation
- . . **all-weather air navigation**

RT Doppler navigation

- inertial navigation
- navigation aids
- radar navigation
- radio navigation
- solar compasses
- Tacan

all-weather landing systems

GS landing aids

- . instrument landing systems
- . . **all-weather landing systems**

RT aircraft landing

- aircraft safety
- flight safety
- low visibility

∞ systems

allyl compounds

RT ∞ chemical compounds

- diallyl compounds

almucantar

USE **elevation angle**

Aloha system

DEF A multiple random access communications scheme in which there is a nonfixed allocation of channel capacity, so that the channel is available to any terminal whenever it has a packet ready for transmission.

GS networks

- . communication networks
- . . **Aloha system**
- telecommunication
- . multiple access
- . . **Aloha system**
- . packet transmission
- . . **Aloha system**
- transmission
- . signal transmission
- . . data transmission
- . . . multiple access
- **Aloha system**
- packet transmission
- **Aloha system**

RT channel capacity

- channel noise
- code division multiple access

- computer networks
- frequency division multiple access
- packets (communication)
- random access
- satellite transmission
- ∞ systems
- time division multiple access
- transmission efficiency
- VSAT (network)

Alouette 1 satellite

UF *S-27 satellite*

GS artificial satellites

- . Alouette satellites
- . . **Alouette 1 satellite**

Canadian spacecraft

- . Alouette satellites
- . . **Alouette 1 satellite**

RT ionospheric sounding

Alouette 2 satellite

GS artificial satellites

- . Alouette satellites
- . . **Alouette 2 satellite**

. ISIS satellites

- . . **Alouette 2 satellite**

Canadian spacecraft

- . Alouette satellites
- . . **Alouette 2 satellite**

RT ionospheric sounding

Alouette 3 helicopter

USE **SE-3160 helicopter**

Alouette B satellite

GS artificial satellites

- . Alouette satellites
- . . **Alouette B satellite**

Canadian spacecraft

- . Alouette satellites
- . . **Alouette B satellite**

RT ISIS-X

Alouette helicopters

GS Sud Aviation aircraft

- . **Alouette helicopters**
- . . SA-330 helicopter
- . . SE-3160 helicopter

V/STOL aircraft

- . rotary wing aircraft
- . . helicopters
- . . . **Alouette helicopters**
- SA-330 helicopter
- SE-3160 helicopter

RT ∞ aircraft

Alouette project

GS programs

- . projects
- . . **Alouette project**

space programs

- . Canadian space program
- . . . **Alouette project**

RT cosmic noise

- data acquisition
- ionospheric sounding
- ISIS-A

Alouette satellites

GS artificial satellites

- . **Alouette satellites**
- . . Alouette 1 satellite
- . . Alouette 2 satellite
- . . Alouette B satellite

Canadian spacecraft

- . **Alouette satellites**
- . . Alouette 1 satellite
- . . Alouette 2 satellite
- . . Alouette B satellite

RT ISIS satellites

alpha decay

DEF The radioactive transformation of a nuclide by alpha-particle emission.

GS decay

- . radioactive decay

- . . **alpha decay**
- nuclear reactions
- . radioactive decay
- . . **alpha decay**

RT fine structure

- selection rules (nuclear physics)

Alpha jet aircraft

GS attack aircraft

- . fighter aircraft
- . . **Alpha jet aircraft**

jet aircraft

- . **Alpha jet aircraft**
- training aircraft
- . **Alpha jet aircraft**

RT ∞ aircraft

- ∞ military aircraft

Alpha Magnetic Spectrometer

(added June 1998)

UF *AMS (spectrometer)*

GS measuring instruments

- . spectrometers
- . . **Alpha Magnetic Spectrometer**

RT antimatter

- Cerenkov counters
- cosmic rays
- dark matter
- International Space Station
- interstellar matter
- magnetic spectroscopy
- space station payloads
- spaceborne astronomy

alpha particles

SN (EMITTED BY NUCLEI)

DEF Positively charged particles emitted from the nuclei of certain atoms during radioactive disintegration. Used for alpha radiation.

UF *alpha radiation*

GS ionizing radiation

- . **alpha particles**
- particles
- . charged particles
- . . energetic particles
- . . . nuclei (nuclear physics)
- **alpha particles**
- corpuscular radiation
- energetic particles
- nuclei (nuclear physics)
- **alpha particles**
- elementary particles
- . . bosons
- . . . **alpha particles**
- . . . nuclear particles
- . . bosons
- . . . **alpha particles**

RT alphas

- alphatrons
- corpuscular radiation
- cosmic rays
- deuteron irradiation
- deuterons
- flux density
- helium
- helium ions
- ions
- nuclear radiation
- nucleons
- protons
- ∞ radiation
- radioactivity
- solar wind velocity
- tritons

alpha plasma devices

GS plasma accelerators

- . **alpha plasma devices**

RT ∞ devices

- Hall accelerators
- magnetohydrodynamics
- plasma physics

- plasmas (physics)
- alpha radiation*
USE **alpha particles**
- alphabets**
RT abbreviations
alphanumeric characters
coding
languages
symbols
- alphanumeric characters**
DEF Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols.
GS symbols
. **alphanumeric characters**
. . . digits
. . . binary digits
RT alphabets
instruction sets (computers)
light emitting diodes
 ∞ numbers
- alphanons**
GS measuring instruments
. pressure gages
. . . vacuum gages
. . . . ionization gages
. . . . **alphanons**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **alphanons**
RT alpha particles
- Alpine meteorology**
DEF Wind, precipitation, atmospheric physics, and other climatological phenomena peculiar to the Alps and/or other similar mountainous areas.
GS meteorology
. **Alpine meteorology**
RT aeronomy
clouds (meteorology)
nephanalysis
precipitation (meteorology)
storms (meteorology)
weather
wind (meteorology)
- Alps Mountains (Europe)**
GS landforms
. mountains
. . **Alps Mountains (Europe)**
RT Austria
Europe
Italy
Switzerland
West Germany
- ALS (launch system)*
USE **Advanced Launch System (STS)**
- ALSEP*
USE **Apollo Lunar Surface Experiments Package**
- Altair engine*
USE **X-248 engine**
- alteration*
USE **revisions**
- alternating current**
UF *AC (current)*
GS electric current
. **alternating current**
electricity
. **alternating current**
RT current converters (AC to DC)
direct current
induction motors
inverted converters (DC to AC)
- voltage converters (AC to AC)
- alternating current generators*
USE **AC generators**
- alternating direction implicit methods**
UF *ADI methods*
GS problem solving
. **alternating direction implicit methods**
RT differential equations
numerical analysis
partial differential equations
- alternations**
GS variations
. periodic variations
. . **alternations**
RT cycles
intervals
rhythm (biology)
- alternatives**
RT options
substitutes
variations
- alternators (generators)*
USE **AC generators**
- altimeters**
DEF Instruments for measuring height above a reference datum.
GS measuring instruments
. distance measuring equipment
. . **altimeters**
. . . laser altimeters
. . . radio altimeters
RT aircraft instruments
altimetry
altitude
approach indicators
astrolabes
barometers
flight instruments
hypsonometers
landing instruments
navigation aids
navigation instruments
position indicators
range finders
rate of climb indicators
satellite altimetry
- altimetry**
GS **altimetry**
. satellite altimetry
RT altimeters
altitude
elevation
geodesy
geoids
radar measurement
topography
- altitude**
DEF In astronomy, angular displacement above the horizon. Also height, especially radial distance as measured above a given datum, as average sea level.
GS **altitude**
. flight altitude
. high altitude
. low altitude
. midaltitude
. sea level
RT altimeters
altimetry
apexes
azimuth
distance
elevation
elevation angle
height
- position (location)
- altitude acclimatization**
DEF A physiological adaptation to reduced atmospheric and oxygen pressure.
GS adaptation
. acclimatization
. . **altitude acclimatization**
RT mountain inhabitants
- altitude control**
RT ∞ control
laser altimeters
lateral control
longitudinal control
spacing
- altitude sickness**
DEF In general, any sickness brought on by exposure to reduced oxygen tension and barometric pressure.
GS sicknesses
. **altitude sickness**
RT aeroembolism
aerosinusitis
aerospace medicine
decompression sickness
- altitude simulation**
UF *simulated altitude*
GS simulation
. environment simulation
. . **altitude simulation**
RT computerized simulation
flight simulation
high altitude environments
hypobaric atmospheres
landing simulation
space environment simulation
thermal simulation
training devices
vacuum chambers
- altitude tests**
GS **altitude tests**
. high altitude tests
RT engine tests
flight tests
full scale tests
high altitude environments
test vehicles
 ∞ tests
- altitude tolerance**
GS tolerances (physiology)
. **altitude tolerance**
RT high altitude breathing
high altitude environments
high altitude pressure
hypobaric atmospheres
low pressure
- ALU (computer components)*
USE **arithmetic and logic units**
- alum**
GS aluminum compounds
. **alum**
potassium compounds
. **alum**
sulfur compounds
. sulfates
. . **alum**
- alumina*
USE **aluminum oxides**
- aluminates**
GS aluminum compounds
. **aluminates**
RT aluminum oxides
 ∞ oxygen compounds

aluminides

spinel

aluminides

DEF Intermetallic compounds of aluminum and a transition metal.

GS aluminum compounds

. **aluminides**

. . iron aluminides
. . nickel aluminides
. . titanium aluminides

RT

aluminum alloys
aluminum coatings
heat resistant alloys
intermetallics
nickel alloys
protective coatings
titanium alloys

aluminizing

USE **aluminum coatings**

aluminum

GS chemical elements

. **aluminum**

. . aluminum isotopes
. . . aluminum 26
. . . aluminum 27
metals

. **aluminum**

. . aluminum isotopes
. . aluminum 26
. . . aluminum 27

RT

aluminum alloys
Boral
Borsic (tradename)
cryolite
dawsonite
powdered aluminum
reaction bonding
sialon
sintered aluminum powder

aluminum 26

GS chemical elements

. aluminum

. . aluminum isotopes
. . . **aluminum 26**

. nuclides
. . isotopes
. . . aluminum isotopes
. . . . **aluminum 26**

metals

. aluminum
. . aluminum isotopes
. . . **aluminum 26**

aluminum 27

GS chemical elements

. aluminum

. . aluminum isotopes
. . . **aluminum 27**

. nuclides

. . isotopes
. . . aluminum isotopes
. . . . **aluminum 27**

metals

. aluminum
. . aluminum isotopes
. . . **aluminum 27**

aluminum alloys

GS alloys

. light alloys

. . **aluminum alloys**

. . . aluminum-lithium alloys

RT

aluminides
aluminum
bearing alloys
friction stir welding
gallium alloys
indium alloys
iron aluminides
lamella (metallurgy)
lithium alloys
mischmetal
silicon alloys

vanadium alloys

aluminum antimonides

GS aluminum compounds

. **aluminum antimonides**

antimony compounds

. antimonides

. . **aluminum antimonides**

aluminum arsenides

DEF Binary compounds of aluminum with negative, trivalent arsenic.

GS aluminum compounds

. **aluminum arsenides**

. . aluminum gallium arsenides

. . indium aluminum arsenides

arsenic compounds

. arsenides

. . **aluminum arsenides**

. . . aluminum gallium arsenides

. . . indium aluminum arsenides

RT

semiconductors (materials)

aluminum borohydrides

GS aluminum compounds

. aluminum hydrides

. . **aluminum borohydrides**

boron compounds

. borohydrides

. . **aluminum borohydrides**

. boron hydrides

. . **aluminum borohydrides**

hydrogen compounds

. hydrides

. . borohydrides

. . . **aluminum borohydrides**

. . boron hydrides

. . . **aluminum borohydrides**

. . metal hydrides

. . . aluminum hydrides

. . . . **aluminum borohydrides**

aluminum boron composites

DEF Structural materials composed of aluminum alloys reinforced with boron fibers (filaments).

GS composite materials

. boron reinforced materials

. . **aluminum boron composites**

. metal matrix composites

. . **aluminum boron composites**

RT

boron fibers

fiber composites

aluminum carbides

GS aluminum compounds

. **aluminum carbides**

carbon compounds

. carbides

. . **aluminum carbides**

aluminum chlorides

GS aluminum compounds

. **aluminum chlorides**

halogen compounds

. chlorine compounds

. chlorides

. . **aluminum chlorides**

. halides

. . chlorides

. . . **aluminum chlorides**

. . metal halides

. . . **aluminum chlorides**

aluminum coatings

UF *aluminizing*

GS coatings

. metal coatings

. . **aluminum coatings**

RT

aluminides

aluminum compounds

GS **aluminum compounds**

. alum

. aluminates

. aluminides

. . iron aluminides
. . nickel aluminides
. . titanium aluminides
. aluminum antimonides
. aluminum arsenides

. . aluminum gallium arsenides
. . indium aluminum arsenides
. aluminum carbides
. aluminum chlorides
. aluminum fluorides

. aluminum hydrides
. . aluminum borohydrides
. aluminum nitrides
. aluminum oxides

. . alexandrite
. . sapphire
. aluminum perchlorates
. aluminum silicates

. . andesite
. . gehlenite
. . kaolinite
. . montmorillonite
. . pyrophyllite
. beryl

. . alexandrite
. cordierite
. cryolite
. feldspars
. lithium aluminum hydrides
. muscovite
. nepheline
. nephelite
. organic aluminum compounds
. spodumene
. tourmaline

RT ∞ chemical compounds

∞ Group 3A compounds

∞ metal compounds

metal fuels

metal propellants

aluminum fluorides

GS aluminum compounds

. **aluminum fluorides**

halogen compounds

. fluorine compounds

. . fluorides

. . . metal fluorides

. . . . **aluminum fluorides**

. halides

. . fluorides

. . . metal fluorides

. . . . **aluminum fluorides**

. . metal halides

. . . metal fluorides

. . . . **aluminum fluorides**

aluminum gallium arsenide lasers

(added November 1991)

GS electronic equipment

. solid state devices

. . semiconductor devices

. . . semiconductor lasers

. . . . **aluminum gallium arsenide lasers**

. . solid state lasers

. . . **aluminum gallium arsenide lasers**

stimulated emission devices

. lasers

. . semiconductor lasers

. . . **aluminum gallium arsenide lasers**

. . solid state lasers

. . . **aluminum gallium arsenide lasers**

RT gallium arsenide lasers

injection lasers

waveguide lasers

aluminum gallium arsenides

DEF Compounds exhibiting characteristics suitable for use in laser devices, light-emitting diodes, solar cells, etc. Used for AlGaAs.

UF *AlGaAs*

GS aluminum compounds

. aluminum arsenides

.. **aluminum gallium arsenides**
 arsenic compounds
 . arsenides
 .. aluminum arsenides
 ... **aluminum gallium arsenides**
 .. gallium arsenides
 ... **aluminum gallium arsenides**
 gallium compounds
 . gallium arsenides
 .. **aluminum gallium arsenides**
 RT MODFETS
 negative resistance devices

aluminum graphite composites
 DEF Structural materials composed of aluminum alloys reinforced with graphite.
 GS composite materials
 . metal matrix composites
 .. **aluminum graphite composites**
 RT fiber composites
 graphite

aluminum hydrides
 GS aluminum compounds
 . **aluminum hydrides**
 .. aluminum borohydrides
 hydrogen compounds
 . hydrides
 .. metal hydrides
 ... **aluminum hydrides**
 aluminum borohydrides

aluminum isotopes
 GS chemical elements
 . aluminum
 .. **aluminum isotopes**
 ... aluminum 26
 ... aluminum 27
 . nuclides
 . isotopes
 ... **aluminum isotopes**
 aluminum 26
 aluminum 27
 metals
 . aluminum
 .. **aluminum isotopes**
 ... aluminum 26
 ... aluminum 27

aluminum nitrides
 GS aluminum compounds
 . **aluminum nitrides**
 nitrogen compounds
 . nitrides
 .. metal nitrides
 ... **aluminum nitrides**

aluminum oxides
 UF *alumina*
corundum
 GS aluminum compounds
 . **aluminum oxides**
 .. alexandrite
 .. sapphire
 chalcogenides
 . oxides
 .. metal oxides
 ... **aluminum oxides**
 alexandrite
 sapphire
 RT abrasives
 aluminates
 bauxite
 energy absorption films
 gehlenite
 kaolinite
 nanocomposites
 pyrophyllite
 ruby
 thermites

aluminum perchlorates
 GS aluminum compounds
 . **aluminum perchlorates**
 halogen compounds
 . chlorine compounds

.. perchlorates
 ... **aluminum perchlorates**

aluminum silicates
 GS aluminum compounds
 . **aluminum silicates**
 .. andesite
 .. gehlenite
 .. kaolinite
 .. montmorillonite
 .. pyrophyllite
 silicon compounds
 . silicates
 .. **aluminum silicates**
 ... andesite
 ... gehlenite
 ... kaolinite
 ... montmorillonite
 ... pyrophyllite
 RT minerals
 mullites

aluminum-lithium alloys
(added August 1991)
 DEF Light alloys consisting primarily of aluminum and lithium.
 GS alloys
 . light alloys
 .. aluminum alloys
 ... **aluminum-lithium alloys**
 . lithium alloys
 .. **aluminum-lithium alloys**
 RT aircraft construction materials
 airframe materials
 alloying
 copper alloys
 high strength alloys
 magnesium alloys

alveolar air
 DEF The respiratory air in the alveoli (air sacs) deep within the lungs.
 GS gases
 . gas mixtures
 . air
 ... **alveolar air**
 mixtures
 . solutions
 .. gas mixtures
 ... air
 **alveolar air**
 RT exhalation
 expired air
 lungs

alveoli
 DEF The terminal air sacs deep within the lungs.
 GS anatomy
 . respiratory system
 .. lungs
 ... **alveoli**
 RT lung morphology
 pulmonary circulation
 pulmonary functions
 respiration

AM (modulation)
 USE **amplitude modulation**

AM-1 (EOS) spacecraft
(added June 1999)
 USE **Terra spacecraft**

amalgams
 USE **mercury amalgams**

Amalthea
 DEF Innermost satellite of Jupiter.
 GS celestial bodies
 . natural satellites
 .. Jupiter satellites
 ... **Amalthea**
 RT Jupiter (planet)

solar system

Amazon region (South America)
 GS regions
 . tropical regions
 .. **Amazon region (South America)**
 RT Brazil
 forests
 river basins
 rivers

Amberlite (trademark)
 RT asbestos
 thermal insulation

ambience
 RT acoustic measurement
 environmental monitoring
 environments
 noise (sound)
 pollution monitoring

ambient temperature
 DEF Temperature of surrounding medium.
 Used for environmental temperature.
 UF *environmental temperature*
 GS temperature
 . **ambient temperature**
 RT atmospheric temperature
 operating temperature
 room temperature
 satellite temperature

ambiguity
 RT intelligibility
 positioning

ambipolar diffusion
 GS diffusion
 . **ambipolar diffusion**
 RT electron diffusion
 electron mobility
 ionic diffusion
 ionic mobility
 plasma diffusion

ambit
 USE **field theory (physics)**

ambulances
 RT medical services
 ∞ military vehicles
 safety devices

American Indians
 RT anthropology
 culture (social sciences)
 ethnic factors
 minorities
 races (anthropology)

americium
 GS chemical elements
 . actinide series
 .. transuranium elements
 ... **americium**
 americium isotopes
 americium 241
 . nuclides
 . isotopes
 .. radioactive isotopes
 ... transuranium elements
 **americium**
 americium isotopes
 americium 241
 metals
 . actinide series
 .. transuranium elements
 ... **americium**
 americium isotopes
 americium 241

americium 241
 GS chemical elements
 . actinide series
 .. transuranium elements

americium isotopes

- . . . americium
- americium isotopes
- **americium 241**
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- americium
- americium isotopes
- **americium 241**
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- americium isotopes
- **americium 241**

americium isotopes

GS chemical elements

- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- americium
- **americium isotopes**
- americium 241
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241

amidase

GS biopolymers

- . proteins
- . . enzymes
- . . . **amidase**
- organic compounds
- . proteins
- . . enzymes
- . . . **amidase**

RT amino acids

amides

GS nitrogen compounds

- . **amides**
- . . acetanilide
- . . acetazolamide
- . . carbamides
- . . cyanamides
- . . formhydroxamic acid
- . . nicotinamide
- . . oxamic acids
- . . polyimides
- . . . bismaleimide
- Kapton (trademark)
- . . succinimides
- . . ureas
- . . . difluorourea
- . . . thioureas
- . . . thiuronium

RT imides

amines

GS **amines**

- . aminophylline
- . amphetamines
- . . methamphetamine
- . . aniline
- . . catecholamine
- . . epinephrine
- . . norepinephrine
- . . cysteamine
- . . diamines
- . . ethylenediamine
- . . guanidines
- . . . guanethidine
- triaminoguanidinium azide
- . . difluorourea
- . . dimenhydrinate

- . dimethylhydrazines
- . diphenyl hydantoin
- . . ergotamine
- . . fluoroamines
- . . . nitrofluoroamines
- . . . trifluoroamine oxide
- . . gallamine triethiodide
- . . hexamethylenetetramine
- . . histidine
- . . hydroxylamine sulfate
- . . hyoscine
- . . mecarnylamine
- . . melamine
- . . methylene diamine
- . . monoethanolamine (MEA)
- . . nitroamines
- . . nitrosamine
- . . promethazine
- . . tetrafluorohydrazine
- . . tetryl
- . . thiuronium
- . . trinitramine
- . . tryptamines
- . . . serotonin

RT ∞ aliphatic compounds

- histamines
- hydrazines
- hydrocarbon fuels
- imines
- Lewis base
- nitrosyls
- phenolic epoxy resins
- rhodamine

amino acids

GS acids

- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- organic compounds
- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine

RT adenosine triphosphate

- adrenocorticotropin (ACTH)
- amidase
- aspartates
- cyclic AMP
- cysteamine
- lipids
- peptides
- polypeptides
- protoproteins

- synthetic food
- uridylic acid
- zwitterions

amino radical

GS hydrogen compounds

- . hydrides
- . . nitrogen hydrides
- . . . **amino radical**
- nitrogen compounds
- . nitrogen hydrides
- . . **amino radical**
- radicals
- . **amino radical**

RT ammonia

- anions
- free radicals
- molecular ions
- reaction kinetics

aminophylline

GS amines

- . **aminophylline**
- diuretics
- . **aminophylline**
- drugs
- . **aminophylline**

RT stimulants

ammeters

DEF An instrument for measuring the magnitude of an electric current.

GS measuring instruments

- . **ammeters**
- . . micromilliammeters
- . . . thermoelement ammeters

RT coulometers

- electric current
- electrical measurement
- galvanometers
- voltmeters

ammines

RT ammonia

- ∞ chemical compounds
- copper
- intermetallics
- ∞ metal compounds

ammonia

GS gases

- . **ammonia**
- . . liquid ammonia
- inorganic compounds
- . **ammonia**
- . . liquid ammonia
- nitrogen compounds
- . **ammonia**
- . . liquid ammonia

RT absorption cooling

- amino radical
- ammines
- ammonium compounds
- ammonolysis
- atmospheric energy sources
- cultivation
- fertilizers
- Kjeldahl method
- nitrogen hydrides
- refrigerants

ammonium bromides

GS ammonium compounds

- . **ammonium bromides**
- halogen compounds
- . bromine compounds
- . . bromides
- . . . **ammonium bromides**
- . . halides
- . . bromides
- . . . **ammonium bromides**

ammonium chlorides

GS ammonium compounds

- . **ammonium chlorides**
- halogen compounds

. chlorine compounds
 . . chlorides
 . . . **ammonium chlorides**
 . halides
 . . chlorides
 . . . **ammonium chlorides**

ammonium compounds
 GS **ammonium compounds**
 . ammonium bromides
 . ammonium chlorides
 . ammonium nitrates
 . ammonium perchlorates
 . ammonium phosphates
 . ammonium picrates
 . ammonium sulfates
 . hydroxylammonium perchlorates
 RT ammonia
 ∞ chemical compounds
 hexamethonium

ammonium nitrates
 GS ammonium compounds
 . **ammonium nitrates**
 nitrogen compounds
 . nitrates
 . . inorganic nitrates
 . . . **ammonium nitrates**
 RT cultivation
 fertilizers

ammonium perchlorates
 GS ammonium compounds
 . **ammonium perchlorates**
 halogen compounds
 . chlorine compounds
 . . perchlorates
 . . . **ammonium perchlorates**
 RT solid rocket propellants

ammonium phosphates
 GS ammonium compounds
 . **ammonium phosphates**
 phosphorus compounds
 . phosphates
 . . **ammonium phosphates**

ammonium picrates
 GS ammonium compounds
 . **ammonium picrates**
 nitrogen compounds
 . nitro compounds
 . . picrates
 . . . **ammonium picrates**
 RT explosives

ammonium sulfates
 GS ammonium compounds
 . **ammonium sulfates**
 sulfur compounds
 . sulfates
 . . **ammonium sulfates**

ammonolysis
 GS chemical reactions
 . **ammonolysis**
 decomposition
 . **ammonolysis**
 RT ammonia
 cracking (chemical engineering)
 hydrolysis

ammunition
 GS **ammunition**
 . incendiary ammunition
 RT blanks
 bombs (ordnance)
 case bonded propellants
 explosive devices
 explosives
 fuses (ordnance)
 grenades
 guns (ordnance)
 igniters
 magazines (supply chambers)
 mines (ordnance)

missiles
 ordnance
 projectiles
 propellants
 pyrotechnics
 ∞ rockets
 shaped charges
 ∞ shot
 torpedoes
 ∞ tracers
 warheads
 weapons

amobarbital
 GS acids
 . **amobarbital**
 RT central nervous system depressants

amoeba
 GS animals
 . protozoa
 . . **amoeba**
 . . . pelomyxa
 microorganisms
 . protozoa
 . . **amoeba**
 . . . pelomyxa
 RT parasitic diseases

AMOOS
 USE **Aeromaneuvering Orbit to Orbit Shuttle**

Amor asteroid
 DEF One group of Earth-approaching asteroids with orbits between the planets Mars and Jupiter. Used for Minor Planet 1221.
 UF *Minor Planet 1221*
 GS celestial bodies
 . asteroids
 . . **Amor asteroid**
 RT asteroid belts
 astronomy
 Jupiter (planet)
 Mars (planet)
 planetary orbits
 solar system

amorphous materials
 GS **amorphous materials**
 . amorphous silicon
 RT asphalt
 carbon nitrides
 crystallinity
 glass
 graphoepitaxy
 grout
 ∞ materials
 spin glass

amorphous semiconductors
 GS semiconductors (materials)
 . **amorphous semiconductors**
 . . amorphous silicon
 RT semiconducting films

amorphous silicon
 GS amorphous materials
 . **amorphous silicon**
 chemical elements
 . metalloids
 . . silicon
 . . . **amorphous silicon**
 semiconductors (materials)
 . amorphous semiconductors
 . . **amorphous silicon**
 RT diamond films
 photovoltaic cells
 semiconducting films
 silicon films
 silicon junctions
 solar cells
 thin films

amount
 UF *quantity*

RT addition
 sums
 value

amperage
 USE **electric current**

amphetamines
 GS amines
 . **amphetamines**
 . . methamphetamine
 RT central nervous system stimulants

amphibia
 GS animals
 . vertebrates
 . . **amphibia**
 . . . frogs
 RT poikilothermia

amphibious aircraft
 GS amphibious vehicles
 . **amphibious aircraft**
 RT ∞ aircraft
 seaplanes
 water takeoff and landing aircraft

amphibious vehicles
 GS **amphibious vehicles**
 . amphibious aircraft
 RT boats
 ∞ military vehicles
 seaplanes
 ships
 surface vehicles
 ∞ vehicles
 water vehicles

amphiboles
 DEF A group of dark, rock-forming, ferromagnesian silicate minerals closely related in crystal form and composition.
 GS minerals
 . **amphiboles**
 RT calcium silicates
 silicates

Amphitrite asteroid
 GS celestial bodies
 . asteroids
 . . **Amphitrite asteroid**
 RT asteroid belts
 Galileo project

amplidynes
 GS electric generators
 . rotating generators
 . . **amplidynes**
 RT amplifiers
 electric motors
 power amplifiers
 servomotors

amplification
 UF *amplification factor*
gain (amplification)
intensification
 GS **amplification**
 . antenna gain
 . high gain
 . power gain
 . sound amplification
 . wave amplification
 RT amplifiers
 amplitudes
 dynamic characteristics
 dynamic range
 dynamic response
 fluid amplifiers
 fluidics
 magnification
 positive feedback
 sensitivity
 stability
 transfer functions

amplifier design

transient response

amplification factor

USE **amplification**

amplifier design

- RT amplifiers
- computer aided design
- ∞ design
- logic design
- operational amplifiers
- product development
- traveling wave amplifiers

amplifiers

DEF Devices which enable an input signal to control a source of power whose output is an enlarged reproduction of the essential characteristics of the signal. Used for electronic amplifiers.

- UF *electronic amplifiers*
- GS **amplifiers**
 - . beam plasma amplifiers
 - . broadband amplifiers
 - . carcinotrons
 - . current amplifiers
 - . . . photomultiplier tubes
 - . . . frequency modulation photomultipliers
 - . differential amplifiers
 - . distributed amplifiers
 - . feedback amplifiers
 - . fluid amplifiers
 - . . . jet amplifiers
 - . intermediate frequency amplifiers
 - . light amplifiers
 - . limiter amplifiers
 - . linear amplifiers
 - . magnetic amplifiers
 - . magnetostatic amplifiers
 - . microwave amplifiers
 - . . . crossed field amplifiers
 - . . . cyclotron resonance devices
 - . . . planotrons
 - . cascode devices
 - . operational amplifiers
 - . parametric amplifiers
 - . postamplifiers
 - . power amplifiers
 - . preamplifiers
 - . push-pull amplifiers
 - . quantum amplifiers
 - . servoamplifiers
 - . transistor amplifiers
 - . traveling wave amplifiers
 - . voltage amplifiers
- RT amplidyne
- amplification
- amplifier design
- ∞ boosters
- capacitors
- circuits
- dynamic range
- ∞ electric cells
- electric choppers
- image intensifiers
- intensifiers
- klystrons
- laser cavities
- lasers
- linear circuits
- masers
- modulators
- multivibrators
- oscillators
- receivers
- repeaters
- solid state devices
- stimulated emission devices
- transformers
- traveling wave masers

amplitrans (trademark)

USE **planotrons**

amplitude distribution analysis

- UF *amplitude probability analysis*

- GS statistical analysis
 - . **amplitude distribution analysis**
- RT photopeak
- pulse amplitude
- signal to noise ratios
- signatures

amplitude modulation

DEF In general, modulation in which the amplitude of a wave is the characteristic subject to variation.

- UF *AM (modulation)*
- GS coding
 - . signal encoding
 - . . **amplitude modulation**
 - . . . quadrature amplitude modulation modulation
 - . **amplitude modulation**
 - . . quadrature amplitude modulation
- RT Bragg cells
- demodulation
- demodulators
- frequency modulation
- light modulation
- modulators
- P. A. C. M. telemetry
- phase modulation
- pulse modulation
- single sideband transmission

amplitude probability analysis

USE **amplitude distribution analysis**

amplitudes

DEF The maximum value of the displacement of a wave or other periodic phenomenon from a reference position. Also, angular distance north or south of the prime vertical; the arc of the horizon, or the angle at the zenith between the prime vertical and a vertical circle, measured north or south from the prime vertical to the vertical circle.

- GS **amplitudes**
 - . pulse amplitude
 - . scattering amplitude
- RT amplification
- cycles
- dimensions
- displacement
- frequencies
- ∞ intensity
- level (quantity)
- magnitude
- oscillations
- phase deviation
- picosecond pulses
- pulses
- standing wave ratios
- vibration

ampoules

DEF Glass containers designed to be filled and sealed by fusion of the glass neck.

- RT ∞ containers
- laboratory equipment
- vacuum systems

AMPS (satellite payload)

- UF *Atmospheric and Magnetospheric Payload*
- plasmas-in-space payload*
- GS measuring instruments
 - . satellite-borne instruments
 - . . **AMPS (satellite payload)**
 - payloads
 - . Spacelab payloads
 - . . **AMPS (satellite payload)**
- RT instrument packages

AMPTE (satellites)

- SN (ACTIVE MAGNETOSPHERIC PARTICLE TRACER EXPLORERS)
- UF *Active Magneto Particle Tracer Explorers*
- GS artificial satellites
 - . scientific satellites
 - . . **AMPTE (satellites)**

- RT Earth magnetosphere
- European space programs
- satellite-borne instruments
- solar wind
- space plasmas
- spaceborne experiments

AMS (spectrometer)

(added June 1998)

USE **Alpha Magnetic Spectrometer**

AMSU (radiometer)

(added July 1997)

USE **Advanced Microwave Sounding Unit**

AMTV

USE **automated mixed traffic vehicles**

AN-2 aircraft

- GS Antonov aircraft
 - . **AN-2 aircraft**
 - biplanes
 - . **AN-2 aircraft**
 - transport aircraft
 - . **AN-2 aircraft**
- RT agricultural aircraft
- ∞ aircraft

AN-22 aircraft

- UF *Antheus aircraft*
- Antonov AN-22 aircraft*
- Cock aircraft*
- GS Antonov aircraft
 - . **AN-22 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **AN-22 aircraft**
 - monoplanes
 - . **AN-22 aircraft**
 - transport aircraft
 - . **AN-22 aircraft**
- RT ∞ aircraft
- passenger aircraft

AN-24 aircraft

- UF *Antonov AN-24 aircraft*
- Coke aircraft*
- GS Antonov aircraft
 - . **AN-24 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **AN-24 aircraft**
 - monoplanes
 - . **AN-24 aircraft**
 - transport aircraft
 - . **AN-24 aircraft**
- RT ∞ aircraft
- passenger aircraft

anabaena

- GS plants (botany)
 - . algae
 - . . blue green algae
 - . . . **anabaena**
 - . thermophilic plants
 - . . blue green algae
 - . . . **anabaena**

anaerobes

- RT aerobes
- bacteria
- microorganisms
- sewage treatment

analgesia

- RT anesthesia
- drugs
- pain

analog circuits

- GS circuits
 - . **analog circuits**
- RT data converters
- operational amplifiers

- rheoelectrical simulation
- analog computers**
 - DEF Computers that work on the principle of measuring, as distinguished from counting, in which the input data is analogous to a measurement continuum such as linear lengths, voltages, or resistances which can be manipulated by the computer.
 - GS data processing equipment
 - . computers
 - . . **analog computers**
 - . . . EAI 680 computer
 - . . . Honeywell 600/6000 computer
 - . . . SIGMA 5 computer
 - . . . Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - RT differential amplifiers
 - differential analyzers
 - digital computers
 - discriminators
 - functional integration
 - hybrid computers
 - missile control
 - operational amplifiers
 - resolvers
 - signal analyzers
 - spectral resolution
- analog data**
 - RT binary data
 - ∞ data
 - data converters
 - data processing
 - digital data
 - ∞ measurement
 - video compression
 - video data
- analog simulation**
 - GS models
 - . mathematical models
 - . . **analog simulation**
 - simulation
 - . computerized simulation
 - . . **analog simulation**
 - RT computer systems simulation
 - digital simulation
 - flight simulation
 - rheoelectrical simulation
 - systems simulation
- analog to digital converters**
 - DEF Devices for converting non-digital information into digits. Used for digitizers.
 - UF *digitizers*
 - GS data converters
 - . **analog to digital converters**
 - RT coders
 - coding
 - ∞ converters
 - data acquisition
 - digital computers
 - digital electronics
 - digital systems
 - digital to analog converters
 - Illiac 3 computer
 - Illiac 4 computer
 - peripheral equipment (computers)
 - plotting
- analogies**
 - UF *similarities*
 - GS **analogies**
 - . hydraulic analogies
 - RT comparison
 - homology
 - simulation
- analogous**
 - RT models
- simulators
 - . . . Fredholm equations
 - . . . J integral
 - . . . singular integral equations
 - . . . Volterra equations
 - . . . Wiener Hopf equations
 - . . . integral transformations
 - . . . Fourier transformation
 - fast Fourier transformations
 - . . . Fourier-Bessel transformations
 - . . . Hilbert transformation
 - . . . Laplace transformation
 - . . . half planes
 - . . . half spaces
 - . . . Hill determinant
 - . . . numerical analysis
 - . . . approximation
 - . . . Born approximation
 - . . . Born-Oppenheimer approximation
 - . . . Chebyshev approximation
 - . . . Eddington approximation
 - . . . essentially non-oscillatory schemes
 - . . . finite difference theory
 - finite difference time domain method
 - . . . finite element method
 - . . . Hartree approximation
 - . . . least squares method
 - . . . mean square values
 - . . . Milne method
 - . . . multigrid methods
 - . . . Newton methods
 - . . . Newton-Raphson method
 - . . . boundary element method
 - . . . discretization (mathematics)
 - . . . numerical differentiation
 - . . . Oseen approximation
 - . . . Pade approximation
 - . . . particle in cell technique
 - . . . Pohlhausen method
 - . . . predictor-corrector methods
 - . . . Rayleigh-Ritz method
 - . . . relaxation method (mathematics)
 - . . . Reynolds averaging
 - . . . Ritz averaging method
 - . . . Schwartz method
 - . . . Sommerfeld approximation
 - . . . TVD schemes
 - . . . upwind schemes (mathematics)
 - . . . vortex in cell technique
 - Trefftz method
 - . . . boundary integral method
 - . . . computational astrophysics
 - . . . computational chemistry
 - . . . computational electromagnetics
 - . . . computational fluid dynamics
 - . . . difference equations
 - . . . error analysis
 - . . . finite volume method
 - . . . Godunov method
 - . . . flux difference splitting
 - . . . flux vector splitting
 - . . . Glimm method
 - . . . Graeff calculus
 - . . . interpolation
 - . . . iteration
 - conjugate gradient method
 - iterative solution
 - . . . Newton methods
 - Newton-Raphson method
 - predictor-corrector methods
 - . . . Monte Carlo method
 - . . . nomographs
 - . . . numerical integration
 - . . . Runge-Kutta method
 - . . . direct numerical simulation
 - . . . space-time CE/SE method
 - . . . truncation errors
 - . . . Pfaff equation
 - . . . phase-space integral
 - . . . real variables
 - . . . Abel function
 - . . . asymptotes
 - . . . Bessel functions
 - . . . Hankel functions
 - . . . Bethe-Salpeter equation
 - . . . calculus of variations
- analysis*
 - USE **analyzing**
- analysis (mathematics)**
 - DEF That part of the field of mathematics which arises from the calculus and which deals primarily with functions.
 - GS **analysis (mathematics)**
 - . aperiodic functions
 - . calculus
 - . . continuity (mathematics)
 - . . differential calculus
 - . . Fourier-Bessel transformations
 - . . Graeff calculus
 - . . integral calculus
 - . . limits (mathematics)
 - . . series (mathematics)
 - . . . asymptotic series
 - . . . Campbell-Hausdorff series
 - . . . cosine series
 - . . . Fourier series
 - . . . Pade approximation
 - . . . power series
 - Taylor series
 - Maclaurin series
 - . . . progressions
 - . . . Prony series
 - . . . sine series
 - . . . vector analysis
 - . . . collinearity
 - . . . coplanarity
 - . . . curl (vectors)
 - vorticity
 - . . . combinatorial analysis
 - . . . binomial coefficients
 - . . . combinations (mathematics)
 - . . . factorials
 - . . . partitions (mathematics)
 - . . . permutations
 - . . . complex variables
 - . . . Airy function
 - . . . analytic functions
 - . . . entire functions
 - . . . Bessel functions
 - . . . Hankel functions
 - . . . Cauchy integral formula
 - . . . conformal mapping
 - . . . conjugates
 - . . . conjugate points
 - . . . exponential functions
 - logarithms
 - . . . gamma function
 - . . . harmonic functions
 - . . . hyperbolic functions
 - . . . hypergeometric functions
 - . . . Laguerre functions
 - . . . Legendre functions
 - . . . Liouville theorem
 - . . . Mathieu function
 - . . . meromorphic functions
 - . . . elliptic functions
 - rational functions
 - . . . nonholonomic equations
 - . . . orthogonal functions
 - Walsh function
 - . . . Schwarz-Christoffel transformation
 - . . . singularity (mathematics)
 - naked singularities
 - . . . spherical harmonics
 - . . . dependent variables
 - . . . Fourier analysis
 - Fourier series
 - function space
 - Banach space
 - Hilbert space
 - Sobolev space
 - . . . functional analysis
 - Banach space
 - Hilbert space
 - Sobolev space
 - . . . convolution integrals
 - . . . harmonic analysis
 - tesseral harmonics
 - zonal harmonics
 - . . . integral equations

- .. composite functions
- .. delta function
- .. differential equations
 - ... Blasius equation
 - ... Chandrasekhar equation
 - ... cosine series
 - ... Duffing differential equation
 - ... Falkner-Skan equation
 - ... hyperbolic differential equations
 - ... Lamé wave equations
 - ... partial differential equations
 - ... biharmonic equations
 - ... Burger equation
 - ... Cauchy-Riemann equations
 - ... elliptic differential equations
 - ... Monge-Ampère equation
 - ... Euler-Cauchy equations
 - ... Fokker-Planck equation
 - ... Gauss equation
 - ... Helmholtz vorticity equation
 - ... Liouville equations
 - ... parabolic differential equations
 - ... Poisson equation
 - ... vlasov equations
 - ... Riccati equation
 - ... vorticity equations
 - ... Helmholtz vorticity equation
 - ... Einstein equations
 - ... existence theorems
 - ... extremum values
 - ... limits (mathematics)
 - ... maxima
 - ... minima
 - ... Cramer-Rao bounds
 - ... Fourier-Bessel transformations
 - ... Green's functions
 - ... hyperbolic functions
 - ... hyperplanes
 - ... Jacobi integral
 - ... Jacobi matrix method
 - ... kernel functions
 - ... Liapunov functions
 - ... linear equations
 - ... linear evolution equations
 - ... Riccati equation
 - ... Lipschitz condition
 - ... measure and integration
 - ... binary integration
 - ... Borel sets
 - ... functional integration
 - ... integral calculus
 - ... J integral
 - ... Lebesgue theorem
 - ... numerical integration
 - ... Runge-Kutta method
 - ... Stieltjes integral
 - ... weighting functions
 - ... Neumann problem
 - ... nonlinear equations
 - ... cubic equations
 - ... Duffing differential equation
 - ... Monge-Ampère equation
 - ... nonlinear evolution equations
 - ... quadratic equations
 - ... quartic equations
 - ... numerical differentiation
 - ... periodic functions
 - ... trigonometric functions
 - ... cosine series
 - ... sine series
 - ... tangents
 - ... series (mathematics)
 - ... asymptotic series
 - ... Campbell-Hausdorff series
 - ... cosine series
 - ... Fourier series
 - ... Pade approximation
 - ... power series
 - ... Taylor series
 - ... MacLaurin series
 - ... progressions
 - ... Prony series
 - ... sine series
 - ... Sturm-Liouville theory
 - ... vector analysis
 - ... collinearity
 - ... coplanarity
 - ... curl (vectors)
 - ... vorticity
 - ... Weierstrass functions
 - ... Whittaker functions
 - ... frequency domain analysis
 - ... time domain analysis
 - ... finite difference time domain method
 - RT algebra
 - ∞ analyzing
 - ∞ applications of mathematics
 - discontinuity
 - equilibrium equations
 - geometry
 - ∞ mathematics
 - monotone functions
 - ∞ space
 - trees (mathematics)
 - vector spaces
 - Venn diagrams
 - analysis of variance**
 - DEF A systematic statistical procedure for determining the sources and the magnitudes of the errors present in a measurement process, and for assessing the significance of differences between materials, processes, or test methods under study.
 - GS statistical analysis
 - ... variance (statistics)
 - ... **analysis of variance**
 - RT ∞ variance
 - analytic functions**
 - UF *holomorphism*
 - GS analysis (mathematics)
 - ... complex variables
 - ... **analytic functions**
 - ... entire functions
 - ... functions (mathematics)
 - ... **analytic functions**
 - ... entire functions
 - RT Cauchy-Riemann equations
 - isoperimetric problem
 - nonholonomic equations
 - power series
 - analytic geometry**
 - GS geometry
 - ... Euclidean geometry
 - ... **analytic geometry**
 - ... catenarries
 - ... circumferences
 - ... conics
 - ... ellipses
 - ... hyperbolas
 - ... parabolas
 - ... cycloids
 - ... epicycloids
 - ... loci
 - ... Mercator projection
 - ... quadrants
 - ... S curves
 - ... Gompertz curves
 - ... spheroids
 - ... oblate spheroids
 - ... prolate spheroids
 - ... tangents
 - ... toruses
 - ... trigonometry
 - RT annuli
 - asymptotes
 - calculus
 - coordinates
 - curves (geometry)
 - ∞ cylinders
 - descriptive geometry
 - differential geometry
 - polytopes
 - projective geometry
 - analytical chemistry**
 - RT chemical analysis
 - ∞ chemistry
 - inorganic chemistry
 - qualitative analysis
 - quantitative analysis
 - volumetric analysis
 - analyzers**
 - SN (EXCLUDES DEVICES FOR PERFORMING MATHEMATICAL ANALYSIS)
 - GS measuring instruments
 - ... **analyzers**
 - ... engine analyzers
 - ... signal analyzers
 - RT controllers
 - ∞ detectors
 - monitors
 - selectors
 - ∞ test equipment
 - ∞ **analyzing**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *analysis*
 - instrumental analysis*
 - RT activation analysis
 - algebra
 - analysis (mathematics)
 - chemical analysis
 - combinatorial analysis
 - cost analysis
 - creep analysis
 - design analysis
 - diagnosis
 - differential geometry
 - duality principle
 - error analysis
 - evaluation
 - examination
 - failure analysis
 - figure of merit
 - forecasting
 - management analysis
 - multivariate statistical analysis
 - network analysis
 - numerical analysis
 - photointerpretation
 - postflight analysis
 - prediction analysis techniques
 - preflight analysis
 - reliability analysis
 - sensitivity analysis
 - signal analysis
 - signature analysis
 - spectrum analysis
 - statistical analysis
 - stress analysis
 - structural analysis
 - systems analysis
 - terrain analysis
 - thermal analysis
 - training analysis
 - trajectory analysis
 - trend analysis
 - weight analysis
 - x ray analysis
- anaphylaxis**
 - GS sensitivity
 - ... **anaphylaxis**
 - RT allergic diseases
 - antigens
 - immunology
 - sensitizing
- anastigmatism**
 - RT optometry
 - vision
- anatase**
 - UF *octahedrite*
 - GS chalcogenides
 - ... oxides
 - ... metal oxides
 - ... titanium oxides
 - ... **anatase**
 - minerals
 - ... **anatase**
 - titanium compounds
 - ... titanium oxides

- RT . . anatase
pigments
rutile
- anatomy**
SN (LIMITED TO ANIMAL ANATOMY)
GS **anatomy**
. abdomen
. chest
. circulatory system
. cardiovascular system
. . . blood vessels
. . . . arteries
. aorta
. capillaries (anatomy)
. glomerulus
. veins
. . . heart
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . myocardium
. . digestive system
. . esophagus
. . gastrointestinal system
. . . appendix (anatomy)
. . . intestines
. . . . rectum
. . . stomach
. . mouth
. . . lips (anatomy)
. . pancreas
. . salivary glands
. . teeth
. . tongue
. . face (anatomy)
. . chin
. . forehead
. . mouth
. . . lips (anatomy)
. . nose (anatomy)
. . genitourinary system
. . bladder
. . kidneys
. . . glomerulus
. . reproductive systems
. . . sex glands
. . . . gonads
. ovaries
. testes
. . . prostate gland
. . . uterus
. . glands (anatomy)
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . . ovaries
. . . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
. . mammary glands
. . salivary glands
. . sebaceous glands
. . sex glands
. . . gonads
. . . . ovaries
. . . . testes
. . . prostate gland
. . head (anatomy)
. . skull
. . . cranium
. . . . intracranial cavity
. . . mastoids
. . human body
. . limbs (anatomy)
. . arm (anatomy)
. . . elbow (anatomy)
. . . forearm
. . hand (anatomy)
. . . fingers
. . leg (anatomy)
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
. . liver
. . lumbar region
. . musculoskeletal system
. . . bones
. . . femur
. . . pelvis
. . . scapula
. . . skull
. . . . cranium
. intracranial cavity
. . . . mastoids
. . . spine
. . . . vertebrae
. . . sternum
. . . tibia
. . . ulna
. . joints (anatomy)
. . elbow (anatomy)
. . knee (anatomy)
. . wrist
. . muscles
. . . constrictors
. . diaphragm (anatomy)
. . flexors
. . . myocardium
. . tendons
. . cartilage
. . neck (anatomy)
. . nervous system
. . afferent nervous systems
. . . autonomic nervous system
. . . sympathetic nervous system
. . central nervous system
. . brain
. . . brain stem
. . . cerebellum
. . . cerebral ventricles
. . . cerebrum
. . . . cerebral cortex
. occipital lobes
. . . diencephalon
. . . . hypothalamus
. . . . pineal gland
. . . . thalamus
. . . hippocampus
. . . spinal cord
. . efferent nervous systems
. . nerves
. . . ganglia
. . . oculomotor nerves
. . peripheral nervous system
. . peritoneum
. . pleurae
. . respiratory system
. . bronchi
. . diaphragm (anatomy)
. . larynx
. . . glottis
. . . vocal cords
. . lungs
. . . alveoli
. . nose (anatomy)
. . paranasal sinuses
. . pharynx
. . trachea
. . sciatic region
. . sense organs
. . chemoreceptors
. . ear
. . . eardrums
. . . eustachian tubes
. . . labyrinth
. . . . cochlea
. Corti organ
. otolith organs
. semicircular canals
. . . vestibules
. . middle ear
. . eye (anatomy)
. . choroid membranes
. . conjunctiva
. . cornea
. . oculomotor nerves
. . pupils
. . retina
. . . fovea
. . . gravireceptors
. . . . otolith organs
. . . baroreceptors
. . . mechanoreceptors
. . . photoreceptors
. . . proprioceptors
. . . thermoreceptors
. . skin (anatomy)
. . epidermis
. . immune systems
. . thorax
. . torso
. . lymphatic system
. . . spleen
. . . thymus gland
RT appendages
bifurcation (biology)
biodynamics
∞ biology
cells (biology)
∞ differentiation
differentiation (biology)
dorsal sections
epithelium
exoskeletons
hepatitis
morphology
organs
posterior sections
tissues (biology)
vestibular nystagmus
viscera
- anchors (fasteners)**
GS fasteners
. **anchors (fasteners)**
RT ∞ bands
bolts
brackets
clips
couplings
guy wires
holders
mooring
nuts (fasteners)
screws
straps
studs (structural members)
tetherlines
- Andes Mountains (South America)**
GS landforms
. mountains
. . **Andes Mountains (South America)**
RT South America
- andesite**
DEF Volcanic rock composed essentially of andesine and one or more mafic constituents.
GS aluminum compounds
. aluminum silicates
. . **andesite**
rocks
. **andesite**
silicon compounds
. silicates
. . aluminum silicates
. . . **andesite**
RT feldspars
igneous rocks
minerals
soils
- Andorra**
GS nations
. **Andorra**
RT Europe
France
Pyrenees Mountains (Europe)
Spain
- ∞ **Andromeda**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

Andromeda Constellation

RT Andromeda Constellation
Andromeda Galaxy

Andromeda Constellation

GS constellations
. **Andromeda Constellation**
RT ∞ Andromeda
Andromeda Galaxy

Andromeda Galaxy

GS celestial bodies
. galaxies
. . . spiral galaxies
. . . **Andromeda Galaxy**
RT ∞ Andromeda
Andromeda Constellation
local group (astronomy)

anechoic chambers

DEF Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the frequency ranges of interest.

GS compartments
. test chambers
. . **anechoic chambers**
test facilities
. **anechoic chambers**
RT acoustic attenuation
acoustic measurement
acoustics
∞ chambers
zero sound

anelasticity

GS mechanical properties
. elastic properties
. . **anelasticity**
RT creep properties
internal friction
modulus of elasticity
stress relaxation

anemias

GS diseases
. **anemias**
RT blood
blood cells
hematocrit ratio
hemoglobin
ischemia
occupational diseases

anemometers

DEF Instruments used to measure the speed of air currents, usually measured from the rotation of wind driven cups or from wind pressure through a tube pointed into the wind.

GS measuring instruments
. **anemometers**
. . drag force anemometers
. . hot-film anemometers
. . hot-wire anemometers
. . laser anemometers
. . sonic anemometers
RT aircraft instruments
flow measurement
meteorological instruments
speed indicators
velocity measurement
wind (meteorology)
wind measurement
wind vanes
wind velocity
wind velocity measurement

anemometry

USE **velocity measurement**

anesthesia

GS **anesthesia**
. electroanesthesia
RT analgesia
hypnosis
sensory perception

unconsciousness

anesthesiology

GS medical science
. **anesthesiology**
RT chloroform
clinical medicine
depressants
diagnosis
drugs
pharmacology

anesthetics

GS drugs
. **anesthetics**
. . chloroform
. . cyclopropane
. . methyl chloride
. . novocain
RT ethers

angels (radar)

DEF Echos of false radar targets caused by atmospheric inhomogeneity, atmospheric refraction, insects, birds, or unknown phenomena.

GS echoes
. radar echoes
. . **angels (radar)**
RT glint
radar cross sections
radio echoes

angina pectoris

GS diseases
. heart diseases
. . **angina pectoris**
RT anoxia
arteriosclerosis
coronary artery disease
emotional factors
heart function
heart rate
myocardium
physical exercise
stress (physiology)

angiography

GS imagery
. radiography
. . **angiography**
RT brain
cardiology
cardiovascular system

angiosperms

RT grains (food)
nuts (fruits)
plants (botany)
vegetables

angle of attack

DEF The angle between a reference line fixed with respect to an airframe and a line in the direction of movement of the body.

GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **angle of attack**
. . . . zero angle of attack
RT aerodynamic characteristics
aerodynamic stalling
∞ attack
boundary layer separation
lift
sweep angle
wing rock

angles (geometry)

DEF The inclination to each other of two intersecting lines, measured by the arc of a circle intercepted between the two lines forming the angle, the center of the circle being the point of intersection.

GS geometry
. Euclidean geometry
. . **angles (geometry)**

. . . angle of attack
. . . zero angle of attack
. . . Bragg angle
. . . Brewster angle
. . . dihedral angle
. . . elevation angle
. . . look angles (electronics)
. . . look angles (tracking)
. . . sweep angle
. . . . sweepback
. leading edge sweep

RT angular resolution
apsides
azimuth
complements (mathematics)
corners
elongation
goniometers
∞ grade
gradients
grazing incidence
incidence
obliqueness
phase shift
photogoniometers
pitch (inclination)
∞ profiles
protractors
reciprocal theorems
slopes
triangulation
trigonometry

Angola

GS nations
. **Angola**
RT Africa

angular acceleration

DEF The rate of change of angular velocity.

GS rates (per time)
. acceleration (physics)
. . **angular acceleration**
RT ∞ acceleration
acceleration measurement
centrifugal force
centripetal force
deceleration
rotation
spin reduction
transverse acceleration
yo-yo devices

angular correlation

GS correlation
. **angular correlation**
RT data correlation
MATTs (systems)
view effects

angular distribution

GS distribution (property)
. **angular distribution**
RT electron density profiles
elementary particle interactions
flux density
force distribution
mass distribution
moment distribution
nuclear scattering
star distribution

angular momentum

GS momentum
. **angular momentum**
RT classical mechanics
Clebsch-Gordan coefficients
electron spin
kinetics
moments of inertia
particle spin
quantum numbers
quantum theory
quenching (atomic physics)
Racah coefficient
Regge poles

- spin
spin tests
stellar rotation
transverse momentum
Wigner coefficient
- angular motion*
USE **angular velocity**
- angular resolution**
DEF Specifically, the ability of a radar to distinguish between two targets solely by the measurement of angles.
GS resolution
 . **angular resolution**
RT accuracy
 angles (geometry)
 high resolution
∞ optics
 radar resolution
- angular velocity**
DEF The change of angle per unit time; specifically, in celestial mechanics, the change in angle of the radius vector per unit time. Used for angular motion.
UF *angular motion*
GS rates (per time)
 . **angular velocity**
 velocity
 . **angular velocity**
RT gyration
 orbital velocity
 revolving
 rotation
 rotor speed
 Sagnac effect
 tachometers
 tip speed
- anhydrides**
GS chalcogenides
 . oxides
 . . . **anhydrides**
 . . . peroxides
 inorganic peroxides
 hydrogen peroxide
 organic peroxides
 potassium peroxides
 sodium peroxides
RT acids
 bases (chemical)
- Anik 1**
UF *Anik A*
 Telesat Canada A
GS artificial satellites
 . synchronous satellites
 . . Anik satellites
 . . . **Anik 1**
 Canadian spacecraft
 . Anik satellites
 . . **Anik 1**
RT Canada
 Canadian space program
 Delta launch vehicle
 international cooperation
- Anik 2**
UF *Anik B*
 Telesat Canada B
GS artificial satellites
 . synchronous satellites
 . . Anik satellites
 . . . **Anik 2**
 Canadian spacecraft
 . Anik satellites
 . . **Anik 2**
RT Canada
 Canadian space program
 Delta launch vehicle
 international cooperation
- Anik 3**
UF *Anik C*
 Telesat Canada 3
- Telesat Canada C*
GS artificial satellites
 . synchronous satellites
 . . Anik satellites
 . . . **Anik 3**
 Canadian spacecraft
 . Anik satellites
 . . **Anik 3**
RT Canada
 Canadian space program
 international cooperation
- Anik A*
USE **Anik 1**
- Anik B*
USE **Anik 2**
- Anik C*
USE **Anik 3**
- Anik satellites**
DEF A series of geostationary communication satellites operated by Telesat which is partly owned by the Canadian government and partly owned by private enterprise. The name "Anik" is derived from an Eskimo word meaning "brother." It was so designated because of its partial use in the Far North.
GS artificial satellites
 . synchronous satellites
 . . **Anik satellites**
 . . . Anik 1
 . . . Anik 2
 . . . Anik 3
 Canadian spacecraft
 . **Anik satellites**
 . . Anik 1
 . . Anik 2
 . . Anik 3
RT Canadian space program
 Delta launch vehicle
 international cooperation
- aniline**
GS amines
 . **aniline**
RT dyes
- animals**
UF *fauna*
 metazoa
GS **animals**
 . homeotherms
 . invertebrates
 . . arthropods
 . . . artemia
 . . . crabs
 . . . insects
 bees
 bollworms
 chironomus flies
 cockroaches
 Coleoptera
 beetles
 tribolia
 boll weevils
 crickets
 Drosophila
 fireflies
 grasshoppers
 locusts
 moths
 silkworms
 spiders
 mollusks
 cephalopods
 octopuses
 snails
 Rotifera
 sea urchins
 worms
 flatworms
 livestock
 poikilothermia
 protozoa
- . . amoeba
. . . pelomyxa
. . . Flagellata
. . . Euglena
. . . trypanosome
. . . paramecia
. . . vertebrates
. . . amphibia
. . . frogs
. . . birds
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
. . . fishes
. . . . schools (fish)
. . . . sharks
. . . . mammals
. . . . bats
. . . . bears
. . . . cats
. . . . cattle
. . . . calves
. . . . deer
. caribous
. dogs
. goats
. horses
. marine mammals
. dolphins
. manatees
. porpoises
. seals (animals)
. whales
. moles
. primates
. apes
. chimpanzees
. baboons
. human beings
. monkeys
. rodents
. guinea pigs
. hamsters
. mice
. jerboas
. pocket mice
. rabbits
. rats
. squirrels
. ground squirrels
. . . sheep
. . . swine
. . . wolves
. . . reptiles
. . . lizards
. . . snakes
. . . turtles
. . . wildlife
. . . zooplankton
- RT ∞ biology
 biomass
 carbon cycle
 census
 endangered species
 food chain
 grazing
 habitats
 heterotrophs
 larvae
 microorganisms
 organisms
 parasites
 plankton
 plants (botany)
 predators
 viability
 wildlife radiolocation
∞ zoology
- animation**
GS arts
 . graphic arts
 . . **animation**
 . . . computer animation
RT cinematography

anions

motion pictures

anions

- GS ions
 - . negative ions
 - . . **anions**
- RT amino radical
- anodes
- cations
- cell anodes
- electrode materials
- electron affinity
- ionic mobility

anisole

- GS ethers
 - . **anisole**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **anisole**

anisoplanatism

(added May 1999)

DEF In adaptive optics (AO) systems, a performance-degrading effect that arises whenever light from the wave-front sensor beacon and light from the target object sample different volumes of optical turbulence. This effect results in an increased value of the aperture-averaged residual phase variance after AO compensation, which causes an exponential decrease in system performance.

- RT aberration
- adaptive optics
- atmospheric correction
- atmospheric optics
- image resolution
- optical correction procedure
- phase error
- telescopes

anisotropic fluids

- GS media
 - . anisotropic media
 - . . **anisotropic fluids**
- RT anisotropy
 - ∞ fluids
 - invariant imbeddings
 - isotropy
 - liquid crystals
 - Newtonian fluids

anisotropic media

- GS media
 - . **anisotropic media**
 - . . anisotropic fluids
- RT anisotropy
- birefringence
- birefringent coatings
- functionally gradient materials
- homogeneity
- isotropic media
- ∞ materials
- polarization (waves)

anisotropic plates

- UF *nonisotropic plates*
- GS structural members
 - . plates (structural members)
 - . . **anisotropic plates**
- RT cantilever plates
- end plates
- perforated plates
- reinforced plates

anisotropic shells

- GS shells (structural forms)
 - . **anisotropic shells**
- RT corrugated shells
- elastic shells
- reinforced shells

anisotropy

DEF Having different properties in different directions. Used for nonisotropy, isotropy,

photothermotropism, and thermotropism.

- UF *nonisotropy*
- anisotropy*
- photothermotropism*
- thermotropism*
- GS **anisotropy**
 - . plastic anisotropy
 - . . elastic anisotropy
- RT aeolotropism
- anisotropic fluids
- anisotropic media
- birefringence
- crystal structure
- crystals
- directivity
- isotropy
- mechanical properties
- metallography
- polarization (spin alignment)
- polarization (waves)
- spatial distribution
- Sunyaev-Zeldovich effect

Anna hurricane

- GS storms
 - . storms (meteorology)
 - . . cyclones
 - . . . hurricanes
 - **Anna hurricane**
 - . . tropical storms
 - . . . hurricanes
 - **Anna hurricane**

ANNA satellites

- GS artificial satellites
 - . geodetic satellites
 - . . **ANNA satellites**
- RT Explorer 29 satellite
- Explorer 36 satellite
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite

annealing

DEF Application of heat energy to a material cooling at a suitable rate to relieve stresses, change certain properties, improve machinability, or for realignment of atoms in a distorted lattice as caused, for example, by radiation damage.

- GS heat treatment
 - . **annealing**
 - . . laser annealing
 - . . pulse heating
- RT combustion synthesis
- graphitization
- hardening (materials)
- heating
- normalizing (heat treatment)
- recrystallization
- simulated annealing
- softening
- stress relieving
- tempering

annihilation reactions

- GS **annihilation reactions**
 - . positron annihilation
- RT antiparticles
- electron-positron pairs
- high energy interactions
- matter-antimatter propulsion
- photons
- proton-antiproton interactions
- proton-proton reactions

annotations

- RT abstracts
- information
- summaries

annual variations

- UF *interannual variations*
- seasonal variations*
- GS variations
 - . periodic variations

- . . **annual variations**
- RT atmospheric circulation
- brown wave effect
- cycles
- green wave effect
- intraseasonal variations
- Madden-Julian Oscillation
- magnetic variations
- meteorological parameters
- meteorology
- monsoons
- quasi-biennial oscillation
- seasons
- temporal distribution
- weather
- wind variations
- zonal flow (meteorology)

annular core pulse reactors

- GS nuclear reactors
 - . **annular core pulse reactors**
- RT ∞ nuclear energy
- nuclear fuel elements
- nuclear fuels
- reactor cores
- reactor design
- reactor materials
- reactor physics
- reactor safety
- reactor technology
- ∞ reactors

annular ducts

DEF Ring-shaped openings for the passage of fluids (gases, etc.) designed for optimum aerodynamic flow properties for the application involved.

- GS ducts
 - . **annular ducts**
- RT air ducts
- duct geometry
- ducted bodies
- fluid flow
- intake systems
- nose inlets
- openings
- orifices
- vents

annular flow

- GS fluid flow
 - . axisymmetric flow
 - . . **annular flow**
- RT annuli
- axial flow
- channel flow
- coaxial flow
- Couette flow
- ∞ flow
- flow geometry
- heat transmission
- nozzle flow
- one dimensional flow
- turbulent flow

annular nozzles

- RT annuli
- coaxial flow
- conical nozzles
- exhaust nozzles
- inlet nozzles
- ∞ nozzles
- plug nozzles
- rocket nozzles
- shrouded nozzles
- spray nozzles

annular plates

- GS structural members
 - . plates (structural members)
 - . . **annular plates**
- RT annuli
- circular plates

- flat plates
- annular suspension and pointing system**
 DEF In the Shuttle era, high accuracy pointing and stabilization of an experiment payload.
 GS pointing control systems
 . **annular suspension and pointing system**
 RT magnetic suspension
 payloads
 space shuttles
 space transportation system
 Spacelab
 Spacelab payloads
 ∞ systems
- annuli**
 RT analytic geometry
 annular flow
 annular nozzles
 annular plates
 flow measurement
 ∞ rings
- anodes**
 DEF The positive poles or electrodes of electron emitters, such as electron tubes or electric cells.
 GS electrodes
 . **anodes**
 . . cell anodes
 . . shell anodes
 . . tube anodes
 RT accumulators
 anions
 cathodes
 electrode materials
 multi-anode microchannel arrays
- anodic coatings**
 GS coatings
 . inorganic coatings
 . . **anodic coatings**
 . protective coatings
 . . **anodic coatings**
 RT anodizing
 cathodic coatings
 electrode materials
 oxides
- anodic stripping**
 DEF The removal of metal coatings.
 RT cladding
 coating
 debonding (materials)
 delaminating
 metal coatings
 plating
 removal
 ∞ stripping
- anodizing**
 DEF An electrolytic oxidation process in which the surface of a metal, when anodic, is converted to a coating having desirable protective, decorative, or functional properties.
 GS coating
 . **anodizing**
 deposition
 . **anodizing**
 RT anodic coatings
 passivity
 protective coatings
 surface treatment
- anolytes**
 GS conductors
 . electrolytes
 . . **anolytes**
 RT catholytes
 cell anodes
- anomalies**
 DEF In general, deviations from the norm.
 GS **anomalies**
 . geothermal anomalies
- . gravity anomalies
 . magnetic anomalies
 . . geomagnetic hollow
 RT anomalous temperature zones
 Southern Oscillation
- anomalous temperature zones**
 RT anomalies
 geysers
 stratospheric warming
 temperature measurement
 temperature measuring instruments
 temperature scales
 temperature sensors
- anorthosite**
 DEF A group of essentially monomineralic plutonic igneous rocks composed almost entirely of plagioclase feldspar.
 GS rocks
 . igneous rocks
 . . **anorthosite**
 RT feldspars
 gabbro
 soils
- anoxia**
 DEF A complete lack of oxygen available for physiological use within the body.
 RT angina pectoris
 asphyxia
 hypoxia
 stress (physiology)
- ANS
 USE **Astronomical Netherlands Satellite**
- Antarctic environment*
 USE **ice environments**
- Antarctic Ocean**
 GS oceans
 . **Antarctic Ocean**
 RT Antarctic regions
- Antarctic regions**
 DEF The areas surrounding and including the continent of Antarctica. Used for Antarctica.
 UF *Antarctica*
 GS regions
 . polar regions
 . . **Antarctic regions**
 . . . McMurdo sound
 . . . Ross ice shelf
 . remote regions
 . . **Antarctic regions**
 . . . McMurdo sound
 . . . Ross ice shelf
 Southern Hemisphere
 . **Antarctic regions**
 . . McMurdo sound
 . . Ross ice shelf
 RT Antarctic Ocean
 climatology
 continents
 land ice
 ozone depletion
 polar caps
 polynyas
 Total Ozone Mapping Spectrometer
- Antarctica*
 USE **Antarctic regions**
- Antares rocket vehicle**
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Antares rocket vehicle**
 . sounding rockets
 . . **Antares rocket vehicle**
 RT atmospheric ionization
 solid propellant rocket engines
 X-254 engine
- Antelope missile**
 GS missiles
- . **Antelope missile**
- antenna arrays**
 DEF Systems of antennas coupled together to obtain directional effects, or to increase sensitivity.
 GS arrays
 . **antenna arrays**
 . . linear arrays
 . . . endfire arrays
 Yagi antennas
 . . . multispectral linear arrays
 . . steerable antennas
 . . . inertialess steerable antennas
 . . turnstile antennas
 RT antennas
 beamforming
 Cobra Dane (radar)
 dipole antennas
 directional antennas
 log periodic antennas
 microwave antennas
 patch antennas
 phased arrays
 retroreflection
 space based radar
 Very Large Array (VLA)
 Very Long Baseline Array (VLBA)
- antenna components**
 GS **antenna components**
 . antenna couplers
 . . diplexers
 . . directional couplers
 . antenna feeds
 . parasitic elements (antennas)
 . . directors (antenna elements)
 RT communication equipment
 ∞ components
 couplers
 electronic equipment
 ∞ spinners
- antenna couplers**
 GS antenna components
 . **antenna couplers**
 . . diplexers
 . . directional couplers
 couplers
 . **antenna couplers**
 . . diplexers
 . . directional couplers
 RT antennas
 couples
 coupling
 coupling circuits
 energy transfer
 impedance matching
 microwave coupling
 transmission lines
- antenna design**
 RT antennas
 backlobes
 Cassegrain antennas
 delta antennas
 ∞ design
 dipole antennas
 gravitational wave antennas
 Gregorian antennas
 helical antennas
 horn antennas
 lens antennas
 ∞ lobes
 log periodic antennas
 maypole antennas
 microstrip antennas
 monopole antennas
 parabolic antennas
 parasitic elements (antennas)
 patch antennas
 pencil beams
 plasma antennas
 product development
 rhombic antennas
 sidelobes

antenna feeds

slot antennas
space technology experiments
spiral antennas
Yagi antennas

antenna feeds

GS antenna components
. **antenna feeds**
RT Gregorian antennas
reflector antennas
strip transmission lines
transmission lines
waveguides

antenna fields

USE **antenna radiation patterns**

antenna gain

(added June 1998)
GS amplification
. **antenna gain**
RT antennas
automatic gain control
directional antennas
effectiveness
high gain
signal reception

antenna radiation patterns

UF *antenna fields*
GS distribution (property)
. radiation distribution
. . **antenna radiation patterns**
. . . sidelobes
RT antennas
backfire antennas
backlobes
beam steering
beamforming
cylindrical antennas
directional antennas
∞ fans
far fields
field theory (physics)
footprints
Fresnel region
Gregorian antennas
∞ lobes
near fields
parasitic elements (antennas)
pencil beams
plasma antennas
∞ radiation
reflector antennas
rosette shapes
Schelkunoff principle
Sommerfeld approximation
support interference
synthetic arrays

antennas

DEF Conductors or systems of conductors for radiating or receiving radio waves.

GS **antennas**
. aircraft antennas
. backfire antennas
. Cassegrain antennas
. cylindrical antennas
. delta antennas
. directional antennas
. . dipole antennas
. . helical antennas
. . horn antennas
. . lens antennas
. . log periodic antennas
. . loop antennas
. . radar antennas
. . . radant
. . reflector antennas
. . . parabolic antennas
. . . two reflector antennas
. . rhombic antennas
. . slot antennas
. . steerable antennas
. . . inertialess steerable antennas
. . Yagi antennas

. furlable antennas
. gravitational wave antennas
. . LIGO (observatory)
. . LISA (observatory)
. Gregorian antennas
. high resolution coverage antennas
. hoop column antennas
. maypole antennas
. microstrip antennas
. missile antennas
. monopulse antennas
. multibeam antennas
. multiple beam interval scanners
. omnidirectional antennas
. . monopole antennas
. . whip antennas
. . turnstile antennas
. parasitic elements (antennas)
. . directors (antenna elements)
. plasma antennas
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spacetennas
. satellite antennas
. Schwarzschild antennas
. spacecraft antennas
. spherical antennas
. spiral antennas
. . log spiral antennas
. waveguide antennas
. . horn antennas
. patch antennas
RT antenna arrays
antenna couplers
antenna design
antenna gain
antenna radiation patterns
arrays
conductors
corners
current sheets
electromagnetic radiation
folding structures
inflatable space structures
near fields
radiation hardening
∞ radiators
radio equipment
radio telescopes
reflectors
slewing
space technology experiments
telecommunication
telescopes
towers
transmitters

Antheus aircraft

USE **AN-22 aircraft**

anthracene

GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **anthracene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **anthracene**
RT anthraquinones
phenanthrene

anthracite

DEF Coal of the highest metamorphic rank, in which fixed-carbon content is between 92 percent and 98 percent (on a dry, mineral-matter-free basis). It is hard and black, and has a semimetallic luster and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal.

UF *hard coal*

GS fuels
. chemical fuels
. . hydrocarbon fuels

. . . fossil fuels
. . . . coal
. . . . **anthracite**
resources
. Earth resources
. fossil fuels
. . coal
. . . . **anthracite**
rocks
. sedimentary rocks
. . carbonaceous rocks
. . coal
. . . . **anthracite**
RT mineral exploration
mining

anthraquinones

GS ketones
. **anthraquinones**
RT anthracene
dyes

anthropology

DEF The study of the interrelations of biological, cultural, geographical, and historical aspects of man.

RT aborigines
American Indians
anthropometry
archaeology
artifacts
case histories
cities
culture (social sciences)
Eskimos
human beings
minorities
museums
race factors
races (anthropology)
∞ science
social factors
sociology

anthropometry

GS bioengineering
. biometrics
. . body measurement (biology)
. . . **anthropometry**
RT anthropology
body size (biology)
∞ engineering
human factors engineering

antiadrenergics

GS drugs
. **antiadrenergics**
RT adrenergics

antiaircraft missiles

GS missiles
. **antiaircraft missiles**
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Falcon missile
. . Mauler missile
. . Nike-Ajax missile
. . Nike-Hercules missile
. . Redeye missile
. . SIAM missiles
. . Sidewinder missiles
. . tartar missile
. . terrier missile
RT air to air missiles
antimissile missiles
Nike missiles
ramjet missiles
surface to air missiles

antibiotics

GS drugs
. **antibiotics**
. . actinomycin
. . penicillin
. . pleurotin

- . . streptomycin
 - . . tetracyclines
 - RT antiinfectives and antibacterials
 - microorganisms
 - steroids
- antibodies**
- GS **antibodies**
 - . gamma globulin
 - RT acquired immunodeficiency syndrome
 - antiserums
 - biocompatibility
 - human immunodeficiency virus
 - immune systems
 - immunology
 - inoculum
 - lymphatic system
 - physiological defenses
 - vaccines
- anticholinergics**
- UF *cholinergic blocking agents*
 - GS drugs
 - . cholinergics
 - . . **anticholinergics**
 - RT curare
- anticlines**
- DEF Geologic formations characterized by folds, the core of which contain stratigraphically older rocks; they convex upward. Used for anticlinoria.
 - UF *anticlinoria*
 - RT domes (geology)
 - geosynclines
 - ∞ layers
 - strata
 - stratification
 - stratigraphy
 - synclines
- anticlinoria*
- USE **anticlines**
- anticoagulants**
- RT adrenergics
 - ∞ agents
 - heparins
 - preservatives
 - stabilizers (agents)
- anticoincidence detectors**
- (added August 2000)
 - DEF Detectors and related systems that differentiate ambient background noise from signals of interest by identifying unwanted input signals that co-occur in time with other signals. Often used with gamma-ray detection systems.
 - UF *anticoincidence shields*
 - RT background radiation
 - coincidence circuits
 - comparators
 - counting circuits
 - ∞ detectors
 - discriminators
 - gamma ray spectrometers
 - hodoscopes
 - particle telescopes
 - proportional counters
 - radiation counters
 - scintillation counters
 - signal detectors
 - trigger circuits
- anticoincidence shields*
- (added August 2000)
 - USE **anticoincidence detectors**
- anticonvulsants**
- GS drugs
 - . **anticonvulsants**
 - RT hexamethonium
- anticyclones**
- RT air masses
 - atmospheric pressure
- cyclones
 - high pressure
 - meteorology
 - synoptic meteorology
- antidetector technology*
- (added November 2001)
 - USE **stealth technology**
- antidiuretics**
- GS drugs
 - . **antidiuretics**
 - RT urine
- antidotes**
- GS drugs
 - . **antidotes**
 - RT inhibitors
- antiemetics and antinauseants**
- GS drugs
 - . **antiemetics and antinauseants**
 - RT nausea
- antiferroelectricity**
- GS electrical properties
 - . **antiferroelectricity**
 - RT dielectric properties
 - ferroelectricity
 - hysteresis
 - ∞ polarization
- antiferromagnetism**
- GS magnetic properties
 - . **antiferromagnetism**
 - RT ferromagnetism
 - hysteresis
 - Ising model
 - magnetic switching
 - magnons
 - neel temperature
 - paramagnetism
- antifouling**
- DEF Measures taken to prevent corrosion or the accumulation of organic or other residues or growths on operating mechanisms, especially in underwater environments.
 - GS fouling
 - . **antifouling**
 - RT ∞ agents
 - cleaning
 - contamination
 - corrosion prevention
 - inhibitors
 - sterilization
- antifreezes**
- GS additives
 - . **antifreezes**
 - RT antiicing additives
 - freezing
- antifriction bearings**
- GS bearings
 - . **antifriction bearings**
 - . . ball bearings
 - . . roller bearings
 - . . . needle bearings
 - RT friction reduction
 - gas bearings
 - journal bearings
 - rolling contact loads
 - thrust bearings
- antigens**
- RT anaphylaxis
 - biocompatibility
 - immune systems
 - immunoassay
 - immunology
 - inoculum
 - physiological defenses
 - radioimmunoassay
 - Rhesus factor
- vaccines
- antigravity**
- DEF A hypothetical effect that would arise from cancellation by some energy field of the effect of the gravitational field of the earth or other body.
 - RT gravitation
 - microgravity
- Antigua and Barbuda**
- (added February 1989)
 - GS landforms
 - . islands
 - . . West Indies
 - . . . **Antigua and Barbuda**
 - nationalities
 - . **Antigua and Barbuda**
 - RT Caribbean region
- antihistaminics**
- GS drugs
 - . **antihistaminics**
 - . . dimenhydrinate
 - . . diphenyl hydantoin
 - . . promethazine
 - RT decongestants
 - histamines
- antihypertensive agents**
- GS drugs
 - . **antihypertensive agents**
 - RT reserpine
- antiicing additives**
- GS additives
 - . **antiicing additives**
 - RT antifreezes
 - deicers
 - deicing
 - fuel contamination
 - ice prevention
 - inhibitors
 - propellant additives
 - retardants
- antiinfectives and antibacterials**
- GS drugs
 - . **antiinfectives and antibacterials**
 - RT antibiotics
 - antiseptics
 - bactericides
 - contamination
 - fungicides
- antiknock additives**
- GS additives
 - . **antiknock additives**
 - RT automobile fuels
 - gasoline
 - ∞ octane
 - octanes
 - retardants
- antimatter**
- GS **antimatter**
 - . antiparticles
 - . . antineutrinos
 - . . antinucleons
 - . . antiprotons
 - . . positrons
 - RT Alpha Magnetic Spectrometer
 - degenerate matter
 - matter (physics)
 - matter-antimatter propulsion
 - negative matter
- antimissile defense**
- SN (PROTECTION AGAINST MISSILE ATTACK)
 - GS air defense
 - . **antimissile defense**
 - RT antiradiation missiles
 - civil defense
 - ∞ defense
 - defense industry

antimissile missiles

- defense program
- military technology
- missile defense
- missiles
- optical countermeasures
- Safeguard system
- Sentinel system
- space surveillance (ground based)
- space surveillance (spaceborne)

antimissile missiles

- GS missiles
 - . antimissile missiles
 - .. Mauler missile
 - .. Nike-Zeus missile
 - .. Spartan missile
 - .. Sprint missile
- RT anti-aircraft missiles
- ballistic missiles
- infrared tracking
- missile defense
- Nike missiles
- Nike X systems
- Sentinel system
- SIAM missiles
- space weapons
- surface to air missiles

antimisting fuels

- DEF Fuels which have an additive to reduce misting and thus create safer fuels.
- GS fuels
 - . chemical fuels
 - .. liquid fuels
 - ... antimisting fuels
- RT additives
- aircraft fuels
- flame retardants
- jet engine fuels
- kerosene

antimonides

- GS antimony compounds
 - . antimonides
 - .. aluminum antimonides
 - .. cadmium antimonides
 - .. cesium antimonides
 - .. gallium antimonides
 - .. germanium antimonides
 - .. indium antimonides
 - .. zinc antimonides

antimony

- GS chemical elements
 - . metalloids
 - .. antimony
- RT metals

antimony alloys

- GS alloys
 - . antimony alloys
 - .. babbitt metal
- RT bismuth alloys
- mulberry (alloy)

antimony compounds

- GS antimony compounds
 - . antimonides
 - .. aluminum antimonides
 - .. cadmium antimonides
 - .. cesium antimonides
 - .. gallium antimonides
 - .. germanium antimonides
 - .. indium antimonides
 - .. zinc antimonides
 - . antimony fluorides
- RT ∞ chemical compounds
- ∞ Group 5A compounds
- ∞ metal compounds

antimony fluorides

- GS antimony compounds
 - . antimony fluorides
 - halogen compounds
 - fluorine compounds
 - .. fluorides

- ... antimony fluorides
- .. halides
- .. fluorides
- ... antimony fluorides

antimony isotopes

- GS chemical elements
 - . metalloids
 - .. antimony isotopes
 - . nuclides
 - .. isotopes
 - ... antimony isotopes
 - metals
 - . antimony isotopes

antineutrinos

- GS antimatter
 - . antiparticles
 - .. antineutrinos
 - particles
 - . elementary particles
 - .. antiparticles
 - ... antineutrinos
 - .. fermions
 - ... leptons
 - ... antineutrinos
 - . nuclear particles
 - .. antiparticles
 - ... antineutrinos
- RT charged particles
- neutrinos

antinodes

- DEF Either of the two points on an orbit where a line in the orbit plane, perpendicular to the line of nodes and passing through the focus intersects the orbit. Also a point, line, or surface in a standing wave where some characteristic of the wave field has maximum amplitude.
- RT nodes (standing waves)

- rarefaction
- resonant frequencies
- standing waves
- vibration
- wavelengths

antinucleons

- GS antimatter
 - . antiparticles
 - .. antinucleons
 - particles
 - . elementary particles
 - .. antiparticles
 - ... antinucleons
 - . nuclear particles
 - .. antiparticles
 - ... antinucleons
- RT nucleons

antioxidants

- DEF Compounding ingredients used to retard deterioration caused by oxidation.

- GS additives
 - . antioxidants
- RT ∞ agents
- corrosion prevention
- corrosion resistance
- inhibitors
- preservatives
- propellant additives
- retardants
- stabilizers (agents)

antiparticles

- DEF Particles with a charge of opposite signs to the same particles in normal matter.

- GS antimatter
 - . antiparticles
 - .. antineutrinos
 - .. antinucleons
 - .. antiprotons
 - .. positrons
 - particles
 - . elementary particles
 - .. antiparticles
 - ... antineutrinos

- ... antinucleons
- ... antiprotons
- ... positrons
- . nuclear particles
- .. antiparticles
- ... antineutrinos
- ... antinucleons
- ... antiprotons
- ... positrons
- RT annihilation reactions
- charged particles
- hyperons
- Pomeranchuk theorem
- positron annihilation

antiphase boundaries

- (added March 1998)
- UF antiphase domains
- APB (materials)
- GS boundaries
 - . antiphase boundaries
- RT binary alloys
- crystal dislocations
- crystal lattices
- crystal structure
- grain boundaries
- interfacial energy
- intermetallics
- microstructure
- order-disorder transformations
- solid solutions
- solid-solid interfaces
- superlattices
- ternary alloys

antiphase domains

- (added March 1998)
- USE antiphase boundaries

antipodes

- DEF Anything exactly opposite to something else. Particularly, that point on the Earth 180 deg. from a given place.
- RT apsides
- ionospheric propagation
- propagation modes
- radio transmission
- zenith

antiprotons

- GS antimatter
 - . antiparticles
 - .. antiprotons
 - particles
 - . charged particles
 - .. antiprotons
 - . elementary particles
 - .. antiparticles
 - ... antiprotons
 - . nuclear particles
 - .. antiparticles
 - ... antiprotons
- RT proton-antiproton interactions
- protons

antiquities

- DEF Man-made objects or surviving parts or fragments from the past.
- RT artifacts
- tools
- weapons

antiradar coatings

- GS absorbers (materials)
- . radar absorbers
- . antiradar coatings
- coatings
 - . antiradar coatings
 - countermeasures
 - . electronic countermeasures
 - .. antiradar coatings
- RT electronic warfare
- inorganic coatings
- metal coatings
- plastic coatings
- ∞ ram

- stealth technology
- antiradiation drugs**
 UF *radioprotective agents*
 GS drugs
 . **antiradiation drugs**
 . . cysteamine
 RT nuclear medicine
 pharmacology
 radiation protection
 radiation sickness
 radiobiology
 radiopathology
- antiradiation missiles**
 DEF Missiles that attack radiating targets such as radar transmitters, etc.
 GS missiles
 . **antiradiation missiles**
 RT air defense
 antimissile defense
 countermeasures
 digital radar systems
 military technology
 missile defense
 remote control
- antireflection coatings**
 DEF Thin dielectric or metallic films applied to an optical surface to reduce the reflectance and thereby increase the transmittance. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal optical thickness being one quarter of a wavelength.
 GS coatings
 . **antireflection coatings**
 RT lens design
 optical reflection
 optical thickness
 solar cells
- antiseptics**
 UF *disinfectants*
 RT acriflavine
 antiinfectives and antibacterials
 bactericides
 chemical sterilization
 chemotherapy
 cleaning
 decontamination
 environmental control
 fumigation
 infectious diseases
 purification
 sterilization
- antiserums**
 RT antibodies
 immunology
 serums
 vaccines
- antiship missiles**
 GS missiles
 . **antiship missiles**
 RT cruise missiles
 sea launching
 ships
 submarines
 weapon systems
- antiship warfare**
 GS warfare
 . **antiship warfare**
 RT missiles
 sea launching
 ships
 submarines
 warheads
 weapons
- antisite defects**
(added July 1997)
 DEF Point defects occurring in crystalline compounds where an atom of one atomic species occupies an atomic site that is allocated to a different atomic species (e. g. , in GaAs, an arsenic atom may sit on a site allocated to a gallium atom). If the nearest neighbor sites are occupied with the correct species for their sites (e. g. , an arsenic antisite atom surrounded by arsenic atoms), the antisite atom is then bonded to four like atoms (rather than four Ga atoms). Such a configuration is not electrically neutral, but acts as a double donor. An "antisite pair" occurs if two adjacent atoms have simply been interchanged.
 GS defects
 . crystal defects
 . . point defects
 . . . **antisite defects**
 RT donor materials
 gallium arsenides
 interstitials
 semiconductors (materials)
 vacancies (crystal defects)
- antiskid devices**
 RT aircraft brakes
 arresting gear
 automobiles
 brakes (for arresting motion)
 ∞ devices
 landing aids
 safety devices
 trucks
 wheel brakes
- antistatic devices*
 USE **static dischargers**
- antisubmarine warfare**
 GS warfare
 . **antisubmarine warfare**
 RT ASROC engine
 military technology
 sonobuoys
 submarines
 torpedoes
 underwater explosions
 underwater trajectories
- antisubmarine warfare aircraft**
 GS **antisubmarine warfare aircraft**
 . Breguet 1150 aircraft
 . CL-84 aircraft
 . P-3 aircraft
 . S-2 aircraft
 . S-3 aircraft
 . SH-3 helicopter
 . SH-4 helicopter
 RT ∞ aircraft
 attack aircraft
 bomber aircraft
 drone aircraft
 H-25 helicopter
 ∞ military aircraft
 observation aircraft
 P-531 helicopter
 reconnaissance aircraft
 S-61 helicopter
 submersible aircraft
 V/STOL aircraft
 water takeoff and landing aircraft
- antisymmetry**
 RT asymmetry
 chirality
 symmetry
- antitank missiles**
 GS missiles
 . surface to surface missiles
 . . **antitank missiles**
 . . . Shillelagh missiles
 . . . tow missiles
- Antonov aircraft**
 GS **Antonov aircraft**
 . AN-2 aircraft
- . AN-22 aircraft
 . AN-24 aircraft
 RT ∞ aircraft
- Antonov AN-22 aircraft*
 USE **AN-22 aircraft**
- Antonov AN-24 aircraft*
 USE **AN-24 aircraft**
- anvil clouds**
 GS clouds (meteorology)
 . convection clouds
 . . cumulonimbus clouds
 . . . **anvil clouds**
 . . . cumulus clouds
 . . . **anvil clouds**
 RT atmospheric moisture
 climatology
 cloud cover
 fog
 meteorology
 nephelanalysis
 precipitation (meteorology)
 thunderstorms
 weather
- anvils**
 RT compressing
 tools
- anxiety**
 DEF Nervous or fear reaction to a perception of danger.
 RT detachment
 fear
 fear of flying
 phobias
 stress (biology)
 Taylor manifest anxiety scale
- AO-1 aircraft*
 USE **OV-1 aircraft**
- AOIPS*
 USE **Atmospheric & Oceanographic Inform Sys**
- aorta**
 GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . blood vessels
 arteries
 **aorta**
 RT heart
- AOSO**
 UF *Advanced Orbiting Solar Observatory*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **AOSO**
 . . . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **AOSO**
 observatories
 astronomical observatories
 astronomical satellites
 . . . OSO
 **AOSO**
 solar observatories
 . . . OSO
 **AOSO**
 geophysical observatories
 . . OSO
 . . . **AOSO**
 RT sun
- Apache rocket vehicle**
 GS rocket vehicles
 . sounding rockets
 . . **Apache rocket vehicle**

aperiodic functions

RT sondes

apatites

USE **calcium phosphates**
minerals

APB (materials)

(added March 1998)

USE **antiphase boundaries**

aperiodic functions

GS analysis (mathematics)
. **aperiodic functions**
functions (mathematics)
. **aperiodic functions**
RT complex variables
real variables

apertures

GS openings
. **apertures**
. . . irises (mechanical apertures)
. . . numerical aperture
. . . synthetic apertures
RT apodization
cavities
doors
gates (openings)
infrared windows
louvers
orifices
outlets
pinhole cameras
ports (openings)
slits
synthetic arrays
vents
VSAT (network)
windows (apertures)

apes

GS animals
. vertebrates
. . . mammals
. . . . primates
. . . . **apes**
. chimpanzees

apexes

UF *vertices*
RT altitude
aphelions
apogees
maxima
orbits
 ∞ peaks
plateaus
trajectories
zenith

aphelions

GS apsides
. **aphelions**
RT apexes
elliptical orbits
orbits
perihelions
solar orbits

API (computers)

(added June 2003)

USE **application programming interface**

APL (programming language)

DEF "A Programming Language" is a high level interactive computer language primarily designed for mathematical applications. It was developed by Kenneth Iverson in 1962. It is characterized by extensive operators and array handling capability. NASA Goddard was one of the first users and was instrumental in introducing APL to the computer community.

GS languages
. programming languages
. . **APL (programming language)**

RT computer programming

apnea

USE **respiration**

apodization

(added October 2002)

DEF The elimination or smoothing of sharp discontinuities in an image, electrical signal, or mathematical function; as in the modification of lens design to reduce diffraction fringes, or the mathematical processing of interferograms to suppress sidelobes.

RT apertures
Bragg gratings
gratings (spectra)
imaging techniques
optical filters
sidelobe reduction
wave diffraction

apogee boost motors

UF *ABM*

apogee kick motors

GS engines
. rocket engines
. . . booster rocket engines
. . . . **apogee boost motors**
. . . solid propellant rocket engines
. . . . **apogee boost motors**

RT ∞ boosters
motors

apogee kick motors

USE **apogee boost motors**

apogees

DEF Those orbital points farthest from the Earth, when the Earth is the center of attraction.

GS apsides
. **apogees**
RT apexes
Earth orbits
elliptical orbits
orbits
perigees

Apollo 5 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 5 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories

Apollo 6 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 6 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories

Apollo 7 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 7 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight

lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories

Apollo 8 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 8 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories

Apollo 9 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 9 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module

Apollo 10 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 10 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories

Apollo 11 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 11 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories

Apollo 12 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 12 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories

Apollo 13 flight

GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 13 flight**
RT Earth-Moon trajectories
lunar exploration

- Lunar Exploration System for Apollo
- lunar flight
- lunar landing
- lunar launch
- Lunar Module
- manned spacecraft
- moon-Earth trajectories
- Apollo 14 flight**
 - GS space flight
 - . manned space flight
 - .. Apollo flights
 - ... **Apollo 14 flight**
 - RT Earth-Moon trajectories
 - lunar exploration
 - Lunar Exploration System for Apollo
 - lunar flight
 - lunar landing
 - lunar launch
 - Lunar Module
 - manned spacecraft
 - moon-Earth trajectories
- Apollo 15 flight**
 - GS space flight
 - . manned space flight
 - .. Apollo flights
 - ... **Apollo 15 flight**
 - RT Earth-Moon trajectories
 - lunar exploration
 - Lunar Exploration System for Apollo
 - lunar flight
 - lunar landing
 - lunar launch
 - Lunar Module
 - manned spacecraft
 - moon-Earth trajectories
 - SIM
- Apollo 16 flight**
 - GS space flight
 - . manned space flight
 - .. Apollo flights
 - ... **Apollo 16 flight**
 - RT Earth-Moon trajectories
 - lunar exploration
 - Lunar Exploration System for Apollo
 - lunar flight
 - lunar landing
 - lunar launch
 - Lunar Module
 - manned spacecraft
 - moon-Earth trajectories
- Apollo 17 flight**
 - GS space flight
 - . manned space flight
 - .. Apollo flights
 - ... **Apollo 17 flight**
 - RT Earth-Moon trajectories
 - lunar exploration
 - Lunar Exploration System for Apollo
 - lunar flight
 - lunar landing
 - lunar launch
 - Lunar Module
 - manned spacecraft
 - moon-Earth trajectories
- Apollo applications program**
 - GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Apollo applications program**
 - . space programs
 - .. NASA space programs
 - ... **Apollo applications program**
 - RT AAP 1 mission
 - AAP 2 mission
 - AAP 3 mission
 - AAP 4 mission
 - airlock modules
 - Earth Resources Program
 - Earth Resources Survey Program
 - Saturn 1 workshop
 - Saturn 5 workshop
- Saturn project
- Saturn workshops
- Skylab program
- Apollo asteroids**
 - DEF Earth grazing asteroids in orbits between Mars and Jupiter, and crossing the Earth's orbit. This group contains 19 known asteroids.
 - GS celestial bodies
 - . asteroids
 - .. **Apollo asteroids**
 - RT asteroid belts
 - astronomy
 - Chiron
 - Earth orbits
 - Jupiter (planet)
 - Mars (planet)
 - planetary orbits
 - solar system
- Apollo extension system**
 - RT exobiology
 - extravehicular activity
 - lunar landing modules
 - manned space flight
 - NASA programs
 - orbital workshops
 - ∞ systems
- Apollo flights**
 - GS space flight
 - . manned space flight
 - .. **Apollo flights**
 - ... Apollo 5 flight
 - ... Apollo 6 flight
 - ... Apollo 7 flight
 - ... Apollo 8 flight
 - ... Apollo 9 flight
 - ... Apollo 10 flight
 - ... Apollo 11 flight
 - ... Apollo 12 flight
 - ... Apollo 13 flight
 - ... Apollo 14 flight
 - ... Apollo 15 flight
 - ... Apollo 16 flight
 - ... Apollo 17 flight
 - RT Skylab program
- Apollo lunar experiment module**
 - GS lunar spacecraft
 - . Apollo spacecraft
 - .. **Apollo lunar experiment module**
 - . lunar landing modules
 - .. Lunar Module
 - ... **Apollo lunar experiment module**
 - maneuverable spacecraft
 - . Apollo spacecraft
 - .. **Apollo lunar experiment module**
 - manned spacecraft
 - . Apollo spacecraft
 - .. **Apollo lunar experiment module**
 - . Lunar Module
 - .. **Apollo lunar experiment module**
 - modules
 - . spacecraft modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - **Apollo lunar experiment module**
 - reentry vehicles
 - . recoverable spacecraft
 - .. Apollo spacecraft
 - ... **Apollo lunar experiment module**
 - soft landing spacecraft
 - . Apollo spacecraft
 - .. **Apollo lunar experiment module**
 - . landing modules
 - .. lunar landing modules
 - ... Lunar Module
 - **Apollo lunar experiment module**
 - spacecraft components
- . spacecraft modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - **Apollo lunar experiment module**
- RT lunar exploration
 - lunar landing
- Apollo Lunar Surface Experiments Package**
 - UF *ALSEP*
 - GS packages
 - . instrument packages
 - .. **Apollo Lunar Surface Experiments Package**
 - RT ∞ instruments
 - lunar exploration
 - lunar retroreflectors
 - payloads
 - ∞ surfaces
- Apollo project**
 - GS programs
 - . lunar programs
 - .. **Apollo project**
 - . NASA programs
 - .. NASA space programs
 - ... **Apollo project**
 - . projects
 - .. **Apollo project**
 - . space programs
 - .. NASA space programs
 - ... **Apollo project**
 - RT AAP 1 mission
 - AAP 2 mission
 - AAP 3 mission
 - AAP 4 mission
 - Advanced Range Instrumentation Aircraft
 - command service modules
 - LSSM
 - lunar exploration
 - Lunar Exploration System for Apollo
 - lunar mobile laboratories
 - lunar probes
 - manned spacecraft
 - Marquardt R4D engine
 - Mercury project
 - Saturn 1 workshop
 - Saturn 5 workshop
 - Saturn launch vehicles
 - Saturn workshops
 - SIM
 - site data processors
 - Skylab program
 - soft landing spacecraft
- Apollo short stack**
 - RT spacecraft configurations
- Apollo Soyuz test project**
 - UF *ASTP*
 - GS programs
 - . projects
 - .. **Apollo Soyuz test project**
 - RT international cooperation
 - international relations
 - manned spacecraft
 - rendezvous
 - Soyuz spacecraft
 - space flight
 - space missions
 - space programs
 - space rendezvous
 - spacecrew transfer
 - U. S. S. R. space program
- Apollo spacecraft**
 - GS lunar spacecraft
 - . **Apollo spacecraft**
 - .. Apollo lunar experiment module
 - maneuverable spacecraft
 - . **Apollo spacecraft**
 - .. Apollo lunar experiment module
 - manned spacecraft
 - . **Apollo spacecraft**
 - .. Apollo lunar experiment module
 - . **Apollo spacecraft**

Apollo telescope mount

. . Apollo lunar experiment module
reentry vehicles
. recoverable spacecraft
. . **Apollo spacecraft**
. . . Apollo lunar experiment module
soft landing spacecraft
. **Apollo spacecraft**
. . Apollo lunar experiment module
RT command modules
landing modules
Lunar Module
Lunar Module 5
Lunar Module 7
manned orbital laboratories
Saturn project
service modules
Skylab program
unified S band

Apollo telescope mount

GS telescopes
. manned orbital telescopes
. . **Apollo telescope mount**
RT Skylab program

apoptosis

(added October 2000)

DEF One of the two mechanisms by which cell death occurs (the other being the pathological process of NECROSIS). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathologic processes associated with tumor growth.

UF *programmed cell death*
GS physiological effects
. **apoptosis**
RT biological effects
cells (biology)
cytology
death
deoxyribonucleic acid
necrosis
radiation effects

Appalachian Mountains (North America)

GS landforms
. mountains
. . **Appalachian Mountains (North America)**
RT North America

apparatus

USE **equipment**

appearance

RT imagery
quality
visibility

appendages

GS **appendages**
. arm (anatomy)
. . elbow (anatomy)
. . forearm
. hand (anatomy)
. . fingers
. leg (anatomy)
. . feet (anatomy)
. . knee (anatomy)
. . thigh
RT anatomy
human body
limbs (anatomy)

appendix (anatomy)

GS anatomy
. digestive system
. . gastrointestinal system

. . . **appendix (anatomy)**
RT intestines

application

USE **utilization**

application programming interface

(added June 2003)

DEF An interface between a software or hardware system and an application program which allows the application program to communicate with, and to access services from the software or hardware system

UF *API (computers)*
RT computer systems programs

application specific integrated circuits

(added May 1989)

UF *ASIC*
custom integrated circuits

GS circuits
. integrated circuits
. . **application specific integrated circuits**
RT chips (electronics)
large scale integration
systems-on-a-chip
very large scale integration

Applications Explorer Satellites

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Applications Explorer Satellites**
RT Heat Capacity Mapping Mission

∞ applications of mathematics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *mathematical analysis*
RT analysis (mathematics)
approximation
combinatorial analysis
computation
dimensional analysis
dynamic programming
econometrics
error analysis
finite element method
fractals
functions (mathematics)
information theory
Kalman-Schmidt filtering
linear programming
mathematical models
nonlinear programming
numerical analysis
operational calculus
operations research
optimization
parameterization
probability theory
statistical analysis
stochastic processes
time series analysis

applications programs (computers)

DEF Software designed to fulfill specific needs of a user; for example, software for navigation, payroll, or process control.

GS computer programs
. **applications programs (computers)**
. . NASTRAN
. . spreadsheets
RT computers
software development tools

Applications Technology Satellites

USE **ATS**

approach

GS **approach**
. airborne radar approach
. instrument approach
RT air traffic control

aircraft approach spacing
arrivals
descent
flight paths
flight plans
ground based control
guidance (motion)
landing
landing aids
passageways
touchdown

approach and landing tests (STS)

DEF A series of flight maneuvers involving the Space Shuttle.

RT evaluation
horizontal spacecraft landing
landing
manned spacecraft
space shuttles
space transportation system
spacecraft landing
∞ tests
touchdown

approach control

DEF The control process which delivers aircraft to the final approach course or landing system properly spaced for their landing.

GS **approach control**
. radar approach control
RT air traffic control
aircraft approach spacing
aircraft communication
aircraft guidance
aircraft maneuvers
automated en route ATC
collision avoidance
∞ control

flight paths
glide paths
ground based control
instrument approach
instrument flight rules
instrument landing systems
landing aids
landing radar
microwave landing systems
night flights (aircraft)
runway lights
tracking (position)
traffic control
visual control

approach indicators

GS aircraft instruments
. **approach indicators**
display devices
. **approach indicators**
flight instruments
. **approach indicators**
landing aids
. landing instruments
. . **approach indicators**
measuring instruments
. indicating instruments
. . **approach indicators**
RT air traffic control
altimeters
blind landing
glide paths
instrument approach
instrument landing systems
microwave scanning beam landing system
navigation aids
radar approach control
solar compasses
speed indicators

appropriations

RT budgeting
cost estimates
federal budgets

- grants
- RT learning
personnel selection
- approximation**
- UF *approximation methods*
nominal values
truncation (mathematics)
- GS analysis (mathematics)
. numerical analysis
. . . **approximation**
. . . Born approximation
. . . Born-Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non-oscillatory schemes
. . . finite difference theory
. . . finite difference time domain method
. . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . Newton-Raphson method
. . . boundary element method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor-corrector methods
. . . Rayleigh-Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
. . . Trefftz method
- RT ∞ applications of mathematics
censored data (mathematics)
difference equations
∞ equations
form factors
Glauber theory
Godunov method
∞ methodology
minimax technique
numerical stability
problem solving
∞ relationships
spline functions
static models
statistical analysis
- approximation methods*
USE **approximation**
- apsidal angles*
USE **apsides**
- apsides**
- UF *apsidal angles*
- GS **apsides**
. aphelions
. apogees
. perigees
. perihelions
. perilunes
- RT angles (geometry)
antipodes
elliptical orbits
orbital elements
orbital mechanics
- APT (*picture transmission*)
USE **automatic picture transmission**
- aptitude**
- GS abilities
. **aptitude**
- Aquarid meteoroids**
- GS celestial bodies
. meteoroid showers
. . . **Aquarid meteoroids**
. . . meteoroids
. . . **Aquarid meteoroids**
- RT Orionid meteoroids
- aquatic plants**
- DEF Plants growing in or on water.
- GS plants (botany)
. **aquatic plants**
. . . phytoplankton
- RT aquaculture
hydroponics
marine biology
- aqueous solutions**
- GS mixtures
. solutions
. . . **aqueous solutions**
- RT hydrates
solvation
- aquiculture**
- DEF The cultivation (breeding, raising, and harvesting) of fish, mollusks, shellfish, and/or other aquatic life as sources of food.
- GS agriculture
. **aquiculture**
- RT aquatic plants
fisheries
fishes
hydroponics
marine biology
marine environments
marine resources
marine technology
∞ nutrients
tidal flats
- aquifers**
- DEF Bodies of rock that contain sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs.
- GS resources
. Earth resources
. . . water resources
. . . **aquifers**
- RT fresh water
gravels
ground water
hydrogeology
hydrology
hydrothermal systems
lakes
limnology
oases
permeability
ponds
porosity
rain
sands
springs (water)
streams
water
water tables
wells
- Arabian commercial satellite*
USE **Arcomsat**
- Arabian Sea**
- GS seas
. **Arabian Sea**
- RT Indian Ocean
- Arabsat**
- GS artificial satellites
. **Arabsat**
- RT international cooperation
- aragonite**
- DEF A white, yellowish, or gray orthorhombic mineral, that contains calcium carbonate.
- GS calcium compounds
. calcium carbonates
. . . **aragonite**
carbon compounds
. carbonates
. . . calcium carbonates
. . . **aragonite**
minerals
. **aragonite**
silicon compounds
. silicates
. . . **aragonite**
- RT calcite
- aramid fiber composites**
(*added May 1992*)
- SN (ARAMID FIBER UTILIZATION IN COMPOSITES. FOR PROPERTIES OF ARAMID FIBERS THEMSELVES USE 'ARAMID FIBERS'.)
- GS composite materials
. fiber composites
. . . **aramid fiber composites**
- RT aramid fibers
epoxy matrix composites
Kevlar (trademark)
metal matrix composites
polyamide resins
polymer matrix composites
reinforced plastics
whisker composites
- aramid fibers**
(*added May 1992*)
- SN (PROPERTIES OF ARAMID FIBERS THEMSELVES. FOR ARAMID FIBER UTILIZATION IN COMPOSITES USE 'ARAMID FIBER COMPOSITES'.)
- GS fibers
. reinforcing fibers
. . . **aramid fibers**
. . . Kevlar (trademark)
. . . synthetic fibers
. . . **aramid fibers**
. . . Kevlar (trademark)
- RT aramid fiber composites
composite materials
epoxy matrix composites
fiber composites
fiber orientation
fiber strength
lay-up
plastics
polyamide resins
reinforced plastics
reinforcing materials
resin matrix composites
- arc chambers**
- RT ∞ chambers
electric arcs
plasma generators
thrust chambers
- arc clouds**
- GS clouds (meteorology)
. convection clouds
. . . **arc clouds**
- RT cyclogenesis
fronts (meteorology)
mesoscale phenomena
meteorology
observation aircraft
satellite observation
thunderstorms
- arc discharges**
- GS electric current
. electric discharges
. . . **arc discharges**

arc generators

RT electric arcs

arc generators

RT electric arcs
electric generators
electrostatic generators
∞ generators
∞ induction
inductors
plasma generators
spark gaps
spark plugs
voltage generators

arc heating

UF *Gerdien arc heaters*
GS heating
. **arc heating**
RT gas heating
image furnaces
plasma heating
resistance heating
Saha equations

arc jet engines

DEF Electrothermal rocket engines that produce thrust by expanding a hot gas in an appropriate nozzle to a high velocity. The propellant is heated to a higher temperature than can be obtained through combustion processes resulting in higher exhaust velocities and better propellant efficiency.

GS engines
. rocket engines
. . . electric rocket engines
. . . electrothermal engines
. . . . **arc jet engines**
. . . . pulsed jet engines
RT electric propulsion
electrostatic engines
magnetoplasmadynamic thrusters
plasma engines
resistojet engines

arc lamps

GS lighting equipment
. luminaires
. . **arc lamps**
RT carbon arcs
light sources
mercury arcs
searchlights
xenon lamps

arc melting

GS phase transformations
. melting
. . **arc melting**
RT drop transfer
electroslag refining
vacuum melting
zone melting

arc spraying

UF *plasma arc spraying*
GS spraying
. **arc spraying**
RT metal spraying

arc welding

GS welding
. fusion welding
. . electric welding
. . . **arc welding**
. . . . gas tungsten arc welding
. . . . plasma arc welding
RT electron beam welding
heat affected zone
pressure welding
spot welds
sputtering

Arcas rocket vehicles

GS rocket vehicles
. single stage rocket vehicles
. . **Arcas rocket vehicles**

. sounding rockets

. . **Arcas rocket vehicles**

RT radiosondes
solid propellant rocket engines
∞ vehicles

archaeobacteria

DEF Organisms belonging to the taxonomic kingdom of the same name which are characterized by distinct t- and r-RNAs, the absence of peptoglycan cell walls and their possible replacement by a proteinaceous coat, ether-linked lipids from phytanyl chains, and occurrence in unusually harsh habitats, e. g. , methane, halide and thermoacidic environments. These hardy bacteria are significant in the study of the origin of life.

GS microorganisms
. bacteria
. . **archaeobacteria**

RT bacteriology
biological evolution
paleobiology
paleontology

archaeology

RT anthropology
cultural resources
fossils
ground penetrating radar
paleomagnetism

archaeomagnetism

(added April 1999)

USE **paleomagnetism**

arches

RT perforated shells
rigid structures
shells (structural forms)
trusses

archipelagoes

DEF Seas or areas in seas that contain numerous islands; also the island groups themselves.

RT Aleutian Islands (US)
islands
landforms
seas
Spitsbergen (Norway)
Virgin Islands

architecture

RT acoustics
buildings
construction
∞ construction materials
human factors engineering
illuminating
plant design
Starsite program
structural design
∞ structures

architecture (computers)

DEF The design of system and logic organization and information flow relationships in a computer rather than the circuit and component features.

UF *computer architecture*
RT client server systems
computer components
computer design
concurrent processing
Connection Machine
distributed memory
distributed processing
hypercube multiprocessors
local area networks
logic circuits
logic design
massively parallel processors
memory (computers)
MIMD (computers)
modularity

multidisciplinary design optimization
programmable logic devices
relational data bases
RISC processors
SIMD (computers)
software development tools
supercomputers
systolic arrays
transputers
very large scale integration

Arcomsat

UF *Arabian commercial satellite*
GS artificial satellites
. communication satellites
. . **Arcomsat**
RT Africa
international cooperation
Saudi Arabian space program
Symphonie satellites
synchronous satellites

Arcon rocket vehicle

GS rocket vehicles
. **Arcon rocket vehicle**
RT ∞ vehicles

∞ arcs

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
RT auroral arcs
curves (geometry)
electric arcs
island arcs
magnetic annular arc
plasma jets
red arcs

Arctic environments

USE **ice environments**

Arctic Ocean

GS oceans
. **Arctic Ocean**
RT Barents Sea
Beaufort Sea (North America)
Greenland
polynyas
Spitsbergen (Norway)

Arctic regions

GS Northern Hemisphere
. **Arctic regions**
. . subarctic regions
regions
. polar regions
. . **Arctic regions**
. . . subarctic regions
. remote regions
. . **Arctic regions**
. . . subarctic regions
RT Chukchi Sea
climatology
geography
muskegs
nunataks
ozone depletion
polar caps
Siberia
tundra

area

RT ∞ cross sections
geometry
integral calculus
line of sight
∞ sectors
∞ surfaces
volume

area navigation

DEF A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of self-contained system capability.

- GS navigation
 . air navigation
 . . **area navigation**
- RT flight paths
 ground tracks
- Arend-Roland comet**
- GS celestial bodies
 . comets
 . . **Arend-Roland comet**
- RT solar system
- ARES (spacecraft)*
- USE **Advanced Recon Electric Spacecraft**
- Argentina**
- GS nations
 . **Argentina**
- RT Argentine space program
 South America
- Argentine space program**
(added May 1989)
- GS programs
 . space programs
 . . **Argentine space program**
- RT Argentina
- Argo rocket vehicles**
- GS rocket vehicles
 . multistage rocket vehicles
 . . **Argo rocket vehicles**
- RT Honest John rocket vehicle
 Javelin rocket vehicle
 Nike-Ajax missile
 solid propellant rocket engines
 sounding rockets
 ∞ vehicles
- argon**
- GS chemical elements
 . rare gases
 . . **argon**
 . . . argon isotopes
 gases
 . rare gases
 . . **argon**
 . . . argon isotopes
- RT radiation trapping
- argon isotopes**
- GS chemical elements
 . nuclides
 . . isotopes
 . . . **argon isotopes**
 . rare gases
 . . argon
 . . . **argon isotopes**
 gases
 . rare gases
 . . argon
 . . . **argon isotopes**
- argon lasers**
- GS stimulated emission devices
 . lasers
 . . **argon lasers**
- RT chemical lasers
 continuous wave lasers
 gas masers
 infrared lasers
 Mach-Zehnder interferometers
 molecular oscillations
 pulsed lasers
 Q switched lasers
 stimulated emission
- argon plasma**
- GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **argon plasma**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
- RT helium plasma
 hydrogen plasma
 oxygen plasma
- argon-oxygen atmospheres**
- GS controlled atmospheres
 . **argon-oxygen atmospheres**
- RT aerospace environments
 ∞ atmospheres
 ∞ breathing
 gas mixtures
 portable life support systems
 underwater breathing apparatus
- Argos system**
- GS networks
 . satellite networks
 . . **Argos system**
- RT data collection platforms
 data transmission
 ocean data acquisitions systems
 satellite doppler positioning
- Argosy MK-1 aircraft**
- GS Hawker Siddeley aircraft
 . **Argosy MK-1 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **Argosy MK-1 aircraft**
 monoplanes
 . **Argosy MK-1 aircraft**
 transport aircraft
 . **Argosy MK-1 aircraft**
- RT ∞ aircraft
- arguments (mathematics)*
- USE **independent variables**
- Argus project**
- GS programs
 . projects
 . . **Argus project**
- RT thermonuclear explosions
- Ariane 4 launch vehicle**
(added April 1995)
- GS launch vehicles
 . Ariane launch vehicle
 . . **Ariane 4 launch vehicle**
- RT European space programs
 space commercialization
- Ariane 5 launch vehicle**
(added April 1995)
- GS launch vehicles
 . Ariane launch vehicle
 . . **Ariane 5 launch vehicle**
- RT Automated Transfer Vehicle
 European space programs
 space commercialization
- Ariane launch vehicle**
- GS launch vehicles
 . **Ariane launch vehicle**
 . . Ariane 4 launch vehicle
 . . Ariane 5 launch vehicle
- RT Eldo launch vehicle
 Europa launch vehicles
 European Space Agency
 European space programs
 Geosari project
- arid lands**
- GS land
 . **arid lands**
- RT barren land
 Death Valley (CA)
 desertification
 desertline
 deserts
 drought
 Earth environment
 Earth resources
 equatorial regions
- Gobi desert
 Mojave Desert (CA)
 oases
 Sahara Desert (Africa)
 soils
 steppes
 wadis
- Ariel**
- DEF A satellite of Uranus orbiting at a mean distance of 192,000 kilometers.
- GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Ariel**
 . . Uranus satellites
 . . . **Ariel**
- RT Uranus (planet)
- Ariel 1 satellite**
- UF *S-51 satellite*
- GS artificial satellites
 . Ariel satellites
 . . **Ariel 1 satellite**
- Ariel 2 satellite**
- UF *S-52 satellite*
- GS artificial satellites
 . Ariel satellites
 . . **Ariel 2 satellite**
- Ariel 3 satellite**
- GS artificial satellites
 . Ariel satellites
 . . **Ariel 3 satellite**
- Ariel 4 satellite**
- GS artificial satellites
 . Ariel satellites
 . . **Ariel 4 satellite**
 . scientific satellites
 . . UK satellites
 . . . **Ariel 4 satellite**
- RT ionospheric electron density
 ionospheric sounding
- Ariel 5 satellite**
- DEF One in a series of artificial satellites launched for Britain by the United States.
- GS artificial satellites
 . Ariel satellites
 . . **Ariel 5 satellite**
 . scientific satellites
 . . UK satellites
 . . . **Ariel 5 satellite**
- Ariel satellites**
- GS artificial satellites
 . **Ariel satellites**
 . . Ariel 1 satellite
 . . Ariel 2 satellite
 . . Ariel 3 satellite
 . . Ariel 4 satellite
 . . Ariel 5 satellite
- RT geophysical satellites
 Thor Delta launch vehicle
- Aries constellation**
- GS constellations
 . **Aries constellation**
- RT celestial bodies
 celestial sphere
 stars
- Aries sounding rocket**
- DEF The largest in terms of weight and volume of the sounding rockets. It has a 44 inch payload capacity.
- GS rocket vehicles
 . sounding rockets
 . . **Aries sounding rocket**
- Arietid meteoroids**
- GS celestial bodies
 . meteoroid showers
 . . **Arietid meteoroids**

arithmetic

. meteoroids
. . **Arietid meteoroids**

ARIP (impact prediction)
USE **computerized simulation impact prediction**

ARIS instrumentation ship
USE **Advanced Range Instrumentation Ship**

arithmetic
GS number theory
. **arithmetic**
. . double precision arithmetic
. . fixed point arithmetic
. . floating point arithmetic
RT addition
calculators
computation
dividing (mathematics)
exponents
integers
multiplication
subtraction
sums

arithmetic and logic units
UF *ALU (computer components)*
logic units
GS computer components
. central processing units
. . **arithmetic and logic units**
RT computers
double precision arithmetic
logic circuits

Arizona
GS nations
. United States
. . **Arizona**
RT Colorado Plateau (US)
Colorado River (North America)
Grand Canyon (AZ)
Phoenix (AZ)
Phoenix quadrangle (AZ)

Arkansas
GS nations
. United States
. . **Arkansas**

arm (anatomy)
GS anatomy
. limbs (anatomy)
. . **arm (anatomy)**
. . . elbow (anatomy)
. . . forearm
appendages
. **arm (anatomy)**
. . elbow (anatomy)
. . forearm
RT humerus
scapula
ulna
wrist

ARMA (mathematics)
(added October 1997)
USE **autoregressive moving average**

armatures
RT commutators
electric generators
electric motors
electric relays
induction motors
∞ rotating electrical machines
rotors

armed forces
GS **armed forces**
. armed forces (foreign)
. armed forces (United States)
. navy
RT ∞ military aircraft

∞ military aviation
military spacecraft
∞ military vehicles
tanks (combat vehicles)

armed forces (foreign)
GS armed forces
. **armed forces (foreign)**
RT disarmament
enemy personnel
∞ military aircraft
military technology
∞ military vehicles
weapons

armed forces (United States)
GS armed forces
. **armed forces (United States)**
RT defense program
disarmament
∞ military aircraft
military technology
∞ military vehicles
weapons
weapons industry

Armenia
(added August 1993)
GS nations
. **Armenia**
RT Asia
Europe

armor
RT helmets
metal plates
ordnance
protective clothing
shielding

arms (robotics)
USE **robot arms**

Army-Navy instrumentation program
GS programs
. **Army-Navy instrumentation program**
RT logistics
military technology

AROD (range-orbit determination)
USE **airborne range and orbit determination**

∞ **aromatic compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *aryl compounds*
RT ∞ chemical compounds
chloroaromatics
furfuryl alcohol
hydrocarbons
methylidyne
organic compounds
polycyclic aromatic hydrocarbons

Aroos meteorite
GS celestial bodies
. meteorites
. . iron meteorites
. . . **Aroos meteorite**

arousal
RT alertness
electroencephalography
∞ stimuli

ARPA computer network
DEF The "Advanced Research Projects Agency" of the Department of Defense nationwide computer network incorporating digital communication between large numbers of dissimilar computers as well as direct access to programs, data, storage, etc. shared by all terminals.

GS networks
. communication networks
. . internets
. . . **ARPA computer network**
. computer networks
. . internets
. . . **ARPA computer network**
RT computer techniques
queueing theory
satellite communication
spacecraft communication
switching circuits
telecommunication
VSAT (network)

ARQ (communication)
USE **automatic repeat request**

arrays
GS **arrays**
. antenna arrays
. . linear arrays
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
. . steerable antennas
. . inertialess steerable antennas
. . turnstile antennas
. large aperture seismic array
. laser arrays
. multi-anode microchannel arrays
. phased arrays
. solar arrays
. . solar blankets
. synthetic arrays
. systolic arrays
RT antennas
focal plane devices
matrices (mathematics)
photomasks
pushbroom sensor modes
ranking
∞ statistics

∞ **arresters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT arresting gear
blocking
brakes (for arresting motion)
gaps
lightning

arresting gear
GS landing aids
. **arresting gear**
safety devices
. **arresting gear**
RT abort apparatus
aircraft carriers
aircraft safety
antiskid devices
∞ arresters
∞ barriers
brakes (for arresting motion)
crash landing
∞ gear

arrhythmia
DEF Absence of rhythm, as, for example, in heart beat.
GS rates (per time)
. heart rate
. . **arrhythmia**

arrivals
RT approach
landing

arrow wings
DEF Aircraft wings of V-shaped planform, either tapering or of constant chord, suggesting a stylized arrowhead.
GS airfoils
. wings
. . swept wings

- ... sweptback wings
 - ... **arrow wings**
 - planforms
 - . wing planforms
 - . . sweptback wings
 - ... **arrow wings**
 - RT caret wings
 - delta wings
 - variable sweep wings
- arroyos**
- GS landforms
 - . **arroyos**
 - RT canyons
 - drainage patterns
 - erosion
 - limnology
 - rain impact damage
 - water
 - water currents
 - water erosion
- arsenates**
- GS arsenic compounds
 - . **arsenates**
 - RT arsenides
 - ∞ oxygen compounds
- arsenic**
- GS chemical elements
 - . metalloids
 - . . **arsenic**
 - . . . arsenic isotopes
 - RT metals
- arsenic alloys**
- GS alloys
 - . **arsenic alloys**
 - RT metalloids
- arsenic compounds**
- GS **arsenic compounds**
 - . arsenates
 - . arsenides
 - . . aluminum arsenides
 - . . . aluminum gallium arsenides
 - . . . indium aluminum arsenides
 - . . gallium arsenides
 - . . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - . . indium arsenides
 - . . . indium aluminum arsenides
 - . . . indium gallium arsenides
 - . . proustite
 - RT ∞ chemical compounds
 - ∞ Group 5A compounds
- arsenic isotopes**
- GS chemical elements
 - . metalloids
 - . . arsenic
 - . . . **arsenic isotopes**
 - . . nuclides
 - . . isotopes
 - . . . **arsenic isotopes**
 - RT metals
 - radioactive isotopes
- arsenides**
- GS arsenic compounds
 - . **arsenides**
 - . . aluminum arsenides
 - . . . aluminum gallium arsenides
 - . . . indium aluminum arsenides
 - . . gallium arsenides
 - . . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - . . indium arsenides
 - . . . indium aluminum arsenides
 - . . . indium gallium arsenides
 - . . proustite
 - RT arsenates
 - intermetallics
- artemia**
- GS animals
- . invertebrates
 - . . arthropods
 - . . . **artemia**
- arteries**
- GS anatomy
 - . circulatory system
 - . . cardiovascular system
 - . . . blood vessels
 - **arteries**
 - aorta
 - RT arteriosclerosis
 - bifurcation (biology)
 - carotid sinus body
 - carotid sinus reflex
 - phonoarteriography
 - sphygmography
 - veins
- arteriosclerosis**
- UF *atherosclerosis*
 - GS diseases
 - . **arteriosclerosis**
 - RT angina pectoris
 - arteries
 - cholesterol
 - circulatory system
 - coronary artery disease
 - myocardial infarction
- arthritis**
- GS diseases
 - . **arthritis**
 - RT bones
 - calcification
 - joints (anatomy)
 - rheumatic diseases
- arthropods**
- GS animals
 - . invertebrates
 - . . **arthropods**
 - . . . artemia
 - . . . crabs
 - . . . insects
 - bees
 - bollworms
 - chironomus flies
 - cockroaches
 - Coleoptera
 - beetles
 - tribolia
 - boll weevils
 - crickets
 - Drosophila
 - fireflies
 - grasshoppers
 - locusts
 - moths
 - silkworms
 - spiders
 - RT exoskeletons
 - larvae
- articulation (speech)**
- GS speech
 - . **articulation (speech)**
 - RT languages
 - speech defects
- artifacts**
- RT anthropology
 - antiquities
 - culture (social sciences)
 - museums
- artificial cardiac pacemaker**
- GS medical equipment
 - . **artificial cardiac pacemaker**
 - RT biotechnology
 - blood circulation
 - cardiology
 - circulatory system
 - heart
- pulmonary circulation
- artificial clouds**
- GS clouds (meteorology)
 - . **artificial clouds**
 - . . chemical clouds
 - . . . barium ion clouds
 - RT weather modification
- artificial ears**
- GS medical equipment
 - . prosthetic devices
 - . . **artificial ears**
 - RT ear
- artificial gravity**
- DEF A simulated gravity established within a space vehicle by rotation or acceleration.
 - GS gravitation
 - . **artificial gravity**
 - RT acceleration stresses (physiology)
 - ∞ astronautics
 - environmental control
 - gravity gradient satellites
 - human centrifuges
 - life support systems
 - lower body negative pressure
 - rotating environments
 - spin dynamics
 - weightlessness
- artificial harbors**
- GS waterways
 - . harbors
 - . . **artificial harbors**
 - RT cargo ships
 - deepwater terminals
 - dredging
 - marine technology
 - oceanography
 - offshore docking
 - offshore platforms
 - ship terminals
 - tanker ships
 - tanker terminals
 - ∞ tankers
 - terminal facilities
 - transportation
- artificial heart valves**
- GS medical equipment
 - . **artificial heart valves**
 - valves
 - . heart valves
 - . . **artificial heart valves**
 - RT biotechnology
 - blood circulation
 - blood pumps
 - heart
 - heart implantation
- artificial intelligence**
- DEF A discipline concerned with the development of computer and extended-robotic systems that can exhibit intelligent action. May also be defined as a subfield of computer science concerned with concepts and methods of symbolic inference by a computer and the symbolic representation of the knowledge to be used in making inferences.
 - UF *machine recognition*
 - GS intelligence
 - . **artificial intelligence**
 - RT automata theory
 - backpropagation (artificial intelligence)
 - belief networks
 - bionics
 - character recognition
 - cognition
 - computer vision
 - computers
 - decision support systems
 - depersonalization
 - expert systems
 - genetic algorithms
 - hypertext

artificial radiation belts

- information processing (biology)
 - intellect
 - knowledge based systems
 - knowledge bases (artificial intelligence)
 - knowledge representation
 - ∞ logic
 - logic programming
 - machine learning
 - natural language processing
 - perception
 - pilot support systems
 - predicate calculus
 - predicate logic
 - Prolog (programming language)
 - robotics
 - robots
 - self organizing systems
 - theorem proving
 - voice data processing
- artificial radiation belts**
- GS particles
 - . charged particles
 - . . magnetically trapped particles
 - . . . radiation belts
 - **artificial radiation belts**
 - . corpuscular radiation
 - . . radiation belts
 - . . . **artificial radiation belts**
 - . trapped particles
 - . . magnetically trapped particles
 - . . . radiation belts
 - **artificial radiation belts**
 - RT inner radiation belt
 - nuclear explosions
 - outer radiation belt
 - ∞ radiation
- artificial respiration*
- USE **resuscitation**
- artificial satellites**
- DEF Man-made satellites.
 - GS **artificial satellites**
 - . active satellites
 - . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . Alouette satellites
 - . . Alouette 1 satellite
 - . . Alouette 2 satellite
 - . . Alouette B satellite
 - . Arabsat
 - . Ariel satellites
 - . . Ariel 1 satellite
 - . . Ariel 2 satellite
 - . . Ariel 3 satellite
 - . . Ariel 4 satellite
 - . . Ariel 5 satellite
 - . BESS (satellite)
 - . biosatellites
 - . . Biosatellite 1
 - . . Biosatellite 2
 - . . Biosatellite 3
 - . . Orbiting Frog Otolith
 - . . Sputnik 2 satellite
 - . communication satellites
 - . . ACTS
 - . . aeronautical satellites
 - . . . Aerosat satellites
 - . . Arcomsat
 - . . Communications Technology Satellite
 - . . . ComStar C
 - . . . NATO 3B satellite
 - . . ComStar satellites
 - . . direct broadcast satellites
 - . . European Communications Satellite
 - . . Intelsat satellites
 - . . low frequency transionospheric satellites
 - . . L-Sat
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . Molniya satellites
 - . . MSAT
 - . . Palapa satellites
 - . . . Palapa 2 satellite
 - . . Raduga satellite
 - . . RCA Satcom satellites
 - . . Relay satellites
 - . . . Relay 1 satellite
 - . . . Relay 2 satellite
 - . . Symphonie satellites
 - . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . . TDR satellites
 - . . Westar satellites
 - . . COSPAS
 - . . Courier satellite
 - . . Diademe satellites
 - . . Discoverer satellites
 - . . Dodge satellite
 - . . EROS (satellites)
 - . . ESA satellites
 - . . Aerosat satellites
 - . . COS-B satellite
 - . . ERS-1 (ESA satellite)
 - . . ERS-2 (esa satellite)
 - . . ESRO 1 satellite
 - . . ESRO 2 satellite
 - . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . METEOSAT satellite
 - . . OTS (ESA)
 - . . TD satellites
 - . . . TD-1 satellite
 - . . Envisat-1 satellite
 - . . XMM-Newton telescope
 - . . European 1 spacecraft
 - . . evasive satellites
 - . . French satellites
 - . . D-1 satellite
 - . . D-2 satellites
 - . . EOLE satellites
 - . . FR-1 satellite
 - . . GEOLE satellites
 - . . PEOLE satellites
 - . . Poseidon satellite
 - . . SPOT (French satellite)
 - . . SRET satellites
 - . . . SRET 1 satellite
 - . . . SRET 2 satellite
 - . . geodetic satellites
 - . . ANNA satellites
 - . . Explorer 29 satellite
 - . . Explorer 36 satellite
 - . . GEOLE satellites
 - . . GEOS 1 satellite
 - . . GEOS 2 satellite
 - . . GEOS 3 satellite
 - . . Geosat satellites
 - . . LARGOS satellite
 - . . PAGEOS satellite
 - . . Vanguard 1 satellite
 - . . geophysical satellites
 - . . Cosmos satellites
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
 - . . Explorer 6 satellite
 - . . Explorer 10 satellite
 - . . Explorer 12 satellite
 - . . Explorer 45 satellite
 - . . OGO
 - . . . EGO
 - . . . OGO-3
 - . . . OGO-5
 - . . . OGO-A
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - . . OSO
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
 - . . Polar/GGS spacecraft
 - . . Radiation and Meteoroid satellite
 - . . Sputnik 3 satellite
 - . . Vanguard 3 satellite
 - . . Wind/GGS spacecraft
 - . . GEOS-D satellite
 - . . gravity gradient satellites
 - . . ATS
 - . . . ATS 1
 - . . . ATS 2
 - . . . ATS 3
 - . . . ATS 4
 - . . . ATS 5
 - . . . ATS 6
 - . . . ATS 7
 - . . . ATS 8
 - . . ORBIS CAL satellite
 - . . GREB satellites
 - . . Helios satellites
 - . . Helios 1
 - . . Helios 2
 - . . Helios A
 - . . Helios B
 - . . Injun satellites
 - . . Explorer 25 satellite
 - . . Injun 1 satellite
 - . . Injun 3 satellite
 - . . Injun 4 satellite
 - . . INMARSAT satellites
 - . . Inspector satellite
 - . . IRIS satellites
 - . . ISIS satellites
 - . . Alouette 2 satellite
 - . . ISIS-A
 - . . ISIS-B
 - . . ISIS-X
 - . . Landsat satellites
 - . . Landsat 1
 - . . Landsat 2
 - . . Landsat 3
 - . . Landsat 4
 - . . Landsat 5
 - . . Landsat 6
 - . . Landsat 7
 - . . Landsat E

- .. Landsat F
- . Lincoln Experimental Satellites
- . lunar satellites
 - .. Explorer 18 satellite
 - .. Explorer 28 satellite
 - .. IMP
 - .. Lunar Orbiter
 - ... Lunar Orbiter 1
 - ... Lunar Orbiter 2
 - ... Lunar Orbiter 3
 - ... Lunar Orbiter 4
 - ... Lunar Orbiter 5
 - .. Lunar Prospector
 - .. orbiting lunar stations
- . Mapsat
- . Marisat satellites
 - .. Marisat 1 satellite
- . maritime satellites
 - .. ERS-1 (ESA satellite)
 - .. Marecs maritime satellites
 - .. Marots (ESA)
- . meteorological satellites
 - .. AEROS satellite
 - .. Cosmos 144 satellite
 - .. D-2 satellites
 - .. DMSP satellites
 - .. Elektron satellites
 - ... Elektron 1 satellite
 - ... Elektron 2 satellite
 - ... Elektron 4 satellite
 - .. EOLE satellites
 - .. ESSA satellites
 - ... ESSA 1 satellite
 - ... ESSA 2 satellite
 - ... ESSA 3 satellite
 - ... ESSA 4 satellite
 - ... ESSA 5 satellite
 - ... ESSA 6 satellite
 - ... ESSA 7 satellite
 - ... ESSA 8 satellite
 - ... ESSA 9 satellite
 - .. Explorer 9 satellite
 - .. Explorer 17 satellite
 - .. Explorer 19 satellite
 - .. GEOLE satellites
 - .. GOES satellites
 - ... GOES 1
 - ... GOES 2
 - ... GOES 3
 - ... GOES 4
 - ... GOES 5
 - ... GOES 6
 - ... GOES 7
 - ... GOES 8
 - ... GOES 9
 - ... GOES 10
 - .. METEOSAT satellite
 - .. Nimbus satellites
 - ... Nimbus 1 satellite
 - ... Nimbus 2 satellite
 - ... Nimbus 3 satellite
 - ... Nimbus 4 satellite
 - ... Nimbus 5 satellite
 - ... Nimbus 6 satellite
 - ... Nimbus 7 satellite
 - .. NOAA satellites
 - ... NOAA 2 satellite
 - ... NOAA 3 satellite
 - ... NOAA 4 satellite
 - ... NOAA 5 satellite
 - ... NOAA 6 satellite
 - ... NOAA 7 satellite
 - ... NOAA 8 satellite
 - ... NOAA 9 satellite
 - ... NOAA 10 satellite
 - ... NOAA 11 satellite
 - ... NOAA 12 satellite
 - ... NOAA 14 satellite
 - .. San Marco satellites
 - ... San Marco 1 satellite
 - ... San Marco 2 satellite
 - ... San Marco 3 satellite
 - .. SEOCS (satellite)
 - .. SIRS B satellite
 - .. Sputnik 1 satellite
 - .. Sputnik 2 satellite
 - .. Sputnik 3 satellite
- .. SRET satellites
 - ... SRET 1 satellite
 - ... SRET 2 satellite
- .. Synchronous Earth Observatory satellite
 - ... SMS 1
 - ... SMS 2
- .. Synchronous Meteorological Satellite
 - ... SMS 1
 - ... SMS 2
- .. TIROS satellites
 - ... ITOS satellites
 - ... ITOS 1
 - ... ITOS 2
 - ... ITOS 3
 - ... ITOS 4
 - ... TIROS 1 satellite
 - ... TIROS 2 satellite
 - ... TIROS 3 satellite
 - ... TIROS 4 satellite
 - ... TIROS 5 satellite
 - ... TIROS 6 satellite
 - ... TIROS 7 satellite
 - ... TIROS 8 satellite
 - ... TIROS 9 satellite
 - ... TIROS 10 satellite
 - ... TIROS M
 - ... TIROS N series satellites
 - ... NOAA 6 satellite
- .. TRMM satellite
- .. Vanguard 2 satellite
- .. Midas satellites
 - ... Midas 2 satellite
 - ... Midas 3 satellite
 - ... Midas 4 satellite
 - ... Midas 5 satellite
 - ... Midas 6 satellite
 - ... Midas 7 satellite
- .. Multispectral Resource Sampler
- .. navigation satellites
 - ... Aerosat satellites
 - ... Explorer 22 satellite
 - ... navigation technology satellites
 - ... NAVSTAR satellites
 - ... Nova satellites
 - ... Refsat
 - ... Transit Attitude Control satellite
 - ... Transit satellites
- .. orbital workshops
 - ... Saturn workshops
 - ... Saturn 1 workshop
 - ... Saturn 5 workshop
 - ... Skylab 1
 - ... Skylab 2
 - ... Skylab 3
 - ... Skylab 4
- .. PAS
- .. passive satellites
 - ... Beacon satellites
 - ... Beacon Explorer A
 - ... Explorer 22 satellite
 - ... Echo satellites
 - ... Echo 1 satellite
 - ... Echo 2 satellite
 - ... LAGEOS (satellite)
 - ... PAGEOS satellite
- .. Pegasus satellites
- .. Polyot satellites
- .. ROSAT mission
- .. SAGE satellite
- .. Samos
- .. SarSat
- .. scientific satellites
 - ... AMPTE (satellites)
 - ... astronomical satellites
 - ... Astronomical Netherlands Satellite
 - ... Gamma Ray Observatory
 - ... Ginga satellite
 - ... HEAO
 - ... HEAO 1
 - ... HEAO 2
 - ... HEAO 3
 - ... HEAO 4
 - ... Hubble Space Telescope
 - ... Infrared Astronomy Satellite
- ... Infrared Space Observatory (ISO)
- ... IUE
- ... Large Deployable Reflector
- ... Magellan ultraviolet astronomy satellite
 - ... OAO
 - ... OAO 1
 - ... OAO 2
 - ... OAO 3
 - ... OSO
 - ... AOSO
 - ... OSO-1
 - ... OSO-2
 - ... OSO-3
 - ... OSO-4
 - ... OSO-5
 - ... OSO-6
 - ... OSO-7
 - ... OSO-8
 - ... OSO-C
 - ... Quasat
 - ... SAS
 - ... Explorer 53 satellite
 - ... SAS-1
 - ... SAS-2
 - ... SAS-3
 - ... James Webb Space Telescope
 - ... LISA (observatory)
 - ... Space Infrared Telescope Facility
 - ... Spartan satellites
 - ... Submillimeter Wave Astronomy Satellite
 - ... Tenma satellite
 - ... X Ray Astrophysics Facility
 - ... XMM-Newton telescope
- .. ATS
 - ... ATS 1
 - ... ATS 2
 - ... ATS 3
 - ... ATS 4
 - ... ATS 5
 - ... ATS 6
 - ... ATS 7
 - ... ATS 8
- .. Azur satellite
- .. Cannonball 2 satellite
- .. CRRES (satellite)
- .. DIAL satellite
- .. Environmental Research Satellites
 - ... ERS 17
 - ... ERS 18
- .. Intasat satellite
- .. EXOS satellites
 - ... EXOS-A satellite
 - ... EXOS-B satellite
 - ... EXOS-C satellite
 - ... EXOS-D satellite
- .. Exosat satellite
 - ... Explorer satellites
 - ... Applications Explorer Satellites
 - ... Cosmic Background Explorer satellite
 - ... Dual Air Density Explorer
 - ... Dynamics Explorer satellites
 - ... Dynamics Explorer 1 satellite
 - ... Dynamics Explorer 2 satellite
 - ... Explorer 1 satellite
 - ... Explorer 2 satellite
 - ... Explorer 3 satellite
 - ... Explorer 4 satellite
 - ... Explorer 5 satellite
 - ... Explorer 6 satellite
 - ... Explorer 7 satellite
 - ... Explorer 8 satellite
 - ... Explorer 9 satellite
 - ... Explorer 10 satellite
 - ... Explorer 11 satellite
 - ... Explorer 12 satellite
 - ... Explorer 14 satellite
 - ... Explorer 15 satellite
 - ... Explorer 16 satellite
 - ... Explorer 17 satellite
 - ... Explorer 18 satellite
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 - ... Explorer 20 satellite
 - ... Explorer 21 satellite
 - ... Explorer 22 satellite

- ... Explorer 23 satellite
- ... Explorer 24 satellite
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- ... Explorer 32 satellite
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- ... Explorer 34 satellite
- ... Explorer 35 satellite
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- ... Explorer 37 satellite
- ... Explorer 38 satellite
- ... Explorer 39 satellite
- ... Explorer 40 satellite
- ... Explorer 41 satellite
- ... Explorer 43 satellite
- ... Explorer 44 satellite
- ... Explorer 45 satellite
- ... Explorer 46 satellite
- ... Explorer 47 satellite
- ... Explorer 48 satellite
- ... Explorer 49 satellite
- ... Explorer 50 satellite
- ... Explorer 51 satellite
- ... Explorer 52 satellite
- ... Explorer 53 satellite
- ... Explorer 54 satellite
- ... Explorer 55 satellite
- ... Extreme Ultraviolet Explorer satellite
- ... Far UV Spectroscopic Explorer
- ... IMP
- ... International Magnetospheric Explorer
- ... International Sun Earth Explorers
- ... International Sun Earth Explorer 1
- ... International Sun Earth Explorer 2
- ... International Sun Earth Explorer 3
- ... Advanced Composition Explorer
- ... IMAGE satellite
- ... Micrometeoroid Explorer satellites
- ... Radio Astronomy Explorer satellite
- ... Solar Mesosphere Explorer
- ... Submillimeter Wave Astronomy Satellite
- ... Transition Region and Coronal Explorer
- ... Uhuru satellite
- ... X Ray Timing Explorer
- ... Geopotential Research Mission
- ... Hawkeye satellites
- ... Long Duration Exposure Facility
- ... LZEEBE satellite
- ... MagSat satellites
- ... MagSat 1 satellite
- ... Magsat A satellite
- ... MagSat B satellite
- ... ORBIS
- ... ORBIS CAL satellite
- ... OV-1 satellites
- ... OV-2 satellites
- ... OV-3 satellites
- ... OV-4 satellites
- ... OV-5 satellites
- ... SCATHA satellite
- ... small scientific satellites
- ... Submillimeter Wave Astronomy Satellite
- ... Transition Region and Coronal Explorer
- ... UK satellites
- ... Ariel 4 satellite
- ... Ariel 5 satellite
- ... Miranda satellite
- ... UK 4 satellite
- ... Ice, Cloud and Land Elevation Satellite
- ... Polar/GGS spacecraft
- ... QuikSCAT satellite
- ... TRMM satellite
- ... Upper Atmosphere Research Satellite (UARS)
- ... Wind/GGS spacecraft
- ... SCORE satellite
- ... SEASAT satellites
- ... SEASAT 1
- ... SEASAT-B satellite
- ... Shuttle pallet satellites
- ... Skynet satellites
- ... Snapshot satellite
- ... solar power satellites
- ... Solar Radiation 1 satellite
- ... Solar Radiation 3 satellite
- ... Soviet satellites
- ... Cosmos 782 satellite
- ... Cosmos 936 satellite
- ... Cosmos satellites
- ... Cosmos 2 satellite
- ... Cosmos 3 satellite
- ... Cosmos 5 satellite
- ... Cosmos 6 satellite
- ... Cosmos 14 satellite
- ... Cosmos 44 satellite
- ... Cosmos 54 satellite
- ... Cosmos 71 satellite
- ... Cosmos 110 satellite
- ... Cosmos 137 satellite
- ... Cosmos 144 satellite
- ... Cosmos 149 satellite
- ... Cosmos 166 satellite
- ... Cosmos 186 satellite
- ... Cosmos 188 satellite
- ... Cosmos 206 satellite
- ... Cosmos 213 satellite
- ... Cosmos 224 satellite
- ... Cosmos 225 satellite
- ... Cosmos 381 satellite
- ... Cosmos 954 satellite
- ... Cosmos 1129 satellite
- ... Intercosmos satellites
- ... Granat satellite
- ... Molniya satellites
- ... Prognoz satellites
- ... Proton satellites
- ... Proton 1 satellite
- ... Proton 2 satellite
- ... Proton 3 satellite
- ... Proton 4 satellite
- ... Raduga satellite
- ... Sputnik satellites
- ... Sputnik 1 satellite
- ... Sputnik 2 satellite
- ... Sputnik 3 satellite
- ... Sputnik 4 satellite
- ... Sputnik 5 satellite
- ... Venera satellites
- ... Venera 2 satellite
- ... Venera 3 satellite
- ... Venera 4 satellite
- ... Venera 5 satellite
- ... Venera 6 satellite
- ... Venera 7 satellite
- ... Venera 8 satellite
- ... Venera 9 satellite
- ... Venera 10 satellite
- ... Venera 11 satellite
- ... Venera 12 satellite
- ... space stations
- ... Automatic Universal Orbiting Stations
- ... Columbus space station
- ... Halo Orbit space station
- ... International Space Station
- ... man tended free flyers
- ... Mir space station
- ... orbiting lunar stations
- ... Salyut space station
- ... Skylab 1
- ... Skylab 2
- ... Skylab 3
- ... Skylab 4
- ... Space Operations Center (NASA)
- ... Space Station Freedom
- ... space station polar platforms
- ... synchronous satellites
- ... AEROS satellite
- ... Aerosat satellites
- ... Anik satellites
- ... Anik 1
- ... Anik 2
- ... Anik 3
- ... GOES satellites
- ... GOES 1
- ... GOES 2
- ... GOES 3
- ... GOES 4
- ... GOES 5
- ... GOES 6
- ... GOES 7
- ... GOES 8
- ... GOES 9
- ... GOES 10
- ... Miranda satellite
- ... SIRIO satellite
- ... StormSat satellite
- ... Synchronous Earth Observatory satellite
- ... SMS 1
- ... SMS 2
- ... Synchronous Meteorological Satellite
- ... SMS 1
- ... SMS 2
- ... SYNCOM satellites
- ... Early Bird satellites
- ... SYNCOM 1 satellite
- ... SYNCOM 2 satellite
- ... SYNCOM 3 satellite
- ... SYNCOM 4 satellite
- ... TD satellites
- ... TD-1 satellite
- ... Telstar satellites
- ... Telstar 1 satellite
- ... Telstar 2 satellite
- ... tethered satellites
- ... Vanguard satellites
- ... Vanguard 1 satellite
- ... Vanguard 2 satellite
- ... Vanguard 3 satellite
- ... Engineering Test Satellites
- ... microsattellites
- ... nanosatellites
- ... Terra spacecraft
- ... Vela satellites
- RT flexible spacecraft
- inflatable spacecraft
- interplanetary spacecraft
- lunar orbits
- lunar spacecraft
- maneuverable spacecraft
- manned spacecraft
- military spacecraft
- National Oceanic Satellite System
- natural satellites
- observatories
- orbits
- reconnaissance spacecraft
- satellite sounding
- ∞ satellites
- space capsules
- space laboratories
- Telstar project
- unmanned spacecraft
- artillery**
- GS weapons
- ... guns (ordnance)
- ... **artillery**
- ... howitzers
- ... precision guided projectiles
- RT gun launchers
- gunnery training
- missiles
- rifles
- Sabot projectiles
- artillery fire**
- RT ∞ barrages
- gunfire
- arts**
- GS **arts**
- ... graphic arts

- . . animation
 . . . computer animation
 RT creativity
 music
- Aryabhata**
 USE **Indian spacecraft**
- aryl compounds**
 USE **aromatic compounds**
- ASA**
 USE **acetylsalicylic acid**
- asbestos**
 GS minerals
 . **asbestos**
 RT Amberlite (trademark)
 electrical insulation
 insulation
 nonflammable materials
 serpentine
 thermal insulation
- ascent**
 GS **ascent**
 . climbing flight
 RT balloons
 descent
 Lunar Module Ascent Stage
 takeoff
- ascent propulsion systems**
 GS propulsion
 . **ascent propulsion systems**
 propulsion system configurations
 . **ascent propulsion systems**
 RT Lunar Module
 missiles
 propellants
 rocket propellants
 space flight
 Space Shuttle Ascent Stage
 ∞ systems
- ascent trajectories**
 GS trajectories
 . **ascent trajectories**
 RT ballistic trajectories
 climbing flight
 coasting flight
 descent trajectories
 flight mechanics
 guidance (motion)
 injection guidance
 lofting
 Lunar Module Ascent Stage
 midcourse trajectories
 missile trajectories
 orbit insertion
 parabolic flight
 post boost propulsion system
 rendezvous trajectories
 spacecraft trajectories
- ascorbic acid**
 UF *vitamin C*
 GS acids
 . **ascorbic acid**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **ascorbic acid**
 vitamins
 . **ascorbic acid**
- ascorbic acid metabolism**
 GS metabolism
 . **ascorbic acid metabolism**
- RT vitamins
- ASCR reactor**
 USE **advanced sodium cooled reactor**
- ASDE**
 USE **airport surface detection equipment**
- ASE (aerodynamics)**
 USE **aeroservoelasticity**
- ashes**
 GS **ashes**
 . fly ash
 RT air pollution
 coal
 combustion products
 cultivation
 fertilizers
 fire damage
 forest fires
 lignite
 reaction products
 residues
- Asia**
 GS continents
 . **Asia**
 RT Afghanistan
 Armenia
 Azerbaijan
 Bangladesh
 Brunei
 Burma
 Cambodia
 China
 Commonwealth of Independent States
 Georgia (Eurasia)
 Himalayas
 Hong Kong
 India
 Iran
 Iraq
 Israel
 Japan
 Kazakhstan
 Kuwait
 Kyrgyzstan
 Laos
 Lebanon
 Malaysia
 Middle East
 Mongolia
 nations
 Nepal
 North Korea
 Pakistan
 Papua New Guinea
 Qatar
 Red Sea
 Russian Federation
 Saudi Arabia
 Sea of Japan
 Siberia
 Sikkim
 Singapore
 South Korea
 Southeast Asia
 Southern Yemen
 Sri Lanka
 Syria
 Taiwan
 Tajikistan
 Thailand
 Tibet
 tundra
 Turkmenistan
 U. S. S. R.
 Uzbekistan
 Vietnam
- Yemen
- ASIC**
 USE **application specific integrated circuits**
- aspartates**
 GS biopolymers
 . proteins
 . . **aspartates**
 esters
 . **aspartates**
 organic compounds
 . proteins
 . . **aspartates**
 RT amino acids
 aspartic acid
- aspartic acid**
 GS acids
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 organic compounds
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 RT aspartates
 peptides
- aspect ratio**
 DEF In general, the ratio of one dimension to another. In aeronautics, the ratio of the square of the span of an airfoil to the total airfoil area, or the ratio of its span to its mean chord.
 UF *slenderness ratio*
 GS ratios
 . **aspect ratio**
 . . fineness ratio
 . . high aspect ratio
 . . low aspect ratio
 . . thickness ratio
 RT aerodynamic characteristics
 airfoils
 dimensional analysis
 dimensional stability
 lift
 ∞ span
 structural stability
 wings
- Aspergillus**
 GS plants (botany)
 . fungi
 . . **Aspergillus**
 RT infectious diseases
 ∞ mold
- asphalt**
 DEF A dark brown to black cementitious material, in which the predominating constituents are bitumens which occur in nature or are obtained in petroleum processing.
 GS products
 . petroleum products
 . . **asphalt**
 RT amorphous materials
 pavements
 pitch (material)
 tars
- asphaltenes**
 DEF Components of bitumens that are soluble in carbon disulphide but not in paraffin naphtha, constitute the solid dispersed particles of the bitumens, and consist of high molecular weight hydrocarbons.
 RT coal
 coal derived liquids
 coal liquefaction

aspheric optics

hydrogenation

aspheres

USE **aspheric optics**

aspheric optics

(added June 1995)

DEF Lenses whose surfaces are custom tuned to specific applications, thereby correcting aberrations in an optical system.

UF *aspheres*

asymmetrical optics
nonspherical optics

GS lenses

. **aspheric optics**

RT asphericity

laser fusion
lens design
optical materials
∞ optics

asphericity

RT aberration

aspheric optics
geometrical optics

∞ optics

refraction
spheres

asphyxia

RT anoxia

respiration
signs and symptoms

aspiration

USE **vacuum**

ASRM (STS)

USE **Advanced Solid Rocket Motor (STS)**

ASROC engine

GS engines

. rocket engines
. . . solid propellant rocket engines
. . . **ASROC engine**

RT

antisubmarine warfare
torpedoes

Assateague Island (MD-VA)

GS landforms

. islands

. . **Assateague Island (MD-VA)**

RT

Atlantic Ocean
Maryland
Virginia

assaulting

USE **attacking (assaulting)**

assaying

RT chemical analysis

immunoassay
Mars surface samples
particulate sampling
radioimmunoassay
sampling

assembler routines

GS computer programming

. **assembler routines**
computer programs
. computer systems programs
. . **assembler routines**

RT

compilers
disk operating system (DOS)
operating systems (computers)

assemblies

GS **assemblies**

. subassemblies
. tail assemblies
. . horizontal tail surfaces
. . sweptback tail surfaces
. . swing tail assemblies

. . T tail surfaces

. . trapezoidal tail surfaces

RT

accumulations

assembling

∞ assembly

collocation

∞ components

fabrication

mosaics

strings

assembling

GS **assembling**

. orbital assembly
. self assembly

RT

assemblies

∞ assembly

∞ attachment

clean rooms

collection

construction

fabrication

fitting

installing

∞ joining

mounting

preparation

rigging

space manufacturing

∞ **assembly**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

assemblies

assembling

collocation

self assembly

Assembly language

GS languages

. programming languages

. . **Assembly language**

. . . autocoders

. . . COMPASS (programming

language)

. . . MAP (programming language)

RT

computer programming

computer programs

computer systems programs

machine oriented languages

Assess program

UF *Spacelab simulation flights*

GS

programs

. NASA programs

. . **Assess program**

RT

space shuttles

assessments

GS **assessments**

. damage assessment

. technology assessment

RT

evaluation

pilot ratings

ratings

revenue

value

ASSET gliders

GS gliders

. **ASSET gliders**

RT

∞ aircraft

hypersonic gliders

lifting reentry vehicles

ASSET project

GS programs

. projects

. . **ASSET project**

RT

aerothermodynamics

environmental tests

assignment

USE **allocations**

assimilation

RT dispersing

distributing

∞ distribution

material absorption

association reactions

DEF Gas phase chemical processes in which two molecular species A and B react to form a larger molecule AB. In astrophysics these processes are involved in the "condensation" of small gaseous molecules into larger species.

GS chemical reactions

. **association reactions**

gas-gas interactions

. **association reactions**

RT

astrophysics

chemical equilibrium

condensing

endothermic reactions

exothermic reactions

interstellar chemistry

molecular gases

molecular interactions

oxidation

photochemical reactions

photooxidation

reaction kinetics

vapor phases

associations

USE **organizations**

associative memory

(added December 1999)

DEF A method or device for data storage in which data is identified by a part or properties of its content, rather than by an address or relative position.

UF *associative storage*
content-addressable memory

GS memory (computers)

. **associative memory**

RT associative processing (computers)

computer storage devices

neural nets

optical memory (data storage)

associative processing (computers)

DEF Byte-variable computer processing with multifield search, arithmetic, and logic capability.

GS data processing

. **associative processing**

(computers)

RT associative memory

digital computers

multiprocessing (computers)

parallel processing (computers)

pipelining (computers)

∞ processing

associative storage

(added December 1999)

USE **associative memory**

assumptions

RT hypotheses

inference

risk

simplification

∞ theories

assurance

RT insurance (contracts)

quality control

redundancy

reliability

Assured Crew Return Vehicle

(added September 1995)

DEF An aerospace vehicle designed to return space station crews to Earth quickly (less than 24 hours) in the event of crew illness/injury, space station catastrophe/failure, or transportation element catastrophe/failure.

UF *ACRV*

GS recovery vehicles

. **Assured Crew Return Vehicle**

RT emergency life sustaining systems

escape capsules

International Space Station

lifeboats

rescue operations

return to Earth space flight

safety management

Soyuz spacecraft

survival equipment

X-38 crew return vehicle

astatine

GS chemical elements

. halogens

. . . **astatine**

metals

. **astatine**

astatine isotopes

GS chemical elements

. nuclides

. . . isotopes

. . . . radioactive isotopes

. . . . **astatine isotopes**

metals

. **astatine isotopes**

ASTECSolar turboelectric generator

GS auxiliary power sources

. solar auxiliary power units

. . **ASTECSolar turboelectric generator**

electric generators

. rotating generators

. . turbogenerators

. . . **ASTECSolar turboelectric generator**

. solar generators

. . solar auxiliary power units

. . . **ASTECSolar turboelectric generator**

turbomachinery

. turbogenerators

. . **ASTECSolar turboelectric generator**

RT Rankine cycle

sun

thermoelectric generators

asteroid belts

DEF The location of the orbits of most of the minor planets (estimated at a half million asteroids) between Mars and Jupiter; about 2000 asteroids have been assigned numbers and names.

GS celestial bodies

. **asteroid belts**

. . Toro asteroid

RT Amor asteroid

Amphitrite asteroid

Apollo asteroids

asteroid collisions

asteroids

∞ belts

Ceres asteroid

Chiron

Gaspra asteroid

Icarus asteroid

Ida asteroid

meteorite parent bodies

meteoroids

Quaoar

regions

solar system

space debris

Toutatis asteroid

Vesta asteroid

asteroid capture

DEF The transfer of an asteroid or comet from the influence of a planet into that of another planet or neutral satellite.

RT asteroids

celestial bodies

containment

enclosures

payloads

retaining

solar system

asteroid collisions

(added July 1997)

GS collisions

. **asteroid collisions**

RT asteroid belts

asteroid detection

cometary collisions

craters

Earth (planet)

hypervelocity impact

meteorite collisions

near Earth objects

asteroid detection

(added July 1997)

GS detection

. **asteroid detection**

RT asteroid collisions

asteroids

sky surveys (astronomy)

space observations (from Earth)

space surveillance (ground based)

stellar occultation

asteroid missions

DEF Space missions for the study of asteroids and related celestial bodies.

GS space missions

. **asteroid missions**

. . Comet Rendezvous Asteroid Flyby Mission

. . Near Earth Asteroid Rendezvous Mission

. . Rosetta mission

RT

asteroids

Clementine spacecraft

Deep Space 1 Mission

flyby missions

interplanetary flight

∞ missions

space exploration

asteroids

DEF Small celestial bodies revolving around the sun, most having orbits between those of Mars and Jupiter.

UF *minor planets*

GS celestial bodies

. **asteroids**

. . Amor asteroid

. . Amphitrite asteroid

. . Apollo asteroids

. . Ceres asteroid

. . Chiron

. . EROS asteroid

. . Gaspra asteroid

. . Icarus asteroid

. . Ida asteroid

. . Quaoar

. . Toro asteroid

. . Toutatis asteroid

. . Trojan asteroids

. . Vesta asteroid

RT

asteroid belts

asteroid capture

asteroid detection

asteroid missions

Kuiper belt

meteorite parent bodies

meteoroids

near Earth objects

solar system

space debris

asteroseismology

(added March 2001)

DEF Study of stellar oscillations as a means to probing the internal structure and dynamics of stars.

UF *stellar seismology*

GS seismology

. **asteroseismology**

. . helioseismology

RT

astrometry

astronomical photometry

astrophysics

starquakes

stellar evolution

stellar interiors

stellar oscillations

stellar physics

asthenopia

GS diseases

. eye diseases

. . **asthenopia**

RT fatigue (biology)

asthenosphere

(added August 1994)

DEF Layer or shell of the Earth below the lithosphere which is weak and in which isostatic adjustments take place, magmas may be generated, and seismic waves are strongly attenuated.

RT boundary layers

Earth mantle

Earth planetary structure

lithosphere

planetary structure

seismology

tectonics

asthma

GS diseases

. respiratory diseases

. . **asthma**

astigmatism

DEF A defect of an optical system in consequence of which rays from a point fail to meet in a focal point resulting in a blurred and imperfect image.

GS diseases

. eye diseases

. . **astigmatism**

RT

distortion

focusing

geometrical optics

haplosopes

lenses

∞ optics

refraction

stigmatism

ASTP

USE **Apollo Soyuz test project**

astrionics

DEF Astronautical electronics, particularly the development and use of electronic equipment and systems for space vehicles and platforms.

RT ∞ astronautics

avionics

∞ control

∞ electronics

guidance (motion)

satellite communication

single event upsets

spacecraft communication

spacecraft electronic equipment

spacecraft instruments

∞ test equipment

Astro missions (STS)

GS payloads

. Space Shuttle payloads

Astro vehicle

. . Astro missions (STS)

RT ∞ missions
spaceborne astronomy
spaceborne telescopes
Spacelab payloads

Astro vehicle

SN (EXCLUDES STS)
GS maneuverable spacecraft
. Astro vehicle
manned spacecraft
. Astro vehicle
reentry vehicles
. recoverable spacecraft
. . Astro vehicle
soft landing spacecraft
. Astro vehicle
RT aerospace planes
boostglide vehicles
ferry spacecraft
lifting reentry vehicles
∞ spacecraft

Astrobee 1500 rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. sounding rockets
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
RT solid propellant rocket engines

Astrobee rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. sounding rockets
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
RT Genie rocket vehicle
solid propellant rocket engines
∞ vehicles

astrobiology

USE **exobiology**

astrodynamics

DEF The practical application of celestial mechanics, astrobballistics, propulsion theory, and allied fields to the problem of planning and directing the trajectories of space vehicles.

GS classical mechanics
. space mechanics
. . **astrodynamics**
RT ∞ astronautics
astronomical observatories
celestial bodies
celestial mechanics
∞ dynamics
interplanetary flight
orbital mechanics
orbital resonances (celestial mechanics)
orbits
∞ science
space exploration
space flight
space navigation
∞ spacecraft
trajectory analysis

astrography

SN (EXCLUDES ASTRONOMICAL PHOTOGRAPHY)
RT astronomical maps
mapping
planetary mapping

Astroguide Navigation System

GS navigation
. celestial navigation
. . **Astroguide Navigation System**
. inertial navigation
. . **Astroguide Navigation System**
RT inertial coordinates

star trackers
∞ systems

astrolabes

DEF Instruments designed to observe the positions and measure the altitudes of celestial bodies.

GS measuring instruments
. indicating instruments
. . **astrolabes**
RT altimeters
astrometry
astronomical observatories
astronomy
celestial bodies
position (location)
position errors
solar position
star distribution
star trackers
stars

Astroloy (trademark)

GS alloys
. chromium alloys
. . **Astroloy (trademark)**
. cobalt alloys
. . **Astroloy (trademark)**
. high strength alloys
. . **Astroloy (trademark)**
. nickel alloys
. . **Astroloy (trademark)**
. ternary alloys
. . **Astroloy (trademark)**

astromasts

USE **longerons**

astrometry

RT asteroseismology
astrolabes
astronomical maps
astronomical photography
astronomical polarimetry
astronomy
double stars
Hipparcos satellite
∞ measurement
parallax
planet detection
solar diameter
stellar parallax

Astron thermonuclear reactor

GS nuclear reactors
. **Astron thermonuclear reactor**
RT relativistic plasmas
thermonuclear power generation
thermonuclear reactions

astronaut locomotion

GS locomotion
. **astronaut locomotion**
RT extravehicular activity
extravehicular mobility units
intravehicular activity
life support systems
man operated propulsion systems
manned maneuvering units
orbital workers

astronaut maneuvering equipment

GS **astronaut maneuvering equipment**
. manned maneuvering units
RT Crew Equipment Translation Aid (ISS)
extravehicular activity
extravehicular mobility units
human factors engineering
IMLSS
intravehicular activity
self maneuvering units
walking machines

astronaut performance

GS human performance
. **astronaut performance**

. . blackout prevention
confinement
confining
human factors engineering
intravehicular activity
man machine systems
operator performance
∞ performance
physiological factors
pilot performance
psychological factors
space psychology
spacecraft performance
weightlessness

astronaut training

GS education
. flight training
. . space flight training
. . . **astronaut training**
learning
. **astronaut training**
RT ejection training
pilot training
space maintenance
space psychology
training simulators

∞ astronautics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The science of space flight including the design, construction, and operation of spacecraft.
RT aerospace environments
artificial gravity
astrionics
astrodynamics
astronauts
astronomy
auxiliary propulsion
avionics
bioastronautics
Biosatellite 3
cosmonauts
Earth-Venus trajectories
human factors engineering
lunar bases
propulsion
soft landing
space exploration
space flight
space maintenance
space navigation
spacecraft docking
weightlessness

astronauts

GS personnel
. flying personnel
. . **astronauts**
. . . orbital workers
RT ∞ astronautics
awards
cosmonauts
crew experiment stations
crew observation stations
crew workstations
crews
pilots (personnel)
spacecrews

astronavigation

GS navigation
. celestial navigation
. . **astronavigation**
RT air navigation
interplanetary navigation
interstellar travel
radio navigation
space navigation

astronomical catalogs

UF *star catalogs*
GS documents
. catalogs (publications)

- . . **astronomical catalogs**
- RT ∞ catalogs
 - classifications
 - ephemerides
 - northern sky
 - sky surveys (astronomy)
 - Southern sky
 - tables (data)
- astronomical coordinates**
 - DEF Coordinates defining a point on the surface of the Earth, or of the geoid, in which the local direction of gravity is used as a reference.
 - GS coordinates
 - . **astronomical coordinates**
 - RT azimuth
 - celestial reference systems
 - cylindrical coordinates
 - geocentric coordinates
 - northern sky
 - planetocentric coordinates
 - planispheres
 - polar coordinates
 - reference stars
 - solar longitude
 - spherical coordinates
- astronomical interferometry**
 - (added June 1993)
 - GS interferometry
 - . **astronomical interferometry**
 - RT astronomy
 - etalons
 - infrared interferometers
 - interferometers
 - LIGO (observatory)
 - LISA (observatory)
 - planet detection
 - radio astronomy
 - Sagnac effect
 - space observations (from Earth)
 - spaceborne astronomy
 - very long base interferometry
- astronomical maps**
 - GS maps
 - . **astronomical maps**
 - . . planispheres
 - RT astrography
 - astrometry
 - celestial reference systems
 - celestial sphere
 - lunar maps
- astronomical models**
 - UF *orries*
 - GS models
 - . **astronomical models**
 - . . density wave model
 - . . stellar models
 - RT big bang cosmology
 - corotation
 - cosmology
 - mathematical models
 - molecular clouds
 - planetariums
 - Reissner-Nordstrom solution
 - solar neutrinos
 - solar oscillations
 - stellar oscillations
- Astronomical Netherlands Satellite**
 - UF ANS
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Astronomical Netherlands Satellite**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Astronomical Netherlands Satellite**
 - RT Netherlands
- Netherlands space program
- astronomical observatories**
 - GS observatories
 - . **astronomical observatories**
 - . . astronomical satellites
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - . . . HEAO 1
 - . . . HEAO 2
 - . . . HEAO 3
 - . . . HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)
 - . . . IUE
 - . . . Large Deployable Reflector
 - . . . Magellan ultraviolet astronomy satellite
 - . . . OAO
 - . . . OAO 1
 - . . . OAO 2
 - . . . OAO 3
 - . . . OSO
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
 - . . . Quasat
 - . . . SAS
 - . . . Explorer 53 satellite
 - . . . SAS-1
 - . . . SAS-2
 - . . . SAS-3
 - . . . James Webb Space Telescope
 - . . . LISA (observatory)
 - . . . Space Infrared Telescope Facility
 - . . . Spartan satellites
 - . . . Submillimeter Wave Astronomy Satellite
 - . . . Tenma satellite
 - . . . X Ray Astrophysics Facility
 - . . . XMM-Newton telescope
 - . . . Astroplane
 - . . . ROSAT mission
 - . . . SOFIA (airborne observatory)
 - . . . solar observatories
 - . . . OSO
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
 - . . . Pinhole Occulter Facility
 - . . . European Southern Observatory
 - . . . LIGO (observatory)
 - RT astrodynamics
 - astrolabes
 - astronomy
 - celestial bodies
 - geophysical observatories
 - honeycomb mirrors
 - Jodrell Bank Observatory
 - lunar observatories
 - Next Generation Space Telescope project
 - northern sky
 - observation scheduling
 - radio astronomy
 - seeing (astronomy)
 - segmented mirrors
 - Southern sky
 - spaceborne telescopes
- telescopes
- astronomical photography**
 - GS imagery
 - . photography
 - . . **astronomical photography**
 - RT aerial photography
 - astrometry
 - astronomy
 - atmospheric windows
 - Baker-Nunn camera
 - black and white photography
 - coronagraphs
 - diffraction limited cameras
 - electro-optical photography
 - faint object camera
 - infrared astronomy
 - infrared photography
 - Lallemand cameras
 - lunar photographs
 - lunar photography
 - reference stars
 - rocket-borne photography
 - satellite-borne photography
 - Schmidt cameras
 - Southern sky
 - spaceborne photography
 - spaceborne telescopes
- astronomical photometry**
 - GS optical measurement
 - . photometry
 - . . **astronomical photometry**
 - . . . stellar spectrophotometry
 - RT asteroeismology
 - atmospheric windows
 - blinking
 - cometary atmospheres
 - DIAL satellite
 - infrared photometry
 - planet detection
 - spectrophotometry
 - superhumps (astronomy)
 - telephotometry
- astronomical polarimetry**
 - (added July 1991)
 - DEF The measurement of electromagnetic radiation from celestial bodies by polarimeters.
 - GS optical measurement
 - . polarimetry
 - . . **astronomical polarimetry**
 - RT astrometry
 - astronomy
 - polarimeters
- astronomical satellites**
 - GS artificial satellites
 - . scientific satellites
 - . . **astronomical satellites**
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - . . . HEAO 1
 - . . . HEAO 2
 - . . . HEAO 3
 - . . . HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)
 - . . . IUE
 - . . . Large Deployable Reflector
 - . . . Magellan ultraviolet astronomy satellite
 - . . . OAO
 - . . . OAO 1
 - . . . OAO 2
 - . . . OAO 3
 - . . . OSO
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4

- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- Quasat
- SAS
- Explorer 53 satellite
- SAS-1
- SAS-2
- SAS-3
- James Webb Space Telescope
- LISA (observatory)
- Space Infrared Telescope Facility
- Spartan satellites
- Submillimeter Wave Astronomy Satellite
- Tenma satellite
- X Ray Astrophysics Facility
- XMM-Newton telescope
- observatories
- . astronomical observatories
- . **astronomical satellites**
- Astronomical Netherlands Satellite
- Gamma Ray Observatory
- Ginga satellite
- HEAO
- HEAO 1
- HEAO 2
- HEAO 3
- HEAO 4
- Hubble Space Telescope
- Infrared Astronomy Satellite
- Infrared Space Observatory (ISO)
- IUE
- Large Deployable Reflector
- Magellan ultraviolet astronomy satellite
- OAO
- OAO 1
- OAO 2
- OAO 3
- OSO
- AOSO
- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- Quasat
- SAS
- Explorer 53 satellite
- SAS-1
- SAS-2
- SAS-3
- James Webb Space Telescope
- LISA (observatory)
- Space Infrared Telescope Facility
- Spartan satellites
- Submillimeter Wave Astronomy Satellite
- Tenma satellite
- X Ray Astrophysics Facility
- XMM-Newton telescope
- RT ROSAT mission
- spaceborne astronomy

astronomical spectroscopy

- GS spectroscopy
- . **astronomical spectroscopy**
- . . stellar spectrophotometry
- RT astronomy
- blue shift
- continuous spectra
- electromagnetic spectra
- infrared spectroscopy
- Kuiper Airborne Observatory
- organic solids
- radial velocity
- radiation spectra
- radio astronomy
- radio spectroscopy

- Raman spectroscopy
- solar spectra
- Southern sky
- spectra
- spectroscopic telescopes
- stellar spectra
- ultraviolet spectroscopy
- visible spectrum
- x ray spectroscopy

astronomical telescopes
USE **telescopes**

astronomy

DEF The science that treats of the location, magnitudes, motions, and constitution of celestial bodies and structures. Used for celestial observation.

- UF *celestial observation*
- GS **astronomy**
- . gamma ray astronomy
- . infrared astronomy
- . radar astronomy
- . radio astronomy
- . spaceborne astronomy
- . ultraviolet astronomy
- . x ray astronomy
- RT ∞ aerospace sciences
- Amor asteroid
- Apollo asteroids
- astrolabes
- astrometry
- ∞ astronautics
- astronomical interferometry
- astronomical observatories
- astronomical photography
- astronomical polarimetry
- astronomical spectroscopy
- astrophysics
- celestial bodies
- celestial mechanics
- Earth limb
- halos
- infrared sources (astronomy)
- infrared telescopes
- mass to light ratios
- meteoroid showers
- missing mass (astrophysics)
- ∞ physical sciences
- relic radiation
- ∞ science
- seeing (astronomy)
- selenology
- sidereal time
- sky surveys (astronomy)
- solar neighborhood
- solar parallax
- Southern sky
- spaceborne telescopes
- stellar magnitude
- stellar models
- stellar oscillations
- telescopes

astrophysics

DEF Study of the physical characteristics and processes associated with celestial bodies and interstellar space. The application of the laws of physics to the study of the celestial bodies and astronomical phenomena such as luminosity, size, mass, density, temperature, and chemical composition. Used for geoastronomy.

- UF *geoastronomy*
- GS **astrophysics**
- . computational astrophysics
- . nuclear astrophysics
- . stellar physics
- . . solar physics
- RT accretion disks
- association reactions
- asteroseismology
- astronomy
- brightness distribution
- brightness temperature
- celestial bodies
- celestial mechanics

- cosmology
- degenerate matter
- dense plasmas
- disk galaxies
- galactic evolution
- gamma ray astronomy
- geophysics
- grand unified theory
- gravitational binding energy
- gravitational collapse
- gravitational instability
- helioseismology
- interstellar extinction
- magnetic field configurations
- mass to light ratios
- Michelson interferometers
- missing mass (astrophysics)
- naked singularities
- Orion nebula
- ∞ physics
- planetary rotation
- radio interferometers
- radio jets (astronomy)
- relic radiation
- ∞ science
- solar neutrinos
- Spartan satellites
- spin temperature
- star formation
- stellar cores
- stellar envelopes
- stellar evolution
- stellar interiors
- stellar oscillations
- theoretical physics
- Wolf-Rayet stars
- X Ray Astrophysics Facility
- x ray binaries

Astroplane

- SN (LIMITED TO THE EUROPEAN AIRBORNE ASTRONOMICAL OBSERVATORY)
- GS observatories
- . astronomical observatories
- . . **Astroplane**
- RT airborne equipment
- infrared telescopes

asymmetrical optics

USE **aspheric optics**

asymmetry

- UF *dissymmetry*
- RT antisymmetry
- deviation
- distortion
- eccentricity
- shapes
- skewness
- symmetry
- variations

asymptotes

- GS analysis (mathematics)
- . real variables
- . . **asymptotes**
- functions (mathematics)
- . **asymptotes**
- RT analytic geometry
- asymptotic properties
- asymptotic series
- calculus
- numerical analysis

asymptotic giant branch stars

- UF *AGB stars*
- GS celestial bodies
- . stars
- . . giant stars
- . . . **asymptotic giant branch stars**
- RT carbon stars
- color-magnitude diagram
- Hertzsprung-Russell diagram
- late stars
- M stars
- Mira variables
- red giant stars

- S stars
stellar evolution
stellar mass ejection
- asymptotic methods**
GS problem solving
 . **asymptotic methods**
RT asymptotic properties
 iterative solution
 learning curves
∞ methodology
- asymptotic properties**
DEF Properties of any mathematical relation or corresponding physical system characterized by an approach to a given value as an expression, containing a variable, tends to infinity.
RT asymptotes
 asymptotic methods
 asymptotic series
 attractors (mathematics)
 differential equations
 integral equations
 mathematical models
 normality
- asymptotic series**
GS analysis (mathematics)
 . calculus
 . . series (mathematics)
 . . . **asymptotic series**
 . real variables
 . . series (mathematics)
 . . . **asymptotic series**
RT asymptotes
 asymptotic properties
 series expansion
- asynchronous motors**
GS electromechanical devices
 . electric motors
 . . **asynchronous motors**
 motors
 . electric motors
 . . **asynchronous motors**
RT induction motors
 synchronous motors
- asynchronous transfer mode**
(added January 1997)
UF *ATM (data transmission)*
RT broadband
 channels (data transmission)
 communication networks
 data transfer (computers)
 data transmission
 optical switching
 packet switching
 packet transmission
- ATARS**
USE **automatic traffic advisory and resolution**
- ataxia**
GS diseases
 . **ataxia**
RT muscles
- ataxite**
GS rocks
 . **ataxite**
RT breccia
 soils
- Atchafalaya River Basin (LA)**
GS landforms
 . structural basins
 . . river basins
 . . . **Atchafalaya River Basin (LA)**
RT Louisiana
- rivers
- atelectasis**
DEF Collapsed or airless state of all or part of the lung.
GS diseases
 . **atelectasis**
RT lungs
- ATF**
USE **F-22 aircraft**
- Athena rocket vehicle**
GS rocket vehicles
 . multistage rocket vehicles
 . . **Athena rocket vehicle**
RT BE-3 engine
 reentry vehicles
 solid propellant rocket engines
- atherosclerosis*
USE **arteriosclerosis**
- athletes**
RT competition
 physical exercise
 physical fitness
 sports medicine
- athodyds*
USE **ramjet engines**
- Atlanta (GA)**
GS cities
 . **Atlanta (GA)**
RT Georgia
- Atlantic aircraft*
USE **Breguet 1150 aircraft**
- Atlantic Ocean**
GS oceans
 . **Atlantic Ocean**
RT Assateague Island (MD-VA)
 Azores
 Bermuda
 Block Island Sound (RI)
 Cape Hatteras (NC)
 Cape Verde
 Delaware Bay (US)
 English Channel
 GARP Atlantic Tropical Experiment
 Gulf Stream
 Lesser Antilles
 Lomonosov current
 Long Island (NY)
 mid-ocean ridges
 Outer Banks (NC)
 Sargasso Sea
 Wallops Island
 West Indies
- Atlantis (orbiter)**
UF *Space Shuttle Orbiter 104*
GS manned spacecraft
 . space shuttles
 . . Space Shuttle orbiters
 . . . **Atlantis (orbiter)**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . space shuttles
 Space Shuttle orbiters
 **Atlantis (orbiter)**
RT manned space flight
 Space Shuttle mission 51-H
 Space Shuttle mission 51-J
 Space Shuttle mission 61-B
∞ spacecraft
- Atlas Able 5 launch vehicle**
GS launch vehicles
 . Atlas launch vehicles
 . . **Atlas Able 5 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
- . . Atlas launch vehicles
 . . . **Atlas Able 5 launch vehicle**
RT lunar probes
 space probes
- Atlas Agena B launch vehicle**
GS launch vehicles
 . Atlas launch vehicles
 . . **Atlas Agena B launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Atlas launch vehicles
 . . . **Atlas Agena B launch vehicle**
RT Agena rocket vehicles
 Mariner 2 space probe
 Midas satellites
 Ranger 4 lunar probe
 Ranger lunar probes
- Atlas Agena launch vehicles**
GS launch vehicles
 . Atlas launch vehicles
 . . **Atlas Agena launch vehicles**
 rocket vehicles
 . multistage rocket vehicles
 . . Atlas launch vehicles
 . . . **Atlas Agena launch vehicles**
RT Agena rocket vehicles
 Environmental Research Satellites
 ERS 17
 ERS 18
 Mariner 5 space probe
 Mariner 6 space probe
 Mariner program
 OGO-A
∞ vehicles
- Atlas Centaur launch vehicle**
GS launch vehicles
 . Atlas launch vehicles
 . . **Atlas Centaur launch vehicle**
 Centaur launch vehicle
 . . **Atlas Centaur launch vehicle**
 rocket vehicles
 . Centaur launch vehicle
 . . **Atlas Centaur launch vehicle**
 . multistage rocket vehicles
 . . Atlas launch vehicles
 . . . **Atlas Centaur launch vehicle**
RT Centaur project
 OAO 1
 OAO 2
 OAO 3
 RL-10 engines
 Space Shuttle upper stage A
 Surveyor 1 lunar probe
 Surveyor 2 lunar probe
 Surveyor 3 lunar probe
 Surveyor 4 lunar probe
 Surveyor 5 lunar probe
 Surveyor 6 lunar probe
 Surveyor 7 lunar probe
 Surveyor project
- Atlas D ICBM**
GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 **Atlas D ICBM**
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 **Atlas D ICBM**
RT Centaur launch vehicle
 Standard Launch Vehicles
 Vega launch vehicle
- Atlas E ICBM**
GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 **Atlas E ICBM**
 . surface to surface missiles
 . . intercontinental ballistic missiles

. . . Atlas ICBM
 Atlas E ICBM

Atlas F ICBM

GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas F ICBM
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas F ICBM

Atlas ICBM

GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas D ICBM
 Atlas E ICBM
 Atlas F ICBM
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas D ICBM
 Atlas E ICBM
 Atlas F ICBM
 RT MA-2 engine
 MA-3 engine

Atlas launch vehicles

UF *SM-65 missile*
 GS launch vehicles
 . Atlas launch vehicles
 . . Atlas Able 5 launch vehicle
 . . Atlas Agena B launch vehicle
 . . Atlas Agena launch vehicles
 . . Atlas Centaur launch vehicle
 . . Atlas SLV-3 launch vehicle
 rocket vehicles
 . multistage rocket vehicles
 . . Atlas launch vehicles
 . . . Atlas Able 5 launch vehicle
 . . . Atlas Agena B launch vehicle
 . . . Atlas Agena launch vehicles
 . . . Atlas Centaur launch vehicle
 . . . Atlas SLV-3 launch vehicle
 RT EGO
 Gemini project
 MA-5 engine
 Mariner program
 Mercury flights
 Mercury MA-1 flight
 Mercury MA-2 flight
 Mercury MA-3 flight
 Mercury MA-4 flight
 Mercury MA-5 flight
 Mercury MA-6 flight
 Mercury MA-7 flight
 Mercury MA-8 flight
 Mercury MA-9 flight
 Mercury project
 Nomad launch vehicle
 OAO
 orbital rendezvous
 Ranger project
 ∞ vehicles

Atlas SLV-3 launch vehicle

UF *standard launch vehicle 3*
 GS launch vehicles
 . Atlas launch vehicles
 . . Atlas SLV-3 launch vehicle
 . Standard Launch Vehicles
 . . Atlas SLV-3 launch vehicle
 rocket vehicles
 . multistage rocket vehicles
 . . Atlas launch vehicles
 . . . Atlas SLV-3 launch vehicle
 . Standard Launch Vehicles
 . . Atlas SLV-3 launch vehicle
 RT liquid propellant rocket engines

MA-5 engine

ATLIT project

UF *Advanced Technology Light Twin aircraft*
 GS programs
 . NASA programs
 . . ATLIT project
 . projects
 . . ATLIT project
 RT ∞ aircraft
 GAW-1 airfoil
 PA-34 Seneca aircraft

ATM (data transmission)
 (added January 1997)

USE asynchronous transfer mode

Atmosphere Explorer A

USE Explorer 17 satellite

Atmosphere Explorer B

USE Explorer 32 satellite

Atmosphere Explorer C

USE Explorer 51 satellite

Atmosphere Explorer D

USE Explorer 54 satellite

Atmosphere Explorer E

USE Explorer 55 satellite

∞ atmospheres

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF (1) The mixture of gases surrounding the Earth or filling the habitable volume or a spacecraft. (2) The pressure exerted by a column of mercury 760 mm high at 1G, equal to 101.329 kilopascals.

RT air
 argon-oxygen atmospheres
 atmospheric pressure
 cabin atmospheres
 cometary atmospheres
 controlled atmospheres
 Earth atmosphere
 environments
 equatorial atmosphere
 gas mixtures
 gases
 helium-oxygen atmospheres
 hypobaric atmospheres
 life support systems
 meteorology
 middle atmosphere
 Neptune atmosphere
 neutral atmospheres
 nongray atmospheres
 nongray gas
 planetary atmospheres
 planetary ionospheres
 primitive Earth atmosphere
 satellite atmospheres
 solar atmosphere
 stellar atmospheres
 Uranus atmosphere

Atmospheric & Oceanographic Inform Sys

SN (ATMOSPHERIC & OCEANOGRAPHIC INFORMATION SYSTEMS)

DEF A data system designed primarily for the interactive manipulation of meteorological satellite images. Capabilities include displaying, analyzing, storing, and manipulating digital data in the field of meteorology and Earth resources. Used for AOIPS.

UF AOIPS
 GS information systems
 . Atmospheric & Oceanographic Inform Sys

RT aerology
 air water interactions
 data processing
 data systems

imagery
 isotherms
 meteorological parameters
 meteorology
 minicomputers
 oceanographic parameters
 oceanography
 ∞ systems
 weather

atmospheric absorption

USE atmospheric attenuation

Atmospheric and Magnetospheric Payload

USE AMPS (satellite payload)

atmospheric attenuation

UF *atmospheric absorption*
 GS attenuation
 . atmospheric attenuation
 . . auroral absorption
 RT acoustic attenuation
 atmospheric lasers
 cosmic ray albedo
 electromagnetic absorption
 electromagnetic scattering
 electromagnetic wave transmission
 infrared absorption
 microwave absorption
 molecular absorption
 planetary atmospheres
 radar attenuation
 radar transmission
 radiation absorption
 radio attenuation
 radio transmission
 shock wave attenuation
 shock wave propagation
 thermal absorption
 transmission
 vegetative index
 wave attenuation
 wave propagation

atmospheric boundary layer

GS boundary layers
 . atmospheric boundary layer
 RT air flow
 air land interactions
 boundary layer flow
 Ekman layer
 ∞ layers
 mixing layers (fluids)
 planetary boundary layer
 primitive equations

atmospheric chemistry

DEF Study of the production, transport, modification, and removal of atmospheric constituents in the troposphere and stratosphere.

GS environmental chemistry
 . atmospheric chemistry
 RT acid rain
 aerothermochemistry
 air pollution
 Aitken nuclei
 atmospheric effects
 ∞ chemistry
 formyl ions
 middle atmosphere
 nitrous acid
 photochemical oxidants
 photochemical reactions
 physical chemistry
 satellite atmospheres

atmospheric circulation

DEF Global or hemispheric air movements which can be treated by equations of motion in contrast to atmospheric diffusion which is small random movement not amenable to treatment by these equations. Used for wind circulation.

UF *wind circulation*
 GS circulation
 . atmospheric circulation
 . . zonal flow (meteorology)

RT advection
 air currents
 air land interactions
 air masses
 annual variations
 Atmospheric General Circulation Experiment
 Atmospheric General Circulation Models
 baroclinic instability
 Brunt-Vaisala frequency
 circulation distribution
 circumpolar westerlies
 climatology
 convection cells
 cyclogenesis
 Earth atmosphere
 ground wind
 horizontal distribution
 intertropical convergent zones
 intraseasonal variations
 jet streams (meteorology)
 Kelvin waves
 Madden-Julian Oscillation
 meridional flow
 middle atmosphere
 mixing height
 monsoons
 planetary meteorology
 planetary waves
 pollution transport
 quasi-biennial oscillation
 sea breeze
 Southern Oscillation
 superrotation
 tornadoes
 TRMM satellite
 tropical storms
 turbopause
 typhoons
 upwelling water
 vertical air currents
 vorticity
 wind (meteorology)
 wind direction
 wind profiles
 windpower utilization

Atmospheric Cloud Physics Lab (Spacelab)

DEF A NASA Spacelab mission involving cloud physics experiments in zero gravity environment. Also known as ACPL. Used for ACPL (Spacelab) and zero-g ACPL (Spacelab).

UF ACPL (Spacelab)
 zero-g ACPL (Spacelab)

GS laboratories
 . space laboratories
 . . **Atmospheric Cloud Physics Lab (Spacelab)**

payloads
 . Spacelab payloads
 . . **Atmospheric Cloud Physics Lab (Spacelab)**

RT cloud physics
 meteorological parameters
 nephelometry
 spacecraft instruments

atmospheric composition

GS composition (property)
 . **atmospheric composition**
 . . atmospheric moisture
 . . ionospheric composition

RT aeronomy
 air
 air pollution
 Aitken nuclei
 carbon dioxide concentration
 chemical composition
 climate change
 Earth atmosphere
 electron density (concentration)
 equatorial atmosphere
 Gaia hypothesis
 gas composition
 horizontal distribution
 in situ measurement

isotope ratios
 LACATE (experiment)
 middle atmosphere
 mixing ratios
 moisture content
 ozone depletion
 particulates
 planetary atmospheres
 primitive Earth atmosphere
 radio occultation
 radioactive contaminants
 satellite atmospheres
 Saturn atmosphere
 Solar Mesosphere Explorer
 Titan

atmospheric conditions

USE **meteorology**

atmospheric conductivity

GS transport properties
 . **atmospheric conductivity**
 . . ionospheric conductivity
 RT air conductivity
 ∞ conductivity
 electrical resistivity
 thermal conductivity

atmospheric correction

DEF Removal of the effects of the intervening atmosphere from satellite imagery.

GS correction
 . **atmospheric correction**

RT anisoplanatism
 atmospheric effects
 clouds (meteorology)
 geometric rectification (imagery)
 image classification
 image processing
 infrared radiometers
 radiative transfer
 satellite imagery
 spatial resolution

atmospheric density

GS density (mass/volume)
 . **atmospheric density**
 RT air pollution
 Boltzmann distribution
 ∞ density
 density (number/volume)
 electron density (concentration)
 humidity
 ion density (concentration)
 magnetospheric electron density
 magnetospheric ion density
 magnetospheric proton density
 meteorology
 particle density (concentration)
 planetary atmospheres
 plasma density
 proton density (concentration)
 space density

atmospheric diffusion

GS diffusion
 . **atmospheric diffusion**
 RT Boltzmann distribution
 molecular diffusion
 pollution transport
 radio scattering
 turbulent diffusion

atmospheric effects

RT aerosols
 air pollution
 atmospheric chemistry
 atmospheric correction
 ∞ effects
 erosion
 exposure
 rusting
 seeing (astronomy)
 soil erosion
 turbulence
 vegetative index

wind effects
 wind erosion

atmospheric electricity

DEF Electrical phenomena, regarded collectively, which occur in the Earth's atmosphere. Also the study of electrical processes occurring within the atmosphere.

GS electricity
 . **atmospheric electricity**
 . . ionospheric currents
 . . . Birkeland currents
 . . . electrojets
 auroral electrojets
 equatorial electrojet
 . . . Pedersen currents

RT atmospheric
 ball lightning
 cloud physics
 dust storms
 Earth atmosphere
 electric corona
 electron density profiles
 elves
 field aligned currents
 lightning
 lightning suppression
 primitive Earth atmosphere
 ring currents
 sprites (atmospheric physics)
 static electricity
 telluric currents

atmospheric emission

USE **airglow**

atmospheric energy sources

RT ammonia
 atmospheric heat budget
 atmospheric heating
 atmospheric physics
 energy budgets
 ∞ energy sources
 ethyl alcohol
 planetary atmospheres

atmospheric entry

DEF The penetration of any planetary atmosphere by any object from outer space; specifically, the penetration of the Earth's atmosphere by a manned or unmanned capsule or spacecraft. Used for planetary entry.

UF *planetary entry*
 GS **atmospheric entry**

. reentry
 . . hyperbolic reentry
 . . hypersonic reentry
 . . . uncontrolled reentry (spacecraft)
 . . manned reentry
 . . spacecraft reentry
 . . . uncontrolled reentry (spacecraft)

RT ablation
 aeroassist
 aerocapture
 aerodynamic heating
 aeromaneuvering
 bolides
 descent trajectories
 Earth atmosphere
 ∞ entry
 entry guidance (STS)
 falling
 Galileo project
 gas guns
 orbit decay
 space flight
 spacecraft breakup

atmospheric entry simulation

GS simulation
 . **atmospheric entry simulation**
 RT environment simulation
 flight simulators
 landing simulation

Atmospheric General Circulation Experiment

space environment simulation

Atmospheric General Circulation Experiment

DEF Model experiment of the Earth's atmospheric circulation as proposed for a Spacelab flight on which a liquid contained between two concentric spheres is subjected to rotation. The thermal driving force will be a stable radial temperature gradient and an unstable latitudinal gradient.

GS payloads

. Space Shuttle payloads

. . **Atmospheric General Circulation Experiment**

. Spacelab payloads

. . **Atmospheric General Circulation Experiment**

RT atmospheric circulation

Atmospheric General Circulation Models

Earth atmosphere

space transportation system

Atmospheric General Circulation Models

(added March 1989)

GS models

. atmospheric models

. . **Atmospheric General Circulation Models**

RT atmospheric circulation

Atmospheric General Circulation Experiment

climatology

long range weather forecasting

numerical weather forecasting

atmospheric heat budget

GS energy budgets

. heat budget

. . **atmospheric heat budget**

RT atmospheric energy sources

Earth radiation budget

greenhouse effect

heat balance

heat transfer

stratospheric warming

atmospheric heating

SN (EXCLUDES AERODYNAMIC HEATING)

GS heating

. **atmospheric heating**

. . global warming

. . stratospheric warming

RT atmospheric energy sources

bolides

atmospheric impurities

USE **air pollution**

atmospheric ionization

UF *meteoritic ionization*

GS ionization

. gas ionization

. . **atmospheric ionization**

. . auroral ionization

RT afterglows

airglow

Antares rocket vehicle

Earth ionosphere

electron density profiles

elves

photoionization

plasmasphere

radio meteors

riometers

sprites (atmospheric physics)

atmospheric lasers

DEF The theoretical phenomena whereby the upper atmosphere is used as the lasing medium.

GS stimulated emission devices

. lasers

. . **atmospheric lasers**

RT atmospheric attenuation

atmospheric optics

atmospheric scattering

laser outputs

TEA lasers

atmospheric loading

USE **pollution transport**

atmospheric models

GS models

. **atmospheric models**

. . Atmospheric General Circulation Models

. . reference atmospheres

RT

baroclinic instability

Chapman-Ferraro problem

climate models

environment models

environment simulation

horizontal distribution

intraseasonal variations

large eddy simulation

Madden-Julian Oscillation

mathematical models

numerical weather forecasting

ocean models

primitive Earth atmosphere

solar oscillations

stellar oscillations

Venus clouds

weather forecasting

atmospheric moisture

GS composition (property)

. atmospheric composition

. . **atmospheric moisture**

. . concentration (composition)

. . moisture content

. . . **atmospheric moisture**

moisture

. **atmospheric moisture**

RT

acid rain

Advanced Microwave Sounding Unit

anvil clouds

cap clouds

cirrocumulus clouds

cirrostratus clouds

clouds (meteorology)

dew point

humidity

hydrometeors

mixing ratios

precipitation (meteorology)

psychrometers

water vapor

atmospheric noise

USE **atmospherics**

atmospheric optics

DEF The study of the optical characteristics of the atmosphere and of the optical phenomena produced by the atmosphere's suspensoids and hydrometeors. It embraces the study of refraction, reflection, diffraction, scattering, and polarization of light, but is not commonly regarded as including the study of any other kinds of radiation.

RT

adaptive optics

anisoplanatism

atmospheric lasers

clarity

haze

infrared absorption

light transmission

opacity

∞ optics

seeing (astronomy)

thermal lensing

transparence

vegetative index

atmospheric physics

UF *aerophysics*

GS **atmospheric physics**

. cloud physics

RT

aeronomy

atmospheric energy sources

Brunt-Vaisala frequency

dust storms

Earth sciences

International Magnetospheric Study

magnetosphere-ionosphere coupling

meteorology

neutral sheets

∞ physics

planetary meteorology

satellite atmospheres

∞ science

secular variations

turbopause

atmospheric pressure

DEF The pressure at any point in an atmosphere due solely to the weight of the atmospheric gases above the point concerned. Used for barometric pressure.

UF *barometric pressure*

GS pressure

. **atmospheric pressure**

RT

anticyclones

∞ atmospheres

cyclogenesis

cyclones

gas pressure

geopotential height

high altitude pressure

isobars (pressure)

isostatic pressure

meteorological parameters

pressure gradients

radio occultation

Southern Oscillation

weather

atmospheric radiation

DEF Infrared radiation emitted by or being propagated through the atmosphere.

GS **atmospheric radiation**

. auroras

. . auroral arcs

. . . red arcs

. . radio auroras

. dawn chorus

. ionospheric noise

. . whistlers

. sky radiation

. . airglow

. . . geocoronal emissions

. . . nightglow

. . . twilight glow

. . dayglow

. . elves

. . sprites (atmospheric physics)

. stratosphere radiation

. tropospheric radiation

RT

corpuscular radiation

Earth radiation budget

electromagnetic radiation

extraterrestrial radiation

greenhouse effect

ionospheric heating

light (visible radiation)

∞ radiation

∞ rays

secondary cosmic rays

terrestrial radiation

VLF emission recorders

atmospheric refraction

DEF Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere.

GS refraction

. **atmospheric refraction**

. . radio wave refraction

RT

electromagnetic radiation

light transmission

refractivity

solar radiation

wave dispersion

atmospheric scattering

GS scattering

- . wave scattering
- . . **atmospheric scattering**
- . . . tropospheric scattering

RT atmospheric lasers

- circumsolar radiation
- diffraction
- diffusion
- electromagnetic scattering
- halos
- light scattering
- microwave scattering
- radio scattering
- signal fading
- vegetative index

atmospheric seeing

USE **seeing (astronomy)**

atmospheric shells

USE **atmospheric stratification**

atmospheric sounding

DEF Measurement of atmospheric phenomena generally with instruments carried aloft by spacecraft, rockets, etc.

GS sounding

- . **atmospheric sounding**

RT Advanced Microwave Sounding Unit

- balloon sounding
- differential absorption lidar
- in situ measurement
- ionospheric sounding
- rocket sounding
- satellite sounding
- visible infrared spin scan radiometer

atmospheric stratification

DEF The presence of strata or layers in the Earth's atmosphere. Used for atmospheric shells.

UF *atmospheric shells*

GS stratification

- . **atmospheric stratification**

RT Brunt-Vaisala frequency

- mixing layers (fluids)
- plasma layers
- surface layers

atmospheric temperature

GS temperature

- . **atmospheric temperature**
- . . auroral temperature
- . . ionospheric temperature

RT Advanced Microwave Sounding Unit

- ambient temperature
- climate change
- Gaia hypothesis
- gas temperature
- global warming
- isotherms
- LACATE (experiment)
- land surface temperature
- meteorological parameters
- planetary atmospheres
- planetary temperature
- quasi-biennial oscillation
- radio occultation
- sodar
- sound detecting and ranging
- stratospheric warming
- subzero temperature
- temperature gradients
- temperature inversions
- thermal resources
- weather

atmospheric tides

DEF Defined in analogy to the oceanic tide as an atmospheric motion on a worldwide scale, in which vertical accelerations are neglected (but compressibility is taken into account).

GS tides

- . **atmospheric tides**

RT Earth tides

- lunar tides

atmospheric turbulence

GS turbulence

- . **atmospheric turbulence**
- . . clear air turbulence
- . . gusts
- . . low level turbulence

RT aviation meteorology

- dissipation
- gust loads
- homogeneous turbulence
- isotropic turbulence
- laminar flow
- meteorological parameters
- meteorology
- seeing (astronomy)
- tephigrams
- turbopause
- turbulent diffusion
- turbulent flow
- wind variations

atmospheric windows

DEF Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation.

RT astronomical photography

- astronomical photometry

atmospherics

DEF The radiofrequency electromagnetic radiations originating, principally, in the irregular surges of charge in thunderstorm lightning discharges. Atmospherics are heard as a quasi-steady background of crackling noise (static) in ordinary amplitude modulated radio receivers. Used for atmospheric noise and sferics.

UF *atmospheric noise*

GS *sferics*

GS electromagnetic interference

- . radio frequency interference
- . . electromagnetic noise
- . . . **atmospherics**
- ionospherics
- dawn chorus
- hiss
- sudden enhancement of
atmospherics
- whistlers

RT atmospheric electricity

- blackout (propagation)
- electromagnetic compatibility
- radio meteorology
- radio waves
- static electricity
- thunderstorms
- VLF emission recorders

atoll reefs

USE **coral reefs**

atolls

DEF Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral inlets that encircle a shallow lagoon in which there is no pre-existing land or islands of non-coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldives (Indian Ocean) which are typical examples of this structure.

GS landforms

- . islands
- . . **atolls**

RT coral reefs

- lagoons

reefs

atom concentration

GS composition (property)

- . concentration (composition)
- . . **atom concentration**

RT chemical composition

∞ density

- electron density (concentration)
- flux density
- gas composition
- gas density
- ion density (concentration)
- ionospheric composition
- plasma composition
- plasma density
- proton density (concentration)

atom optics

(added January 2002)

DEF Field of study addressing the manipulation of atomic beams in a way that is analogous to the manipulation of light by conventional optics. Reflection, diffraction, and focusing of the atoms is typically carried out through interaction with lasers tuned to the atomic resonances.

RT atomic beams

- beam interactions
- Bose-Einstein condensates
- electron optics
- four-wave mixing
- ion optics
- laser cooling

∞ optics

- quantum optics

atomic batteries

USE **radioisotope batteries**

atomic beams

GS beams (radiation)

- . particle beams
- . . **atomic beams**

RT atom optics

- ion beams
- molecular beams
- neutral atoms
- neutral beams
- neutron beams
- particle diffusion
- rarefied gas dynamics

atomic bombs

USE **fission weapons**

atomic clocks

DEF Timekeeping devices controlled by the frequency of the natural vibrations of certain atoms.

GS measuring instruments

- . time measuring instruments
- . . clocks
- . . . **atomic clocks**

RT autonomous spacecraft clocks

- chronometers
- clock paradox
- frequency standards
- gas masers
- masers
- molecular beams
- time measurement

atomic clusters

(added January 1994)

RT adatoms

- agglomeration
- chemisorption
- clumps

∞ clusters

- fullerenes
- metal clusters
- molecular clusters
- nucleation

atomic collisions

GS atomic interactions

atomic energy levels

- . **atomic collisions**
- collisions
- . **atomic collisions**
- RT ∞ absorption
- atomizing
- autoionization
- ∞ cross sections
- elastic scattering
- electron scattering
- ∞ interactions
- ionic collisions
- ionization
- molecular collisions
- particle collisions
- recoil ions
- recombination reactions
- scattering

atomic energy

USE **nuclear energy**

atomic energy levels

UF *triplet excitation*

triplet state

GS level (quantity)

. energy levels

. . **atomic energy levels**

RT atomic interactions

excitation

ground state

Landau factor

laser cooling

line spectra

spontaneous emission

atomic excitations

GS excitation

. **atomic excitations**

RT energy levels

Heisenberg theory

ionization

molecular excitation

particle collisions

resonance fluorescence

atomic explosions

USE **nuclear explosions**

atomic force microscopy

(added February 1994)

DEF A form of microscopy that allows the imaging of general surface morphology and surface atomic structure by the measurement of the atomic forces acting on a sharply pointed probe as it is moved across the surface of a specimen.

UF *AFM (microscopy)*

GS microscopy

. **atomic force microscopy**

RT atomic structure

crystal surfaces

interatomic forces

microstructure

nanofabrication

nanindentation

surface properties

thin films

atomic gases

USE **monatomic gases**

atomic interactions

GS **atomic interactions**

. atomic collisions

RT atomic energy levels

∞ interactions

ion atom interactions

molecular structure

quantum mechanics

atomic layer epitaxy

(added June 1997)

GS growth

. crystal growth

. . epitaxy

. . . **atomic layer epitaxy**

RT molecular beam epitaxy

thin films

vapor deposition

vapor phase epitaxy

atomic mass

USE **atomic weights**

atomic mobilities

GS mobility

. **atomic mobilities**

RT electron mobility

hole mobility

ionic mobility

self diffusion (solid state)

atomic physics

RT Hartree-Fock-Slater method

∞ physics

resonance fluorescence

∞ science

atomic recombination

GS chemical reactions

. **atomic recombination**

. . oxygen recombination

recombination reactions

. **atomic recombination**

. . oxygen recombination

RT deionization

dissociation

emission

emission spectra

ion recombination

radiative recombination

atomic spectra

GS spectra

. **atomic spectra**

RT Balmer series

Lyman alpha radiation

Lyman beta radiation

Lyman spectra

Paschen series

Rydberg series

atomic structure

SN (THIS TERM WAS USED FOR "ELECTRONIC STRUCTURE" PRIOR TO MAY 1999)

RT atomic force microscopy

atoms

constitution

crystal lattices

electronic structure

elementary particles

energy levels

fine structure

gravitons

Hartree approximation

hyperfine structure

interatomic forces

isoelectronic sequence

melts (crystal growth)

molecular structure

nuclear chemistry

nuclear models

nuclear physics

octets

order-disorder transformations

particle precipitation

Pauli exclusion principle

polywater

∞ structures

Thomas-Fermi model

atomic theory

GS **atomic theory**

. Heisenberg theory

RT electron transitions

ground state

Landau factor

∞ nuclear energy

quantum theory

∞ theories

atomic weights

DEF The weight of an atom according to a scale of atomic weight units, awu, valued as one-twelfth the mass of the carbon atom. Used for atomic mass.

UF *atomic mass*

GS weight (mass)

. **atomic weights**

RT ∞ weight

atomization

USE **atomizing**

atomizers

RT atomizing

evaporators

grinding mills

∞ nozzles

sprayers

atomizing

UF *atomization*

GS **atomizing**

. gas atomization

. liquid atomization

RT aerosols

atomic collisions

atomizers

colloidal generators

colloiding

comminution

disintegration

flaking

grinding (comminution)

grinding mills

metal powder

spraying

atoms

GS **atoms**

. adatoms

. helium atoms

. hot atoms

. hydrogen atoms

. metastable atoms

. neutral atoms

. nitrogen atoms

. oxygen atoms

. recoil atoms

RT atomic structure

chemical elements

∞ elements

free radicals

ions

isomers

isotope separation

isotopes

molecules

monatomic molecules

nuclei (nuclear physics)

polyatomic molecules

positive ions

positronium

ATP

USE **adenosine triphosphate**

ATR reactor

USE **advanced test reactors**

ATR-72 aircraft

(added September 1994)

GS jet aircraft

. turboprop aircraft

. . **ATR-72 aircraft**

passenger aircraft

. commuter aircraft

. . **ATR-72 aircraft**

RT ∞ aircraft

atrophy

RT biological effects

degeneration

deterioration

- glucocorticoids
hindlimb suspension
nutritional requirements
physical exercise
tissues (biology)
- atropine**
GS bases (chemical)
. alkaloids
. . . **atropine**
drugs
. stimulants
. . . **atropine**
nitrogen compounds
. alkaloids
. . . **atropine**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . alkaloids
. . . . **atropine**
- ATS**
UF *Applications Technology Satellites*
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
. scientific satellites
. . . **ATS**
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
RT communication satellites
Early Bird satellites
meteorological satellites
navigation satellites
NAVSTAR satellites
- ATS 1**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 1**
. scientific satellites
. . . **ATS**
. . . **ATS 1**
- ATS 2**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 2**
. scientific satellites
. . . **ATS**
. . . **ATS 2**
- ATS 3**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 3**
. scientific satellites
. . . **ATS**
. . . **ATS 3**
- ATS 4**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 4**
. scientific satellites
. . . **ATS**
- . . . **ATS 4**
- ATS 5**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 5**
. scientific satellites
. . . **ATS**
. . . **ATS 5**
- ATS 6**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 6**
. scientific satellites
. . . **ATS**
. . . **ATS 6**
RT HET experiment
- ATS 7**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 7**
. scientific satellites
. . . **ATS**
. . . **ATS 7**
- ATS 8**
GS artificial satellites
. gravity gradient satellites
. . . **ATS**
. . . **ATS 8**
. scientific satellites
. . . **ATS**
. . . **ATS 8**
- ∞ **attachment**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *reattachment*
RT assembling
Coanda effect
electron attachment
mounting
reattached flow
- attachments*
USE **accessories**
- ∞ **attack**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT angle of attack
attacking (assaulting)
chemical attack
- attack aircraft**
GS **attack aircraft**
. A-1 aircraft
. A-7 aircraft
. A-9 aircraft
. A-10 aircraft
. A-37 aircraft
. AH-1G helicopter
. AH-63 helicopter
. AH-64 helicopter
. bomber aircraft
. . . A-2 aircraft
. . . A-3 aircraft
. . . A-4 aircraft
. . . A-5 aircraft
. . . A-6 aircraft
. . . B-1 aircraft
. . . B-2 aircraft
. . . B-26 aircraft
. . . B-47 aircraft
. . . B-50 aircraft
. . . B-52 aircraft
. . . B-57 aircraft
. . . B-58 aircraft
. . . B-66 aircraft
. . . B-70 aircraft
- . . . F-111 aircraft
. . . Shackleton bomber
. . . Valiant aircraft
. . . Victor MK-1 aircraft
. . . Vulcan aircraft
. . . Breguet 1150 aircraft
. . . Buccaneer aircraft
. . . CL-41 aircraft
. . . COIN aircraft
. . . F-5 aircraft
. . . OV-10 aircraft
. . . DH 115 aircraft
. . . fighter aircraft
. . . Alpha jet aircraft
. . . DH 112 aircraft
. . . F-2 aircraft
. . . F-4 aircraft
. . . F-5 aircraft
. . . F-8 aircraft
. . . F-9 aircraft
. . . F-14 aircraft
. . . F-15 aircraft
. . . F-16 aircraft
. . . F-17 aircraft
. . . F-18 aircraft
. . . F-20 aircraft
. . . F-22 aircraft
. . . F-84 aircraft
. . . F-86 aircraft
. . . F-89 aircraft
. . . F-94 aircraft
. . . F-100 aircraft
. . . F-101 aircraft
. . . F-102 aircraft
. . . F-104 aircraft
. . . F-105 aircraft
. . . F-106 aircraft
. . . F-117A aircraft
. . . FV-12A aircraft
. . . G-91 aircraft
. . . G-95/4 aircraft
. . . GA-5 aircraft
. . . Harrier aircraft
. . . Jaguar aircraft
. . . JAS-39 aircraft
. . . jet provost aircraft
. . . MiG aircraft
. . . Mirage aircraft
. . . Mirage 3 aircraft
. . . P-51 aircraft
. . . P-1127 aircraft
. . . P-1154 aircraft
. . . Saab 37 aircraft
. . . Scimitar aircraft
. . . Vampire MK 35 aircraft
. . . YF-12 aircraft
. . . AH-1S helicopter
. . . AH-1W helicopter
. . . P-308 aircraft
. . . T-2 aircraft
. . . TSR-2 aircraft
RT aeroquatic vehicles
∞ aircraft
antisubmarine warfare aircraft
jet aircraft
∞ military aircraft
military helicopters
MRCA aircraft
supersonic aircraft
terrain following
V/STOL aircraft
- attacking (assaulting)**
UF *assaulting*
GS violence
. **attacking (assaulting)**
RT ∞ attack
∞ military aircraft
tactics
warfare
- attention**
RT alertness
consciousness
- attenuation**
DEF Reducing in intensity.
GS **attenuation**

attenuation coefficients

- . atmospheric attenuation
- . . auroral absorption
- . microwave attenuation
- . sidelobe reduction
- . wave attenuation
- . . acoustic attenuation
- . . . shock wave attenuation
- . . radar attenuation
- . . radio attenuation
- RT ∞ absorption
- attenuators
- ∞ conduction
- damping
- diffraction
- dilution
- dissipation
- electromagnetic absorption
- electromagnetic wave transmission
- elimination
- fading
- impingement
- ∞ inhibition
- internal friction
- light (visible radiation)
- mechanical impedance
- ∞ propagation
- ∞ reduction
- retarding
- shielding
- signal fading
- signal to noise ratios
- sound propagation
- sound transmission
- spatial filtering
- transmission
- transmission loss
- transmitters
- vibration damping
- wave degradation
- wave diffraction
- wave dispersion
- wave propagation

attenuation coefficients

DEF A measure of the space rate of attenuation of any transmitted electromagnetic radiation.

- GS coefficients
- . **attenuation coefficients**
- RT diffusion coefficient
- flow coefficients
- impedance
- opacity
- reflectance
- scattering coefficients
- transmission efficiency
- transmittance

attenuators

DEF Devices for measuring attenuation. They are usually calibrated in dB (decibels).

- GS **attenuators**
- . resistors
- . . potentiometers (resistors)
- . . printed resistors
- . . thermistors
- RT ∞ absorbers
- absorbers (materials)
- attenuation
- baffles
- deflectors
- ∞ diffusers
- electromagnetic wave filters
- equalizers (circuits)
- ∞ filters
- insulators
- inverters
- isolators
- mufflers
- power limiters
- radiation shielding
- reflectors
- shielding
- silencers
- suppressors

attitude (inclination)

DEF The position or orientation of an air-

craft, spacecraft, etc. , either in motion or at rest, as determined by the relationship between its axes and some reference line or plane or some fixed system of reference axes. Used for spatial orientation, tilt, and tilting.

- UF *spatial orientation*
- tilt*
- tilting*
- GS **attitude (inclination)**
- . pitch (inclination)
- . roll
- . satellite orientation
- . yaw
- RT horizontal orientation
- instrument orientation
- misalignment
- ∞ motion
- ∞ orientation
- ∞ position
- ∞ space orientation
- stability augmentation
- tiltmeters
- vertical orientation

attitude control

DEF The regulation of the attitude of an aircraft, spacecraft, etc. Also a device or system that automatically regulates and corrects attitude, especially of a pilotless vehicle.

- GS **attitude control**
- . directional control
- . . thrust vector control
- . lateral control
- . longitudinal control
- . satellite attitude control
- RT air traffic control
- aircraft control
- automatic control
- cold gas
- ∞ control
- control moment gyroscopes
- flight control
- guidance sensors
- helicopter control
- horizon scanners
- magnetic control
- manual control
- Miranda satellite
- missile control
- orbital lifetime
- reaction wheels
- remote control
- rocket engine control
- satellite control
- solar sensors
- spacecraft control
- spacing
- spin stabilization
- star trackers
- thrust control
- trajectory control
- visual control

attitude gyros

DEF Gyro-operated flight instruments that indicate the attitude of an aircraft or spacecraft with respect to a reference coordinate system throughout 360 degrees of rotation about each axis of the craft.

- GS gyroscopes
- . **attitude gyros**
- . . gyro horizons
- RT control moment gyroscopes
- sea keeping

attitude indicators

- UF *helicopter attitude indicators*
- yawmeters*
- GS flight instruments
- . **attitude indicators**
- . . gyro horizons
- measuring instruments
- . indicating instruments
- . . **attitude indicators**
- . . . gyro horizons
- navigation aids
- . navigation instruments

. . attitude indicators

- . . . gyro horizons
- RT aircraft instruments
- control moment gyroscopes
- flight control

attitude stability

- UF *satellite attitude disturbance*
- GS dynamic characteristics
- . dynamic stability
- . motion stability
- . . . **attitude stability**
- directional stability
- gyroscopic stability
- lateral stability
- longitudinal stability
- stability
- . dynamic stability
- . motion stability
- . . . **attitude stability**
- directional stability
- gyroscopic stability
- lateral stability
- longitudinal stability
- RT aerodynamic stability
- aircraft stability
- Discos (satellite attitude control)
- hovering stability
- low speed stability
- satellite attitude control
- spacecraft motion
- spacecraft stability
- tumbling motion

attraction

- RT affinity
- field theory (physics)
- ∞ force
- gravitational fields

attractors (mathematics)

(added June 1997)

- GS **attractors (mathematics)**
- . strange attractors
- RT asymptotic properties
- chaos
- dynamical systems
- nonlinear systems
- stochastic processes
- trajectories

attributes

USE **properties**

attrition (materials)

USE **comminution**

audio data

DEF Useful information at audio signal frequency.

- RT audio frequencies
- ∞ data
- data transmission

audio equipment

- GS **audio equipment**
- . earphones
- . loudspeakers
- . microphones
- RT audio visual equipment
- ∞ equipment
- monaural signals

audio frequencies

SN (APPROXIMATELY 20 TO 20,000 HZ)
DEF Frequencies corresponding to normally audible sound waves.

- GS frequencies
- . acoustic frequencies
- . . **audio frequencies**
- . . . uefrequencies
- RT acoustic measurement
- audio data
- audio signals
- auditory perception
- cepstral analysis

extremely low frequencies
 monaural signals
 noise pollution
 radio frequencies
 sound generators
 sound transmission
 sound waves
 very low frequencies
 voice

audio signals

DEF Signals with a bandwidth of less than 20 kilohertz.

RT audio frequencies
 auditory signals
 signal processing
 signal transmission
 ∞ signals

audio tapes

(added February 1992)

RT acoustics
 audio visual material
 information
 magnetic tapes
 ∞ tapes
 video tapes

audio visual equipment

(added September 1993)

RT audio equipment
 display devices
 multimedia
 training devices
 video equipment
 visual aids

audio visual material

(added September 1993)

RT audio tapes
 multimedia
 visual aids

audiology

RT audiometry
 auditory fatigue
 auditory perception
 hearing

audiometry

DEF The testing and measurement of hearing at various levels.

RT acoustic measurement
 audiology
 auditory defects
 auditory fatigue
 auditory perception
 auditory stimuli
 hearing
 masking
 ∞ measurement
 thresholds (perception)

auditory defects

UF *deafness*
hearing loss
 GS defects
 . **auditory defects**
 RT audiometry
 bioacoustics
 disabilities
 losses

auditory fatigue

GS fatigue (biology)
 . **auditory fatigue**
 RT audiology
 audiometry
 hearing
 noise threshold

auditory perception

UF *sound perception*
 GS perception
 . sensory perception
 . . **auditory perception**

RT acoustics
 audio frequencies
 audiology
 audiometry
 auditory sensation areas
 binaural hearing
 ear
 earphones
 monaural signals
 noise threshold
 psychoacoustics
 sensitivity
 sound localization
 sound waves
 speech
 thresholds (perception)
 Weber test

auditory sensation areas

DEF In acoustics, the frequency region enclosed by the curves defining the threshold of pain and the threshold of audibility.

RT auditory perception
 auditory stimuli
 bioacoustics
 thresholds (perception)

auditory signals

UF *chimes*
 RT audio signals
 bells
 cues
 horns
 monaural signals
 psychoacoustics
 signal mixing
 ∞ signals
 warning
 warning systems

auditory stimuli

GS stimulation
 . **auditory stimuli**
 RT acoustics
 audiometry
 auditory sensation areas
 noise (sound)
 noise intensity
 sound generators
 sound intensity
 ∞ stimuli
 thresholds (perception)

auditory tasks

GS tasks
 . **auditory tasks**
 RT acoustics
 hearing
 noise (sound)

auferis (ice)

DEF Icing of ground or river water in Arctic areas with continuous permafrost on which the water has continued to flow.

RT ice
 melting
 permafrost
 rivers

Auger effect

DEF The nonradiative transition of an atom from an excited electronic energy state to a lower state with the emission of an electron. The term usually refers to the x ray region of energy states. The final state corresponds to one higher degree of ionization than does the initial state. The effect is an alternative process to the transition to a lower state having the same degree of ionization with the emission of an x ray photon, and thus is analogous to the internal conversion of a nuclear transmission.

RT cosmic ray showers
 ∞ effects
 electron transitions

Langmuir turbulence

Auger showers

(added August 1997)

USE **cosmic ray showers**

Auger spectroscopy

GS spectroscopy
 . **Auger spectroscopy**
 RT chemical analysis
 electron transitions
 spectroscopic analysis
 thermites

augmentation

UF *enhancement*
 GS **augmentation**
 . stability augmentation
 . thrust augmentation
 RT increasing
 spatial filtering

AUOS

USE **Automatic Universal Orbiting Stations**

Auriga constellation

GS constellations
 . **Auriga constellation**
 RT Zeta Aurigae star

Aurora 7

GS manned spacecraft
 . Mercury spacecraft
 . . **Aurora 7**
 reentry vehicles
 . recoverable spacecraft
 . . Mercury spacecraft
 . . . **Aurora 7**
 soft landing spacecraft
 . Mercury spacecraft
 . . **Aurora 7**
 space capsules
 . Mercury spacecraft
 . . **Aurora 7**
 RT Mercury MA-7 flight

auroral absorption

GS attenuation
 . atmospheric attenuation
 . . **auroral absorption**
 energy absorption
 . radiation absorption
 . . electromagnetic absorption
 . . . **auroral absorption**
 RT ∞ absorption
 light emission
 riometers

auroral activity

USE **auroras**

auroral arcs

GS atmospheric radiation
 . auroras
 . . **auroral arcs**
 . . . red arcs
 RT ∞ arcs

auroral echoes

GS echoes
 . **auroral echoes**
 RT radar echoes
 radio echoes

auroral electrojets

GS electric current
 . ionospheric currents
 . . electrojets
 . . . **auroral electrojets**
 electricity
 . atmospheric electricity
 . . ionospheric currents
 . . . electrojets
 **auroral electrojets**
 RT Birkeland currents

auroral ionization

equatorial electrojet
telluric currents

auroral ionization
GS ionization
. gas ionization
. . atmospheric ionization
. . . **auroral ionization**
RT auroras
excitation
light emission
photoionization
red arcs

auroral irradiation
GS irradiation
. **auroral irradiation**
RT auroras
electron irradiation
excitation
ion irradiation
photoionization

auroral spectroscopy
GS spectroscopy
. **auroral spectroscopy**
RT channel multipliers
Fabry-Perot spectrometers
light emission
optical emission spectroscopy
spectroscopic analysis
visible spectrum

auroral temperature
GS temperature
. atmospheric temperature
. . **auroral temperature**
RT auroras
ion temperature
ionospheric temperature

auroral zones
DEF Roughly circular bands around either geomagnetic pole above which there is a maximum of auroral activity. The zones lie about 10 deg. to 15 deg. of geomagnetic latitude from the geomagnetic poles.
GS regions
. **auroral zones**
RT auroras
Birkeland currents
IMAGE satellite
magnetic poles
Pedersen currents
polar radio blackout
polar regions

auroras
DEF Sporadic radiant emissions from the upper atmosphere over middle and high latitudes. Used for auroral activity and polar auroras.
UF *auroral activity*
polar auroras
GS atmospheric radiation
. **auroras**
. . auroral arcs
. . . red arcs
. . . radio auroras
RT aeronomy
airglow
auroral ionization
auroral irradiation
auroral temperature
auroral zones
dawn chorus
Earth atmosphere
electron precipitation
ESRO 4 satellite
light emission
magnetic disturbances
night sky
Polar/GGS spacecraft
proton precipitation
sky brightness
solar activity

x rays

ausforming
GS forming techniques
. hot working
. . **ausforming**
metal working
. **ausforming**
RT forging
∞ rolling

austenite
DEF A solid solution of carbon in gamma-iron.
RT allotropy
ferrites
iron alloys
martensite
martensitic transformation
microstructure
steels

austenitic stainless steels
DEF Steels having at room temperature a microstructure consisting, at least predominantly, of austenite. Their austenitic microstructure is attained above all by alloying conditions, e. g. , manganese and nickel.
GS alloys
. iron alloys
. . steels
. . . stainless steels
. . . . **austenitic stainless steels**
RT martensitic stainless steels
time temperature parameter

Austin comet
(added May 1991)
GS celestial bodies
. comets
. . **Austin comet**

Australia
GS continents
. **Australia**
nations
. **Australia**
RT Australian space program
Papua New Guinea
Tasmania
Torres Strait

Australian space program
(added February 1989)
GS programs
. space programs
. . **Australian space program**
RT Australia

australites
GS celestial bodies
. meteorites
. . stony meteorites
. . . tektites
. . . . **australites**
RT bediasites

Austria
GS nations
. **Austria**
RT Alps Mountains (Europe)
Austrian space program
Central Europe
Europe

Austrian space program
(added October 1990)
GS programs
. space programs
. . European space programs
. . . **Austrian space program**
RT Austria

autocatalysis
GS catalysis
. **autocatalysis**

RT abiogenesis
catalytic activity
reaction kinetics

autoclaves
RT autoclaving
chemical reactors
∞ containers
pressure vessels

autoclaving
RT autoclaves
curing
heating
leaching
powder metallurgy

autocoders
GS languages
. programming languages
. . Assembly language
. . . **autocoders**
RT compilers
computer programming
computer systems programs
machine oriented languages

autocollimators
USE **collimators**

autocorrelation
DEF In statistics, the simple linear internal correlation of members of a time series (ordered in time or other domains).
GS correlation
. **autocorrelation**
RT cross correlation
data correlation
Fourier analysis
periodic variations
time series analysis

autodynes
GS circuits
. **autodynes**
oscillators
. **autodynes**
RT ∞ detectors
frequency control
heterodyning
signal analyzers
signal detection
signal detectors
vacuum tube oscillators

autogyros
GS V/STOL aircraft
. rotary wing aircraft
. . **autogyros**
. . . Avian 2/180 autogiro

autoignition
(added April 1997)
USE **spontaneous combustion**

autoionization
GS dissociation
. **autoionization**
ionization
. **autoionization**
RT atomic collisions
many electron effects

autokinesis
GS perception
. sensory perception
. . proprioception
. . . **autokinesis**
. . visual perception
. . . space perception
. . . . **autokinesis**

automata theory
RT adaptive control
artificial intelligence
∞ automation

- bionics
- cellular automata
- computers
- cybernetics
- depersonalization
- heuristic methods
- information theory
- machine learning
- model reference adaptive control
- robotics
- robots
- self adaptive control systems
- ∞ theories
- Turing machines

automated en route ATC

DEF An air traffic control technology which allows computers to make decisions about conflict resolution, the generation of clearances, and their automatic transmission, with the operator standing by to take over in an emergency.

- GS ground based control
 - . air traffic control
 - . . **automated en route ATC**
 - traffic control
 - . air traffic control
 - . . **automated en route ATC**

- RT aircraft guidance
 - approach control
 - automated pilot advisory system
 - flight control
 - ground-air-ground communication
 - microwave landing systems

automated guideway transit vehicles

DEF A system of a large number of captive vehicles traveling at relatively close headways on an exclusive guideway controlled by a computer. Used for AGT.

- UF *AGT*
- GS surface vehicles
 - . automated transit vehicles
 - . . **automated guideway transit vehicles**

- RT automated mixed traffic vehicles
 - conveyors
 - passengers
 - rail transportation
 - rapid transit systems
 - transportation
 - urban transportation
 - ∞ vehicles

automated mixed traffic vehicles

DEF Low speed, surface vehicles automatically operated and controlled in a pedestrian environment by following a buried wire in the roadways sensing obstacles and stopping at predetermined spots for passenger exit and entry. Used for AMTV.

- UF *AMTV*
- GS research vehicles
 - . **automated mixed traffic vehicles**
 - surface vehicles
 - . motor vehicles
 - . . **automated mixed traffic vehicles**

- RT automated guideway transit vehicles
 - passengers
 - urban transportation
 - ∞ vehicles

automated pilot advisory system

DEF An airport advisory system and an air traffic advisory system designed to improve airport and air traffic advisories at high density uncontrolled airports.

- RT air traffic control
 - automated en route ATC
 - automatic traffic advisory and resolution
 - ∞ systems

automated radar terminal system

DEF Radar tracking system for use in a terminal area. Primary and secondary radar targets are detected and data for the two are

correlated for transmission to a central computer.

- RT air traffic control
 - radar equipment
 - radar tracking
 - ∞ systems

Automated Transfer Vehicle

(added December 1995)

- RT Ariane 5 launch vehicle
 - cargo spacecraft
 - Columbus space station
 - rendezvous guidance
 - space logistics
 - ∞ vehicles

automated transit vehicles

- GS surface vehicles
 - . **automated transit vehicles**
 - . . automated guideway transit vehicles

- RT conveyors
 - electric motor vehicles
 - passengers
 - rail transportation
 - rapid transit systems
 - transportation
 - urban transportation
 - ∞ vehicles

automatic control

DEF Control of devices and equipment, including aerospace vehicles by automatic means. Used for self regulating.

- UF *self regulating*
- GS **automatic control**
 - . adaptive control
 - . . active control
 - . . model reference adaptive control
 - . . self adaptive control systems
 - . automatic flight control
 - . . automatic landing control
 - . automatic frequency control
 - . automatic gain control
 - . dynamic control
 - . feedback control
 - . . cascade control
 - . feedforward control
 - . numerical control
 - . off-on control
 - . optimal control
 - . . H-2 control
 - . . H-infinity control
 - . . linear quadratic Gaussian control
 - . . time optimal control
 - . proportional control
 - . sequential control

- RT aircraft control
 - attitude control
 - ∞ automation
 - ∞ combustion control
 - ∞ control
 - control equipment
 - control systems design
 - controllers
 - depersonalization
 - directional control
 - dynamic characteristics
 - electric control
 - electronic aircraft
 - electronic control
 - engine control
 - environmental control
 - flight control
 - ground based control
 - guidance (motion)
 - helicopter control
 - hydraulic control
 - ∞ instruments
 - jet control
 - landing instruments
 - lateral control
 - longitudinal control
 - manual control
 - measuring instruments
 - missile control
 - negative feedback

- optical control
- pneumatic control
- radio control
- real time operation
- recording instruments
- reentry guidance
- regulators
- relief valves
- remote control
- robotics
- rocket engine control
- sampled data systems
- satellite attitude control
- satellite control
- satellite guidance
- self absorption
- self alignment
- servocontrol
- servomechanisms
- servomotors
- spacecraft control
- spacecraft guidance
- speed control
- stability augmentation
- temperature control
- Terminal Configured Vehicle Program
- thermostats
- thrust vector control
- tracking problem
- transfer functions
- turbojet engine control

automatic control valves

- GS control equipment
 - . regulators
 - . . **automatic control valves**
 - . . . pressure regulators
 - . . . relief valves
 - valves
 - . **automatic control valves**
 - . . pressure regulators
 - . . relief valves

- RT actuators
 - ∞ control
 - dampers (valves)
 - dynamic characteristics
 - fluid amplifiers
 - fluid switching elements
 - gas valves
 - hydraulic equipment
 - pneumatic control
 - servomechanisms
 - solenoid valves
 - temperature control

automatic data processing

USE **data processing**

automatic flight control

- UF *AFCS (control system)*
- GS automatic control
 - . **automatic flight control**
 - . . automatic landing control
 - flight control
 - . **automatic flight control**
 - . . automatic landing control

- RT aircraft control
 - aircraft instruments
 - autonomous navigation
 - ∞ control
 - distance measuring equipment
 - flight management systems
 - highly maneuverable aircraft
 - missile control
 - navigation
 - navigation aids
 - radar navigation
 - radio navigation
 - solar compasses
 - Terminal Configured Vehicle Program
 - thrust vector control

automatic frequency control

DEF An arrangement whereby the frequency of an oscillator is automatically main-

automatic gain control

tained within specified limits. Used for AFC (control).

UF *AFC (control)*

GS automatic control

. **automatic frequency control**
frequency control

. **automatic frequency control**

RT ∞ control

feedback control
frequency modulation
oscillators
tuning

automatic gain control

DEF A process by which gain is automatically adjusted as a function of input or other specified parameter. Used for AGC (control).

UF *AGC (control)*

GS automatic control

. **automatic gain control**

RT antenna gain

∞ control

feedback control
tuning

automatic indexing

(added April 2000)

USE **indexing (information science)**

automatic landing control

GS automatic control

. automatic flight control

. . . **automatic landing control**

flight control

. automatic flight control

. . . **automatic landing control**

RT airborne equipment

aircraft equipment
blind landing
distance measuring equipment
flight management systems
instrument landing systems
microwave landing systems
Terminal Configured Vehicle Program

automatic pattern recognition

USE **pattern recognition**

automatic picture transmission

UF *APT (picture transmission)*

GS telecommunication

. communication

. . . facsimile communication

. . . **automatic picture transmission**

transmission

. signal transmission

. . data transmission

. . . **automatic picture transmission**

RT television transmission

wave propagation

automatic pilots

DEF Equipment which automatically stabilizes the attitude of a vehicle about its pitch, roll, and yaw axes. Used for autopilots.

UF *autopilots*

GS aircraft instruments

. **automatic pilots**

flight instruments

. **automatic pilots**

RT aircraft equipment

flight control
gyroscopes
highly maneuverable aircraft
homing
landing aids
navigation aids
pilot support systems
∞ pilots
radio altimeters

solar compasses

automatic repeat query

USE **automatic repeat request**

automatic repeat request

(added August 1991)

DEF A request from a receiving device to retransmit the most recent block of data.

UF *ARQ (communication)*

automatic repeat query

automatic request for retransmission

RT

data transmission
error correcting codes
error signals
message processing
messages
packet transmission
telecommunication

automatic request for retransmission

USE **automatic repeat request**

automatic rocket impact predictors

USE **computerized simulation impact prediction**

automatic test equipment

RT ∞ equipment

measuring instruments
self tests
sneak circuit analysis
∞ test equipment

automatic traffic advisory and resolution

SN (AUTOMATIC TRAFFIC ADVISORY AND RESOLUTION SERVICE)

DEF Ground based collision avoidance system using the surveillance and data link capabilities of the discrete address beacon system (DABS). Used for ATARS.

UF *ATARS*

RT automated pilot advisory system

collision avoidance
ground based control
navigation aids
resolution
∞ systems

automatic typewriters

UF *Flexowriters (trademark)*

GS typewriters

. **automatic typewriters**

RT

consoles
display devices
printers (data processing)
punched tapes

Automatic Universal Orbiting Stations

(added September 1994)

UF *AUOS*

GS artificial satellites

. space stations

. . **Automatic Universal Orbiting Stations**

stations

. space stations

. . **Automatic Universal Orbiting Stations**

RT ∞ platforms

Russian Federation
spacecraft environments
U. S. S. R. space program

automatic weather stations

DEF Weather stations at which the services of observers are not required. They are usually equipped with telemetric apparatus.

GS stations

. weather stations

. . **automatic weather stations**

RT

data acquisition
data collection platforms
instrument packages
meteorological services
ocean data acquisitions systems

remote sensors

weather data recorders

∞ automation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *instrumental analysis*

RT automata theory

automatic control
command and control
computer vision
computers
control systems design
controllers
cybernetics
data processing
depersonalization
fail-safe systems
feedback control
feedforward control
information theory
man machine systems
materials handling
mechanization
numerical control
office automation
remote control
robotics
self erecting devices
self repairing devices
servomechanisms
systems engineering
tooling

automobile accidents

GS accidents

. **automobile accidents**

RT

accident investigation
accident prevention
safety devices

automobile engines

RT external combustion engines

internal combustion engines
piston engines
rotary engines
Stirling engines
turbine engines
Wankel engines

automobile fuels

GS fuels

. **automobile fuels**

RT

aircraft fuels
antiknock additives
diesel fuels
gasoline
hydrocarbon fuels
internal combustion engines
liquid fuels
synthane

automobiles

UF *jeeps*

GS surface vehicles

. motor vehicles

. . . **automobiles**

. . . electric automobiles

RT

air bag restraint devices
antiskid devices
chassis
electric hybrid vehicles
electric motor vehicles
fuel systems
hydrogen engines
ignition systems
lubrication systems
∞ military vehicles
trailers
trucks
∞ vehicles

automorphisms

GS algebra

. group theory
. . homomorphisms

- ... **automorphisms**
- autonomic nervous system**
 - GS anatomy
 - . nervous system
 - ... **autonomic nervous system**
 - ... sympathetic nervous system
 - RT involuntary actions
 - ∞ systems
- autonomous navigation**
 - GS navigation
 - . **autonomous navigation**
 - RT automatic flight control
 - celestial navigation
 - Deep Space 1 Mission navigation aids
 - navigation instruments
 - satellite navigation systems
 - space navigation
 - spacecraft guidance
 - unmanned ground vehicles
- autonomous spacecraft clocks**
 - DEF Standard Time scale instruments aboard spacecraft with provisions for synchronization with existing satellite-based system (global positioning system, for example).
 - GS measuring instruments
 - . time measuring instruments
 - .. clocks
 - ... **autonomous spacecraft clocks**
 - RT atomic clocks
 - Global Positioning System
 - spacecraft instruments
 - TDR satellites
- autonomy**
 - RT adaptive control
 - command and control
 - ∞ commands
 - ∞ direction
 - equations of motion
 - management
 - model reference adaptive control
 - self adaptive control systems
- autopilots*
 - USE **automatic pilots**
- autopsies**
 - RT dissection
 - pathology
- autoradiography**
 - DEF A technique that uses x ray film to visualize radioactively labeled molecules or fragments of molecules used in analyzing the length and number of DNA fragments separated by gel electrophoresis.
 - GS imagery
 - . photography
 - .. **autoradiography**
 - .. radiography
 - .. **autoradiography**
 - RT black and white photography
- autoregressive moving average**
 - (added October 1997)
 - UF *ARMA (mathematics)*
 - GS average
 - . **autoregressive moving average**
 - RT autoregressive processes
 - estimating
 - IIR filters
 - regression analysis
 - stochastic processes
 - time series analysis
- autoregressive processes**
 - RT autoregressive moving average
 - factor analysis
 - ∞ processes
 - regression analysis
- statistical analysis
- autorotation**
 - DEF A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.
 - UF *windmilling*
 - GS gyration
 - . rotation
 - .. **autorotation**
 - RT rotary wing aircraft
 - rotochutes
- autotrophs**
 - DEF Organisms capable of synthesizing organic nutrients directly from simple inorganic substances such as carbon dioxide and inorganic nitrogen.
 - GS **autotrophs**
 - . hydrogenomonas
 - RT heterotrophs
- autumn**
 - DEF The season of the year between summer and winter. Its beginning is marked by the autumnal equinox and its end by the winter solstice.
 - GS seasons
 - . **autumn**
 - RT spring (season)
 - summer
 - winter
- auxiliary equipment (computers)*
 - USE **peripheral equipment (computers)**
- auxiliary power sources**
 - GS **auxiliary power sources**
 - . chemical auxiliary power units
 - . nuclear auxiliary power units
 - .. SNAP
 - ... fission electric cells
 - SNAP 2
 - SNAP 4
 - SNAP 8
 - SNAP 10A
 - SNAP 1
 - SNAP 3
 - SNAP 7
 - SNAP 9A
 - SNAP 11
 - SNAP 13
 - SNAP 15
 - SNAP 17
 - SNAP 19
 - SNAP 21
 - SNAP 23
 - SNAP 27
 - SNAP 29
 - SNAP 50
 - .. space power reactors
 - ... fission electric cells
 - SNAP 2
 - SNAP 4
 - SNAP 8
 - SNAP 10A
 - SNAP 50
 - .. space power unit reactors
 - .. solar auxiliary power units
 - .. ASTEC solar turboelectric generator
 - RT aircraft power supplies
 - direct power generators
 - electric batteries
 - electric generators
 - ∞ electric power
 - electric power supplies
 - ∞ energy sources
 - ground support equipment
 - ∞ power supplies
 - spacecraft power supplies
 - voltage converters (AC to AC)
 - voltage converters (DC to DC)
- auxiliary propulsion**
 - GS propulsion
 - . **auxiliary propulsion**
 - RT aeronautical engineering
 - ∞ astronautics
 - engines
 - hydrogen oxygen engines
 - Marquardt R4D engine
 - missiles
 - propellants
 - propulsion system configurations
 - rocket propellants
 - space flight
 - space shuttles
 - space station propulsion
 - ∞ spacecraft
 - thrust
- AV-8A aircraft*
 - USE **Harrier aircraft**
- AV-8B aircraft*
 - USE **Harrier aircraft**
- availability**
 - GS **availability**
 - . bioavailability
 - RT abundance
 - energy policy
 - reserves
 - resources
- avalanche diodes**
 - DEF A solid state device that takes advantage of avalanche multiplication of the photocurrent.
 - UF *IMPATT diodes*
 - TRAPATT diodes*
 - Zener diodes*
 - GS electronic equipment
 - . diodes
 - .. semiconductor diodes
 - ... **avalanche diodes**
 - ... cryosar
 - .. solid state devices
 - .. semiconductor devices
 - ... **avalanche diodes**
 - ... cryosar
 - rectifiers
 - .. **avalanche diodes**
 - .. cryosar
 - RT Barritt diodes
 - ion implantation
 - negative conductance
 - TRAPATT devices
 - voltage regulators
- avalanches**
 - GS **avalanches**
 - . electron avalanche
 - . Townsend avalanche
 - RT Earth movements
 - electric discharges
 - ion production rates
 - ionizing radiation
- AVCS*
 - USE **Advanced Vidicon Camera System (AVCS)**
- average**
 - GS **average**
 - . autoregressive moving average
 - . mean
 - RT distribution moments
 - median (statistics)
 - mode (statistics)
 - normality
 - norms
 - quality control
 - Reynolds averaging
- AVHRR*
 - USE **Advanced Very High Resolution Radiometer**
- Avian 2/180 autogiro*
 - GS research vehicles

- . research aircraft
- . . **Avian 2/180 autogiro**
- V/STOL aircraft
- . rotary wing aircraft
- . . autogyros
- . . . **Avian 2/180 autogiro**

aviation
USE **aeronautics**

aviation meteorology

- DEF Weather conditions and meteorological studies pertaining to aeronautics.
- GS meteorology
 - . **aviation meteorology**
- RT aircraft accident investigation
 - aircraft accidents
 - aircraft hazards
 - aircraft icing
 - atmospheric turbulence
 - civil aviation
 - clear air turbulence
 - downbursts
 - flight conditions
 - flight hazards
 - flight safety
 - fog
 - meteorological parameters
 - meteorological services
 - microbursts (meteorology)
- ∞ military aviation
 - nowcasting
 - numerical weather forecasting
 - runway conditions
 - wind shear

aviation psychology

- GS medical science
 - . aerospace medicine
 - . . **aviation psychology**
 - psychology
 - . **aviation psychology**
- RT aircraft pilots
 - military psychology
 - pilot training
 - psychological effects
 - psychological factors
 - space psychology

aviators
USE **aircraft pilots**

avionics

- DEF The use of electronics in all its forms in airborne or aerospace vehicles.
- RT ∞ aeronautics
 - airborne equipment
 - aircraft communication
 - aircraft equipment
 - aircraft instruments
 - astrionics
- ∞ astronautics
- ∞ control
- ∞ electronics
 - flat panel displays
 - flight management systems
 - guidance (motion)
 - head-up displays
 - modularity
 - pilot support systems
 - self tests
 - single event upsets
 - systems integration
- ∞ test equipment
 - video landmark acquisition and tracking

avoidance

- GS **avoidance**
 - . collision avoidance
 - . . Beacon Collision Avoidance System
 - . vortex avoidance
- RT accident prevention
 - hazards
 - traffic

- traffic control
- warning systems

AVRO 698 aircraft
USE **Vulcan aircraft**

AVRO 707 aircraft

- GS Hawker Siddeley aircraft
 - . **AVRO 707 aircraft**
 - jet aircraft
 - . **AVRO 707 aircraft**
 - monoplanes
 - . **AVRO 707 aircraft**
 - research vehicles
 - . research aircraft
 - . . **AVRO 707 aircraft**
 - tailless aircraft
 - . **AVRO 707 aircraft**
- RT ∞ aircraft
 - delta wings
 - Vulcan aircraft

AVRO Whitworth HS-748 aircraft
USE **HS-748 aircraft**

AWACS aircraft

- UF *Airborne Warning and Control System*
- GS **AWACS aircraft**
 - . E-2 aircraft
 - . E-3A aircraft
 - . E-4A aircraft
- RT ∞ aircraft
 - Boeing aircraft
 - command and control
 - early warning systems
 - Grumman aircraft
 - ∞ military aircraft
 - military technology

awards

- SN (EXCLUDES CONTACTS & GRANTS)
- DEF Distinctions that are bestowed upon a person or persons due to their special contributions to a field.
- RT astronauts
 - biography
 - engineers
 - scientists

AXAF

USE **X Ray Astrophysics Facility**

axes (coordinates)

USE **coordinates**

axes (reference lines)

- GS **axes (reference lines)**
 - . axes of rotation
 - . . Earth axis
- RT coordinates

axes of rotation

- GS axes (reference lines)
 - . **axes of rotation**
 - . . Earth axis
- RT bodies of revolution
 - rotating bodies
 - rotation
 - shafts (machine elements)
 - symmetrical bodies

axial compression loads

- GS loads (forces)
 - . axial loads
 - . . **axial compression loads**
 - . compression loads
 - . . **axial compression loads**
- RT aerodynamic loads
 - compressing
 - dynamic loads
 - shock loads
 - static loads
 - structural design criteria

thrust loads

axial compressors
USE **turbocompressors**

axial flow

- GS fluid flow
 - . **axial flow**
- RT annular flow
 - axisymmetric flow
 - coaxial flow
 - coaxial nozzles
 - counterflow
 - discharge coefficient
 - flow geometry
 - one dimensional flow
 - radial flow
 - three dimensional flow
 - two dimensional flow

axial flow compressors
USE **turbocompressors**

axial flow pumps

- GS pumps
 - . **axial flow pumps**
 - . . turbine pumps
- RT centrifugal pumps
 - fuel pumps

axial flow turbines

- GS turbomachinery
 - . turbines
 - . . **axial flow turbines**
- RT gas turbine engines
 - gas turbines
 - steam turbines

axial loads

- GS loads (forces)
 - . **axial loads**
 - . . axial compression loads
- RT aerodynamic loads
 - compression loads
 - dynamic loads
 - static loads
 - structural design criteria
 - thrust loads

axial modes

- DEF Regimes of vibration along a given axis.
- GS modes
 - . **axial modes**
- RT combustion stability
 - laser modes
 - propellant combustion
 - rocket engines

axial strain

- DEF Linear strain in a plane parallel to the longitudinal axis of the specimen. Used for axisymmetric deformation and uniaxial strain.
- UF *axisymmetric deformation*
- GS *uniaxial strain*
 - deformation
 - . **axial strain**
- RT elastic deformation
 - Euler-Bernoulli beams
 - stress-strain diagrams
 - structural strain

axial stress

- GS stresses
 - . **axial stress**
- RT tensile stress

axioms

- UF *postulates*
- GS mathematical logic
 - . **axioms**
- RT knowledge
 - ∞ logic

B

B stars

- UF *helium stars*
- GS celestial bodies
 - . stars
 - .. early stars
 - ... hot stars
 - **B stars**
 - shell stars
 - Sigma Orionis
- RT blue stars
 - Herbig-Haro objects
 - limb brightening
 - limb darkening
 - peculiar stars
 - Population I stars
 - stellar composition
 - Wolf-Rayet stars

B-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - .. **B-1 aircraft**
 - jet aircraft
 - . **B-1 aircraft**
 - North American aircraft
 - . **B-1 aircraft**
- RT ∞ aircraft
 - bombing equipment
 - bombs (ordnance)
 - combat
 - ∞ military aircraft
 - multiengine vehicles
 - warfare
 - ∞ winged vehicles

B-2 aircraft

- (added September 1992)
- UF *stealth bomber*
- GS attack aircraft
 - . bomber aircraft
 - .. **B-2 aircraft**
 - jet aircraft
 - . **B-2 aircraft**
- RT ∞ aircraft
 - ∞ military aircraft
 - stealth technology
 - X-36 aircraft

B-26 aircraft

- UF *Invader aircraft*
- GS attack aircraft
 - . bomber aircraft
 - .. **B-26 aircraft**
 - Martin aircraft
 - . **B-26 aircraft**
 - monoplanes
 - . **B-26 aircraft**
- RT ∞ aircraft

B-47 aircraft

- UF *RB-47 aircraft*
Stratojet aircraft
XB-47 aircraft
- GS attack aircraft
 - . bomber aircraft
 - .. **B-47 aircraft**
 - Boeing aircraft
 - . **B-47 aircraft**
 - jet aircraft
 - . **B-47 aircraft**
 - monoplanes
 - . **B-47 aircraft**
- RT ∞ aircraft

B-50 aircraft

- UF *RB-50 aircraft*
superfortress aircraft
- GS attack aircraft
 - . bomber aircraft
 - .. **B-50 aircraft**
 - Boeing aircraft

. B-50 aircraft

- monoplanes
- . **B-50 aircraft**
- RT ∞ aircraft

B-52 aircraft

- UF *Stratofortress aircraft*
- GS attack aircraft
 - . bomber aircraft
 - .. **B-52 aircraft**
 - Boeing aircraft
 - . **B-52 aircraft**
 - jet aircraft
 - . **B-52 aircraft**
 - monoplanes
 - . **B-52 aircraft**
- RT ∞ aircraft
 - Pegasus air-launched booster
 - turbofan engines

B-57 aircraft

- UF *Canberra bomber*
RB-57 aircraft
- GS attack aircraft
 - . bomber aircraft
 - .. **B-57 aircraft**
 - jet aircraft
 - . **B-57 aircraft**
 - Martin aircraft
 - . **B-57 aircraft**
 - monoplanes
 - . **B-57 aircraft**
- RT ∞ aircraft
 - Canberra aircraft

B-58 aircraft

- UF *Hustler aircraft*
- GS attack aircraft
 - . bomber aircraft
 - .. **B-58 aircraft**
 - General Dynamics aircraft
 - . **B-58 aircraft**
 - jet aircraft
 - . **B-58 aircraft**
 - monoplanes
 - . **B-58 aircraft**
 - supersonic aircraft
 - . **B-58 aircraft**
 - tailless aircraft
 - . **B-58 aircraft**
- RT ∞ aircraft

B-66 aircraft

- UF *Destroyer aircraft*
RB-66 aircraft
- GS attack aircraft
 - . bomber aircraft
 - .. **B-66 aircraft**
 - jet aircraft
 - . **B-66 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - .. **B-66 aircraft**
 - monoplanes
 - . **B-66 aircraft**
- RT ∞ aircraft

B-70 aircraft

- UF *Valkyrie aircraft*
XB-70 aircraft
- GS attack aircraft
 - . bomber aircraft
 - .. **B-70 aircraft**
 - jet aircraft
 - . **B-70 aircraft**
 - monoplanes
 - . **B-70 aircraft**
 - North American aircraft
 - . **B-70 aircraft**
 - research vehicles
 - . research aircraft

.. B-70 aircraft

- supersonic aircraft
- . **B-70 aircraft**
- RT ∞ aircraft

B-103 aircraft

- USE **Buccaneer aircraft**

babbitt metal

- DEF Any of the white alloys composed primarily of tin or lead and of lesser amounts of antimony, copper, and other metals, and used for bearings.
- GS alloys
 - . antimony alloys
 - .. **babbitt metal**
 - . copper alloys
 - .. **babbitt metal**
 - . tin alloys
 - .. **babbitt metal**
- RT bearing alloys

baboons

- GS animals
 - . vertebrates
 - .. mammals
 - ... primates
 - **baboons**

BAC 111 aircraft

- GS BAC aircraft
 - . **BAC 111 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - .. **BAC 111 aircraft**
 - monoplanes
 - . **BAC 111 aircraft**
 - passenger aircraft
 - . **BAC 111 aircraft**
 - transport aircraft
 - . **BAC 111 aircraft**
- RT ∞ aircraft

BAC aircraft

- UF *British Aircraft Corp aircraft*
- GS **BAC aircraft**
 - . BAC 111 aircraft
 - . Canberra aircraft
 - . H-126 aircraft
 - . jet provost aircraft
 - . Scimitar aircraft
 - . TSR-2 aircraft
 - . Valiant aircraft
 - . VC-10 aircraft
 - . Viscount aircraft
- RT ∞ aircraft

BAC TSR 2 aircraft

- USE **TSR-2 aircraft**

Bacillus

- SN (RESTRICTED TO MEMBERS OF THE GENUS BACILLUS; DOES NOT INCLUDE GENERAL MORPHOLOGICAL CLASSIFICATIONS)
- GS microorganisms
 - . bacteria
 - .. **Bacillus**
 - ... stearothermophilus

back injuries

- GS injuries
 - . **back injuries**
- RT whiplash injuries

backfire

- RT combustion
 - deflagration
 - explosions
 - fires
 - flame deflectors

flame propagation
flashback

backfire antennas

DEF Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator.

GS antennas
. **backfire antennas**
RT antenna radiation patterns
dipole antennas
endfire arrays
microwave antennas
radio antennas

background noise

DEF In recording and reproducing, the total system noise independent of whether or not a signal is present. The signal is not to be included as part of the noise. In receivers, the noise in the absence of signal modulation on the carrier.

RT channel noise
cosmic noise
elastic waves
electromagnetic noise
ionospheric noise
∞ noise
noise (sound)
noise measurement
noise spectra
noise threshold
∞ radiation
random noise
∞ rays
signal to noise ratios
squelch circuits

background radiation

RT antineutrino detectors
big bang cosmology
continuous radiation
corpuscular radiation
Cosmic Background Explorer satellite
cosmic noise
electromagnetic noise
extraterrestrial radiation
high altitude tests
ionospheric noise
∞ radiation
relic radiation
sky radiation

backings

USE **backups**

backlobes

DEF Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.

RT antenna design
antenna radiation patterns
directional antennas
∞ lobes

backpropagation (artificial intelligence)

(added December 2001)

DEF A learning algorithm which minimizes the error function of perceptron neural nets by comparing the actual and desired outputs and adjusting the weights of each neuron layer.

GS mathematical logic
. algorithms
. . . **backpropagation (artificial intelligence)**
RT artificial intelligence
computer techniques
error analysis
least squares method
machine learning
neural nets

optimization

backscattering

DEF Scattering of radiation in a direction having a component opposite its original direction of propagation.

GS scattering
. **backscattering**
RT differential absorption lidar
forward scattering
laser plasma interactions
microwave signatures
nuclear scattering
scatter propagation

backshores

USE **beaches**

backups

DEF Items kept available to replace items which fail to perform satisfactorily. Items under development intended to perform the same general functions another item also under development performs. Used for backups.

UF *backings*
RT redundant components
reserves
welding

backward differencing

DEF A method of solving a parabolic problem for approximating a time derivative in terms of a previous time step.

RT differential equations
numerical stability
problem solving

backward facing steps

DEF A step structure which faces an oncoming flow. Used for rearward facing steps.

UF *rearward facing steps*
RT boundary layer flow
flow geometry
fluid boundaries
forward facing steps
reattached flow
recirculative fluid flow
stairsteps
∞ steps

backward wave tubes

GS electron tubes
. vacuum tubes
. . . microwave tubes
. . . . traveling wave tubes
. . . . **backward wave tubes**
. . . . helitrons
microwave equipment
. microwave tubes
. . traveling wave tubes
. . . **backward wave tubes**
. . . . helitrons
RT beam currents
electron transfer
microwave oscillators

backward waves

DEF In traveling wave tubes, waves whose group velocity is opposite to the direction of electron-stream motion.

RT elastic waves
electromagnetic radiation
solitary waves
transmission lines
traveling wave tubes
traveling waves

backwash

SN (EXCLUDES PROCESSES OF BACKWASHING)
UF *sidewash*
RT boundary layer stability
downwash
slipstreams
Strouhal number
turbulence

wakes

bacteria

GS microorganisms
. **bacteria**
. . . actinomycetes
. . . archaeobacteria
. . . Azotobacter
. . . Bacillus
. . . . stearothermophilus
. . . Clostridium
. . . Clostridium botulinum
. . . Escherichia
. . . hydrogenomonas
. . . Klebsiella
. . . nitrobacter
. . . pseudomonas
. . . salmonella
. . . sarcina
. . . serratia
. . . staphylococcus
. . . streptococcus
. . . streptomyces
RT aerobes
anaerobes
bacteriology
biofilms
biological weapons
blight
colonies
eukaryotes
gnotobiotics
invertebrates
panspermia
pathogens
prokaryotes
saprophytes
waste treatment

bacterial diseases

SN (EXCLUDES PLANT DISEASES)
diseases
GS
. infectious diseases
. . **bacterial diseases**
. . . cholera
. . . diphtheria
. . . keratitis
. . . syphilis
. . . tuberculosis
. . . typhoid
. . . typhus
RT Clostridium
conjunctivitis
dermatitis
encephalitis
meningitis
nephritis
pneumonia

bactericides

DEF Agents that destroy microorganisms. Also known as germicides. Used for germicides.

UF *germicides*
RT antiinfectives and antibacterials
antiseptics
chemical sterilization
ethylene oxide
fumigation
sterilization

bacteriology

GS microbiology
. **bacteriology**
RT archaeobacteria
bacteria
biochemistry
∞ biology
Clostridium botulinum
colonies
endotoxins
gnotobiotics
vaccines

bacteriophages

GS microorganisms
. viruses

badlands

- . . **bacteriophages**
- RT interferon

badlands

DEF Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called "mauvaises terres" by the early French fur traders.

- GS land
 - . **badlands**
- RT barren land topography

baffles

DEF Plates that regulate the flow of a fluid, e. g. , a heat exchanger, boiler flue, or automotive muffler.

- RT attenuators
 - ∞ barriers
 - blast deflectors
 - conical flow
 - damping deflectors
 - ∞ diffusers
 - diverters
 - dividers
 - ducts
 - flame deflectors
 - liquid sloshing
 - louvers
 - mixers
 - mufflers
 - panels
 - reflectors
 - shielding
 - suppressors

baggage

- GS cargo
 - . **baggage**
- RT air cargo
- bags
- ground handling

bags

- GS **bags**
 - . air bag restraint devices
 - . gas bags
- RT baggage
- ∞ containers
- packages

Bahamas

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Bahamas**
 - nations
 - . **Bahamas**
- RT Caribbean region

Bahrain

- GS landforms
 - . islands
 - . . **Bahrain**
 - nations
 - . **Bahrain**

bailout

- RT air drop operations
- ejection
- ejection injuries
- ejection seats
- ejection training
- escape (abandonment)

escape systems
flying ejection seats
jettison systems
jettisoning
parachute descent
parafoils

bainite

DEF Metastable microstructure or microstructures resulting from the transformation of austenite at temperatures between those which produce pearlite and martensite.

- RT bainitic steel
- iron alloys
- microstructure
- steels

bainitic steel

- GS alloys
 - . iron alloys
 - . . steels
 - . . . **bainitic steel**
- RT bainite

Baja California

USE **Lower California (Mexico)**

bajadas

USE **fans (landforms)**

Bakelite (trademark)

- RT ceramics
- resins
- thermosetting resins

bakeout

USE **degassing**

Baker-Nunn camera

- GS optical equipment
 - . cameras
 - . . **Baker-Nunn camera**
 - photographic equipment
 - . cameras
 - . . **Baker-Nunn camera**
- RT astronomical photography
- Schmidt cameras

baking

- SN (EXCLUDES FOOD PROCESSING)
- GS heating
 - . **baking**
- RT casting
- degassing
- drying
- heat treatment
- ovens
- roasting
- sterilization

balance

- GS **balance**
 - . aerodynamic balance
 - . heat balance
 - . material balance
 - . . water balance
- RT compensators
- ∞ equilibrium
- ∞ mass balance
- mass distribution
- weight indicators

balance equations

USE **equations**

balanced amplifiers

USE **push-pull amplifiers**

balancing

- RT eccentricity
- ∞ equilibrium
- flywheels
- man machine systems

stabilization

Baldwin-Lomax turbulence model

(added May 1997)

- GS models
 - . mathematical models
 - . . turbulence models
 - . . . **Baldwin-Lomax turbulence model**
- RT computational fluid dynamics
- eddy viscosity
- flow equations
- turbulent boundary layer
- turbulent flow

ball bearings

- GS bearings
 - . antifriction bearings
 - . . **ball bearings**
- RT balls
- elastohydrodynamics
- needle bearings
- roller bearings
- thrust bearings

ball lightning

DEF A relatively rare form of lightning, consisting of a reddish, luminous ball, of the order of one foot in diameter, which may move rapidly along solid objects or remain floating in midair. Hissing noises emanate from such balls, and they sometimes explode noisily but may also appear noiselessly.

- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **ball lightning**
- RT atmospheric electricity

∞ ballast

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ballast (mass)
- ballasts (impedances)

ballast (mass)

- RT aerodynamic stability
- ∞ ballast
- buoyancy
- counterbalances
- floating
- floats
- hydrodynamics
- loads (forces)
- mass distribution
- stability
- static loads

ballasts (impedances)

DEF Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and where necessary provide the required starting voltage and current amd. in ballasts for rapid-start lamps provide low-voltage cathode heating.

- RT ∞ ballast
 - capacitors
 - inductors
 - luminaires
 - resistors
 - transformers

ballistic cameras

DEF Ground-based cameras using multiple exposures on the same plate to record the trajectories of rockets.

- GS optical equipment
 - . cameras
 - . . **ballistic cameras**
 - photographic equipment
 - . cameras
 - . . **ballistic cameras**
- RT ground support equipment
- high speed cameras

- optical tracking
rangefinding
stroboscopes
trajectory measurement
- ballistic missile decoys**
GS countermeasures
. **ballistic missile decoys**
decoys
. **ballistic missile decoys**
RT missile defense
reentry decoys
- Ballistic Missile Early Warning System**
UF *BMEWS*
GS warning systems
. early warning systems
. . . **Ballistic Missile Early Warning System**
RT air defense
military technology
radar tracking
∞ systems
- ballistic missile submarines**
GS water vehicles
. ships
. . . submarines
. . . **ballistic missile submarines**
. underwater vehicles
. . . submarines
. . . **ballistic missile submarines**
RT fleet ballistic missiles
missile launchers
mobile missile launchers
navy
Poseidon missiles
sea launching
- ballistic missiles**
SN (GUIDED ONLY DURING INITIAL POWERED PHASE)
DEF Missiles designed to operate primarily in accordance with the laws of ballistics.
GS missiles
. **ballistic missiles**
. . . field army ballistic missiles
. . . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. . . intermediate range ballistic missiles
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. . . Pershing missile
. . . Poseidon missiles
. . . short range ballistic missiles
. . . Skybolt missile
. . . Subroc missile
. . . V-2 missile
RT antimissile missiles
Safeguard system
surface to surface missiles
- ballistic ranges**
GS ranges (facilities)
. test ranges
. . . **ballistic ranges**
test facilities
. test ranges
. . . **ballistic ranges**
RT downrange
hydroballistics
missile ranges
- ballistic trajectories**
DEF Trajectories followed by a body being
- acted upon only by gravitational forces and the resistance of the medium through which it passes.
GS trajectories
. **ballistic trajectories**
RT ascent trajectories
ballistics
coasting flight
descent trajectories
downrange
free fall
impact prediction
midcourse trajectories
missile trajectories
parabolic flight
- ∞ **ballistic vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *nonlifting vehicles*
RT reentry vehicles
rocket vehicles
test vehicles
∞ vehicles
weapons
- ballistics**
DEF The science that deals with the motion, behavior and effects of projectiles, especially bullets, aerial bombs, rockets or the like; the science or art of designing and hurling projectiles so as to achieve a desired performance.
GS **ballistics**
. hydroballistics
. interior ballistics
. terminal ballistics
RT aerodynamic drag
ballistic trajectories
gas guns
howitzers
hypervelocity guns
ordnance
projectiles
propellants
trajectories
trajectory analysis
trajectory measurement
- ballistocardiography**
GS bioengineering
. biometrics
. . . cardiography
. . . **ballistocardiography**
RT electrocardiography
phonocardiography
seismocardiography
- balloon flight**
RT ∞ flight
meteorological flight
vertical flight
- balloon sounding**
GS sounding
. **balloon sounding**
RT atmospheric sounding
in situ measurement
radiosondes
superpressure balloons
- balloon-borne instruments**
GS measuring instruments
. **balloon-borne instruments**
RT airborne equipment
balloons
high altitude balloons
meteorological instruments
radiosondes
telescopes
- ballooning modes**
GS modes
. **ballooning modes**
RT magnetohydrodynamic stability
plasma control
plasma equilibrium
- tearing modes (plasmas)
- balloons**
GS expandable structures
. inflatable structures
. . . **balloons**
. . . high altitude balloons
. . . . jimsphere balloons
. . . . skyhook balloons
. . . . superpressure balloons
. . . meteorological balloons
. . . . jimsphere balloons
. . . . ROBIN balloons
. . . microballoons
. . . tethered balloons
RT ∞ aircraft
airships
ascent
balloon-borne instruments
ballutes
folding structures
gas bags
gondolas
observation aircraft
pilotless aircraft
stratoscope telescopes
- balls**
RT ball bearings
falling spheres
joints (junctions)
spheres
valves
- ballutes**
GS brakes (for arresting motion)
. aerodynamic brakes
. . . **ballutes**
drag devices
. aerodynamic brakes
. . . **ballutes**
expandable structures
. inflatable structures
. . . **ballutes**
RT air drop operations
aircraft brakes
balloons
drag chutes
folding structures
parachutes
- Balmer series**
GS spectra
. radiation spectra
. . . electromagnetic spectra
. . . line spectra
. . . . **Balmer series**
RT absorption spectra
atomic spectra
electron transitions
emission spectra
H beta line
H gamma line
H lines
hydrogen
- balsa**
RT trees (plants)
wood
- Baltic sea**
GS seas
. **Baltic sea**
RT Estonia
Latvia
- Baltic Shield (Europe)**
GS rocks
. bedrock
. . . **Baltic Shield (Europe)**
RT Earth resources
Europe
Precambrian period
- Banach space**
GS algebra

band ratioing

- . vector spaces
- .. **Banach space**
- ... Hilbert space
- ... Sobolev space
- analysis (mathematics)
- . function space
- .. **Banach space**
- ... Hilbert space
- ... Sobolev space
- . functional analysis
- .. **Banach space**
- ... Hilbert space
- ... Sobolev space
- RT harmonic analysis
- metric space

band ratioing

- GS image processing
 - . **band ratioing**
- RT image enhancement
- multispectral band scanners
- remote sensing
- spectral bands

band structure of solids

- RT Brillouin zones
- conduction bands
- electron transitions
- electronic structure
- energy gaps (solid state)
- forbidden bands
- heterojunction devices
- quantum wells

bandgap

- USE **energy gaps (solid state)**

bandpass filters

- DEF Wave filters having a single transmission band; neither of the cut-off frequencies being zero or infinity.

- GS electromagnetic wave filters
 - . **bandpass filters**
 - .. crystal filters
 - .. tracking filters
- RT adaptive filters
- bandstop filters
- bandwidth
- electric filters
- ∞ filters
- FIR filters
- microwave filters
- optical filters
- ultraviolet filters
- vocoders

∞ bands

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT absorption spectra
- anchors (fasteners)
- bandwidth
- Bloch band
- broadband
- clamps
- clips
- conduction bands
- edge dislocations
- energy bands
- fasteners
- forbidden bands
- frequencies
- Herzberg bands
- holders
- low frequencies
- narrowband
- photoluminescent bands
- plastic deformation
- ring structures
- Schumann-Runge bands
- sidebands
- spectral bands
- straps
- Swan bands

- Vegard-Kaplan bands

bandstop filters

- DEF Filters that block signals of a specific frequency or a band of frequencies.
- GS electromagnetic wave filters
 - . electric filters
 - .. **bandstop filters**
- RT adaptive filters
- bandpass filters
- bandwidth
- crystal filters
- ∞ filters
- high pass filters
- low pass filters
- microwave filters
- optical filters
- tracking filters
- waveguide filters

bandwidth

- GS **bandwidth**
 - . broadband
 - . narrowband
 - . spectral line width
- RT bandpass filters
- ∞ bands
- bandstop filters
- broadband amplifiers
- channel capacity
- dynamic characteristics
- frequencies
- frequency ranges
- impedance
- laser windows
- resonant frequencies
- speech baseband compression
- tracking filters
- transfer functions
- width
- windows (intervals)

bang-bang control

- USE **off-on control**

Bangladesh

- UF *East Pakistan*
- GS nations
 - . **Bangladesh**
- RT Asia
- India
- Pakistan

banking flight

- USE **turning flight**

Barany chair

- DEF A kind of chair in which a person is revolved to test his susceptibility to vertigo. It is named after the Swedish physician Robert Barany who lived from 1876 to 1936.

- GS seats
 - . **Barany chair**
- RT rotating environments
- tolerances (physiology)
- vertigo

Barbados

- GS landforms
 - . islands
 - .. West Indies
 - ... **Barbados**
- nations
 - . **Barbados**
- RT Caribbean region

barchans

- USE **dunes**

Bardeen approximation

- USE **barrier layers**
- electrical properties**
- surface properties**

Bardeen-Cooper-Schrieffer theory

- USE **BCS theory**

Barents Sea

- GS seas

. Barents Sea

- RT Arctic Ocean
- U. S. S. R.

barite

- GS minerals
 - . **barite**
 - sulfur compounds
 - . sulfates
 - .. **barite**

barium

- GS chemical elements
 - . **barium**
 - .. barium isotopes
 - metals
 - . **barium**
 - .. barium isotopes

barium alloys

- GS alloys
 - . **barium alloys**

barium compounds

- GS **barium compounds**
 - . barium ferrates
 - . barium fluorides
 - . barium oxides
 - . barium sulfides
 - . barium titanates
 - . barium zirconates
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds

barium ferrates

- GS barium compounds
 - . **barium ferrates**
 - iron compounds
 - . ferrates
 - .. **barium ferrates**

barium fluorides

- GS barium compounds
 - . **barium fluorides**
 - halogen compounds
 - . fluorine compounds
 - .. fluorides
 - ... **barium fluorides**
 - . halides
 - .. fluorides
 - ... **barium fluorides**
 - .. metal halides
 - ... **barium fluorides**

barium ion clouds

- GS clouds (meteorology)
 - . artificial clouds
 - .. chemical clouds
 - ... **barium ion clouds**
- RT Earth magnetosphere
- electric fields
- geomagnetism
- lines of force
- metal ions
- rocket sounding
- thermites

barium isotopes

- GS chemical elements
 - . alkaline earth metals
 - .. **barium isotopes**
 - . barium
 - . **barium isotopes**
 - . nuclides
 - .. isotopes
 - ... **barium isotopes**
 - metals
 - . alkaline earth metals
 - .. **barium isotopes**
 - . barium
 - .. **barium isotopes**

barium oxides

- GS barium compounds
 - . **barium oxides**

chalcogenides
 . oxides
 . . metal oxides
 . . . alkaline earth oxides
 **barium oxides**
 RT high temperature superconductors
 YBCO superconductors

barium sulfides

GS barium compounds
 . **barium sulfides**
 chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . **barium sulfides**
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . **barium sulfides**

barium titanates

GS barium compounds
 . **barium titanates**
 titanium compounds
 . titanates
 . . **barium titanates**
 RT dielectrics
 ferroelectric materials

barium zirconates

GS barium compounds
 . **barium zirconates**
 zirconium compounds
 . zirconates
 . . **barium zirconates**

Barkhausen effect

RT ∞ effects
 electromagnetic measurement
 electromagnetism
 oscillographs

barley

GS farm crops
 . grains (food)
 . . **barley**
 plants (botany)
 . **barley**
 RT agriculture
 blight
 botany
 crop growth
 crop vigor
 ∞ crops
 ∞ food
 irrigation
 seeds

baroclinic instability

DEF Hydrodynamic instability arising from the existence of a meridional temperature gradient (and hence a thermal wind) in an atmosphere in quasigeostrophic equilibrium and possessing static stability.

GS stability
 . **baroclinic instability**
 RT atmospheric circulation
 atmospheric models
 baroclinic waves
 baroclinity
 flow stability
 geostrophic wind
 meteorology
 zonal flow (meteorology)

baroclinic waves

GS elastic waves
 . capillary waves
 . . gravity waves
 . . . **baroclinic waves**
 surface waves
 . capillary waves
 . . gravity waves
 . . . **baroclinic waves**
 RT baroclinic instability
 baroclinity

barotropic flow
 cyclones
 density distribution
 geostrophic wind
 radiation pressure
 stratified flow
 wave amplification
 ∞ waves
 zonal flow (meteorology)

baroclinity

DEF The state of stratification in a fluid in which surfaces of constant pressure (isobaric) intersect surfaces of constant density (isotheric). The number, per unit area, of isobaric-isotheric solenoids intersecting a given surface is a measure of baroclinity.

RT baroclinic instability
 baroclinic waves
 barotropic flow
 barotropism
 ∞ isobars
 meteorological solenoids
 stratified flow

barometers

DEF Instruments used to measure atmospheric pressure.

GS measuring instruments
 . meteorological instruments
 . . **barometers**
 . pressure gages
 . . **barometers**
 RT altimeters
 hypsometers
 manometers
 pressure measurement
 vacuum gages

barometric pressure

USE **atmospheric pressure**

baroreceptor reflexes

(added April 2001)

USE **baroreflexes**

baroreceptors

DEF Receptors in the vascular system, particularly the aorta and carotid sinus, which are sensitive to stretch of the vessel walls.

UF *pressoreceptors*
 GS anatomy
 . sense organs
 . . **baroreceptors**
 receptors (physiology)
 . **baroreceptors**
 RT baroreflexes
 pressure
 proprioceptors

baroreflexes

(added March 2001)

DEF A negative feedback system that buffers short-term changes in blood pressure. Increased pressure stretches blood vessels, which activates pressoreceptors (baroreceptors) in the vessel walls. The central nervous system's net response is a reduction of central sympathetic outflow. This reduces blood pressure by decreasing peripheral vascular resistance and by lowering cardiac output. Because the baroreceptors are tonically active, the baroreflex can compensate rapidly for both increases and decreases in blood pressure.

UF *baroreceptor reflexes*
pressoreceptor reflexes
 GS reflexes
 . **baroreflexes**
 . . carotid sinus reflex
 RT baroreceptors
 blood pressure
 cardiovascular system
 heart rate
 hemodynamic responses

physiological responses

barotrauma

GS injuries
 . **barotrauma**
 RT decompression sickness
 diving (underwater)

barotropic flow

GS fluid flow
 . **barotropic flow**
 RT air currents
 air flow
 baroclinic waves
 baroclinity
 barotropism
 flow characteristics
 lee waves
 planetary waves
 Rayleigh waves
 Rossby regimes
 sea breeze
 viscous flow
 wind (meteorology)
 wind shear

barotropism

DEF The state of a fluid in which surfaces of constant density (or temperature) are coincident with surfaces of constant pressure; it is the state of zero baroclinity.

GS **barotropism**
 . planetary waves
 RT baroclinity
 barotropic flow
 ∞ isobars

 ∞ **barrages**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT artillery fire
 dams

barred galaxies

DEF Spiral galaxies whose nuclei are in the shape of bars at the ends of which the spiral arms begin. About one fifth of all spiral galaxies are barred spirals.

GS celestial bodies
 . galaxies
 . . spiral galaxies
 . . . **barred galaxies**
 RT disk galaxies
 galactic structure
 Hubble diagram
 local group (astronomy)
 star clusters
 star distribution
 stars
 Virgo galactic cluster

 ∞ **barrels**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT barrels (containers)
 ∞ drums
 gun launchers

barrels (containers)

UF *casks*
 RT ∞ barrels
 ∞ containers
 drums (containers)

barren land

DEF Rugged or unproductive lands devoid of significant vegetation compared to adjacent areas because of environmental factors such as adverse climate, poor soil, o, or winds. Used for barrens.

UF *barrens*
 GS land
 . **barren land**
 RT arid lands
 badlands

barrier layers

desertification
deserts
land use
Sahara Desert (Africa)
sites
soils
topography

barrens

USE **barren land**

barricades

USE **barriers**

barrier injection transit time diodes

USE **Barritt diodes**

barrier layers

UF *Bardeen approximation*

RT ∞ barriers

Barritt diodes
interlayers
JFET
joints (junctions)
junction diodes
junction transistors
 ∞ layers
MBM junctions
nonohmic effect
resonant tunneling
seals (stoppers)
semiconductor devices
SIS (semiconductors)
surface layers
tunnel junctions
waterproofing
Zener effect

∞ barriers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Any materials limiting passage through itself of solids, liquids, semisolids, gases, or forms of energy such as ultraviolet light. Used for barricades and obstacles.

UF *barricades*

obstacles

RT

abort apparatus
acoustic velocity
arresting gear
baffles
barrier layers
barriers (landforms)
Barritt diodes
blood-brain barrier
bulkheads
chains
closures
constrictions
curtains
dams
dividers
electrode film barriers
enclosures
fences (barriers)
gates (openings)
guards (shields)
MBM junctions
safety devices
Schottky diodes
seals (stoppers)
shielding
thermal barriers (plasma control)
vapor barrier clothing
walls
wind (meteorology)
windows (apertures)

barriers (landforms)

DEF Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. It is built up by the action of waves and currents.

GS landforms

. barriers (landforms)

. . . Outer Banks (NC)
. . . reefs
RT ∞ barriers
bars (landforms)
island arcs

Barritt diodes

DEF Barrier injection transit time diodes that operate similarly to IMPATT diodes. The operating frequencies are determined by the transit times across the drift. Used for barrier injection transit time diodes.

UF *barrier injection transit time diodes*

GS electronic equipment

. diodes

. . . semiconductor diodes

. . . . **Barritt diodes**

. solid state devices

. . . semiconductor devices

. . . . **Barritt diodes**

RT

avalanche diodes

barrier layers

∞ barriers

carrier injection
cryosar
electric potential
injection
junction diodes
microwave oscillators
rectifiers
Schottky diodes
semiconductor junctions
shot noise
transit time

bars

GS **bars**

. elastic bars
. prismatic bars

RT

metal plates
rods
structural members

bars (landforms)

DEF A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.

UF *tombolos*

GS landforms

. **bars (landforms)**

RT

barriers (landforms)
beaches
coastal plains
lagoons
littoral drift
reefs

barycenter

USE **center of gravity**

baryon resonance

DEF An anomaly found in scattering cross sections indicating the existence of an unstable, excited state of baryon.

GS resonance

. **baryon resonance**

RT

baryons
hyperons
scattering cross sections

baryons

GS particles
. elementary particles
. . . fermions
. . . . **baryons**
. hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons

. . . hadrons
. . . . **baryons**
. hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons

RT

baryon resonance
cold neutrons
dark matter
eta-mesons
fast neutrons
gravitinos
kaons
meson resonance
mesons
muons
neutrons
nucleons
photoneutrons
pions
protons
recoil protons
solar protons
thermal neutrons

basalt

GS rocks

. igneous rocks

. . . **basalt**

RT

cones (volcanoes)
lunar maria
Mars volcanoes
regolith
soils
volcanoes
volcanology

base flow

DEF Fluid flow at the base or extreme aft end of a body.

GS fluid flow

. **base flow**

RT

head flow
wakes

base heating

GS heating

. **base heating**

RT

afterbodies
convection
exhaust nozzles
jet exhaust
jet impingement
 ∞ radiation
rocket exhaust

base pressure

DEF In aerodynamics, the pressure exerted on the base, or extreme aft end, of a body, as of a cylindrical or boattailed body or of a blunt-trailing-edge wing, in a fluid flow.

GS pressure

. **base pressure**

RT

aerodynamic drag

basements

RT buildings
floors
foundations

∞ bases

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

bases (chemical)
data bases
foundations
inorganic compounds
ion concentration
lunar bases
space bases
stations

bases (chemical)

GS **bases (chemical)**

. adenines

- . alkalis
 - . . lithium hydroxides
 - . . potassium hydroxides
 - . . sodium hydroxides
 - . alkaloids
 - . . atropine
 - . . betaines
 - . . caffeine
 - . . colchicine
 - . . ergotamine
 - . . hyoscine
 - . . lysergine
 - . . morphine
 - . . nicotinamide
 - . . nicotine
 - . . pilocarpine
 - . . reserpine
 - . . strychnine
 - . . tropanyl compounds
 - . guanines
 - . piperidine
 - . pyridines
 - . quinoline
 - . thymidine
 - . uracil
 - RT alkalinity
 - anhydrides
 - ∞ bases
 - buffers (chemistry)
 - pH
- bases (foundations)*
USE **foundations**
- BASIC (programming language)**
GS languages
 - . programming languages
 - . . **BASIC (programming language)**- RT computer programming

basins
USE **structural basins**

basins (containers)
RT tanks (containers)

baskets
RT ∞ containers
 - gondolas

bastnasite
GS carbon compounds
 - . carbonates
 - . . **bastnasite**
 - minerals
 - . **bastnasite**
 - rare earth compounds
 - . cerium compounds
 - . . **bastnasite**

batch processing
GS data processing
 - . **batch processing**- RT computer programming
 - computer programs
 - data processing equipment
 - ∞ processing

bathing
GS cleaning
 - . washing
 - . . **bathing**- RT cooling
 - hygiene
 - waste water

batholiths
GS rock intrusions
 - . **batholiths**
 - rocks
 - . bedrock
 - . . **batholiths**- RT granite
 - igneous rocks

baths
SN (EXCLUDES BATHING)
- GS **baths**
 - . salt baths- RT dipping
 - electroplating
 - heat transfer
 - quenching (cooling)
 - ∞ soaking
 - submerging
 - water immersion

bathymeters
DEF Instruments that measure the ocean depths and check the topography of the ocean floor. Used for bathymetry.
- UF *bathymetry*
- GS measuring instruments
 - . **bathymeters**- RT depth measurement
 - oceanography
 - sounding
 - underwater research laboratories

bathymetry
USE **bathymeters**

bathythermographs
GS measuring instruments
 - . temperature measuring instruments
 - . . **bathythermographs**
 - recording instruments
 - . **bathythermographs**- RT pressure gradients
 - temperature gradients

bats
GS animals
 - . vertebrates
 - . . mammals
 - . . . **bats**

batteries
USE **electric batteries**

battery chargers
RT charge efficiency
 - ∞ charging
 - electric batteries
 - pulse charging
 - storage batteries

battery separators
USE **separators**

Bauschinger effect
RT ∞ effects
 - fatigue (materials)
 - microstructure

bauxite
DEF A ferruginous aluminium hydroxide rock consisting of several minerals. It is the principle source for aluminum.
- RT aluminum oxides
 - minerals
 - rocks

B-A-W devices
USE **bulk acoustic wave devices**

bay ice
GS ice
 - . **bay ice**- RT freezing
 - frost
 - ice formation
 - ice mapping
 - ice reporting
 - lake ice
 - low temperature
 - navigation
 - oceanography
 - sea ice
 - slush
 - water

Bayard-Alpert ionization gages
DEF Ionization vacuum gages using a tube with an electrode structure designed to minimize x ray induced electron emission from the ion collector.
- GS measuring instruments
 - . pressure gages
 - . . vacuum gages
 - . . . ionization gages
 - **Bayard-Alpert ionization gages**- vacuum apparatus
 - . vacuum gages
 - . . ionization gages
 - . . . **Bayard-Alpert ionization gages**- RT hot cathodes

Bayes theorem
UF *Bayesian statistics*- GS theorems
 - . **Bayes theorem**- RT belief networks
 - quality control
 - sampling

Bayesian belief networks
USE **belief networks**

Bayesian statistics
USE **Bayes theorem**

bayous
DEF A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U. S. , especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water; especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French "boyau", "gut"; from the Choctaw "bayuk", "small stream".
- GS landforms
 - . inlets (topography)
 - . . **bayous**- RT lakes
 - marshlands
 - rivers

∞ **bays**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bays (structural units)
 - bays (topographic features)

bays (structural units)
RT aircraft compartments
 - airframes
 - ∞ bays
 - compartments
 - fuselages
 - hulls (structures)
 - shells (structural forms)

bays (topographic features)
DEF Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same general character as gulfs. Used for bights and coves.
- UF *bights*
 - coves*- GS **bays (topographic features)**
 - . Chesapeake Bay (US)
 - . Delaware Bay (US)
 - . Hudson Bay (Canada)
 - . Monterey Bay (CA)
 - . Saginaw Bay (MI)
 - . San Francisco Bay (CA)
 - . San Pablo Bay (CA)- RT ∞ bays
 - estuaries

BBGKY hierarchy

gulfs
inlets (topography)

BBGKY hierarchy
GS classifications
. hierarchies
. . . **BBGKY hierarchy**
RT Bogoliubov theory
Boltzmann transport equation
equations of state
Fourier transformation
kinetic equations
plasma physics

BCAS
USE **Beacon Collision Avoidance System**

BCC lattices
USE **body centered cubic lattices**

BCH codes
UF *Bose-Chaudhuri-Hocquenghem codes*
RT binary codes
∞ codes
coding
computer programming
decoders
decoding
digital techniques
error correcting devices
information theory
parity
random errors

BCS theory
UF *Bardeen-Cooper-Schrieffer theory*
RT many body problem
superconductivity
∞ theories
thermodynamic coupling

BE A
USE **Beacon Explorer A**

BE B
USE **Explorer 22 satellite**

BE C
USE **Explorer 27 satellite**

BE-3 engine
GS engines
. rocket engines
. . . retrorocket engines
. . . **BE-3 engine**
RT Athena rocket vehicle
Ranger lunar landing vehicles
solid propellant rocket engines

beaches
DEF Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low-water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.
UF *advancing shorelines*
backshores
inshore zones
RT bars (landforms)
coastal currents
coastal plains
coasts
cusps (landforms)
dunes
lagoons
lakes
littoral drift
marine environments
shoals
shorelines
topography

waterfowl

Beacon Collision Avoidance System
UF *BCAS*
GS avoidance
. collision avoidance
. . . **Beacon Collision Avoidance System**
RT air traffic control
aircraft safety
midair collisions
radio beacons
∞ systems
transponders

Beacon Explorer A
UF *BE A*
S-66 satellite
GS artificial satellites
. passive satellites
. . . Beacon satellites
. . . . **Beacon Explorer A**
expandable structures
. inflatable structures
. . inflatable spacecraft
. . . Beacon satellites
. . . . **Beacon Explorer A**
inflatable space structures
. inflatable spacecraft
. . Beacon satellites
. . . **Beacon Explorer A**
space erectable structures
. inflatable spacecraft
. . Beacon satellites
. . . **Beacon Explorer A**
RT Delta launch vehicle

Beacon Explorer B
USE **Explorer 22 satellite**

Beacon Explorer C
USE **Explorer 27 satellite**

Beacon satellites
UF *polar ionosphere beacon*
GS artificial satellites
. passive satellites
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
expandable structures
. inflatable structures
. . inflatable spacecraft
. . . **Beacon satellites**
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
inflatable space structures
. inflatable spacecraft
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
space erectable structures
. inflatable spacecraft
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT LOCATES system

beacons
DEF Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.
GS navigation aids
. **beacons**
. . airport beacons
. . . discrete address beacon system
. . radar beacons
. . . discrete address beacon system
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radio direction finders
RT aircraft lights
buoys
compasses
homing

homing devices
instrument flight rules
∞ markers
position indicators
projectors
searchlights
∞ signals
solar compasses
visual signals

beads
RT spot welds
welded joints
welding

Beagle aircraft
RT ∞ aircraft

beam currents
DEF Currents incident on specimens by primary particle sources.
GS electric current
. **beam currents**
RT backward wave tubes
Brillouin flow
∞ currents
plasma currents

beam forming
USE **beamforming**

beam injection
DEF The introduction of a particle radiation beam into a plasma or ionized gas for the purpose of diagnostics, plasma control, or the study of beam/plasma interactions.
RT electron beams
ion beams
neutral beams
plasma heating
plasma-particle interactions
tokamak devices
toroidal plasmas

beam interactions
DEF A general term for interactions between various types of beams with each other or with plasmas or substances.
RT atom optics
beams (radiation)
collision parameters
high energy interactions
∞ interactions
wave-particle interactions

beam leads
GS conductors
. electric conductors
. . **beam leads**
. flat conductors
. . **beam leads**
RT bonding
electric connectors
∞ joining
microelectronics
micromodules
soldered joints

beam neutralization
DEF Neutralization that takes place by means of charge exchange with a neutral gas.
RT beams (radiation)
electron beams
ion beams
neutral beams

beam plasma amplifiers
GS amplifiers
. **beam plasma amplifiers**
RT electron beams
millimeter waves
plasma-particle interactions
plasmas (physics)

relativistic electron beams

beam rider guidance

DEF System for guiding aircraft, spacecraft, or missiles, along a desired path by means of a radar beam, light beam, etc. The center of the beam axis forms a line along which the vehicle senses its location and corrects its course relative to the beam axis.

- GS guidance (motion)
- . **beam rider guidance**
- RT missile control
- missile systems

beam splitters

DEF Partially reflecting mirrors which permit some incident light to pass through and reflect the remainder.

- RT beams (radiation)
- particle accelerators
- particle beams
- scatter plates (optics)

beam steering

(added June 1997)

- GS steering
- . **beam steering**
- RT antenna radiation patterns
- beam waveguides
- beamforming
- beams (radiation)
- collimation
- laser beams
- steerable antennas

beam switching

- GS switching
- . **beam switching**
- RT beams (radiation)
- electron optics
- ion engines
- lasers
- magnetic switching
- packet switching

beam waveguides

- GS waveguides
- . **beam waveguides**
- RT beam steering
- collimators
- ion optics
- photon beams
- plasmaguides
- rectangular waveguides
- wave propagation
- yokes

beamed power

USE **power beaming**

beamforming

(added September 1992)

- UF *beam forming*
- beamshaping*
- GS collimation
- . **beamforming**
- RT antenna arrays
- antenna radiation patterns
- beam steering
- beams (radiation)
- ion optics
- laser beams
- polarization (waves)
- radar beams

∞ **beams**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT beams (radiation)
- beams (supports)

beams (radiation)

- GS **beams (radiation)**
- . gamma ray beams
- . light beams

- . . laser beams
- . microbeams
- . particle beams
- . . atomic beams
- . . . electron beams
- . . . relativistic electron beams
- . . ion beams
- . . neutral beams
- . . . molecular beams
- . . . neutron beams
- . . neutrino beams
- . . pion beams
- . . proton beams
- . pencil beams
- . phonon beams
- . photon beams
- . radar beams

- RT beam interactions
- beam neutralization
- beam splitters
- beam steering
- beam switching
- beamforming
- ∞ beams
- coherent electromagnetic radiation
- coherent radiation
- corpuscular radiation
- electromagnetic radiation
- extreme ultraviolet radiation
- infrared radiation
- ionizing radiation
- irradiation
- light (visible radiation)
- longitudinal waves
- monochromatic radiation
- multibeam antennas
- plane waves
- ∞ radiation
- ∞ rays
- submillimeter waves
- ultraviolet radiation

beams (supports)

- UF *structural beams*
- GS structural members
- . **beams (supports)**
- . . box beams
- . . cantilever beams
- . . curved beams
- . . Euler-Bernoulli beams
- . . I beams
- . . rectangular beams
- . . Timoshenko beams
- RT ∞ beams
- clamped structures
- columns (supports)
- girders
- ∞ headers
- plastic bodies
- T shape
- trusses

beamshaping

USE **beamforming**

∞ **bearing**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bearing (direction)
- bearings
- internal combustion engines

bearing (direction)

- RT alignment
- azimuth
- ∞ bearing
- ∞ direction
- direction finding
- exposure
- field of view
- instrument orientation
- ∞ orientation
- position (location)
- sound localization

∞ space orientation

bearing alloys

- GS alloys
- . **bearing alloys**
- RT aluminum alloys
- babbitt metal
- bearings
- cadmium alloys
- copper alloys
- iron alloys
- lead alloys
- metal powder
- silver alloys
- tin alloys
- zinc alloys

bearingless rotors

- GS airfoils
- . wings
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- rotating bodies
- . rotors
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- RT hinges
- rigid rotors

bearings

- GS **bearings**
- . antifriction bearings
- . . ball bearings
- . . roller bearings
- . . . needle bearings
- . foil bearings
- . gas bearings
- . journal bearings
- . liquid bearings
- . magnetic bearings
- . thrust bearings
- RT ∞ bearing
- bearing alloys
- boundary lubrication
- bushings
- gimbals
- idlers
- internal combustion engines
- lubrication
- packings (seals)
- pivots
- shafts (machine elements)
- supports
- suspension systems (vehicles)
- swivels
- wheels

bears

- GS animals
- . vertebrates
- . . mammals
- . . . bears

beat

USE **synchronism**

beat frequencies

DEF The frequencies obtained when two simple harmonic quantities of different frequencies f1 and f2 are superimposed. The beat frequency equals f1-f2.

- GS frequencies
- . **beat frequencies**
- RT group velocity
- intermediate frequency amplifiers
- Moire effects
- resonant frequencies
- standing waves
- superheterodyne receivers

Beaufort Sea (North America)

- GS seas
- . **Beaufort Sea (North America)**
- RT Alaska

bed rest

Arctic Ocean
Canada

bed rest

GS rest
. **bed rest**
RT calcium metabolism
clinical medicine
head down tilt
head up tilt
orthostatic tolerance

bedding equipment

RT ∞ blankets
∞ equipment

bediasites

GS celestial bodies
. meteorites
. . . stony meteorites
. . . . tektites
. . . . **bediasites**
RT australites

bedrock

UF *shields (geology)*
GS rocks
. **bedrock**
. . Baltic Shield (Europe)
. . batholiths
RT Earth resources
geology
regolith
∞ shelves
soils
strata
stratification
stratigraphy
tunneling (excavation)

beds

RT beds (process engineering)
couches

beds (geology)

UF *lake beds*
GS geology
. **beds (geology)**
. . salt beds
landforms
. **beds (geology)**
. . salt beds
RT ocean bottom
strata
stratigraphy

beds (process engineering)

RT beds
chemical reactors
extraction
filtration
fluidized bed processors
ion exchanging
percolation

Beech 99 aircraft

DEF Light, low-wing aircraft manufactured by Beechcraft.
GS Beechcraft aircraft
. **Beech 99 aircraft**
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
light aircraft
. **Beech 99 aircraft**
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
RT ∞ aircraft

∞ low wing aircraft

Beech aircraft

USE **Beechcraft aircraft**

Beech C-33 aircraft

USE **C-33 aircraft**

Beech S-35 aircraft

USE **C-35 aircraft**

Beechcraft 18 aircraft

GS Beechcraft aircraft
. Beech 99 aircraft
. . **Beechcraft 18 aircraft**
general aviation aircraft
. **Beechcraft 18 aircraft**
light aircraft
. Beech 99 aircraft
. . **Beechcraft 18 aircraft**
monoplanes
. **Beechcraft 18 aircraft**
RT ∞ aircraft

Beechcraft aircraft

UF *Beech aircraft*
GS **Beechcraft aircraft**
. Beech 99 aircraft
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
RT ∞ aircraft

Beer law

RT absorptivity
Bouguer law
electromagnetic absorption
molecular absorption

bees

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **bees**
RT swarming

beetles

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. **beetles**
. tribolia
RT infestation

behavior

DEF The way in which an organism, organ, body, or substance acts in an environment or responds to excitation, as the behavior of steel under stress, or the behavior of an animal in a test.

GS **behavior**
. deconditioning
. human behavior
RT conditioning (learning)
diagnosis
education
extroversion
learning
migration
Skinner boxes

Belarus

(added August 1993)
GS nations
. **Belarus**

RT Europe

Belfast aircraft

USE **SC-5 aircraft**

Belgian Congo

USE **Democratic Republic of Congo**

Belgian space program

(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Belgian space program**
RT Belgium

Belgium

GS nations
. **Belgium**
RT Belgian space program
Europe

belief networks

(added December 1994)
DEF Artificial Intelligence technique for computing probabilistic information.
UF *Bayesian belief networks*
GS networks
. **belief networks**
RT artificial intelligence
Bayes theorem
computer techniques
expert systems
knowledge representation
neural nets
probability theory

Belize

UF *British Honduras*
GS nations
. **Belize**
RT Caribbean region
Caribbean Sea
Central America

Bell 214A helicopter

DEF Sixteen-seat utility helicopter manufactured by Bell Helicopter.
GS Bell aircraft
. **Bell 214A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **Bell 214A helicopter**
RT ∞ aircraft
vertical takeoff aircraft

Bell aircraft

GS **Bell aircraft**
. AH-1S helicopter
. AH-1W helicopter
. AH-63 helicopter
. Bell 214A helicopter
. OH-4 helicopter
. OH-13 helicopter
. UH-1 helicopter
. V-22 aircraft
. X-1 aircraft
. X-2 aircraft
. X-5 aircraft
. X-14 aircraft
. X-22 aircraft
. XV-3 aircraft
. XV-15 aircraft
RT ∞ aircraft

Bellman theory

RT dynamic programming
optimization
∞ theories

bellows

SN (EXPANDABLE JOINTS--FOR DEVICES TO MOVE GASES, USE BLOWERS)
DEF Mechanical structures with walls like those of an accordion.

- GS expandable structures
 . **bellows**
- RT expulsion bladders
 joints (junctions)
 pumps
- bells**
- RT auditory signals
 pressure vessels
 psychoacoustics
- ∞ signals
 sound generators
 warning
 warning systems
- Beltrami flow**
- GS fluid flow
 . **Beltrami flow**
- RT incompressible flow
 steady flow
 vorticity
- ∞ **belts**
- SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
- RT asteroid belts
 cables (ropes)
 fasteners
 girdles
 proton belts
 pulleys
 radiation belts
 regions
 Rouse belts
 seat belts
 terrestrial dust belt
- Benard cells**
- GS convection
 . free convection
 . . Rayleigh-Benard convection
 . . . **Benard cells**
 fluid flow
 . convective flow
 . . Rayleigh-Benard convection
 . . . **Benard cells**
- RT convection currents
 convection-diffusion equation
 Rayleigh number
 solar convection (astronomy)
 solar granulation
 stellar convection
- benches*
- USE **seats**
- bend tests**
- DEF Ductility tests in which specimens are
 bent through an arc of known radius and angle.
- RT bending
 crack propagation
 destructive tests
 flexural strength
 fracture mechanics
 fracture strength
 ∞ materials tests
 ∞ tests
- bending**
- GS **bending**
 . elastic bending
- RT bend tests
- ∞ bows
 buckling
 camber
 deflection
 deformation
 displacement
 distortion
 elastic deformation
 Euler-Bernoulli beams
 fatigue tests
 fiber strength
 flexibility
 flexing
 flutter
- folding
 heaving
 kinking
 modulus of elasticity
 plastic deformation
 stiffness
 structural failure
 structural strain
 temperature inversions
 twisting
 warpage
- bending diagrams**
- GS diagrams
 . **bending diagrams**
- RT deflection
- bending fatigue**
- GS fatigue (materials)
 . **bending fatigue**
- RT flexural strength
 metal fatigue
 S-N diagrams
- bending moments**
- GS moments
 . **bending moments**
- RT loading moments
 NASTRAN
 static loads
 stress analysis
 structural design criteria
 torque
- bending strength*
- USE **flexural strength**
- bending theory**
- RT stress analysis
 stress intensity factors
 ∞ theories
 Trefftz method
- bending vibration**
- GS vibration
 . structural vibration
 . . **bending vibration**
- RT breathing vibration
 Euler-Bernoulli beams
 flutter
 missile vibration
 panel flutter
 random vibration
 self induced vibration
- bends (physiology)*
- USE **decompression sickness**
- beneficiation**
- RT ∞ absorption
 adsorption
 aeration
 clean fuels
 comminution
 concentrating
 ∞ conditioning
 enrichment
 exploitation
 extraction
 filtration
 flotation
 foaming
 isotopic enrichment
 leaching
 ∞ metallurgy
 minerals
 purification
 refining
 ∞ separation
 settling
 size separation
 sublimation
 upgrading
 washing
- wastes
- Benin**
- UF *Dahomey*
 GS nations
 . **Benin**
 RT Africa
- bentonite**
- DEF A soft, plastic, porous, light colored
 rock composed essentially of clay minerals of
 the montmorillonite group plus colloidal silica,
 and produced by divitrification and chemical
 alteration of a glassy igneous material, usually a
 tuff or a volcanic ash.
- RT montmorillonite
 soils
 water treatment
- benzene**
- GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **benzene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **benzene**
- RT chlorobenzenes
 cyclohexane
 solvent refined coal
 thiophenes
- benzene poisoning**
- GS diseases
 . toxic diseases
 . . **benzene poisoning**
 toxicity
 . **benzene poisoning**
- RT hydrocarbon poisoning
 industrial safety
 ∞ poisoning
 toxicity and safety hazard
 toxicology
- benzilic acid**
- GS acids
 . carboxylic acids
 . . fatty acids
 . . . **benzilic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzilic acid**
- benzoic acid**
- GS acids
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
- benzoquinone*
- USE **quinones**
- Berence rocket vehicle**
- GS rocket vehicles
 . multistage rocket vehicles
 . . **Berence rocket vehicle**
- RT hypersonic reentry
 solid propellant rocket engines
- Bergman operator**
- GS operators (mathematics)
 . **Bergman operator**
- Bering Sea**
- GS seas
 . **Bering Sea**
- RT Pacific Ocean
- berkelium**
- GS chemical elements
 . actinide series

Bermuda

- .. transuranium elements
- ... **berkelium**
- . nuclides
- . isotopes
- ... radioactive isotopes
- ... transuranium elements
- ... **berkelium**
- metals
- . actinide series
- .. transuranium elements
- ... **berkelium**

Bermuda

- GS landforms
- . islands
- .. **Bermuda**
- RT Atlantic Ocean

Bernoulli equation

- USE **Bernoulli theorem**

Bernoulli theorem

DEF In aeronautics, a law or theorem stating that in a flow of incompressible fluid the sum of the static pressure and the dynamic pressure along a streamline is constant if gravity and frictional effects are disregarded. It is named for Daniel Bernoulli, a Swiss scientist who lived from 1700 to 1782. Used for Bernoulli equation.

- UF *Bernoulli equation*
- GS theorems
- . **Bernoulli theorem**
- RT conservation equations
- ∞ equations
- flow equations
- fluid flow
- isentropic processes
- linearization
- Magnus effect
- panel method (fluid dynamics)

Bernstein energy principle

- GS structural analysis
- . energy methods
- .. **Bernstein energy principle**
- RT ∞ energy
- magnetic fields

beryl

- UF *emerald*
- GS aluminum compounds
- . **beryl**
- .. alexandrite
- beryllium compounds
- . **beryl**
- .. alexandrite
- minerals
- . **beryl**
- .. alexandrite
- silicon compounds
- . silicates
- .. **beryl**
- ... alexandrite
- RT beryllium

beryllium

- GS chemical elements
- . **beryllium**
- .. beryllium isotopes
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- metals
- . **beryllium**
- .. beryllium isotopes
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- RT beryl
- moderators

beryllium 7

- GS chemical elements
- . beryllium
- .. beryllium isotopes
- ... **beryllium 7**

- . nuclides
- . isotopes
- ... beryllium isotopes
- ... **beryllium 7**
- ... radioactive isotopes
- ... **beryllium 7**
- metals
- . beryllium
- .. beryllium isotopes
- ... **beryllium 7**

beryllium 9

- GS chemical elements
- . beryllium
- ... beryllium isotopes
- ... **beryllium 9**
- . nuclides
- . isotopes
- ... beryllium isotopes
- ... **beryllium 9**
- ... radioactive isotopes
- ... **beryllium 9**
- metals
- . beryllium
- .. beryllium isotopes
- ... **beryllium 9**

beryllium 10

- GS chemical elements
- . beryllium
- ... beryllium isotopes
- ... **beryllium 10**
- . nuclides
- . isotopes
- ... beryllium isotopes
- ... **beryllium 10**
- ... radioactive isotopes
- ... **beryllium 10**
- metals
- . beryllium
- .. beryllium isotopes
- ... **beryllium 10**

beryllium alloys

- GS alloys
- . light alloys
- .. **beryllium alloys**

beryllium borohydrides

- GS beryllium compounds
- . **beryllium borohydrides**
- boron compounds
- . borohydrides
- .. **beryllium borohydrides**
- . boron hydrides
- .. **beryllium borohydrides**
- hydrogen compounds
- . hydrides
- .. borohydrides
- ... **beryllium borohydrides**
- .. boron hydrides
- ... **beryllium borohydrides**

beryllium chlorides

- GS beryllium compounds
- . **beryllium chlorides**
- halogen compounds
- . chlorine compounds
- .. chlorides
- ... **beryllium chlorides**
- . halides
- .. chlorides
- ... **beryllium chlorides**
- .. metal halides
- ... **beryllium chlorides**

beryllium compounds

- GS **beryllium compounds**
- . beryl
- . alexandrite
- . beryllium borohydrides
- . beryllium chlorides
- . beryllium fluorides
- . beryllium hydrides
- . beryllium nitrides
- . beryllium oxides

- .. alexandrite
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds
- metal fuels
- metal propellants

beryllium fluorides

- GS beryllium compounds
- . **beryllium fluorides**
- halogen compounds
- . fluorine compounds
- .. fluorides
- ... metal fluorides
- ... **beryllium fluorides**
- . halides
- .. fluorides
- ... metal fluorides
- ... **beryllium fluorides**
- . metal halides
- ... metal fluorides
- ... **beryllium fluorides**

beryllium hydrides

- GS beryllium compounds
- . **beryllium hydrides**
- hydrogen compounds
- . hydrides
- .. metal hydrides
- ... **beryllium hydrides**

beryllium isotopes

- GS chemical elements
- . beryllium
- .. **beryllium isotopes**
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- . nuclides
- . isotopes
- ... **beryllium isotopes**
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- metals
- . beryllium
- .. **beryllium isotopes**
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10

beryllium nitrides

- GS beryllium compounds
- . **beryllium nitrides**
- nitrogen compounds
- . nitrides
- .. metal nitrides
- ... **beryllium nitrides**

beryllium oxides

- GS beryllium compounds
- . **beryllium oxides**
- . alexandrite
- chalcogenides
- . oxides
- .. metal oxides
- ... alkaline earth oxides
- ... **beryllium oxides**
- ... alexandrite

beryllium poisoning

- GS diseases
- . toxic diseases
- .. **beryllium poisoning**
- toxicity
- . **beryllium poisoning**
- RT industrial safety
- ∞ poisoning
- respiratory diseases
- toxicity and safety hazard
- toxicology

BESS (satellite)

DEF A proposed NASA primate biomedical experiment scientific satellite that was never

developed. Used for biomedical experiment scientific satellite.

- UF *Biomedical Experiment Scientific Satellite*
- GS artificial satellites
 - . **BESS (satellite)**
- RT multimission modular spacecraft space shuttles

Bessel functions

- GS analysis (mathematics)
 - . complex variables
 - . . . **Bessel functions**
 - . . . Hankel functions
 - . real variables
 - . . . **Bessel functions**
 - . . . Hankel functions
- RT boundary value problems differential equations hypergeometric functions orthogonal functions power series

Bessel-Bredichin theory

- RT comets
 - Kohoutek comet
 - radiation pressure
- ∞ theories

beta factor

DEF In plasma physics, the ratio of the plasma kinetic pressure to the magnetic pressure.

- RT dense plasmas fluid pressure fusion reactors magnetic fields magnetic flux magnetohydrodynamic stability plasma control plasma equilibrium plasma heating plasma physics pressure effects reactor physics tokamak devices toroidal plasmas

beta interactions

- USE **weak interactions (field theory)**

beta particles

DEF Particles emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a low ability to penetrate other materials.

- GS ionizing radiation
 - . **beta particles**
 - . nuclear radiation
 - . **beta particles**
 - . particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **beta particles**
 - . corpuscular radiation
 - . . electron radiation
 - . . . **beta particles**
 - . . energetic particles
 - . . . plasmas (physics)
 - **beta particles**
 - . elementary particles
 - . . **beta particles**
 - . nuclear particles
 - . . **beta particles**
- RT decay
 - electron beams
 - electrons
 - flux (rate)
 - hot atoms
 - N electrons
 - relativistic electron beams
 - weak energy interactions

betaines

- GS bases (chemical)

- . alkaloids
- . . **betaines**
- . nitrogen compounds
- . alkaloids
- . . **betaines**
- . organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **betaines**

betatrons

DEF Particle accelerators in which magnetic induction is used to accelerate electrons.

- GS particle accelerators
 - . cyclic accelerators
 - . . **betatrons**
 - . electron accelerators
 - . . **betatrons**
- RT microtrons synchrotrons

Bethe-Heitler formula

- GS mathematical logic
 - . formulas (mathematics)
 - . . **Bethe-Heitler formula**

Bethe-Salpeter equation

- GS analysis (mathematics)
 - . real variables
 - . . **Bethe-Salpeter equation**
- RT differential equations
 - ∞ equations
 - equations of motion
 - kinetic equations
 - quantum mechanics

bevatron

- GS particle accelerators
 - . cyclic accelerators
 - . . synchrotrons
 - . . . **bevatron**
- RT synchrocyclotrons

bevel gears

- (added May 1999)
- GS gears
 - . **bevel gears**
 - . . spiral bevel gears
- RT gear teeth

beverages

- GS liquids
 - . potable liquids
 - . . **beverages**
 - . . . wines
- RT coffee drinking
- ∞ food
- milk

BGK model

- (added September 1993)
- UF *Bhatnagar-Grass-Krook model*
- GS models
 - . mathematical models
 - . . **BGK model**
- RT Boltzmann transport equation computational fluid dynamics kinetic equations kinetic theory Knudsen flow molecular collisions molecular flow particle collisions rarefied gas dynamics

Bhatnagar-Grass-Krook model

- USE **BGK model**

Bhutan

- GS nations
 - . **Bhutan**
- RT Himalayas India Sikkim

Tibet

bias

DEF A constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value.

- GS **bias**
 - . response bias
- RT compensators displacement electric potential errors instrument errors open circuit voltage tube grids

bibliographies

- GS documents
 - . **bibliographies**
- RT abstracts biography documentation general overviews handbooks indexes (documentation) information dissemination information retrieval libraries literature
 - ∞ reference systems
 - space glossaries
 - summaries

bicarbonates

- USE **carbonates**

bicrystals

- GS crystals
 - . **bicrystals**
- RT polycrystals single crystals

∞ bicycle

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT landing gear surface vehicles

bidirectional reflectance

- GS electromagnetic properties
 - . optical properties
 - . . reflectance
 - . . . **bidirectional reflectance**
- RT light scattering reflection spectral reflectance surface properties

bifurcation (biology)

DEF The separation or branching into two parts, areas, aspects or connected segments, of anatomical systems or functions.

- RT anatomy arteries
- ∞ biology
 - blood vessels
 - branching (physics)
 - veins

bifurcation (mathematics)

- USE **branching (mathematics)**

big bang cosmology

- GS cosmology
 - . **big bang cosmology**
- RT astronomical models background radiation cosmic rays galactic evolution gamma ray bursts grand unified theory gravitational constant large-scale structure of the universe

Bighorn Mountains (MT-WY)

relativity
relic radiation
universe

Bighorn Mountains (MT-WY)

GS landforms
. mountains
. . . **Bighorn Mountains (MT-WY)**
RT Montana
Wyoming

bights

USE **bays (topographic features)**

biharmonic equations

GS analysis (mathematics)
. real variables
. . . differential equations
. . . . partial differential equations
. . . . **biharmonic equations**
RT elastic properties
∞ equations

billets

RT casting
castings
forging
ingots
metal plates
metal strips
rods
slabs
wire

bimetals

RT alloying
alloys
composite materials
functionally gradient materials
metal bonding
metals

bimetric theories

DEF Theories of gravitation.
RT gravitation theory
metric space
Schwarzschild metric
∞ theories

binary alloys

GS alloys
. **binary alloys**
binary systems (materials)
. **binary alloys**
RT alloying
antiphase boundaries
cluster variation method

binary codes

DEF Codes composed of a combination of entities each of which can assume one of two possible states. Each entity must be identifiable in time or space.
RT BCH codes
bit error rate
∞ codes
concatenated codes
digital systems
trellis coding

binary data

RT analog data
bit error rate
bubble memory devices
∞ data
data processing
decimal to binary converters
digital data

binary digits

GS symbols
. alphanumeric characters
. . . digits
. . . . **binary digits**
RT bit error rate
bits

digital electronics
digital systems

binary fluids

GS binary systems (materials)
. binary mixtures
. . . **binary fluids**
mixtures
. binary mixtures
. . . **binary fluids**
RT ∞ fluids
gas mixtures
kinetic theory
Lennard-Jones gas
transport properties

binary integration

GS analysis (mathematics)
. real variables
. . . measure and integration
. . . . **binary integration**
RT adding circuits
digital integrators

binary mixtures

GS binary systems (materials)
. **binary mixtures**
. . . binary fluids
. . . eutectics
. . . . eutectic alloys
mixtures
. **binary mixtures**
. . . binary fluids
. . . eutectics
. . . . eutectic alloys
RT azeotropes
gas mixtures
liquid-gas mixtures

binary phase shift keying

(added February 1992)
UF *biphase shift keying*
BPSK
GS coding
. signal encoding
. . . phase modulation
. . . . phase shift keying
. **binary phase shift keying**
keying
. phase shift keying
. . . **binary phase shift keying**
modulation
. phase modulation
. . . phase shift keying
. . . . **binary phase shift keying**
RT quadrature phase shift keying
satellite transmission

binary stars

DEF Systems of two stars revolving about a barycenter.
GS celestial bodies
. stars
. . . double stars
. . . . **binary stars**
. cataclysmic variables
. companion stars
. Nemesis (star)
. eclipsing binary stars
. dwarf novae
. Lambda Tauri stars
. Zeta Aurigae star
. Sigma Orionis
. symbiotic stars
. x ray binaries
RT accretion disks
gravitational binding energy
limb darkening
star clusters
stellar parallax
stellar systems
superhumps (astronomy)
triple stars
two body problem

variable stars

binary summators

USE **adding circuits**

binary systems (digital)

USE **digital systems**

binary systems (materials)

UF *two phase systems*
GS **binary systems (materials)**
. binary alloys
. binary mixtures
. . . binary fluids
. . . eutectics
. . . . eutectic alloys
RT alloys
∞ materials
phase diagrams
phase separation (materials)
solidus
∞ systems
ternary systems

binary to decimal converters

GS data converters
. **binary to decimal converters**
RT computer components
∞ converters
data processing
decimal to binary converters

binaural hearing

GS hearing
. **binaural hearing**
perception
. **binaural hearing**
RT auditory perception
sound localization
Weber test

binders (adhesives)

USE **adhesives**

binders (materials)

GS **binders (materials)**
. propellant binders
. . . solid rocket binders
RT additives
adhesives
cements
∞ materials
molding materials
oxetane polymers
sizing materials
solid lubricants

binding

RT binding energy
bonding
collating
folding
∞ joining
printing
sealing
sewing

binding energy

(added May 1995)
GS **binding energy**
. gravitational binding energy
. nuclear binding energy
RT activation energy
binding
chemical bonds
electrostatic bonding
∞ energy
lattice energy
quantum wells
vacancies (crystal defects)

binocular vision

GS vision
. **binocular vision**
RT haploscopes
motion perception

space perception
stereoscopic vision

binoculars
GS optical equipment
. **binoculars**
RT eyepieces
microscopes
periscopes
telescopes

binomial coefficients
GS analysis (mathematics)
. combinatorial analysis
. . **binomial coefficients**
coefficients
. **binomial coefficients**
RT factorials

binomial theorem
GS algebra
. **binomial theorem**
theorems
. **binomial theorem**
RT binomials
probability density functions
probability theory
statistical analysis
statistical distributions

binomials
GS algebra
. polynomials
. . **binomials**
RT binomial theorem

bioacoustics
GS acoustics
. **bioacoustics**
RT acoustic attenuation
auditory defects
auditory sensation areas
bioengineering
∞ biology
psychoacoustics
∞ science
sound intensity

bioassay
DEF A standardized procedure for the determination of the effects of an environmental variable or substance on living organisms. Used for biological analysis.
UF *biological analysis*
RT biochemistry
biological diversity
biological effects
∞ biology
biomarkers
histochemical analysis
in vitro methods and tests
in vivo methods and tests

Bioastronautical Orbital Space System
GS programs
. NASA programs
. . NASA space programs
. . . **Bioastronautical Orbital Space System**
. space programs
. . NASA space programs
. . . **Bioastronautical Orbital Space System**
RT ∞ systems

bioastronautics
DEF The study of biological, behavioral, and medical problems pertaining to astronauts. This includes systems functioning in the environments expected to be found in space, vehicles designed to travel in space, and the conditions on terrestrial bodies other than the Earth.
RT aerospace environments
aerospace medicine
∞ astronautics

bioengineering
∞ biology
Biosatellite 1
Biosatellite 2
Biosatellite 3
closed ecological systems
Columbus space station
Earth atmosphere
exobiology
head down tilt
head up tilt
hindlimb suspension
lunar environment
planetary environments
∞ science
space adaptation syndrome
space exploration
space flight
space stations
spacecraft environments

bioavailability
(added August 2001)
DEF The extent to which a drug, nutrient, toxin, or other substance enters the circulatory system or becomes available at a site of physiological activity.
UF *biological availability*
physiologic availability
GS availability
. **bioavailability**
RT adsorption
exposure
intravenous procedures
material absorption
pharmacology
physiochemistry
sorption
toxicity
toxicology

biochemical fuel cells
GS electric generators
. direct power generators
. . fuel cells
. . . **biochemical fuel cells**
electrochemical cells
. fuel cells
. . **biochemical fuel cells**
RT ∞ biology
phosphoric acid fuel cells
regenerative fuel cells

biochemical oxygen demand
DEF The amount of oxygen necessary for the oxidative decomposition of a material by microorganisms. The amount of oxygen consumed in mg/1 of water (or waste water) over a period of 5 days at 20 deg. C under laboratory conditions. Used for BOD.
UF *BOD*
RT algae
∞ biology
ecology
oximetry
oxygen consumption
plants (botany)
pollution control
water pollution
water treatment

biochemistry
DEF Chemistry dealing with the chemical processes and compounds of living organisms.
GS **biochemistry**
. biogeochemistry
. enzymology
. physiochemistry
RT bacteriology
bioassay
biodegradation
bioengineering
∞ biology
biomarkers
biomimetics
chemical warfare

∞ chemistry
cytology
Gaia hypothesis
genetic engineering
histochemical analysis
immunoassay
interferon
marine chemistry
metabolites
molecular biology
mutagens
nitrogen metabolism
nutrition
optical activity
organic chemistry
radioimmunoassay
vegetation growth

bioclimatology
USE **biometeorology**

biocompatibility
DEF Compatibility of substances with living tissues and blood components.
GS compatibility
. **biocompatibility**
RT antibodies
antigens
∞ biology
blood
immunology
leukocytes
physiological defenses
vaccines

biocontrol systems
SN (RESTRICTED TO ARTIFICIAL BIOTECHNOLOGICAL SYSTEMS FOR THE CONTROL OF BIOLOGICAL PROCESSES—USE REGULATORY MECHANISMS (BIOLOGY) FOR NATURAL PHYSIOLOGICAL REGULATION)
RT biofeedback
∞ biology
bionics
psychomotor performance
regulatory mechanisms (biology)
∞ systems
tolerances (physiology)

bioconversion
DEF The transformation of algae and/or other biomass materials in successive stages to aliphatic organic acids to aliphatic hydrocarbons to diesel and/or other liquid fuels.
RT algae
∞ biology
biomass energy production
bioprocessing
∞ conversion
enzyme activity
fermentation
fuels
hydrocarbon fuel production
methane
renewable energy
solar heating
vegetation

biodegradability
DEF The characteristic of a substance that can be decomposed by microorganisms.
GS dissociation
. **biodegradability**
RT ∞ biology
decay
decomposition
deterioration
organic materials
∞ properties

biodegradation
GS degradation
. **biodegradation**
RT activated sludge
biochemistry
biofilms
∞ biology

biodynamics

decay
decomposition
deterioration

biodiversity

USE **biological diversity**

biodynamics

DEF The study of the effects of dynamic processes (motion, acceleration, weightlessness, etc.) on living organisms. Used for biomechanics.

UF *biomechanics*

RT anatomy

bioengineering
biological models (mathematics)

∞ biology

∞ biophysics

∞ dynamics

∞ science

stress (physiology)

bioelectric potential

GS potential energy

. electric potential

. . **bioelectric potential**

RT bioelectricity

∞ biology

ion channels (biology)

bioelectricity

UF *neuron transmission*

RT bioelectric potential

∞ biology

biomagnetism

information processing (biology)

ion channels (biology)

neuromuscular transmission

spike potentials

bioengineering

GS **bioengineering**

. bioinstrumentation

. . biotelemetry

. . implanted electrodes (biology)

. . biometrics

. . body measurement (biology)

. . . anthropometry

. . . electroplethysmography

. . . cardiography

. . . ballistocardiography

. . . electrocardiography

. . . magnetocardiography

. . . phonocardiography

. . . . echocardiography

. . . seismocardiography

. . . vectorcardiography

. . echoencephalography

. . electroencephalography

. . electromyography

. . electronystagmography

. . electroretinography

. . plethysmography

. . . electroplethysmography

. . radiocardiography

. tissue engineering

RT bioacoustics

bioastronautics

biochemistry

biodynamics

∞ biology

biomimetics

bionics

biopaks

biophysics

bone mineral content

∞ engineering

genetic engineering

human factors engineering

underwater breathing apparatus

voice control

biofeedback

DEF Originally confined to the presenting of a subject with sensory information about ongoing physiological activities, it now includes the

controlling of specific physiological activities through trained mental effort.

GS feedback

. **biofeedback**

. . sensory feedback

RT aerospace medicine

biocontrol systems

blood pressure

conditioning (learning)

∞ control

feedback control

heart rate

human factors engineering

psychology

biofilms

(added July 2001)

DEF Films of bacteria or other microbial organisms, the growth of which is usually defined by the surface of a biological or non-biological substrate.

RT bacteria

biodegradation

biogeochemistry

contaminants

extraterrestrial life

∞ films

fouling

membranes

microorganisms

bioflavonoids

UF *vitamin P*

GS organic compounds

. cyclic compounds

. . heterocyclic compounds

. . . **bioflavonoids**

vitamins

. **bioflavonoids**

RT drugs

biogenesis

USE **biological evolution**

biogeny

RT ∞ biology

biomarkers

∞ evolution

ontogeny

biogeochemistry

GS biochemistry

. **biogeochemistry**

environmental chemistry

. geochemistry

. . **biogeochemistry**

RT biofilms

∞ biology

biomarkers

botany

∞ chemistry

geobotany

International Geosphere-Biosphere

program

minerals

plants (botany)

biography

GS literature

. **biography**

RT awards

bibliographies

case histories

documentation

biohazards

(added August 2003)

USE **biological hazards**

bioinstrumentation

UF *biosensors*

GS bioengineering

. **bioinstrumentation**

. . biotelemetry

. . implanted electrodes (biology)

RT ∞ biology

biometrics

bionics

echoencephalography

∞ engineering

IMBLMS

∞ instruments

magnetocardiography

measuring instruments

respirometers

∞ sensors

sphygmography

wildlife radiolocation

biological activity

USE **activity (biology)**

biological analysis

USE **bioassay**

biological availability

(added August 2001)

USE **bioavailability**

biological cells

USE **cells (biology)**

biological clocks

USE **rhythm (biology)**

biological diversity

(added June 1995)

DEF The diversity of genes, species, and ecosystems that make up the variety and variability of life.

UF *biodiversity*

genetic diversity

RT bioassay

biological evolution

biosynthesis

cytology

deforestation

differentiation (biology)

gene expression

genetics

mutations

protobiology

species diffusion

biological effects

GS **biological effects**

. desynchronization (biology)

. jet lag

. relative biological effectiveness

(RBE)

RT activity (biology)

apoptosis

atrophy

bioassay

∞ biology

biomedical data

bone demineralization

Bragg curve

chemical effects

disorientation

dosage

∞ effects

flight stress (biology)

human reactions

Orbiting Frog Otolith

pathological effects

physiological effects

psychological effects

radiation dosage

radiation effects

space adaptation syndrome

temperature

thermal pollution

biological evolution

UF *biogenesis*

GS evolution (development)

. **biological evolution**

. . abiogenesis

RT archaeobacteria

biological diversity

∞ biology

chemical evolution
 eukaryotes
 Gaia hypothesis
 gene expression
 genetics
 life sciences
 mutagens
 mutations
 panspermia
 prokaryotes
 protein synthesis
 protobiology

biological hazards

(added August 2003)

DEF Infectious agents or biologically derived infectious materials that cause health risks to human or animals through absorption, inhalation or ingestion.

UF *biohazards*

GS hazards

. **biological hazards**

RT contamination
 hazardous materials
 hazardous wastes
 toxic hazards

biological models

USE **bionics**

biological models (mathematics)

DEF Mathematical models for living systems.

GS models

. mathematical models

. . **biological models (mathematics)**

RT biodynamics

∞ biology
 biomimetics
 bionics
 digital simulation
 dynamic models

biological rhythm

USE **rhythm (biology)**

biological warfare agents

(added January 2002)

USE **biological weapons**

biological weapons

(added December 2001)

DEF Infectious agents engineered for deliberate use as a weapon; includes bacteria, viruses, fungi, and other living microorganisms that can kill or incapacitate.

UF *biological warfare agents*

GS weapons

. **biological weapons**

RT bacteria
 chemical warfare
 infectious diseases
 spores
 terrorism
 toxins and antitoxins
 virulence
 viruses

∞ **biology**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT activation (biology)
 activity (biology)
 activity cycles (biology)
 aerobiology
 aerospace medicine
 aging (biology)
 agriculture
 anatomy
 animals
 bacteriology
 bifurcation (biology)
 bioacoustics
 bioassay
 bioastronautics
 biochemical fuel cells

biochemical oxygen demand

biochemistry
 biocompatibility
 biocontrol systems
 bioconversion
 biodegradability
 biodegradation
 biodynamics
 bioelectric potential
 bioelectricity
 bioengineering
 biogeny
 biogeochemistry
 bioinstrumentation
 biological effects
 biological evolution
 biological models (mathematics)
 bioluminescence
 biomagnetism
 biomass
 biomass energy production
 biomedical data
 biometeorology
 biometrics
 biomimetics
 bionics
 biophysics
 bioreactors
 biosatellites
 biosphere
 biosynthesis
 biotechnology
 biotelemetry
 body composition (biology)
 body measurement (biology)
 body size (biology)
 body volume (biology)
 bone demineralization
 bone mineral content
 botany
 carbon cycle
 cells (biology)
 complement (biology)
 cytogenesis
 cytology
 differentiation (biology)
 ecology
 embryology
 evolution (development)
 exobiology
 fatigue (biology)
 flight stress (biology)
 genetic engineering
 genetics
 habitats
 immunology
 implanted electrodes (biology)
 interferon
 life sciences
 marine biology
 medical science
 microbiology
 molecular biology
 morphology
 nitrogen metabolism
 paleobiology
 protobiology
 radiobiology
 relative biological effectiveness (RBE)
 reproduction (biology)
 rhythm (biology)
 ∞ science
 skin temperature (biology)
 tissues (biology)
 veterinary medicine

bioluminescence

GS emission
 . light emission
 . . luminescence
 . . . **bioluminescence**
 RT ∞ biology
 phosphorescence

biomagnetism

DEF Magnetic fields surrounding parts or the whole of a living biological system; also, the

effects of magnetism on parts or the whole of a biological entity.

GS magnetic fields
 . **biomagnetism**
 magnetic properties
 . **biomagnetism**
 RT bioelectricity
 ∞ biology
 biophysics
 electromagnetic fields
 electromagnetic interactions
 radiobiology

biomarkers

(added March 2002)

DEF Any measurable feature from which one can infer a particular environment-induced change in a biological system, detect the presence of a disease, or infer the presence of life in a particular environment.

RT bioassay
 biochemistry
 biogeny
 biogeochemistry
 biometrics
 chemical indicators
 diagnosis
 environmental monitoring
 exobiology
 extraterrestrial life
 life detectors
 ∞ markers
 signatures
 toxicology

biomass

DEF The dry weight of living matter in a given area expressed in terms of mass or weight per unit of volume or area.

GS weight (mass)
 . **biomass**
 RT animals
 ∞ biology
 carbon cycle
 ∞ density
 organisms
 plants (botany)
 populations
 silviculture
 ∞ weight

biomass burning

(added December 1999)

DEF Burning of vegetation in forests, grasslands, and agricultural lands usually carried out to clear the land and change its use; a significant contributor to the global budgets of many radiatively and chemically active gases and particulates in the atmosphere.

GS combustion
 . **biomass burning**
 RT air pollution
 climate change
 combustion products
 contaminants
 deforestation
 environment pollution
 forest fires
 man environment interactions
 smoke

biomass energy production

GS energy conversion
 . **biomass energy production**
 RT bioconversion
 ∞ biology
 bioreactors
 ∞ crops
 ∞ energy sources
 energy technology
 hydrocarbon fuel production
 manures
 methanation
 renewable energy
 vegetation

biomedical data

waste utilization

biomechanics

USE **biodynamics**

biomedical data

- RT aerospace medicine
- biological effects
- ∞ biology
- biometrics
- body measurement (biology)
- cardiograms
- ∞ data
- heart rate
- IMBLMS

Biomedical Experiment Scientific Satellite

USE **BESS (satellite)**

biometeorology

- UF *bioclimatology*
- GS meteorology
- . **biometeorology**
- RT ∞ biology
- coastal ecology
- coastal plains
- ecology
- microclimatology
- nightglow
- phenology

biometrics

- GS bioengineering
- . **biometrics**
- . . . body measurement (biology)
- . . . anthropometry
- . . . electroplethysmography
- . . . cardiography
- ballistocardiography
- electrocardiography
- magnetocardiography
- phonocardiography
- echocardiography
- seismocardiography
- vectorcardiography
- echoencephalography
- electroencephalography
- electromyography
- electronystagmography
- electroretinography
- plethysmography
- electroplethysmography
- radiocardiography
- RT bioinstrumentation
- ∞ biology
- biomarkers
- biomedical data
- bone mineral content
- ∞ engineering
- Orbiting Frog Otolith
- pupillometry
- statistical analysis
- ∞ statistics

biomimetics

(added October 2000)

DEF The study of biological systems as models for the development of synthetic materials, devices, sensors, and processes.

- RT biochemistry
- bioengineering
- biological models (mathematics)
- ∞ biology
- bionics
- cybernetics
- smart materials
- smart structures

bionics

DEF The study of systems, particularly electronic systems, which function after the manner characteristic of, or resembling living systems. Used for biological models and biosimulation.

- UF *biological models*
- biosimulation*
- RT artificial intelligence

- automata theory
- bioccontrol systems
- bioengineering
- bioinstrumentation
- biological models (mathematics)
- ∞ biology
- biomimetics
- control systems design
- cybernetics
- human factors engineering
- man machine systems
- neuristors
- rheoelectrical simulation
- robots
- simulation
- syncoders
- systems engineering

biopaks

- GS support systems
- . life support systems
- . . **biopaks**
- RT bioengineering
- biosatellites
- ∞ containers
- enclosures
- portable life support systems
- preserving

biophysics

- GS **biophysics**
- . health physics
- . . public health
- RT biodynamics
- bioengineering
- ∞ biology
- biomagnetism
- ∞ physics
- ∞ science

biopolymer denaturation

- UF *denaturation (biopolymers)*
- nucleic acid denaturation*
- protein denaturation*
- RT biopolymers
- molecular structure
- nucleic acids
- polymer chemistry
- proteins

biopolymers

- GS **biopolymers**
- . nucleic acids
- . . deoxyribonucleic acid
- . . ribonucleic acids
- . . proteins
- . . . albumins
- . . . aspartates
- . . . calmodulin
- . . . elastin
- . . . enzymes
- aldolase
- amidase
- carbonic anhydrase
- catalase
- cholinesterase
- cytochromes
- hexokinase
- lysozyme
- nuclease
- oxidase
- papain
- pepsin
- protease
- thrombin
- trypsin
- . . fibrin
- . . globulins
- . . . fibrinogen
- . . . gamma globulin
- . . . hemoglobin
- carboxyhemoglobin
- oxyhemoglobin
- . . . keratins
- . . . lipoproteins
- . . . melanin

- . . myoglobin
- . . . proteinoids
- . . . prothrombin
- protoproteins
- . . . lignin
- . . . polysaccharides
- . . . cellulose
- Fortisan (trademark)
- . . . chitin
- . . . dextrans
- . . . glycogens
- . . . starches
- RT biopolymer denaturation
- nucleotides
- ∞ polymers
- polynucleotides
- polypeptides

bioprocessing

- RT aerospace environments
- bioconversion
- biotechnology
- electrophoresis
- microgravity
- ∞ microgravity applications
- pharmacology
- space processing
- spaceborne experiments
- weightlessness

bioreactors

- DEF Biological processors to remove or produce certain chemicals or a particular chemical.
- RT ∞ biology
- biomass energy production
- biotechnology
- clinostats
- tissue engineering

bioregeneration

USE **regeneration (physiology)**

bioregenerative life support systems

USE **closed ecological systems**

biorhythms

USE **rhythm (biology)**

BIOS project

- GS programs
- . projects
- . . **BIOS project**

Biosatellite 1

- GS artificial satellites
- . biosatellites
- . . **Biosatellite 1**
- RT bioastronautics

Biosatellite 2

- GS artificial satellites
- . biosatellites
- . . **Biosatellite 2**
- RT bioastronautics

Biosatellite 3

- GS artificial satellites
- . biosatellites
- . . **Biosatellite 3**
- RT ∞ astronautics
- bioastronautics

biosatellites

- SN (EXCLUDES MANNED SPACECRAFT)
- DEF Artificial satellites which are specifically designed to contain and support man, animals, or other living material in a reasonably normal manner for an adequate period of time and which, particularly for man and animals, possesses the proper means for safe return to the Earth.
- GS artificial satellites
- . **biosatellites**
- . . Biosatellite 1
- . . Biosatellite 2

. . Biosatellite 3
 . . Orbiting Frog Otolith
 . . Sputnik 2 satellite
 RT aerospace environments
 ∞ biology
 biopaks
 environmental control
 extraterrestrial life
 life detectors
 life support systems
 manned spacecraft
 space capsules
 ∞ spacecraft

biosensors

USE **bioinstrumentation**

biosimulation

USE **bionics**

biosphere

DEF That transition zone between Earth and atmosphere within which most forms of terrestrial life are commonly found; the outer portion of the geosphere and inner or lower portion of the atmosphere.

RT ∞ biology
 chemosphere
 Earth hydrosphere
 free atmosphere
 Gaia hypothesis
 homosphere
 International Geosphere-Biosphere program
 lower atmosphere

biosynthesis

RT biological diversity
 ∞ biology
 chemical reactions
 genetic engineering
 metabolites
 prostaglandins
 ∞ synthesis
 synthetic food

Biot method

RT calculus of variations
 ∞ methodology

Biot number

DEF A standard heat transfer dimensionless number.

GS dimensionless numbers
 . **Biot number**
 ratios
 . **Biot number**
 RT heat transfer
 ∞ numbers

biotechnology

DEF The application of engineering and technological principles to the life sciences.

GS technologies
 . **biotechnology**
 . . tissue engineering
 RT artificial cardiac pacemaker
 artificial heart valves
 ∞ biology
 bioprocessing
 bioreactors
 blood pumps
 cloning (biology)
 heart implantation
 in vitro methods and tests
 in vivo methods and tests
 man machine systems

biotelemetry

DEF The remote sensing and evaluation of life functions, as, e. g. , in spacecraft and artificial satellites. Used for physiological telemetry.

UF *physiological telemetry*
 GS bioengineering
 . bioinstrumentation

. . **biotelemetry**
 telecommunication
 . telemetry
 . . **biotelemetry**
 . . transmission
 . . signal transmission
 . . telemetry
 . . . **biotelemetry**
 RT ∞ biology
 communication equipment
 ∞ engineering
 Orbiting Frog Otolith
 pneumography
 telemedicine
 wildlife radiolocation

biotin

UF *vitamin B complex*
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **biotin**
 vitamins
 . **biotin**
 RT drugs

biotite

DEF A widely distributed and important rock-forming mineral of the mica group. Used for kimberlite.

UF *kimberlite*
 GS minerals
 . mica
 . . **biotite**

Biot-Savart law

(added August 1998)

DEF Law describing the intensity of a magnetic field produced by a current carrying wire. Also applied in fluid dynamics to describe the flow-velocity field induced by a vortex.

GS laws
 . **Biot-Savart law**
 RT electromagnetism
 flow velocity
 magnetic fields
 Maxwell equation
 vortices

biphase shift keying

USE **binary phase shift keying**

biplanes

GS **biplanes**
 . AN-2 aircraft
 RT ∞ aircraft
 dual wing configurations
 light aircraft
 monoplanes
 tandem wing aircraft
 utility aircraft

bipolar transistors

GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . transistors
 **bipolar transistors**
 RT bipolarity
 carrier injection
 epitaxy
 majority carriers
 minority carriers
 n-p-n junctions
 semiconductors (materials)

bipolarity

DEF Capability of assuming negative or positive values.

RT bipolar transistors

∞ polarization

bipropellants

USE **liquid rocket propellants**

bird-aircraft collisions

GS accidents
 . aircraft accidents
 . . **bird-aircraft collisions**
 collisions
 . midair collisions
 . . **bird-aircraft collisions**
 RT ∞ aircraft
 aircraft hazards
 birds
 flight hazards
 ingestion (engines)

birds

GS animals
 . vertebrates
 . . **birds**
 . . . chickens
 . . . pigeons
 . . . turkeys
 . . . waterfowl
 RT aircraft hazards
 bird-aircraft collisions
 Earth resources
 endangered species
 flight hazards
 homeotherms
 plumage
 wildlife

birefringence

DEF A double-refraction phenomenon in which an unpolarized beam of light is divided into two beams with different directions and relative velocities of propagation. The amount of energy transmitted along an optical path through a crystal which exhibits birefringence and is a function of crystalline orientation. Used for Pockels effect.

UF *Pockels effect*
 GS electromagnetic properties
 . optical properties
 . . **birefringence**
 . . . Kerr electrooptical effect
 refraction
 . **birefringence**
 . . Kerr electrooptical effect
 RT anisotropic media
 anisotropy
 birefringent coatings
 birefringent filters
 calcite
 electro-optics
 Moire effects
 nonlinear optics
 photoelasticity
 polarization (waves)
 reflectance
 refractivity
 temperature inversions
 Voigt effect

birefringent coatings

GS coatings
 . **birefringent coatings**
 RT anisotropic media
 birefringence
 birefringent filters
 refractivity

birefringent filters

GS electromagnetic wave filters
 . optical filters
 . . **birefringent filters**
 RT birefringence
 birefringent coatings
 ∞ filters
 optical properties

Birkeland currents

refractivity

Birkeland currents

(added May 1989)

- GS electric current
 - . field aligned currents
 - . . **Birkeland currents**
 - . ionospheric currents
 - . . **Birkeland currents**
- electricity
 - . atmospheric electricity
 - . . ionospheric currents
 - . . . **Birkeland currents**
- RT auroral electrojets
 - auroral zones
 - electrojets
 - geomagnetism
 - ionospheric disturbances
 - magnetic disturbances
 - magnetic storms
 - Pedersen currents

birth

- RT fertilization
 - fetuses
 - pregnancy
 - reproduction (biology)
 - reproductive systems

bismaleimide

- GS nitrogen compounds
 - . amides
 - . . polyimides
 - . . . **bismaleimide**
 - . imides
 - . . **bismaleimide**
- RT matrix materials
 - polyimide resins
 - polymer matrix composites
 - resin matrix composites
 - resins

bismuth

- GS chemical elements
 - . **bismuth**
 - . . bismuth isotopes
 - metals
 - . **bismuth**
 - . . bismuth isotopes

bismuth 205

USE **bismuth isotopes**

bismuth alloys

- GS alloys
 - . **bismuth alloys**
- RT antimony alloys
 - eutectic alloys
 - magnesium alloys
 - tin alloys

bismuth compounds

- GS **bismuth compounds**
 - . bismuth oxides
 - . bismuth sulfides
 - . bismuth tellurides
- RT ∞ chemical compounds
 - ∞ Group 5A compounds
 - ∞ metal compounds

bismuth isotopes

- UF *bismuth 205*
- GS chemical elements
 - . bismuth
 - . . **bismuth isotopes**
 - . nuclides
 - . . isotopes
 - . . . **bismuth isotopes**
- metals
 - . bismuth
 - . . **bismuth isotopes**

bismuth oxides

- GS bismuth compounds
 - . **bismuth oxides**
 - chalcogenides

- . oxides
 - . . metal oxides
 - . . . **bismuth oxides**
- RT BSCCO superconductors

bismuth sulfides

- GS bismuth compounds
 - . **bismuth sulfides**
 - chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **bismuth sulfides**
- sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **bismuth sulfides**

bismuth tellurides

- GS bismuth compounds
 - . **bismuth tellurides**
 - chalcogenides
 - . tellurides
 - . . **bismuth tellurides**
- tellurium compounds
 - . tellurides
 - . . **bismuth tellurides**

bisphenols

- GS hydroxyl compounds
 - . alcohols
 - . . phenols
 - . . . **bisphenols**

Bi-Sr-Ca-Cu-O superconductors

USE **BSCCO superconductors**

bistable amplifiers

USE **flip-flops**

bistable circuits

- GS circuits
 - . **bistable circuits**
 - . . flip-flops
- RT digital techniques
 - multivibrators
 - trigger circuits

bistatic radar

USE **multistatic radar**

bistatic reflectivity

- DEF The characteristic of a reflector which reflects energy along a line, or lines, different from, or in addition to, that of the incident ray.
- RT brightness
 - incident radiation
 - reflectance
 - scattering

bit error rate

- DEF The number of erroneous bits or characters received from some fixed number of bits transmitted.
- GS rates (per time)
 - . **bit error rate**
- RT binary codes
 - binary data
 - binary digits
 - bit synchronization
 - bits
 - error analysis
 - error correcting codes
 - error detection codes
 - error signals
 - pulse communication
 - Reed-Solomon codes
 - signal to noise ratios
 - transmission efficiency
 - transmission rate (communications)

bit synchronization

- GS synchronism
 - . **bit synchronization**
- RT bit error rate

frequency synchronization

biternary code

- RT ∞ codes
 - differential pulse code modulation
 - digital systems
 - pulse code modulation

bits

- RT binary digits
 - bit error rate
 - drill bits

bitumens

DEF Dark-colored (solid, semisolid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, of which asphalts, tars, pitches, and asphaltenes are typical.

- RT carbon
 - coal
 - coke
- ∞ construction materials
 - lignite
- ∞ materials
 - solvent refined coal

bivariate analysis

- GS statistical analysis
 - . variance (statistics)
 - . . multivariate statistical analysis
 - . . . **bivariate analysis**
- RT correlation

BL Lacertae objects

DEF One of a class of astronomical objects exhibiting: (1) rapid variations in intensity at radio, infrared, and optical wavelengths; (2) energy distributions largely at infrared wavelengths; (3) absence of discrete features in low dispersion spectra; and (4) strong and rapidly varying polarization at visual and radio wavelengths.

- GS celestial bodies
 - . blazars
 - . . **BL Lacertae objects**
- RT extragalactic radio sources
 - galaxies
 - irregular galaxies
 - luminous intensity
 - polarization (waves)
 - radiant flux density
 - radio sources (astronomy)

black and white photography

- GS imagery
 - . photography
 - . . **black and white photography**
- RT all sky photography
 - astronomical photography
 - autoradiography
 - chronophotography
 - cinematography
 - cloud photography
 - color photography
 - electron photography
 - electro-optical photography
 - frame photography
 - infrared photography
 - lunar photography
 - photomicrography
 - photoreconnaissance
 - radar photography
 - rocket-borne photography
 - satellite-borne photography
 - Schlieren photography
 - shadowgraph photography
 - spaceborne photography
 - spectroheliographs
 - spectrophotography
 - stereophotography
 - ultraviolet photometry

- urography
- Black Arrow launch vehicle*
USE **Black Knight rocket vehicle**
- black body radiation**
DEF The electromagnetic radiation emitted by an ideal black body; it is the theoretical maximum amount of radiant energy of all wavelengths which can be emitted by a body at a given temperature.
GS electromagnetic radiation
. thermal radiation
. . **black body radiation**
RT brightness distribution
brightness temperature
emissivity
heat radiators
hohlraums
infrared radiation
Kirchhoff law of radiation
light (visible radiation)
nongray atmospheres
nongray gas
Plancks constant
radiance
∞ radiation
sunlight
ultraviolet radiation
- Black Brant 1 sounding rocket**
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**
RT solid propellant rocket engines
- Black Brant 2 sounding rocket**
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
RT solid propellant rocket engines
- Black Brant 3 sounding rocket**
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 3 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 3 sounding rocket**
RT solid propellant rocket engines
- Black Brant 4 sounding rocket**
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 4 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 4 sounding rocket**
RT solid propellant rocket engines
- Black Brant 5 sounding rocket**
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 5 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 5 sounding rocket**
RT solid propellant rocket engines
- Black Brant sounding rockets**
GS rocket vehicles
. single stage rocket vehicles
. . **Black Brant sounding rockets**
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
RT solid propellant rocket engines
- Black Hawk assault helicopter*
USE **H-60 Helicopter**
- Black Hills (SD-WY)**
GS landforms
. mountains
. . **Black Hills (SD-WY)**
RT South Dakota
Wyoming
- black holes (astronomy)**
GS celestial bodies
. stars
. . **black holes (astronomy)**
RT accretion disks
degenerate matter
event horizon
gravitational collapse
gravitational lenses
massive stars
naked singularities
Reissner-Nordstrom solution
supernova remnants
white holes (astronomy)
x ray binaries
- Black Knight rocket vehicle**
UF *Black Arrow launch vehicle*
GS rocket vehicles
. multistage rocket vehicles
. . **Black Knight rocket vehicle**
. single stage rocket vehicles
. . **Black Knight rocket vehicle**
RT liquid propellant rocket engines
- Black Sea**
GS seas
. **Black Sea**
RT Bulgaria
Romania
Turkey
U. S. S. R.
- Blackbird aircraft*
USE **SR-71 aircraft**
- Blackburn B-103 aircraft*
USE **Buccaneer aircraft**
- ∞ **blackout**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blackout (physiology)
blackout (propagation)
- blackout (physiology)**
GS syncope
. **blackout (physiology)**
. . blackout prevention
unconsciousness
. **blackout (physiology)**
. . blackout prevention
RT acceleration tolerance
∞ blackout
∞ coma
- blackout (propagation)**
UF *ionospheric blackout*
GS electromagnetic interference
. radio frequency interference
. . **blackout (propagation)**
. . . polar radio blackout
RT atmospherics
- ∞ blackout
electromagnetic fields
electromagnetic noise
ionospheric disturbances
plasma sheaths
plasmas (physics)
radiation effects
radio communication
reentry communication
reentry effects
solar activity effects
x rays
- blackout prevention**
GS human performance
. astronaut performance
. . **blackout prevention**
. pilot performance
. . **blackout prevention**
syncope
. blackout (physiology)
. . **blackout prevention**
unconsciousness
. blackout (physiology)
. . **blackout prevention**
RT acceleration tolerance
∞ coma
weightlessness
- bladder**
GS anatomy
. genitourinary system
. . **bladder**
RT prostate gland
urology
- bladders (mechanics)*
USE **diaphragms (mechanics)**
- blade slap*
USE **blade-vortex interaction**
- blade slap noise**
DEF Impulsive noise (short high pressure sound waves) of rotating blades, primarily helicopter blades. Used for helicopter impulsive noise.
UF *helicopter impulsive noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **blade slap noise**
. . . flow noise
. . . . aerodynamic noise
. . . . **blade slap noise**
RT blade tips
blade-vortex interaction
helicopters
propeller noise
- blade tips**
GS tips
. **blade tips**
RT airfoil profiles
blade slap noise
blade-vortex interaction
propeller blades
rotary wings
rotor blades (turbomachinery)
wing tips
- ∞ **blades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Arms of propeller and rotating wings. Specifically, restrictive, those parts of propellers or of rotating wings from the shank outward, i. e. , those parts having efficient airfoil shapes and that cleave the air. Vanes such as rotating vanes or stationary vanes in rotary air compressors, or vanes of turbine wheels.
RT airfoils
blades (cutters)
compressor blades
fins

blades (cutters)

hydrofoils
propeller blades
rims
rotary wings
rotor blades (turbomachinery)
stator blades
turbine blades
turbomachine blades
vanes

blades (cutters)

GS cutters
. blades (cutters)
. . razor blades
RT ∞ blades

blade-vortex interaction

UF *blade slap*
vortex-blade interaction
RT airfoils
blade slap noise
blade tips
helicopters
interactional aerodynamics
∞ interactions
rotary wings
vortices
wing tip vortices

∞ blankets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bedding equipment
blankets (fission reactors)
blankets (fusion reactors)
cloud cover
controlled atmospheres
solar blankets

blankets (fission reactors)

DEF Damper materials for fission reactors.
RT ∞ blankets
∞ dampers
fission
reactor design
reactor materials

blankets (fusion reactors)

DEF Damper materials for fusion reactors.
RT ∞ blankets
fusion reactors
limiters (fusion reactors)
moderators
reactor design
reactor materials

∞ blanking

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blanking (cutting)
forming techniques
stamping

blanking (cutting)

GS cutting
. blanking (cutting)
forming techniques
. pressing (forming)
. . blanking (cutting)
RT ∞ blanking
laser cutting
shearing
stamping

blanks

RT ammunition
briquets
forms (paper)
preforms

Blasius equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . Blasius equation

flow equations
. boundary layer equations
. . Blasius equation
RT boundary layer flow
∞ equations
Falkner-Skan equation
flat plates
Prandtl-Meyer expansion

Blasius flow

GS fluid flow
. laminar flow
. . Blasius flow
. uniform flow
. . Blasius flow
RT flat plates
head flow
Tollmien-Schlichting waves
turbulent flow
two dimensional flow
wedge flow

blast deflectors

DEF Devices used to divert the exhaust of a rocket fired from a vertical position.
GS deflectors
. blast deflectors
RT baffles
diverters
flame deflectors
shielding

blast loads

GS aerodynamic forces
. aerodynamic loads
. . blast loads
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . blast loads
. . . transient loads
. . . shock loads
. . . . blast loads
RT aerial explosions
dynamic pressure
explosions
gust loads
impact loads
overpressure
pressure
pressure pulses
Riemann waves
shock waves
wave resistance

blastoff

USE rocket launching

∞ blasts

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT exhaust gases
explosions
jet blast effects
shock waves
sound waves

Blattidae

USE cockroaches

blazars

(added December 1988)
DEF Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae-like and quasar-like characteristics.
GS celestial bodies
. blazars
. . BL Lacertae objects
RT accretion disks
active galactic nuclei
active galaxies
disk galaxies
extragalactic radio sources
infrared astronomy
quasars
radio galaxies

radio sources (astronomy)
Seyfert galaxies

bleaching

RT chlorination
cleaning
fading

∞ bleeding

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT boundary layer control
fluid mechanics
hemorrhages
pressure reduction

bleed-off

USE pressure reduction

blended-wing-body configurations

(added April 2001)
DEF Flight vehicle configurations that maximize overall efficiency by integrating the engines, wings, and the body into a single lifting surface. Sometimes referred to as flying-wing configurations.

UF *blended-wing-fuselage*
BWB configurations
flying wing configurations
GS aerodynamic configurations
. body-wing configurations
. . blended-wing-body configurations
RT aircraft configurations
aircraft design
SR-71 aircraft
tailless aircraft

blended-wing-fuselage

(added April 2001)
USE blended-wing-body configurations

blends

USE mixtures

blight

GS plant diseases
. blight
RT alfalfa
bacteria
barley
botany
citrus trees
corn
crop growth
crop vigor
fungi
orchards
parasites
parasitic diseases
plants (botany)
rhizopus
rust fungi
vineyards

blind landing

GS landing
. blind landing
RT aircraft landing
approach indicators
automatic landing control
instrument approach
instrument flight rules
instrument landing systems
landing instruments
night flights (aircraft)

blindness

GS blindness
. flash blindness
RT braille
disabilities
eye diseases
optometry

vision

blinds

RT shielding
 ∞ shutters

blinking

RT astronomical photometry
 display devices
 eye movements
 visual perception

∞ **blisters**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT infectious diseases
 injuries
 mucocoeles
 protuberances
 rupturing
 skin (anatomy)
 viruses

Bloch band

GS energy bands
 . **Bloch band**
 RT ∞ bands
 superconductivity

block copolymers

(added January 1990)
 GS copolymers
 . **block copolymers**
 RT copolymerization
 micelles
 polybutadiene
 ∞ polymers
 polystyrene

block diagrams

GS diagrams
 . **block diagrams**
 RT charts
 computer programming
 computer programs
 flow charts
 research management
 systems analysis

Block Island Sound (RI)

GS sounds (topographic features)
 . **Block Island Sound (RI)**
 RT Atlantic Ocean
 Rhode Island

blocking

UF *obstructing*
 RT ∞ arresters
 closing
 closures
 constraints
 constrictions
 containment
 plugging
 plugs
 prevention
 retarders (devices)
 retarding
 sealing
 seals (stoppers)
 stopping

blocks

RT cubes (mathematics)
 pulleys
 slabs

bloedite

DEF A mineral consisting of hydrous sodium magnesium sulfate that is colorless. Also known as astrakanite or astrochanite.
 GS minerals
 . **bloedite**
 RT magnesium sulfates
 sodium compounds

sulfur compounds

blood

GS body fluids
 . **blood**
 . . fibrin
 . . fibrinogen
 . . thrombin
 . . thromboplastin
 RT anemias
 biocompatibility
 blood cells
 blood circulation
 blood coagulation
 blood flow
 blood groups
 blood plasma
 blood pressure
 blood pumps
 blood vessels
 blood volume
 blood-brain barrier
 capillaries (anatomy)
 carboxyhemoglobin test
 cardiovascular system
 coagulation
 heart
 hematocrit
 hematopoiesis
 hemoglobin
 hemorrhages
 hypercapnia
 hypocapnia
 oximetry
 Rhesus factor
 transfusion

blood cells

UF *corpuscles (blood)*
 GS cells (biology)
 . **blood cells**
 . . erythrocytes
 . . . reticulocytes
 . . hemocytes
 . . leukocytes
 . . . eosinophils
 . . . lymphocytes
 RT anemias
 blood
 blood plasma
 hematopoiesis
 hematopoietic system
 hemoglobin

blood circulation

GS circulation
 . **blood circulation**
 . . brain circulation
 . . coronary circulation
 . . intercranial circulation
 . . ocular circulation
 . . peripheral circulation
 . . pulmonary circulation
 RT artificial cardiac pacemaker
 artificial heart valves
 blood
 blood-brain barrier
 carboxyhemoglobin
 circulatory system
 cyanosis
 diastole
 electroplethysmography
 heart function
 heart implantation
 hematocrit
 hemodynamic responses
 hemodynamics
 hypervolemia
 hypovolemia
 intravascular system
 ischemia
 phonoarteriography
 physiology
 rheoencephalography
 rheometers

tourniquets

blood coagulation

GS coagulation
 . **blood coagulation**
 RT blood
 clotting
 fibrin
 hemostatics
 myocardial infarction
 platelets
 thrombin
 thrombocytes
 thromboplastin
 thrombosis

blood flow

GS fluid flow
 . **blood flow**
 RT blood
 capillary flow
 diastole
 hematocrit
 hemoperfusion
 systole
 tourniquets

blood groups

RT blood
 platelets

blood plasma

RT blood
 blood cells
 body fluids
 electrolyte metabolism
 hematocrit

blood pressure

GS pressure
 . **blood pressure**
 . . diastolic pressure
 . . hypertension
 . . hypotension
 . . lower body negative pressure
 . . systolic pressure
 RT baroreflexes
 biofeedback
 blood
 diastole
 heart function
 hemodynamic responses
 hemoperfusion
 manometers
 ophthalmodynamometry
 orthostatic tolerance
 sphygmography
 systole
 ∞ tension

blood pumps

GS medical equipment
 . **blood pumps**
 pumps
 . **blood pumps**
 RT artificial heart valves
 biotechnology
 blood
 circulatory system
 heart
 pulmonary circulation

blood vessels

GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . **blood vessels**
 arteries
 aorta
 capillaries (anatomy)
 glomerulus
 veins
 RT bifurcation (biology)
 blood
 carotid sinus body
 carotid sinus reflex

blood volume

- catheterization
- embolisms
- endothelium
- fat embolisms
- vasoconstriction
- vasodilation
- ∞ vessels

blood volume

- RT blood
- cardiac output
- cardiovascular system
- chronic conditions
- clinical medicine
- hematocrit
- hematopoietic system
- hemodynamics
- hypervolemia
- hypovolemia
- stroke volume

blood-brain barrier

DEF A mechanism which maintains the constancy of the neurons in the central nervous system by preventing certain substances from leaving the bloodstream and entering the neural tissue.

- RT ∞ barriers
- blood
- blood circulation
- central nervous system
- neurons

blowdown wind tunnels

- GS test facilities
- . wind tunnels
- . . **blowdown wind tunnels**
- RT hotshot wind tunnels
- hypersonic wind tunnels
- hypervelocity wind tunnels
- low density research
- low speed wind tunnels
- subsonic wind tunnels
- supersonic wind tunnels
- transonic wind tunnels

blowers

- RT air conditioning
- air conditioning equipment
- air ducts
- blowing
- centrifugal compressors
- compressors
- cooling systems
- ducted fans
- exhaust systems
- ∞ fans
- impellers
- injectors
- materials handling
- mixers
- ∞ nozzles
- refrigerating machinery
- sealing
- sprayers
- superchargers
- turbomachinery
- ventilation
- ventilation fans
- ventilators

blowing

- GS **blowing**
- . spanwise blowing
- . tangential blowing
- . under surface blowing
- . upper surface blowing
- RT aeration
- agitation
- blowers
- boundary layer control
- circulation
- circulation control airfoils
- compressing
- entrainment
- exhausting

- externally blown flaps
- forced convection
- injection
- mixing
- ∞ pumping
- spraying
- upper surface blown flaps
- wind (meteorology)

blown flaps

USE **externally blown flaps**

blowoff (combustion)

USE **flameout**

blowouts

- RT fatigue life
- tires

Blue Goose missile

- GS decoys
- . **Blue Goose missile**
- missiles
- . surface to air missiles
- . . **Blue Goose missile**
- RT booster rocket engines
- countermeasures
- J-85 engine
- solid propellant rocket engines

blue green algae

- UF *Cyanophyta*
- GS plants (botany)
- . algae
- . . **blue green algae**
- . . . anabaena
- . . . Microcystis
- . . . Nostoc
- . thermophilic plants
- . . **blue green algae**
- . . . anabaena
- . . . Microcystis
- . . . Nostoc

Blue Scout rocket vehicle

- GS launch vehicles
- . **Blue Scout rocket vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . **Blue Scout rocket vehicle**
- RT Algol engine
- solid propellant rocket engines
- X-248 engine
- X-254 engine
- XM-33 engine

blue shift

(added February 2002)

DEF The displacement of observed spectral lines toward the shorter wavelengths of the blue end of the spectrum.

- RT absorption spectra
- astronomical spectroscopy
- Doppler effect
- Doppler-Fizeau effect
- emission spectra
- energy gaps (solid state)
- photoluminescence
- quantum wells
- radial velocity
- red shift

blue stars

DEF Stars of spectral type O, B, A, or F according to the Draper catalog.

- GS celestial bodies
- . stars
- . . early stars
- . . . hot stars
- **blue stars**
- RT A stars
- B stars
- F stars

O stars

Blue Steel missile

- GS missiles
- . **Blue Steel missile**
- RT liquid propellant rocket engines

Blue Streak launch vehicle

- GS launch vehicles
- . **Blue Streak launch vehicle**
- rocket vehicles
- . **Blue Streak launch vehicle**
- RT Eldo launch vehicle
- liquid propellant rocket engines

Blue Streak missile

- GS missiles
- . ballistic missiles
- . . intermediate range ballistic missiles
- . . . **Blue Streak missile**
- . surface to surface missiles
- . . intermediate range ballistic missiles
- . . . **Blue Streak missile**
- rocket vehicles
- . **Blue Streak missile**
- RT liquid propellant rocket engines

blueprints

- GS documents
- . drawings
- . . engineering drawings
- . . . **blueprints**
- RT layouts
- reproduction (copying)

bluff bodies

DEF Bodies having a broad, flattened front, as in some reentry vehicles.

- RT blunt bodies
- ∞ bodies
- ducted bodies
- forebodies
- lifting bodies
- reentry vehicles
- Roshko prediction

bluffs (landforms)

USE **cliffs**

blunt bodies

- RT aerodynamic configurations
- aerodynamics
- axisymmetric bodies
- bluff bodies
- ∞ bodies
- ducted bodies
- forebodies
- missile bodies
- nose cones
- power law bodies
- stagnation point
- symmetrical bodies

blunt leading edges

DEF The obtuse cross sections of certain front edges of airfoils or wings.

- GS edges
- . leading edges
- . . **blunt leading edges**
- RT airfoils
- forebodies
- trailing edges

blunt trailing edges

DEF The rounded or obtuse angled trailing edges of wings and/or control surfaces designed to enhance aerodynamic characteristics.

- GS edges
- . trailing edges
- . . **blunt trailing edges**
- RT airfoils
- control surfaces
- wings

blurring

- RT aberration

- resolution
spatial filtering
- BMC**
USE **bone mineral content**
- BMEWS**
USE **Ballistic Missile Early Warning System**
- BO-105 helicopter**
GS Bolkow aircraft
. **BO-105 helicopter**
passenger aircraft
. **BO-105 helicopter**
utility aircraft
. **BO-105 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **BO-105 helicopter**
- boards (paper)**
UF *fiberboard*
RT ∞ construction materials
paper (material)
papers
- boats**
GS surface vehicles
. **boats**
. . . lifeboats
water vehicles
. **boats**
. . . lifeboats
RT amphibious vehicles
harbors
inflatable structures
keels
∞ military vehicles
research vehicles
ships
underwater vehicles
- boattails**
DEF The rear portions of elongated bodies, as in rockets, having decreasing cross-sectional area toward the rear.
RT afterbodies
skirts
tail assemblies
- BOD**
USE **biochemical oxygen demand**
- ∞ **bodies**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT afterbodies
axisymmetric bodies
bluff bodies
blunt bodies
bodies of revolution
celestial bodies
centerbodies
ducted bodies
elastic bodies
finned bodies
flexible bodies
foreign bodies
Herbig-Haro objects
human body
lenticular bodies
lifting bodies
maneuverable reentry bodies
missile bodies
planforms
plastic bodies
pyramidal bodies
reentry vehicles
rotating bodies
slender bodies
solids
streamlined bodies
symmetrical bodies
- three dimensional bodies
towed bodies
two dimensional bodies
- bodies of revolution**
DEF Symmetrical bodies having the form described by rotating a plane curve about an axis in its plane.
GS symmetrical bodies
. **bodies of revolution**
. . . conical bodies
. . . . slender cones
. . . cylindrical bodies
. . . . rotating cylinders
. . . parabolic bodies
. . . power law bodies
. . . spheres
. . . . celestial sphere
. . . . concentric spheres
. . . . falling spheres
. . . . Poincare spheres
. . . . rotating spheres
. . . toruses
RT aerodynamic configurations
aerodynamics
axes of rotation
axisymmetric bodies
∞ bodies
cones
disks (shapes)
ellipsoids
finned bodies
geometry
∞ hemispheres
hemispherical shells
ogives
∞ rings
spherical shells
streamlined bodies
- body centered cubic lattices**
UF *BCC lattices*
GS crystal lattices
. cubic lattices
. . . **body centered cubic lattices**
RT close packed lattices
cluster variation method
crystals
face centered cubic lattices
- body composition (biology)**
GS composition (property)
. **body composition (biology)**
RT ∞ biology
chemical composition
exoskeletons
- body fluids**
GS **body fluids**
. blood
. . . fibrin
. . . fibrinogen
. . . thrombin
. . . thromboplastin
. . . cerebrospinal fluid
. . . endolymph
. . . lymph
. . . mucus
. . . saliva
. . . sweat
. . . urine
RT blood plasma
diuresis
edema
electrolyte metabolism
∞ fluids
isotonicity
lysozyme
mineral metabolism
obesity
perspiration
secretions
water
- water balance
- body kinematics**
GS kinematics
. **body kinematics**
RT acceleration (physics)
acceleration stresses (physiology)
kinetics
particle theory
velocity
- body measurement (biology)**
SN (LIMITED TO BIOLOGICAL APPLICATIONS--FOR MEASUREMENT OF NON-BIOLOGICAL BODIES USE SIZE DETERMINATION)
GS bioengineering
. biometrics
. . . **body measurement (biology)**
. . . . anthropometry
. . . . electroplethysmography
RT ∞ biology
biomedical data
electrocardiography
electroencephalography
electrophysiology
∞ engineering
human body
human factors engineering
obesity
size determination
∞ sizing
- body size (biology)**
RT anthropometry
∞ biology
obesity
- body sway test**
GS physiological tests
. **body sway test**
RT ∞ equilibrium
head down tilt
vertical perception
vestibular tests
- body temperature**
SN (LIMITED TO TEMPERATURE OF BIOLOGICAL BODIES)
GS temperature
. **body temperature**
RT cold tolerance
fever
heat acclimatization
heat stroke
heat tolerance
homeostasis
homeotherms
humidity
hyperthermia
hypothermia
perspiration
poikilothermia
shivering
thermoreceptors
thermoregulation
vasoconstriction
vasodilation
- body temperature (non-biological)*
USE **temperature**
- body temperature regulation*
USE **thermoregulation**
- body volume (biology)**
GS volume
. **body volume (biology)**
RT ∞ biology
obesity
- body weight**
GS weight (mass)
. **body weight**
RT obesity

body-wing and tail configurations

weightlessness

body-wing and tail configurations

- UF *wing-body and tail configurations*
- GS aerodynamic configurations
 - . **body-wing and tail configurations**
- RT ∞ configurations
 - fuselages
 - tail assemblies
 - wings

body-wing configurations

- UF *wing-body configurations*
- GS aerodynamic configurations
 - . **body-wing configurations**
 - . . blended-wing-body configurations
- RT airfoils
 - drooped airfoils
 - GAW-2 airfoil
 - wings

Boeing 707 aircraft

- GS Boeing aircraft
 - . **Boeing 707 aircraft**
 - commercial aircraft
 - . **Boeing 707 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 707 aircraft**
 - monoplanes
 - . **Boeing 707 aircraft**
 - passenger aircraft
 - . **Boeing 707 aircraft**
 - transport aircraft
 - . **Boeing 707 aircraft**
- RT ∞ aircraft

Boeing 717 aircraft

- (*added October 1998*)
- GS Boeing aircraft
 - . **Boeing 717 aircraft**
 - commercial aircraft
 - . **Boeing 717 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 717 aircraft**
 - monoplanes
 - . **Boeing 717 aircraft**
 - passenger aircraft
 - . **Boeing 717 aircraft**
 - transport aircraft
 - . **Boeing 717 aircraft**
- RT ∞ aircraft

Boeing 720 aircraft

- GS Boeing aircraft
 - . **Boeing 720 aircraft**
 - commercial aircraft
 - . **Boeing 720 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 720 aircraft**
 - monoplanes
 - . **Boeing 720 aircraft**
 - passenger aircraft
 - . **Boeing 720 aircraft**
 - transport aircraft
 - . **Boeing 720 aircraft**
- RT ∞ aircraft

Boeing 727 aircraft

- GS Boeing aircraft
 - . **Boeing 727 aircraft**
 - commercial aircraft
 - . **Boeing 727 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 727 aircraft**
 - passenger aircraft
 - . **Boeing 727 aircraft**
 - transport aircraft
 - . **Boeing 727 aircraft**
- RT ∞ aircraft

cargo aircraft

Boeing 733 aircraft

- GS Boeing aircraft
 - . **Boeing 733 aircraft**
 - commercial aircraft
 - . **Boeing 733 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 733 aircraft**
 - monoplanes
 - . **Boeing 733 aircraft**
 - supersonic aircraft
 - . **Boeing 733 aircraft**
 - transport aircraft
 - . **Boeing 733 aircraft**
- RT ∞ aircraft
 - variable sweep wings

Boeing 737 aircraft

- GS Boeing aircraft
 - . **Boeing 737 aircraft**
 - commercial aircraft
 - . **Boeing 737 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 737 aircraft**
 - monoplanes
 - . **Boeing 737 aircraft**
 - passenger aircraft
 - . **Boeing 737 aircraft**
 - transport aircraft
 - . **Boeing 737 aircraft**
- RT ∞ aircraft
 - cargo aircraft

Boeing 747 aircraft

- GS Boeing aircraft
 - . **Boeing 747 aircraft**
 - commercial aircraft
 - . **Boeing 747 aircraft**
 - jet aircraft
 - . **Boeing 747 aircraft**
 - passenger aircraft
 - . **Boeing 747 aircraft**
 - transport aircraft
 - . **Boeing 747 aircraft**
- RT ∞ aircraft
 - SOFIA (airborne observatory)
 - turbofan engines
 - X-34 reusable launch vehicle

Boeing 747B aircraft

- USE **E-4A aircraft**

Boeing 757 aircraft

DEF Boeing's twin turbofan short/medium range transport aircraft that made its first flight on February 19, 1982.

- GS Boeing aircraft
 - . **Boeing 757 aircraft**
 - commercial aircraft
 - . **Boeing 757 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 757 aircraft**
 - monoplanes
 - . **Boeing 757 aircraft**
 - passenger aircraft
 - . **Boeing 757 aircraft**
 - transport aircraft
 - . **Boeing 757 aircraft**
- RT ∞ aircraft

Boeing 767 aircraft

DEF Boeing's widebodied medium range commercial transport aircraft that made its first flight on September 26, 1981.

- GS Boeing aircraft
 - . **Boeing 767 aircraft**
 - commercial aircraft
 - . **Boeing 767 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Boeing 767 aircraft**
 - monoplanes

- . **Boeing 767 aircraft**
 - passenger aircraft
 - . **Boeing 767 aircraft**
 - transport aircraft
 - . **Boeing 767 aircraft**
- RT ∞ aircraft
 - cargo aircraft
 - turbofan engines

Boeing 777 aircraft

- (*added September 1994*)
- GS Boeing aircraft
 - . **Boeing 777 aircraft**
 - commercial aircraft
 - . **Boeing 777 aircraft**
 - jet aircraft
 - . **Boeing 777 aircraft**
 - passenger aircraft
 - . **Boeing 777 aircraft**
 - transport aircraft
 - . **Boeing 777 aircraft**
- RT ∞ aircraft

Boeing 2707 aircraft

- GS Boeing aircraft
 - . **Boeing 2707 aircraft**
 - commercial aircraft
 - . supersonic commercial air transport
 - . . **Boeing 2707 aircraft**
 - jet aircraft
 - . **Boeing 2707 aircraft**
 - passenger aircraft
 - . **Boeing 2707 aircraft**
 - supersonic aircraft
 - . supersonic transports
 - . . supersonic commercial air transport
 - . . . **Boeing 2707 aircraft**
 - transport aircraft
 - . **Boeing 2707 aircraft**
- RT ∞ aircraft

Boeing aircraft

- UF *Vertol military helicopters*
- GS **Boeing aircraft**
 - . B-47 aircraft
 - . B-50 aircraft
 - . B-52 aircraft
 - . Boeing 707 aircraft
 - . Boeing 717 aircraft
 - . Boeing 720 aircraft
 - . Boeing 727 aircraft
 - . Boeing 733 aircraft
 - . Boeing 737 aircraft
 - . Boeing 747 aircraft
 - . Boeing 757 aircraft
 - . Boeing 767 aircraft
 - . Boeing 777 aircraft
 - . Boeing 2707 aircraft
 - . C-135 aircraft
 - . CH-21 helicopter
 - . CH-46 helicopter
 - . CH-47 helicopter
 - . CH-62 helicopter
 - . E-3A aircraft
 - . E-4A aircraft
 - . H-25 helicopter
 - . V-22 aircraft
 - . VZ-2 aircraft
 - . X-20 aircraft
 - . X-32 aircraft
- RT ∞ aircraft
 - AWACS aircraft
 - McDonnell Douglas aircraft
 - X-45 aircraft
 - YC-14 aircraft

Bogoliubov theory

- RT BBGKY hierarchy
- ∞ theories

bogs

- USE **marshlands**

Bohr magneton

DEF A constant equivalent to the magnetic moment of an electron.

- GS constants
 . **Bohr magneton**
 RT electrons
 magnetic moments
- Bohr theory**
 GS theoretical physics
 . quantum theory
 . . **Bohr theory**
 RT electron transitions
 line spectra
 ∞ theories
- bohrium**
(added May 1998)
 GS chemical elements
 . **bohrium**
 RT hassium
 seaborgium
- boiler plate**
 GS structural members
 . plates (structural members)
 . . metal plates
 . . . **boiler plate**
 RT thick walls
- boilers**
 UF *steam generators*
 GS heating equipment
 . **boilers**
 RT external combustion engines
 furnaces
 ∞ generators
 heat balance
 pressure vessels
 steam
 vaporizers
 waste energy utilization
- boiling**
 UF *ebullition*
 GS phase transformations
 . vaporizing
 . . **boiling**
 . . . film boiling
 . . . nucleate boiling
 Leidenfrost phenomenon
 RT effervescence
 evaporation
 evolution (liberation)
 heat transfer
 heating
- boiling water reactors**
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **boiling water reactors**
 experimental boiling water reactors
 Halden Boiling Water Reactor
 Los Alamos Water Boiler Reactor
 Pathfinder nuclear reactor
 Spert reactors
 RT nuclear power reactors
 nuclear research and test reactors
- bolides**
 DEF Brilliant meteors, especially ones which explode; detonating fireballs.
 GS celestial bodies
 . meteoroids
 . . **bolides**
 . . . Cyrillid meteoroids
 RT atmospheric entry
 atmospheric heating
 ∞ fireballs
 meteor trails
 meteorites
 meteoroid showers
 Pribram meteorite
- Bolivia**
 GS nations
- . **Bolivia**
 RT South America
- Bolkow aircraft**
 GS **Bolkow aircraft**
 . BO-105 helicopter
 RT ∞ aircraft
- boll weevils**
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 Coleoptera
 **boll weevils**
 RT bollworms
 cotton
 infestation
- bollworms**
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **bollworms**
 larvae
 . **bollworms**
 RT boll weevils
 corn
 cotton
 fruits
 infestation
 moths
- bolograms*
 USE **bolometers**
- bolometers**
 DEF Instruments which measure the intensity of radiant energy by employing thermally sensitive electrical resistors; a type of actinometer. Used for bolograms.
 UF *bolograms*
 GS measuring instruments
 . radiation measuring instruments
 . . **bolometers**
 RT Dicke radiometers
 electrical measurement
 heat measurement
 infrared detectors
 photometers
 potentiometers (instruments)
 radiation pyrometers
 radiometers
 resistance thermometers
 temperature measurement
 temperature measuring instruments
 x ray detectors
- bolted joints**
 DEF Joints fastened with bolts. They are usually designed for heavy loads.
 GS joints (junctions)
 . **bolted joints**
 RT bolts
 lap joints
 riveted joints
 scarf joints
- bolts**
 GS fasteners
 . **bolts**
 . . rock bolts
 . . tiebolts
 RT anchors (fasteners)
 bolted joints
 couplings
 holders
 nuts (fasteners)
 screws
 studs (structural members)
 threads
- Boltzmann distribution**
 GS distribution (property)
 . **Boltzmann distribution**
- RT atmospheric density
 atmospheric diffusion
 kinetic theory
 statistical mechanics
 two fluid models
- Boltzmann transport equation**
 RT BBGKY hierarchy
 BGK model
 Burnett equations
 Chapman-Enskog theory
 ∞ equations
 Fokker-Planck equation
 hydrodynamic equations
 kinetic theory
 particle diffusion
 statistical mechanics
 transport properties
 transport theory
- Boltzmann-Vlasov equation**
 RT ∞ equations
 high temperature plasmas
 Maxwell equation
 partial differential equations
 wave equations
- Bolza problems**
 RT optimization
 ∞ problems
- BOMARC A missile**
 GS missiles
 . antiaircraft missiles
 . . BOMARC missiles
 . . . **BOMARC A missile**
 . surface to air missiles
 . . BOMARC missiles
 . . . **BOMARC A missile**
 RT liquid propellant rocket engines
 solid propellant rocket engines
- BOMARC B missile**
 GS missiles
 . antiaircraft missiles
 . . BOMARC missiles
 . . . **BOMARC B missile**
 . surface to air missiles
 . . BOMARC missiles
 . . . **BOMARC B missile**
 RT liquid propellant rocket engines
 solid propellant rocket engines
- BOMARC missiles**
 GS missiles
 . antiaircraft missiles
 . . **BOMARC missiles**
 . . . BOMARC A missile
 . . . BOMARC B missile
 . surface to air missiles
 . . BOMARC missiles
 . . . BOMARC A missile
 . . . BOMARC B missile
- bomb calorimeters**
 GS measuring instruments
 . calorimeters
 . . **bomb calorimeters**
 RT drop calorimeters
 flame calorimeters
 heat measurement
 high temperature tests
 temperature measuring instruments
- ∞ **bombardment**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT electron bombardment
 hypervelocity projectiles
 irradiation
 meteoritic damage
 sputtering
- bomber aircraft**
 GS attack aircraft

bombing equipment

. bomber aircraft

- . . . A-2 aircraft
- . . . A-3 aircraft
- . . . A-4 aircraft
- . . . A-5 aircraft
- . . . A-6 aircraft
- . . . B-1 aircraft
- . . . B-2 aircraft
- . . . B-26 aircraft
- . . . B-47 aircraft
- . . . B-50 aircraft
- . . . B-52 aircraft
- . . . B-57 aircraft
- . . . B-58 aircraft
- . . . B-66 aircraft
- . . . B-70 aircraft
- . . . F-111 aircraft
- . . . Shackleton bomber
- . . . Valiant aircraft
- . . . Victor MK-1 aircraft
- . . . Vulcan aircraft

- RT ∞ aircraft
- antisubmarine warfare aircraft
- bombing equipment
- F-117A aircraft
- jet aircraft
- ∞ military aircraft
- ∞ military aviation
- tanker aircraft
- training aircraft
- Vampire MK 35 aircraft

bombing equipment

- GS onboard equipment
- . aircraft equipment
- . . **bombing equipment**
- RT B-1 aircraft
- bomber aircraft
- bombs (ordnance)
- ∞ equipment
- fire control

∞ bombs

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bombs (ordnance)
- precision guided projectiles
- pressure gages
- samplers

bombs (ordnance)

- DEF Explosive devices designed to be detonated under specified conditions.
- GS explosive devices
- . **bombs (ordnance)**
- RT ammunition
- B-1 aircraft
- bombing equipment
- ∞ bombs
- explosives
- incendiary ammunition
- missiles
- nuclear weapons
- projectiles
- pyrotechnics
- shaped charges
- torpedoes
- warheads

bombs (pressure gages)
USE **pressure gages**

bombs (samplers)
USE **samplers**

Bonanza aircraft
USE **C-35 aircraft**

bond graphs

- GS charts
- . graphs (charts)
- . . **bond graphs**
- RT control systems design
- differential equations
- dynamic models
- mathematical models

- ∞ mathematics
- simulation
- systems analysis
- systems engineering

Bond number

- (added December 1999)
- DEF Dimensionless number representing the ratio between gravitational force and the surface tension of a bubble, drop, or meniscus.
- GS dimensionless numbers
- . **Bond number**
- RT drops (liquids)
- gravitational effects
- interfacial tension
- menisci

bonded joints

- (added March 1993)
- UF *bondlines*
- GS joints (junctions)
- . **bonded joints**
- RT adhesive bonding
- bonding
- rocket engine cases
- rocket linings
- scarf joints
- soldered joints
- solid propellant rocket engines
- welded joints

bonding

- DEF Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arching of static electricity. Glueing or cementing together for structural strength.
- GS **bonding**
- . adhesive bonding
- . agglutination
- . ceramic bonding
- . explosive welding
- . inertia bonding
- . metal bonding
- . . metal-metal bonding
- . reaction bonding
- . resin bonding
- RT adhesion
- adhesion tests
- beam leads
- binding
- bonded joints
- cementation
- chemical bonds
- cohesion
- cold welding
- debonding (materials)
- diffusion welding
- ∞ joining
- joints (junctions)
- laminates
- laser welding
- sealing
- soldering
- superplastic forming
- welding

bondlines

USE **bonded joints**

Bondoc meteorite

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . achondrites
- **Bondoc meteorite**

bone demineralization

- GS demineralizing
- . **bone demineralization**
- diseases
- . **bone demineralization**
- RT biological effects
- ∞ biology
- bones

- hindlimb suspension
- osteoblasts
- osteoporosis
- physiological effects
- physiology
- weightlessness

bone marrow

- GS tissues (biology)
- . connective tissue
- . . **bone marrow**
- RT bones
- cancer
- erythrocytes
- hematopoiesis
- hematopoietic system
- leukemias
- leukocytes
- lymphatic system

bone mineral content

- UF *BMC*
- GS content
- . **bone mineral content**
- RT bioengineering
- ∞ biology
- biometrics
- bones
- calcium carbonates
- calcium phosphates
- collagens
- minerals
- osteoblasts
- osteoporosis

bones

- GS anatomy
- . musculoskeletal system
- . . **bones**
- . . . femur
- . . . pelvis
- . . . scapula
- . . . skull
- cranium
- intracranial cavity
- mastoids
- . . . spine
- vertebrae
- . . . sternum
- . . . tibia
- . . . ulna
- RT arthritis
- bone demineralization
- bone marrow
- bone mineral content
- calcification
- cartilage
- chin
- connective tissue
- exoskeletons
- joints (anatomy)
- lamella
- osteoblasts
- osteoporosis
- spinal cord
- splints

Bonne projection

- DEF A type of conical map projection in which meridians are plotted as curves and the parallels are spaced along them at true distances.
- RT mapping
- maps
- ∞ projection

Boolean algebra

- DEF The study of the manipulation of symbols representing operations according to the rules of logic. Boolean algebra corresponds to an algebra using only the numbers 0 and 1, therefore can be used in programming digital computers which operate on the binary principle.
- GS mathematical logic
- . lattices (mathematics)

- .. **Boolean algebra**
- ... Boolean functions
- RT algebra
 - ∞ conjunction
 - ∞ instruction sets (computers)
 - ∞ logic
 - set theory
 - switching theory
 - transistor logic
 - ∞ unions
- Boolean functions**
 - GS functions (mathematics)
 - . **Boolean functions**
 - mathematical logic
 - . lattices (mathematics)
 - .. Boolean algebra
 - ... **Boolean functions**
- ∞ **boom**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT booms (equipment)
 - sonic booms
 - tail assemblies
- booms (equipment)**
 - GS positioning devices (machinery)
 - . **booms (equipment)**
 - RT ∞ boom
 - cranes
- boost*
- USE **acceleration (physics)**
- booster recovery**
 - RT expendable stages (spacecraft)
 - recoverable launch vehicles
 - ∞ recovery
 - recovery parachutes
 - spacecraft recovery
- booster rocket engines**
 - UF *rocket boosters*
 - GS engines
 - . rocket engines
 - .. **booster rocket engines**
 - ... AJ-10 engine
 - ... Algol engine
 - ... apogee boost motors
 - ... H-1 engine
 - ... LR-87-AJ-5 engine
 - ... M-1 engine
 - ... M-55 engine
 - ... MA-2 engine
 - ... MA-3 engine
 - ... MA-5 engine
 - ... Nike booster rocket engines
 - ... P-1 engine
 - ... rocket engine 9KS-11000
 - ... Space Shuttle Boosters
 - ... Advanced Solid Rocket Motor (STS)
 - ... X-405 engine
 - RT air breathing boosters
 - Blue Goose missile
 - ∞ boosters
 - burnout
 - ducted rocket engines
 - expendable stages (spacecraft)
 - F-1 rocket engine
 - hybrid propellant rocket engines
 - internal combustion engines
 - launch vehicles
 - liftoff (launching)
 - liquid propellant rocket engines
 - Mace missiles
 - nuclear engine for rocket vehicles
 - nuclear rocket engines
 - oxygen-hydrocarbon rocket engines
 - recoverable spacecraft
 - solid propellant rocket engines
 - spinning solid upper stage
 - stage separation
 - sustainer rocket engines
 - turbo-rocket engines
- TX-354 engine
- RT borohydrides
- borates**
 - GS boron compounds
 - . **borates**
 - .. lithium borates
 - RT boric acids
 - ∞ oxygen compounds
- Borazon (trademark)*
- USE **boron nitrides**
- borders**
 - RT boundaries
 - margins
 - rim
- Bordoni peaks**
 - RT elastic deformation
 - plastic deformation
 - resonant frequencies
 - stress relaxation
- boredom**
 - RT detachment
 - human behavior
 - human reactions
 - lethargy
 - monotony
 - psychological effects
 - psychology
 - space flight stress
- boreholes**
 - DEF Holes made by drilling into the ground to study stratification, to search for or to obtain natural resources, or to release underground pressures.
 - RT cavities
 - clays
 - drilling
 - excavation
 - exploration
 - geology
 - gravels
 - ∞ holes
 - minerals
 - pits (excavations)
 - rocks
 - shales
 - soils
- Borel sets**
 - GS analysis (mathematics)
 - . real variables
 - .. measure and integration
 - ... **Borel sets**
 - mathematical logic
 - . set theory
 - .. **Borel sets**
 - RT probability theory
- bores*
- USE **cavities**
- borescopes*
- USE **endoscopes**
- boresight error**
 - DEF Linear displacement between two parallel lines of sight.
 - GS errors
 - . position errors
 - .. **boresight error**
 - RT air navigation
 - boresights
 - directional antennas
 - displacement
 - displacement measurement
 - error analysis
 - instrument errors
 - line of sight communication
 - navigation instruments
 - optical tracking
- ∞ **booster rockets**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT launch vehicles
- ∞ **boosters**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT air breathing boosters
 - amplifiers
 - apogee boost motors
 - booster rocket engines
 - boosters (explosives)
 - launch vehicles
 - Scout project
 - Space Shuttle Boosters
 - Titan project
- boosters (explosives)**
 - GS explosive devices
 - . initiators (explosives)
 - .. **boosters (explosives)**
 - igniters
 - . initiators (explosives)
 - .. **boosters (explosives)**
 - RT ∞ boosters
 - exploding wires
- boostglide vehicles**
 - DEF Vehicles designed to glide in the atmosphere following a rocket-powered phase. Portions of the flights may be ballistic, out of the atmosphere.
 - GS gliders
 - . **boostglide vehicles**
 - .. X-20 aircraft
 - reentry vehicles
 - . **boostglide vehicles**
 - .. X-20 aircraft
 - RT aerospace planes
 - ∞ aircraft
 - Astro vehicle
 - gliding
 - hypersonic aircraft
 - hypersonic gliders
 - lifting reentry vehicles
 - manned spacecraft
 - recoverable spacecraft
 - rocket planes
 - ∞ vehicles
- boots (footwear)**
 - GS clothing
 - . **boots (footwear)**
 - RT shoes
- Boral**
 - GS composite materials
 - . **Boral**
 - composite structures
 - . laminates
 - .. **Boral**
 - RT aluminum
 - boron carbides
 - radiation shielding
- boranes**
 - GS boron compounds
 - . boron hydrides
 - .. **boranes**
 - ... carborane
 - ... hydrazine borane
 - ... pentaboranes
 - hydrogen compounds
 - . hydrides
 - .. boron hydrides
 - ... **boranes**
 - ... carborane
 - ... hydrazine borane
 - ... pentaboranes

boresights

range errors

boresights

RT boresight error
directional antennas
optical tracking

boric acids

GS acids
. **boric acids**
boron compounds
. **boric acids**
RT borates

borides

GS boron compounds
. **borides**
. . chromium borides
. . titanium borides
RT intermetallics

boring machines

GS tools
. machine tools
. . **boring machines**
RT drills
∞ machinery

Born approximation

UF *Born-Mayer equation*
GS analysis (mathematics)
. numerical analysis
. approximation
. . **Born approximation**
RT ∞ equations
quantum mechanics
scattering cross sections

Born-Infeld theory

RT electrodynamics
electrostatics
Maxwell equation
nonlinear equations
∞ theories

Born-Mayer equation

USE **Born approximation**

Born-Oppenheimer approximation

GS analysis (mathematics)
. numerical analysis
. approximation
. . **Born-Oppenheimer approximation**
RT Franck-Condon principle

borohydrides

GS boron compounds
. **borohydrides**
. . aluminum borohydrides
. . beryllium borohydrides
hydrogen compounds
. hydrides
. . **borohydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
RT boranes
boron hydrides

boron

GS chemical elements
. metalloids
. . **boron**
. . . boron isotopes
. . . . boron 10
RT boron reinforced materials
Borsic (tradename)

boron 10

GS chemical elements
. metalloids
. . boron
. . . boron isotopes
. . . . **boron 10**
. nuclides
. . isotopes

. . . boron isotopes
. . . . **boron 10**

boron alloys

GS alloys
. **boron alloys**
RT metalloids

boron carbides

GS boron compounds
. **boron carbides**
carbon compounds
. carbides
. . **boron carbides**
RT Boral
ceramic fibers

boron chlorides

GS boron compounds
. **boron chlorides**
halogen compounds
. chlorine compounds
. chlorides
. . . **boron chlorides**
. halides
. chlorides
. . . **boron chlorides**

boron compounds

GS **boron compounds**
. borates
. . lithium borates
. boric acids
. borides
. . chromium borides
. . titanium borides
. borohydrides
. . aluminum borohydrides
. . beryllium borohydrides
. boron carbides
. boron chlorides
. boron fluorides
. boron hydrides
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
. boron nitrides
. boron oxides
. boron phosphides
. diborane
. organic boron compounds
. tourmaline
RT ∞ chemical compounds
∞ Group 3A compounds
high energy fuels
metal fuels
metal propellants

boron fibers

DEF Fibers produced by vapor deposition methods; used in various composite materials to impart a balance of strength and stiffness.

GS fibers
. reinforcing fibers
. . **boron fibers**
RT aluminum boron composites
Borsic (tradename)
carbon fibers
composite materials
fiber composites
fiber orientation
fiber strength
∞ filaments
glass fibers
metal matrix composites
polymer matrix composites
reinforced plastics

boron fluorides

UF *boron trifluoride*
GS boron compounds
. **boron fluorides**
halogen compounds

. fluorine compounds
. . fluorides
. . . **boron fluorides**
. halides
. . fluorides
. . . **boron fluorides**

boron hydrides

GS boron compounds
. **boron hydrides**
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . **boron hydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

boron isotopes

GS chemical elements
. metalloids
. . boron
. . . **boron isotopes**
. . . . boron 10
. nuclides
. . isotopes
. . . **boron isotopes**
. . . . boron 10

boron nitrides

UF *Borazon (trademark)*
GS boron compounds
. **boron nitrides**
nitrogen compounds
. nitrides
. . **boron nitrides**
RT carbon nitrides

boron oxides

GS boron compounds
. **boron oxides**
chalcogenides
. oxides
. . **boron oxides**

boron phosphides

GS boron compounds
. **boron phosphides**
phosphorus compounds
. phosphides
. . **boron phosphides**

boron reinforced materials

GS composite materials
. **boron reinforced materials**
. . aluminum boron composites
. . boron-epoxy composites
RT boron
ceramic matrix composites
epoxy resins
fiber composites
fibers
∞ materials
plastics
reinforced plastics
reinforcing fibers

boron trifluoride

USE **boron fluorides**

boron-epoxy composites

GS composite materials
. boron reinforced materials
. . **boron-epoxy composites**
. . polymer matrix composites
. . epoxy matrix composites
. . . **boron-epoxy composites**

. resin matrix composites
 . . . **boron-epoxy composites**
 RT aircraft structures
 ∞ chemical compounds
 composite structures
 epoxy resins
 fiber composites
 laminates
 plastic aircraft structures
 spacecraft components
 superhybrid materials

borosilicate glass
 DEF Low expansion heat resistant glass.
 Used for Pyrex (trademark).
 UF *Pyrex (trademark)*
 GS glass
 . **borosilicate glass**
 RT glassware
 honeycomb mirrors
 silicon dioxide

Borsic (tradename)
 DEF Trademark of United Aircraft Products, Inc. for its boron aluminum composite materials.
 GS composite materials
 . metal matrix composites
 . . **Borsic (tradename)**
 RT aluminum
 boron
 boron fibers
 fiber composites
 ∞ materials
 metal fibers
 metals

Bose geometry
 GS geometry
 . **Bose geometry**
 RT equations of state

Bose-Chaudhuri-Hocquenghem codes
 USE **BCH codes**

Bose-Einstein condensates
 (added February 1996)
 GS condensates
 . **Bose-Einstein condensates**
 RT atom optics
 bosons
 condensed matter physics
 ideal gas
 relativistic effects
 superfluidity

Bose-Einstein statistics
 USE **quantum statistics**

Bosnia
 (added June 1996)
 USE **Bosnia and Herzegovina**

Bosnia and Herzegovina
 (added June 1996)
 UF *Bosnia*
Herzegovina
 GS nations
 . **Bosnia and Herzegovina**
 RT Croatia
 Europe
 Serbska Republic
 Yugoslavia

boson fields
 RT field theory (physics)
 ∞ fields
 mesons

bosons
 GS particles
 . elementary particles
 . . **bosons**
 . . . alpha particles
 . . . Higgs bosons
 . . . mesons
 eta-mesons

. . . . hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 . . . photons
 . . . xi hyperons
 . nuclear particles
 . . **bosons**
 . . . alpha particles
 . . . Higgs bosons
 . . . mesons
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 . . . photons
 . . . xi hyperons
 RT Bose-Einstein condensates
 charged particles
 Fermi-Dirac statistics
 quantum statistics
 standard model (particle physics)
 string theory
 supersymmetry

botany
 GS **botany**
 . geobotany
 RT agriculture
 alfalfa
 barley
 biogeochemistry
 ∞ biology
 blight
 brown wave effect
 brush (botany)
 chaparral
 citrus trees
 corn
 farm crops
 fruits
 green wave effect
 habitats
 hay
 leguminous plants
 oats
 plants (botany)
 ∞ science
 silviculture
 sugar beets
 sugar cane
 tomatoes
 vegetation growth
 vineyards
 ∞ zoology

Botswana
 GS nations
 . **Botswana**
 RT Africa
 Republic of South Africa

bottles
 RT ∞ containers
 flasks
 glassware
 tanks (containers)

Bouguer law
 DEF A relationship describing the rate of decrease of flux density of a plane-parallel beam

of monochromatic radiation as it penetrates a medium which both scatters and absorbs at that wavelength. Used for Lambert law.
 UF *Lambert law*
 RT absorptivity
 Beer law
 electromagnetic absorption
 thermoplasticity

boules
 GS crystals
 . **boules**
 RT single crystals

boundaries
 UF *peripheries*
 GS **boundaries**
 . core-mantle boundary
 . fluid boundaries
 . . gas-solid interfaces
 . . jet boundaries
 . . liquid-liquid interfaces
 . . liquid-solid interfaces
 . . liquid-vapor interfaces
 . antiphase boundaries
 . free boundaries
 . grain boundaries
 RT airspace
 borders
 boundary conditions
 circumferences
 contour sensors
 delineation
 fences (barriers)
 interfaces
 regions

boundary conditions
 (added July 1990)
 GS conditions
 . **boundary conditions**
 . . perfectly matched layers
 RT boundaries
 boundary element method
 boundary layers
 boundary value problems
 Trefftz method
 vortex lattice method

boundary detection (imagery)
 USE **edge detection**

boundary element method
 DEF Technique for solving two- and three-dimensional boundary value problems in thermodynamics, mechanics, etc.
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **boundary element method**
 Trefftz method
 RT boundary conditions
 stress analysis

boundary integral method
 DEF Technique related to the boundary element method, and used for laminar and turbulent flow problems.
 GS analysis (mathematics)
 . numerical analysis
 . . **boundary integral method**
 . . . procedures
 . **boundary integral method**
 RT boundary value problems
 ∞ methodology

boundary layer combustion
 GS combustion
 . **boundary layer combustion**
 RT boundary layers
 combustible flow
 convective heat transfer
 diffusion flames
 flame propagation
 laminar boundary layer

boundary layer control

reacting flow

boundary layer control

- UF *laminar flow control*
- GS **boundary layer control**
 - . porous boundary layer control
- RT aerodynamics
 - airfoil fences
- ∞ bleeding
 - blowing
 - boundary layers
 - buffeting
 - circulation control airfoils
- ∞ control
 - control surfaces
 - drag devices
 - fluid amplifiers
 - flutter
 - jet control
 - leading edge slats
 - lift augmentation
 - lift devices
 - riblets
 - spoilers
 - tangential blowing
 - turbulence
 - upper surface blown flaps
 - vacuum
 - vortex generators
 - wing slots
 - X-21 aircraft

boundary layer equations

- GS flow equations
 - . **boundary layer equations**
 - . . Blasius equation
- RT boundary layers
 - differential equations
- ∞ equations
 - flow theory
 - Reynolds averaging

boundary layer flow

- GS fluid flow
 - . viscous flow
 - . . **boundary layer flow**
 - . . . reattached flow
 - . . . secondary flow
 - . . . separated flow
 - boundary layer separation
- RT air currents
 - atmospheric boundary layer
 - backward facing steps
 - Blasius equation
 - boundary layer thickness
 - convective heat transfer
 - flow distribution
 - forward facing steps
 - Lighthill gas model
 - Magnus effect
 - recirculative fluid flow
 - Reynolds number
 - stagnation flow
 - stagnation point
 - Tollmien-Schlichting waves
 - wall flow

boundary layer noise

- USE **aerodynamic noise**
 - boundary layers**

boundary layer plasmas

- DEF Plasmas resulting from the frictional heat of hypersonic spacecraft entering the Earth's atmosphere.
- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **boundary layer plasmas**
 - . . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **boundary layer plasmas**
- RT aerodynamic heating
 - aerothermodynamics

boundary layers
hypersonic reentry
plasma physics
plasma sheaths

boundary layer separation

- UF *breakaway*
 - flow separation*
 - laminar boundary layer separation*
- GS fluid flow
 - . viscous flow
 - . . boundary layer flow
 - . . . separated flow
 - **boundary layer separation**
- RT aerodynamic stalling
 - airspeed
 - angle of attack
 - boundary layers
 - Crocco-Lee theory
- ∞ diffusers
 - Falkner-Skan equation
 - flow distribution
 - injection
 - Kutta-Joukowski condition
 - lift drag ratio
 - reattached flow
 - recirculative fluid flow
 - reversed flow
 - rotating stalls
- ∞ separation
 - stagnation flow
- ∞ stalling
 - sweep angle
 - vortex generators
 - zero lift

boundary layer stability

- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **boundary layer stability**
 - . . flow characteristics
 - . . flow stability
 - . . . **boundary layer stability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **boundary layer stability**
- RT aerodynamic stability
 - backwash
 - boundary layers
 - Goertler instability
 - Reynolds number

boundary layer thickness

- (added September 1995)
- SN (LIMITED TO FLUID DYNAMICS, DO NOT USE FOR PLANETARY OR CORE MANTLE BOUNDARIES)
- GS thickness
 - . **boundary layer thickness**
- RT boundary layer flow
 - flow distribution
 - pressure gradients
 - surface layers
 - transition flow

boundary layer transition

- RT air currents
 - boundary layers
 - Ekman layer
 - Goertler instability
 - Knudsen flow
 - laminar boundary layer
 - laminar flow
 - molecular flow
 - Reynolds number
 - three dimensional boundary layer
 - Tollmien-Schlichting waves
- ∞ transition
 - transition flow
- ∞ transition layers
 - transition points
 - turbulence
 - turbulent boundary layer

turbulent flow

boundary layers

- UF *boundary layer noise*
- GS **boundary layers**
 - . atmospheric boundary layer
 - . compressible boundary layer
 - . hypersonic boundary layer
 - . incompressible boundary layer
 - . laminar boundary layer
 - . planetary boundary layer
 - . supersonic boundary layers
 - . thermal boundary layer
 - . three dimensional boundary layer
 - . turbulent boundary layer
 - . two dimensional boundary layer
- RT asthenosphere
 - boundary conditions
 - boundary layer combustion
 - boundary layer control
 - boundary layer equations
 - boundary layer plasmas
 - boundary layer separation
 - boundary layer stability
 - boundary layer transition
 - core-mantle boundary
 - Crocco method
- ∞ draft
 - drag
 - fluid boundaries
 - fluid flow
 - gas-solid interfaces
- ∞ layers
 - liquid-liquid interfaces
 - liquid-solid interfaces
 - mixing layers (fluids)
 - panel method (fluid dynamics)
 - shear layers
 - surface layers
 - wall pressure

boundary lubrication

- GS lubrication
 - . **boundary lubrication**
- RT bearings
 - lubricants
 - squeeze films
 - vapor phase lubrication
 - wear resistance

boundary value problems

- DEF Physical problems completely specified by a differential equation in an unknown, valid in a certain region of space, and certain information (boundary condition) about the unknown, given on the boundaries of that region. The information required to determine the solution depends completely and uniquely on the particular problem. Used for initial value problems and point matching method (mathematics).
- UF *initial value problems*
 - point matching method (mathematics)*
- GS **boundary value problems**
 - . Cauchy problem
 - . Dirichlet problem
 - . Neumann problem
- RT Bessel functions
 - boundary conditions
 - boundary integral method
 - counter rotation
 - Crank-Nicholson method
 - differential equations
 - finite element method
 - finite volume method
 - half planes
 - half spaces
 - Hankel functions
 - ill-posed problems (mathematics)
 - Lame functions
 - Mathieu function
 - minimal surfaces
 - Monge-Ampere equation
 - observability (systems)
- ∞ problems
 - Sobolev space
 - three dimensional bodies

- Trefftz method
- Bourdon tubes**
 GS transducers
 . pressure sensors
 . . **Bourdon tubes**
 RT pressure gages
 pressure measurement
 ∞ tubes
- Boussinesq approximation**
 DEF The assumption (frequently used in the theory of convection) that the fluid is incompressible except insofar as the thermal expansion produces a buoyancy.
 RT convection
 heat transfer
 incompressible fluids
 perturbation theory
 thermal expansion
- bow shock waves*
 USE **shock waves**
- bow waves**
 DEF Shock waves in front of a body, such as an airfoil, or apparently attached to the forward tip of the body.
 RT hypersonic wakes
 Mach cones
 magnetosheath
 shock waves
 surface waves
- ∞ **bows**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT bending
 camber
 forebodies
 heaving
- box beams**
 GS structural members
 . beams (supports)
 . . **box beams**
 RT ∞ boxes
 cantilever beams
 girders
 rectangular beams
- ∞ **boxes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT box beams
 boxes (containers)
- boxes (containers)**
 RT ∞ boxes
 ∞ buckets
 cases (containers)
 ∞ containers
 packages
- BPSK*
 USE **binary phase shift keying**
- brackets**
 RT anchors (fasteners)
 fasteners
 fixtures
 holders
 mounting
- bradycardia**
 GS rates (per time)
 . heart rate
 . . **bradycardia**
 signs and symptoms
 . **bradycardia**
 RT heart diseases
- Bragg angle**
 DEF The angle between the incident beam and the lattice planes considered.
- GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **Bragg angle**
- RT Bragg gratings
 Bragg reflectors
 crystallography
 DBR lasers
 diffraction
 diffraction paths
 electron diffraction
 isotropy
 ∞ orientation
 ∞ physical properties
 radiography
- Bragg cells**
(added September 1988)
 GS modulators
 . **Bragg cells**
 RT acousto-optics
 amplitude modulation
 crystal optics
 light beams
 light modulation
 phase demodulators
 phase modulation
 ultrasonic light modulation
- Bragg curve**
 DEF A curve showing the average specific ionization of an ionizing particle of a particular kind as a function of its kinetic energy, velocity, or residual range.
 RT biological effects
 nuclear reactions
 particle interactions
 radiation effects
- Bragg gratings**
(added August 1997)
 GS gratings (spectra)
 . **Bragg gratings**
 RT apodization
 Bragg angle
 Bragg reflectors
 interferometers
 optical fibers
 optical filters
- Bragg mirrors*
(added August 1997)
 USE **Bragg reflectors**
- Bragg reflectors**
(added August 1997)
 UF *Bragg mirrors*
 GS reflectors
 . **Bragg reflectors**
 RT Bragg angle
 Bragg gratings
 DBR lasers
 gallium arsenides
 mirrors
 semiconductor lasers
- braided composites**
(added November 1992)
 GS composite materials
 . fiber composites
 . . **braided composites**
 RT carbon fiber reinforced plastics
 epoxy matrix composites
 graphite-epoxy composites
 reinforcing fibers
 three dimensional composites
 woven composites
- braille**
 DEF A system of writing that uses characters made up of raised dots. It was named after Louis Braille.
 RT blindness
- embossing
- brain**
 GS anatomy
 . nervous system
 . . central nervous system
 . . . **brain**
 brain stem
 cerebellum
 cerebral ventricles
 cerebrum
 cerebral cortex
 occipital lobes
 diencephalon
 hypothalamus
 pineal gland
 thalamus
 hippocampus
 RT angiography
 brain circulation
 brain damage
 cerebrospinal fluid
 echoencephalography
 electroencephalography
 encephalitis
 head (anatomy)
 information processing (biology)
 intracranial pressure
 neuroglia
 neurology
 pituitary gland
 psychiatry
 psychology
 rheoencephalography
 spinal cord
- brain circulation**
 GS circulation
 . blood circulation
 . . **brain circulation**
 RT brain
 rheoencephalography
- brain damage**
 GS injuries
 . **brain damage**
 RT brain
- brain stem**
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **brain stem**
- ∞ **brakes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT brakes (for arresting motion)
 brakes (forming or bending)
- brakes (for arresting motion)**
 UF *decelerators*
dragulators
 GS **brakes (for arresting motion)**
 . aerodynamic brakes
 . . ballutes
 . . drag chutes
 . . split flaps
 . . wing flaps
 . . . leading edge flaps
 . . . leading edge slats
 . . . trailing edge flaps
 . . . vortex flaps
 . aircraft brakes
 . . split flaps
 . . wing flaps
 . . . leading edge flaps
 . . . leading edge slats
 . . . trailing edge flaps
 . . . vortex flaps
 . wheel brakes
 RT abort apparatus
 antiskid devices
 ∞ arresters
 arresting gear

brakes (forming or bending)

∞ brakes
braking
cylindrical chambers
drag devices
flaps (control surfaces)
landing gear
nose wheels
parachutes
retarders (devices)
thrust reversal
towed bodies
vehicle wheels
wheels

brakes (forming or bending)

RT ∞ brakes
metal working

braking

RT brakes (for arresting motion)
deceleration
eddy currents
retarders (devices)
retarding
thrust reversal

branching (mathematics)

DEF The appearance of a new solution of a mathematical equation at some critical value of a parameter, as a result of which there may be more than one solution (different branches) of the equation. Used for bifurcation (mathematics)

UF *bifurcation (mathematics)*

GS **branching (mathematics)**

. period doubling

RT chaos
functions (mathematics)

∞ logic
mathematical logic
set theory
switching theory

branching (physics)

RT bifurcation (biology)
∞ physics

brasses

GS alloys
. copper alloys
. . **brasses**

Bravais crystals

GS crystals
. **Bravais crystals**
RT crystal growth
crystal lattices
crystal structure
packing density
single crystals

Brayton cycle

DEF A thermodynamic cycle consisting of two constant-pressure processes interspersed with two constant-entropy cycles. Named after George B. Brayton, American engineer.

GS cycles
. thermodynamic cycles
. . **Brayton cycle**

RT gas turbine engines
gas turbines
Rankine cycle
solar dynamic power systems

Brazil

GS nations
. **Brazil**
RT Amazon region (South America)
Brazilian space program
South America

Brazilian space program

DEF The space program of Brazil which is under the jurisdiction of the Instituto de Pesquisas Espaciais (INPE).

GS programs
. space programs

. . **Brazilian space program**
RT Brazil

brazing

GS welding
. fusion welding
. . gas welding
. . . **brazing**
. . . . low temperature brazing
RT fluxes
∞ joining
metal bonding
sealing
soldering
ultrasonic soldering

Brazzaville

USE **Congo (Brazzaville)**

breadboard models

DEF Assemblies of preliminary circuits or parts used to prove the feasibility of a device, circuit, system, or principle without regard to the final configuration or packaging of the parts.

GS models
. **breadboard models**

RT circuits
printed circuits
product development
prototypes

breakaway

USE **boundary layer separation**

∞ breakdown

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)

RT classifications
electrical faults
failure
gaps
metal working
system failures

breakers (electric)

USE **circuit breakers**

breaking

RT destruction
fragmentation
∞ separation

breakup (spacecraft)

USE **spacecraft breakup**

breakwaters

DEF Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.

UF *jetties*

. *sea walls*

RT concrete structures
harbors
littoral drift
littoral transport
oceanography
structural design
∞ structures
underwater engineering
underwater structures
water waves
∞ waves

∞ breathing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT argon-oxygen atmospheres
breathing apparatus
breathing vibration
emergency breathing techniques
expiration
helium-oxygen atmospheres
high altitude breathing
hypercapnia

hyperpnea
oxygen breathing
respiration
respiratory reflexes

breathing apparatus

GS **breathing apparatus**
. oxygen masks
. underwater breathing apparatus
RT ∞ breathing
∞ equipment
fire fighting
life support systems
oxygen supply equipment
portable life support systems
respirators

breathing vibration

GS vibration
. structural vibration
. . **breathing vibration**
RT bending vibration
∞ breathing
exhausting
missile vibration
venting

breccia

GS rocks
. **breccia**
RT ataxite
igneous rocks
regolith
sedimentary rocks
soils

breeder reactors

GS nuclear reactors
. **breeder reactors**
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . light water breeder reactors
. . liquid metal fast breeder reactors
RT Enrico Fermi atomic power plant
nuclear power reactors

breeding (reproduction)

RT fertility
genetics
heredity
reproduction (biology)

Breguet 940 aircraft

GS Breguet aircraft
. **Breguet 940 aircraft**
monoplanes
. **Breguet 940 aircraft**
research vehicles
. research aircraft
. . **Breguet 940 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 940 aircraft**
RT ∞ aircraft

Breguet 941 aircraft

GS Breguet aircraft
. **Breguet 941 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 941 aircraft**
monoplanes
. **Breguet 941 aircraft**
passenger aircraft
. **Breguet 941 aircraft**
transport aircraft
. cargo aircraft
. . **Breguet 941 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 941 aircraft**
RT ∞ aircraft

Breguet 1150 aircraft

UF *Atlantic aircraft*
GS antisubmarine warfare aircraft

- . **Breguet 1150 aircraft**
- attack aircraft
- . **Breguet 1150 aircraft**
- Breguet aircraft
- . **Breguet 1150 aircraft**
- jet aircraft
- . turboprop aircraft
- . . **Breguet 1150 aircraft**
- monoplanes
- . **Breguet 1150 aircraft**
- reconnaissance aircraft
- . **Breguet 1150 aircraft**
- RT ∞ aircraft

Breguet aircraft

- GS **Breguet aircraft**
- . Breguet 940 aircraft
- . Breguet 941 aircraft
- . Breguet 1150 aircraft
- RT ∞ aircraft
- Jaguar aircraft

bremsstrahlung

- DEF Electromagnetic radiation produced by the rapid change in the velocity of an electron or another fast, charged particle as it approaches an atomic nucleus and is deflected by it. In German it means braking radiation.
- GS electromagnetic radiation
- . **bremsstrahlung**
- RT Cerenkov radiation
- diffraction radiation
- electron photon cascades
- electron radiation
- far ultraviolet radiation
- gamma ray bursts
- gamma rays
- nuclear radiation
- relativistic plasmas
- synchrotron radiation
- x rays

Brewster angle

- GS geometry
- . Euclidean geometry
- . . angles (geometry)
- . . . **Brewster angle**
- RT polarization characteristics
- reflection
- refractivity

bricks

- DEF Solid masonry units of clay or shale, usually formed into a rectangular prism while plastic and burned or fired in a kiln. Bricks are ceramic products.
- GS masonry
- . **bricks**
- RT cements
- ceramics
- clays
- ∞ construction materials
- mortars (material)

∞ **bridges**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT bridges (landforms)
- bridges (structures)
- electric bridges
- liquid bridges

bridges (landforms)

- GS landforms
- . **bridges (landforms)**
- RT ∞ bridges
- geology
- ∞ ridges

bridges (structures)

- RT ∞ bridges
- construction
- construction industry
- crossings
- crossovers
- highways

- ramps (structures)
- ∞ structures
- towers

Bridgman method

- RT crystal growth
- ∞ methodology
- single crystals

brightness

- DEF The attribute of visual perception in accordance with which an area appears to emit more or less light.
- GS electromagnetic properties
- . optical properties
- . . **brightness**
- . . . sky brightness
- RT bistatic reflectivity
- brightness distribution
- color
- dimming
- emissivity
- flux (rate)
- glare
- human factors engineering
- illumination
- illuminating
- incandescence
- ∞ intensity
- light (visible radiation)
- limb brightening
- luminance
- luminescence
- luminosity
- luminous intensity
- luster
- radiance
- radiant flux density
- reflectance
- stellar luminosity
- visibility
- vision

brightness discrimination

- GS discrimination
- . sensory discrimination
- . . **brightness discrimination**
- RT ∞ illumination
- visual perception

brightness distribution

- DEF The statistical distribution based on brightness, or the distribution of brightness over the surface of an object.
- GS distribution (property)
- . **brightness distribution**
- electromagnetic properties
- . optical properties
- . . **brightness distribution**
- statistical distributions
- . **brightness distribution**
- RT astrophysics
- black body radiation
- brightness
- brightness temperature
- ∞ distribution
- galactic radiation
- photography
- radiant flux density
- radio astronomy
- solar granulation
- stellar luminosity

brightness temperature

- DEF In astrophysics, the temperature of a black body radiating the same amount of energy per unit area at the wavelengths under consideration as the observed body. The temperature of a nonblack body determined by measurement with an optical pyrometer.
- GS temperature
- . **brightness temperature**
- RT astrophysics
- black body radiation
- brightness distribution
- limb brightening

- meteorology
- photography
- radio astronomy
- temperature measurement

Brillouin effect

- RT ∞ effects
- frequency shift
- light scattering
- monochromatic radiation

Brillouin flow

- GS electric current
- . **Brillouin flow**
- RT beam currents
- electron beams
- electron optics
- ∞ flow
- traveling wave tubes

Brillouin zones

- GS regions
- . **Brillouin zones**
- RT band structure of solids
- conduction bands
- crystal lattices
- Fermi surfaces
- free electrons

Brillouin-Wigner equation

- RT ∞ equations

brines

- DEF Water saturated or strongly impregnated with common salt.
- RT coolants
- refrigerants
- salinity
- salt baths
- salt beds
- sea water

Brinkman number

- (added July 2001)
- DEF A dimensionless number expressing the ratio of viscous heating to convective heat transfer rates through the flow boundary.
- GS dimensionless numbers
- . **Brinkman number**
- ratios
- . **Brinkman number**
- RT channel flow
- convective heat transfer
- Couette flow
- Nusselt number
- viscous flow
- wall temperature

briquets

- RT blanks
- pellets
- tablets

Bristol-Siddeley BS 53 engine

- UF *Pegasus engine*
- GS engines
- . air breathing engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines
- **Bristol-Siddeley BS 53 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines
- **Bristol-Siddeley BS 53 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines

. **Bristol-Siddeley BS 53 engine**
 RT P-1127 aircraft

Bristol-Siddeley Olympus 593 engine
 GS engines

- . air breathing engines
- . gas turbine engines
- . jet engines
- . turbojet engines
- **Bristol-Siddeley Olympus 593 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . turbojet engines
 - **Bristol-Siddeley Olympus 593 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . turbojet engines
 - **Bristol-Siddeley Olympus 593 engine**

Bristol-Siddeley Viper engine
 GS engines

- . air breathing engines
- . gas turbine engines
- . jet engines
- . turbojet engines
- **Bristol-Siddeley Viper engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . turbojet engines
 - **Bristol-Siddeley Viper engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . turbojet engines
 - **Bristol-Siddeley Viper engine**

British Aircraft Corp aircraft
 USE **BAC aircraft**

British Columbia
 GS nations

- . Canada
- . . **British Columbia**

British Guinea
 USE **Guyana**

British Honduras
 USE **Belize**

brittle materials
 RT cleavage

- cracking (fracturing)
- embrittlement
- fracture strength
- granular materials
- hardness
- impact strength
- ∞ materials
- porous materials

brittle-ductile transition
 USE **ductile-brittle transition**

brittleness
 GS mechanical properties

- . **brittleness**

 RT Charpy impact test

- cleavage
- cold hardening
- crack closure
- crack initiation
- crack propagation
- cracking (fracturing)
- ductile-brittle transition
- ductility
- embrittlement
- fractography
- fracture strength

fracturing
 hardness
 impact strength
 impact tests
 notch strength
 notch tests
 toughness
 weldability

broadband
 UF *wideband*
 GS bandwidth

- . **broadband**
 - frequencies
 - . **broadband**
 - RT asynchronous transfer mode
 - ∞ bands
 - frequency response
 - log periodic antennas
 - narrowband
 - spiral antennas

broadband amplifiers
 GS amplifiers

- . **broadband amplifiers**
 - RT bandwidth
 - frequencies
 - wideband communication

broadcasting
 UF *radio broadcasting*
 GS telecommunication

- . **broadcasting**
 - RT communication networks
 - direct broadcast satellites
 - radio communication
 - radio equipment
 - radio signals
 - radio transmission
 - Symphonie satellites
 - transmission
 - Voice of America

broken symmetry
 DEF Phenomena where a loss of symmetry is present such as in piezoelectricity. Used for symmetry breaking.

- UF *symmetry breaking*
- GS symmetry
 - . **broken symmetry**
 - . . CP violation
- RT grand unified theory
- Higgs bosons
- mathematical models
- supergravity
- supersymmetry
- theoretical physics

bromates
 GS halogen compounds

- . bromine compounds
- . . **bromates**
 - RT ∞ oxygen compounds

bromides
 GS halogen compounds

- . bromine compounds
- . . **bromides**
 - . . . ammonium bromides
 - . . . cesium bromides
 - . . . chromium bromides
 - . . . dibromides
 - . . . hydrobromic acid
 - . . . hydrobromides
 - . . . magnesium bromides
 - . . . potassium bromides
 - . . . silver bromides
 - . . . sodium bromides
 - . . . strontium bromides
 - . halides
 - . . **bromides**
 - . . . ammonium bromides
 - . . . cesium bromides
 - . . . chromium bromides
 - . . . dibromides
 - . . . hydrobromic acid

. . . hydrobromides
 . . . magnesium bromides
 . . . potassium bromides
 . . . silver bromides
 . . . sodium bromides
 . . . strontium bromides
 RT salt beds

bromination
 GS chemical reactions

- . halogenation
- . . **bromination**

bromine
 GS chemical elements

- . halogens
- . . **bromine**
 - . . . bromine isotopes

bromine 82
 USE **bromine isotopes**

bromine 87
 USE **bromine isotopes**

bromine compounds
 GS halogen compounds

- . **bromine compounds**
 - . bromates
 - . bromides
 - . . ammonium bromides
 - . . cesium bromides
 - . . chromium bromides
 - . . dibromides
 - . . hydrobromic acid
 - . . hydrobromides
 - . . magnesium bromides
 - . . potassium bromides
 - . . silver bromides
 - . . sodium bromides
 - . . strontium bromides
 - . halon
- RT ∞ chemical compounds
- halocarbons
- polybrominated biphenyls

bromine isotopes
 UF *bromine 82*
bromine 87
 GS chemical elements

- . halogens
- . bromine
 - . . . **bromine isotopes**
 - . nuclides
 - . isotopes
 - . . . **bromine isotopes**

bronchi
 UF *bronchial tubes*
 GS anatomy

- . respiratory system
- . . **bronchi**
 - RT lungs
 - trachea
 - ∞ tubes

bronchial tubes
 USE **bronchi**

bronzes
 GS alloys

- . copper alloys
- . . **bronzes**

Brorsen-Metcalf comet
(added May 1991)
 GS celestial bodies

- . comets
- . . **Brorsen-Metcalf comet**
 - RT solar system

broths
 RT ∞ food

- nutrition
- brown dwarf stars**
(added March 1989)
GS celestial bodies
. stars
. . **brown dwarf stars**
RT companion stars
cool stars
dwarf stars
massive compact halo objects
protostars
stellar evolution
- brown wave effect**
RT annual variations
botany
chlorophylls
∞ effects
foliage
leaves
- Brownian movements**
RT colloids
dispersions
Einstein equations
emulsions
Fokker-Planck equation
∞ motion
∞ suspensions
- Bruceton test*
USE **statistical tests**
- brucite**
GS chalcogenides
. oxides
. . **brucite**
magnesium compounds
. **brucite**
minerals
. **brucite**
- Bruderheim meteorite**
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Bruderheim meteorite**
- Brunei**
GS nations
. **Brunei**
RT Asia
- Brunt-Vaisala frequency**
DEF The frequency at which an air parcel will oscillate when subjected to an infinitesimal perturbation in a stably stratified atmosphere.
GS constraints
. meteorological parameters
. . **Brunt-Vaisala frequency**
frequencies
. **Brunt-Vaisala frequency**
RT air currents
air flow
air masses
atmospheric circulation
atmospheric physics
atmospheric stratification
oscillations
- brush (botany)**
UF *scrubs (botany)*
GS plants (botany)
. **brush (botany)**
. . chaparral
RT botany
defoliation
Earth resources
guayule
herbicides
- brush seals**
(added July 1991)
GS seals (stoppers)
- . **brush seals**
RT leakage
- brushes**
GS **brushes**
. brushes (electrical contacts)
RT electric contacts
electric generators
electric motors
- brushes (electrical contacts)**
DEF Conductive metal or carbon blocks moved to make sliding electrical contact with a moving part as in an electric motor.
GS brushes
. **brushes (electrical contacts)**
RT electric contacts
electric generators
electric motors
- Bryophytes**
UF *liverworts*
mosses
GS plants (botany)
. **Bryophytes**
- BSCCO superconductors**
(added March 1993)
UF *Bi-Sr-Ca-Cu-O superconductors*
GS chalcogenides
. oxides
. . metal oxides
. . . mixed oxides
. . . . **BSCCO superconductors**
conductors
. superconductors (materials)
. . high temperature superconductors
. . . **BSCCO superconductors**
RT bismuth oxides
calcium oxides
copper oxides
cuprates
strontium oxides
superconducting films
- BSX**
GS explosives
. **BSX**
RT nitromethane
- bubble chambers**
DEF Devices used for the detection and study of elementary particles and nuclear reactions. Charged particles from an accelerator are introduced into a superheated liquid, each forming a trail of bubbles along its path.
GS ionization chambers
. **bubble chambers**
RT ∞ chambers
cloud chambers
elementary particles
particle trajectories
radiation counters
spark chambers
- bubble memory devices**
GS computer components
. computer storage devices
. . **bubble memory devices**
magnetic storage
. **bubble memory devices**
RT binary data
core storage
data processing
data recorders
data recording
data storage
magnetic cores
magnetic domains
magnetic recording
magnetic switching
- bubble technique**
GS technologies
. **bubble technique**
RT data recorders
- electronic equipment
flight instruments
∞ instruments
magnetic domains
onboard equipment
recording instruments
semiconductor devices
solid state devices
spacecraft instruments
- bubbles**
DEF Internal voids or trapped globules of air or other gas.
RT aeration
cavitation flow
Coanda effect
effervescence
foams
metal foams
thermocapillary migration
wakes
- Buccaneer aircraft**
UF *B-103 aircraft*
Blackburn B-103 aircraft
GS attack aircraft
. **Buccaneer aircraft**
Hawker Siddeley aircraft
. **Buccaneer aircraft**
jet aircraft
. **Buccaneer aircraft**
monoplanes
. **Buccaneer aircraft**
RT ∞ aircraft
Harrier aircraft
- bucket brigade devices**
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **bucket brigade devices**
RT charge coupled devices
semiconductors (materials)
- ∞ **buckets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT boxes (containers)
∞ capsules
drums (containers)
trays
turbomachine blades
- buckeye aircraft*
USE **T-2 aircraft**
- buckling**
DEF An unstable state of equilibrium of a thin-walled body stemming from compressive stresses in walls. The lateral deflection of a thin-walled body resulting from such instability.
GS **buckling**
. creep buckling
. elastic buckling
. Euler buckling
. thermal buckling
RT bending
collapse
compression loads
deformation
distortion
Donnell equations
failure
failure modes
flange wrinkling
heaving
kink bands
kinking
∞ ridges
shell stability
stresses
structural failure
structural strain
temperature inversions
torsion

buckminsterfullerene

twisting
warpage
wrinkling

buckminsterfullerene

(added August 1991)

DEF A form of solid carbon consisting of a somewhat disordered hexagonal close packing of soccer-ball-shaped C60 molecules. The molecules are extremely hard pseudospherical molecules bonded by weak Van der Waals forces.

GS fullerenes

. **buckminsterfullerene**

RT carbon
graphite
molecules
polyatomic molecules
polyhedrons

budgeting

RT accounting
allocations
appropriations
∞ budgets
cost analysis
cost effectiveness
cost estimates
economic factors
estimating
financial management
forecasting
grants
income
mission planning
planning
procurement management
project planning
revenue

∞ budgets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT budgeting
Earth radiation budget
energy budgets
engineering management
federal budgets
foreign policy
heat budget
procurement management
research management

Buffalo aircraft

USE **DHC 5 aircraft**

buffer storage

DEF In computer operations, storage used to compensate for a difference in rate of flow or time of occurrence when transferring information from one device to another.

GS computer components
. computer storage devices
. . **buffer storage**

RT ∞ buffers
core storage
data storage
∞ storage

∞ buffers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT buffer storage
buffers (chemistry)

buffers (chemistry)

RT bases (chemical)
∞ buffers
chemical equilibrium
neutralizers
pH

buffeting

DEF The beating of an aerodynamic structure or surfaces by unsteady flow, gusts, etc.; the irregular shaking or oscillation of a vehicle

component owing to turbulent air or separated flow.

RT aerodynamic stability
aircraft stability
boundary layer control
compressibility effects
flight characteristics
flutter
oscillating flow
shaking
spacecraft motion
spacecraft stability
Strouhal number
turbulence effects
vortex avoidance

building materials

USE **construction materials**

building structures

USE **buildings**

buildings

DEF Structures erected and framed of component structural members designed for the housing, shelter or support of persons, animals, or property. Used for building structures.

UF *building structures*

RT architecture
basements
ceilings (architecture)
chimneys
construction
construction industry
floors
greenhouses
hangars
indoor air pollution
inflatable structures
missile silos
museums
roofs
shelters
solar houses
stairways
Starsite program
walls

bulbs

RT luminaires
plant roots
pressure vessels
syringes

Bulgaria

GS nations
. **Bulgaria**
RT Black Sea
Europe

bulging

GS metal working
. **bulging**
RT deep drawing
dimpling
explosive forming
forging
hot working
magnetic forming
metal drawing
stretch forming

bulk acoustic wave devices

DEF Acoustooptic devices utilizing bulk sound waves at megahertz frequencies in thin film transducers. Used for B-A-W devices.

UF *B-A-W devices*

RT ∞ devices
surface acoustic wave devices
transducers

bulk modulus

DEF The reciprocal of the coefficient of compressibility.

GS mechanical properties
. **bulk modulus**

RT compressibility
density (mass/volume)

bulkheads

DEF Steep or vertical structures supporting natural or artificial embankments.

GS walls

. **bulkheads**

RT ∞ barriers
end plates
hulls (structures)
partitions (structures)
reinforcement (structures)
thick walls
thin walls

Bullpup missiles

GS missiles
. air to surface missiles
. . **Bullpup missiles**
RT LR-62-RM-2 engine

Bumblebee project

GS missiles
. **Bumblebee project**
programs
. projects
. . **Bumblebee project**
RT Talos missile
tartar missile
terrier missile
Typhon weapon system

bumpers

RT cushions
meteoroid protection
meteoroids
protectors

bumpy toruses

DEF The shapes (doughnuts) of certain plasmas.

RT fusion reactors
plasma control
plasma heating
tokamak devices
toroidal plasmas

Buna (trademark)

GS elastomers
. rubber
. . synthetic rubbers
. . . **Buna (trademark)**
RT butadiene
styrenes

bunching

GS **bunching**
. electron bunching
RT queueing theory
space charge
velocity modulation

bundle drawing

RT ∞ drawing
metal drawing

bundles

RT ∞ containers
packages
umbilical connectors
wiring

bunkers (fuel)

GS tanks (containers)
. **bunkers (fuel)**
RT fuel systems

buoyancy

RT acoustic levitation
aerostatics
ballast (mass)
buoyancy-driven flow
density (mass/volume)
floating
gas density

levitation
 mechanical properties
 neutral buoyancy simulation
 ∞ physical properties
 porosity
 Rayleigh number
 voids

buoyancy-driven flow
(added June 2002)
 DEF Convective fluid flow induced by buoyant forces.
 GS fluid flow
 . convective flow
 . . **buoyancy-driven flow**
 RT buoyancy
 convection
 crystal growth
 Rayleigh-Benard convection

buoys
 RT beacons
 compasses
 floats
 ∞ markers
 navigation aids
 ocean data acquisitions systems

Buran space shuttle
(added August 1989)
 GS manned spacecraft
 . space shuttles
 . . **Buran space shuttle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . space shuttles
 **Buran space shuttle**
 soft landing spacecraft
 . **Buran space shuttle**
 Soviet spacecraft
 . **Buran space shuttle**
 RT aerospace planes
 U. S. S. R. space program

bureaus (organizations)
 GS institutions
 . **bureaus (organizations)**
 organizations
 . federations
 . . **bureaus (organizations)**
 RT programs
 projects
 teams
 university program

burettes
 GS measuring instruments
 . **burettes**
 RT glassware
 pipettes
 ∞ tubes

Burger equation
 GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **Burger equation**
 RT continuum mechanics
 ∞ equations
 Navier-Stokes equation
 shock wave propagation

Burkina
 UF *Upper Volta*
 GS nations
 . **Burkina**
 RT Africa

Burma
 GS nations
 . **Burma**

RT Asia

burners
 RT afterburning
 chemical reactors
 combustion chambers
 diffusion welding
 fuel injection
 furnaces
 incinerators
 waste energy utilization

Burnett equations
(added March 1996)
 SN (These equations are frequently associated with models of hypersonic flow and shock waves.)
 GS equations of motion
 . kinetic equations
 . . hydrodynamic equations
 . . . **Burnett equations**
 flow equations
 . **Burnett equations**
 RT Boltzmann transport equation
 Chapman-Enskog theory
 computational fluid dynamics
 hypersonic flow
 shock waves

burn-in
 RT failure
 failure analysis
 integrated circuits
 quality control

burning
 USE **combustion**

burning process
 USE **combustion**

burning rate
 DEF The velocity at which a solid propellant in a rocket is consumed. The symbol is r .
 GS rates (per time)
 . **burning rate**
 RT burnout
 combustion
 combustion control
 combustion efficiency
 combustion stability
 explosives
 flame propagation
 flammability
 fuel consumption
 fuel-air ratio
 fuels
 pressure dependence
 propellant consumption
 propellant grains
 propellants
 smoldering
 solid propellant combustion
 solid propellant rocket engines
 solid rocket propellants
 velocity coupling

burning time
 UF *firing time*
 GS time
 . **burning time**
 RT combustion
 combustion efficiency
 firing (igniting)
 flight optimization
 flight time
 rocket engines
 rocket firing
 testing time
 thrust
 windows (intervals)

burnout
 SN (LIMITED TO TERMINATION OF COMBUSTION IN A ROCKET ENGINE BECAUSE OF EXHAUSTION OF THE PROPELLANT)

DEF The termination of combustion in a rocket engine because of exhaustion of the propellant.
 RT booster rocket engines
 burning rate
 combustion
 ∞ cut-off
 erosive burning
 extinguishing
 solid propellant rocket engines
 thrust termination

burns (injuries)
 GS injuries
 . **burns (injuries)**
 RT crash injuries
 fires
 laser damage
 lesions
 radiation injuries

burnthrough (failure)
 GS failure
 . **burnthrough (failure)**
 RT ablation
 damage
 melting
 perforating

burst tests
 GS destructive tests
 . **burst tests**
 RT containment
 failure analysis
 fracture mechanics
 fracture strength
 ∞ materials tests
 pressure vessels

bursts
 GS **bursts**
 . gamma ray bursts
 . radio bursts
 . . solar radio bursts
 . . . type 2 bursts
 . . . type 3 bursts
 . . . type 4 bursts
 . . . type 5 bursts
 RT ∞ disturbances
 emission
 explosions
 fragmentation
 implosions
 rupturing

bursts (communication)
(added December 1996)
 USE **packets (communication)**

Burundi
 UF *Ruanda-Urundi*
 GS nations
 . **Burundi**
 RT Africa
 Rwanda

bus conductors
 GS conductors
 . **bus conductors**
 RT electric wire
 flat conductors
 power lines
 ∞ power transmission

bushings
 RT bearings
 inserts
 linings
 shafts (machine elements)
 spacers

business management
 USE **industrial management**

butadiene
 UF *vinyl ethylene*

butanes

- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - dienes
 - **butadiene**
- RT Buna (trademark)
 - hydrocarbon fuels
 - polybutadiene

butanes

- UF *isobutane*
- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - alkanes
 - **butanes**
- RT petroleum products

butenes

- UF *butylene*
 - isobutylene*
- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - alkenes
 - **butenes**

butt joints

- GS joints (junctions)
 - . **butt joints**
- RT lap joints
 - metal joints

- riveted joints
- soldered joints
- welded joints

butterfly valves

- GS valves
 - . **butterfly valves**
 - . . dampers (valves)

buttes

- GS landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . mesas
 - **buttes**

∞ buttons

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT manual control

butylene

- USE **butenes**

butylene oxides

- USE **tetrahydrofuran**

butyric acid

- GS acids
 - . **butyric acid**

- RT fermentation

BWB configurations

(added April 2001)

- USE **blended-wing-body configurations**

bypass ratio

DEF Ratio of the secondary to the primary inlet airflows for a turbofan engine.

- GS ratios

. bypass ratio

- RT air intakes
 - engine inlets
 - flow geometry
 - hypersonic inlets
 - inlet airframe configurations
 - inlet flow
 - inlet nozzles
 - intake systems
 - nose inlets
 - side inlets
 - supersonic inlets

bypasses

- UF *shunts*
- RT diverters
 - relief valves

by-products

- RT materials recovery
 - products
 - reaction products
 - wastes

C

C (programming language)

(added July 1988)

- GS languages
 - . programming languages
 - . . high level languages
 - . . . **C (programming language)**
- RT C++ (programming language)
 - compilers
 - computer programming
 - expert systems

C band

- SN (3.9 TO 6.2 GHz)
- GS frequencies
 - . radio frequencies
 - . . microwave frequencies
 - . . . **C band**
- RT millimeter waves
 - superhigh frequencies

C stars

- USE **carbon stars**

C-1A aircraft

- UF *Trader aircraft*
- GS Grumman aircraft
 - . **C-1A aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-1A aircraft**
- RT ∞ aircraft
 - ∞ military aircraft

C-2 aircraft

- UF *COD aircraft*
- GS Grumman aircraft
 - . **C-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **C-2 aircraft**
 - monoplanes
 - . **C-2 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-2 aircraft**
- RT ∞ aircraft

C-5 aircraft

- UF *Galaxy aircraft*
- Lockheed *C-5 aircraft*
- GS jet aircraft
 - . **C-5 aircraft**
 - Lockheed aircraft
 - . **C-5 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-5 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-8A augmentor wing aircraft

- DEF NASA's research, short haul, jet aircraft.
- GS jet aircraft
 - . **C-8A augmentor wing aircraft**
 - research vehicles
 - . research aircraft
 - . . **C-8A augmentor wing aircraft**
 - transport aircraft
 - . short haul aircraft
 - . . **C-8A augmentor wing aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-8A augmentor wing aircraft**
- RT ∞ aircraft

C-9 aircraft

- GS jet aircraft
 - . **C-9 aircraft**
 - McDonnell Douglas aircraft

- . Douglas aircraft
- . . **C-9 aircraft**
- McDonnell aircraft
- . . **C-9 aircraft**
- transport aircraft
- . cargo aircraft
- . . **C-9 aircraft**
- RT ∞ aircraft
 - evacuating (transportation)

C-15 aircraft

- UF *YC-15 aircraft*
- GS transport aircraft
 - . cargo aircraft
 - . . **C-15 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-15 aircraft**
- RT ∞ aircraft

C-17 aircraft

- (added August 1995)
- GS McDonnell Douglas aircraft
 - . **C-17 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-17 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-33 aircraft

- UF *Beech C-33 aircraft*
- Debonair aircraft*
- GS Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - general aviation aircraft
 - . **C-33 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - monoplanes
 - . **C-33 aircraft**
 - passenger aircraft
 - . **C-33 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-33 aircraft**
- RT ∞ aircraft

C-35 aircraft

- UF *Beech S-35 aircraft*
- Bonanza aircraft*
- GS Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - general aviation aircraft
 - . **C-35 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - monoplanes
 - . **C-35 aircraft**
 - passenger aircraft
 - . **C-35 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-35 aircraft**
- RT ∞ aircraft

C-46 aircraft

- UF *Commando aircraft*
- Curtiss C-46 aircraft*
- GS Curtiss-Wright aircraft
 - . **C-46 aircraft**
 - monoplanes
 - . **C-46 aircraft**
 - passenger aircraft
 - . **C-46 aircraft**
 - transport aircraft
 - . cargo aircraft

- . . **C-46 aircraft**
- RT ∞ aircraft

C-47 aircraft

- UF *Dakota aircraft*
- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-47 aircraft**
 - monoplanes
 - . **C-47 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-47 aircraft**
- RT ∞ aircraft

C-54 aircraft

- UF *R5D aircraft*
- Skymaster aircraft*
- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-54 aircraft**
 - monoplanes
 - . **C-54 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-54 aircraft**
- RT ∞ aircraft

C-118 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-118 aircraft**
 - monoplanes
 - . **C-118 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-118 aircraft**
- RT ∞ aircraft

C-119 aircraft

- GS Fairchild-Hiller aircraft
 - . **C-119 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-119 aircraft**
- RT ∞ aircraft

C-121 aircraft

- UF *EC-121 aircraft*
- Lockheed Constellation aircraft*
- R7V aircraft*
- Warning Star aircraft*
- GS Lockheed aircraft
 - . **C-121 aircraft**
 - monoplanes
 - . **C-121 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-121 aircraft**
- RT ∞ aircraft
 - passenger aircraft

C-123 aircraft

- UF *Provider aircraft*
- YC-123 aircraft*
- GS Fairchild-Hiller aircraft
 - . **C-123 aircraft**
 - monoplanes
 - . **C-123 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-123 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-123 aircraft**
- RT ∞ aircraft

C-124 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft

C-130 aircraft

- . . **C-124 aircraft**
 - monoplanes
 - . **C-124 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-124 aircraft**
- RT ∞ aircraft
- C-130 aircraft**
 - UF *GC-130 aircraft*
 - Hercules aircraft*
 - JC-130 aircraft*
 - KC-130 aircraft*
 - NC-130 aircraft*
 - GS jet aircraft
 - . turboprop aircraft
 - . . **C-130 aircraft**
 - Lockheed aircraft
 - . **C-130 aircraft**
 - monoplanes
 - . **C-130 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-130 aircraft**
 - RT ∞ aircraft
 - T-56 engine
- C-131 aircraft**
 - UF *Samaritan aircraft*
 - GS General Dynamics aircraft
 - . **C-131 aircraft**
 - monoplanes
 - . **C-131 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-131 aircraft**
 - RT ∞ aircraft
- C-133 aircraft**
 - UF *Cargomaster aircraft*
 - GS jet aircraft
 - . turboprop aircraft
 - . . **C-133 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-133 aircraft**
 - monoplanes
 - . **C-133 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-133 aircraft**
 - RT ∞ aircraft
 - T-34 engine
- C-135 aircraft**
 - UF *EC-135 aircraft*
 - KC-135 aircraft*
 - Stratotanker aircraft*
 - GS Boeing aircraft
 - . **C-135 aircraft**
 - jet aircraft
 - . **C-135 aircraft**
 - monoplanes
 - . **C-135 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-135 aircraft**
 - RT Advanced Range Instrumentation Aircraft
 - ∞ aircraft
 - turbofan aircraft
- C-140 aircraft**
 - UF *Jet Star aircraft*
 - GS jet aircraft
 - . **C-140 aircraft**
 - Lockheed aircraft
 - . **C-140 aircraft**
 - monoplanes
 - . **C-140 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-140 aircraft**

RT ∞ aircraft

C-141 aircraft

- UF *Starlifter aircraft*
- GS jet aircraft
 - . turbofan aircraft
 - . . **C-141 aircraft**
 - Lockheed aircraft
 - . **C-141 aircraft**
 - monoplanes
 - . **C-141 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-141 aircraft**
- RT ∞ aircraft
 - Kuiper Airborne Observatory
 - turbofan engines

C-142 aircraft

USE **XC-142 aircraft**

C-160 aircraft

- UF *Transall C-160 aircraft*
- GS Hamburger aircraft
 - . **C-160 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **C-160 aircraft**
 - monoplanes
 - . **C-160 aircraft**
 - Nord aircraft
 - . **C-160 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-160 aircraft**
- RT ∞ aircraft
 - turboprop engines

C++ (programming language)

- (added October 1991)
- GS languages
 - . programming languages
 - . . high level languages
 - . . . **C++ (programming language)**
- RT C (programming language)
 - Java (programming language)
 - object-oriented programming

cabin atmospheres

- GS controlled atmospheres
 - . **cabin atmospheres**
 - . . spacecraft cabin atmospheres
- RT aircraft compartments
 - ∞ atmospheres
 - cockpits
 - environmental control
 - oxygen supply equipment
 - pressurized cabins
 - space capsules

∞ cabins

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft compartments
 - cockpits
 - pressurized cabins
 - spacecraft cabins

cable force recorders

- GS recording instruments
 - . **cable force recorders**
- RT ∞ recorders
 - strain gages
 - tensiometers

cable television

- (added December 1990)
- UF *CATV*
- GS television systems
 - . **cable television**
 - closed circuit television
 - communication cables

television transmission

∞ cables

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cables (ropes)
 - coaxial cables
 - communication cables
 - power lines
 - submarine cables
 - tetherlines
 - transmission lines

cables (ropes)

- RT ∞ belts
 - ∞ cables
 - chains
 - cordage
 - fasteners
 - reels
 - strands
 - towing
 - wire

CAD (design)

USE **computer aided design**

cadastral mapping

DEF Large-scale mapping for showing the boundaries of subdivisions of land, usually with the directions and lengths thereof and the areas of individual tracts, compiled for the purpose of describing and recording ownership. The map may also show culture, drainage, and other features related to the use of the land.

- GS mapping
 - . **cadastral mapping**
- RT geography
 - maps
 - thematic mapping

cadmium

- GS chemical elements
 - . **cadmium**
 - . . cadmium isotopes
 - metals
 - . transition metals
 - . . **cadmium**
 - . . . cadmium isotopes
- RT heavy metals

cadmium 114

USE **cadmium isotopes**

cadmium alloys

- GS alloys
 - . **cadmium alloys**
- RT bearing alloys

cadmium antimonides

- GS antimony compounds
 - . antimonides
 - . . **cadmium antimonides**
 - cadmium compounds
 - . **cadmium antimonides**

cadmium chlorides

- GS cadmium compounds
 - . **cadmium chlorides**
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **cadmium chlorides**
 - . halides
 - . . chlorides
 - . . . **cadmium chlorides**
 - . . metal halides
 - . . . **cadmium chlorides**

cadmium compounds

- GS **cadmium compounds**
 - . cadmium antimonides
 - . cadmium chlorides
 - . cadmium fluorides
 - . cadmium selenides

- . cadmium sulfides
- . cadmium tellurides
- RT ∞ chemical compounds
- ∞ Group 2B compounds
- ∞ metal compounds

cadmium fluorides

- GS cadmium compounds
- . **cadmium fluorides**
- halogen compounds
- . fluorine compounds
- . . . fluorides
- metal fluorides
- **cadmium fluorides**
- . halides
- . . . fluorides
- metal fluorides
- **cadmium fluorides**
- . . . metal halides
- metal fluorides
- **cadmium fluorides**

cadmium isotopes

- UF *cadmium 114*
- GS chemical elements
- . cadmium
- . . **cadmium isotopes**
- . nuclides
- . . isotopes
- . . . **cadmium isotopes**
- metals
- . transition metals
- . . cadmium
- . . . **cadmium isotopes**

cadmium mercury tellurides

- USE **mercury cadmium tellurides**

cadmium nickel batteries

- USE **nickel cadmium batteries**

cadmium selenides

- GS cadmium compounds
- . **cadmium selenides**
- chalcogenides
- . selenides
- . . **cadmium selenides**
- selenium compounds
- . selenides
- . . **cadmium selenides**

cadmium silver batteries

- USE **silver cadmium batteries**

cadmium sulfides

- GS cadmium compounds
- . **cadmium sulfides**
- chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**

cadmium tellurides

- GS cadmium compounds
- . **cadmium tellurides**
- chalcogenides
- . tellurides
- . . **cadmium tellurides**
- tellurium compounds
- . tellurides
- . . **cadmium tellurides**

caffeine

- GS bases (chemical)
- . alkaloids
- . . **caffeine**
- drugs
- . stimulants
- . . **caffeine**
- fungicides
- . xanthines
- . . **caffeine**

nitrogen compounds

- . alkaloids
- . . **caffeine**
- . xanthines
- . . **caffeine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **caffeine**
- . . . purines
- xanthines
- **caffeine**

CAI

- USE **computer assisted instruction**

caissons

- RT construction
- foundations

Cajun rocket vehicle

- GS rocket vehicles
- . sounding rockets
- . . **Cajun rocket vehicle**
- RT Nike-Cajun rocket vehicle
- solid propellant rocket engines
- sondes

calciferol

- UF *vitamin D*
- GS organic compounds
- . lipids
- . . **calciferol**
- vitamins
- . **calciferol**

calcification

- RT arthritis
- bones

calcination

- USE **roasting**

calcite

- GS calcium compounds
- . calcium carbonates
- . . **calcite**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **calcite**
- minerals
- . **calcite**
- RT aragonite
- birefringence

calcium

- GS chemical elements
- . **calcium**
- . . calcium isotopes
- metals
- . **calcium**
- . . calcium isotopes
- RT calmodulin
- gypsum

calcium 45

- USE **calcium isotopes**

calcium carbonates

- GS calcium compounds
- . **calcium carbonates**
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- carbon compounds
- . carbonates
- . . **calcium carbonates**
- . . . akermanite
- . . . aragonite
- . . . calcite
- . . . chalk
- RT bone mineral content

limestone

calcium chlorides

- GS calcium compounds
- . **calcium chlorides**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **calcium chlorides**
- . halides
- . . chlorides
- . . . **calcium chlorides**
- . . metal halides
- . . . **calcium chlorides**

calcium compounds

- GS **calcium compounds**
- . calcium carbonates
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- . . calcium chlorides
- . . calcium fluorides
- . . . fluorspar
- . . calcium oxides
- . . . akermanite
- . . calcium phosphates
- . . calcium silicates
- . . . gehlenite
- . . calcium sulfides
- . . calcium tungstates
- . . calcium vanadates
- . . fluorite
- . . merwinite
- . . monticellite
- . . perovskites
- . . scheelite
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds

calcium fluorides

- GS calcium compounds
- . **calcium fluorides**
- . . fluorspar
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . difluorides
- **calcium fluorides**
- fluorspar
- metal fluorides
- **calcium fluorides**
- fluorspar
- metal fluorides
- **calcium fluorides**
- fluorspar
- metal halides
- metal fluorides
- **calcium fluorides**
- fluorspar

calcium isotopes

- UF *calcium 45*
- GS chemical elements
- . calcium
- . . **calcium isotopes**
- . nuclides
- . . isotopes
- . . . **calcium isotopes**
- metals
- . calcium
- . . **calcium isotopes**

calcium metabolism

- GS metabolism
- . **calcium metabolism**
- RT bed rest
- calmodulin
- osteoporosis

calcium oxides

parathyroid gland
thyroid gland

calcium oxides
UF *lime*
GS calcium compounds
 . **calcium oxides**
 . . akermanite
 . . chalcogenides
 . . oxides
 . . metal oxides
 . . . alkaline earth oxides
 **calcium oxides**
 akermanite
RT BSCCO superconductors

calcium phosphates
UF *apatites*
GS calcium compounds
 . **calcium phosphates**
 phosphorus compounds
 . phosphates
 . . **calcium phosphates**
RT bone mineral content

calcium silicates
GS calcium compounds
 . **calcium silicates**
 . . gehlenite
 silicon compounds
 . silicates
 . . **calcium silicates**
 . . . gehlenite
RT amphiboles
minerals

calcium sulfides
GS calcium compounds
 . **calcium sulfides**
 chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . **calcium sulfides**
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . **calcium sulfides**

calcium tungstates
GS calcium compounds
 . **calcium tungstates**
 tungsten compounds
 . tungstates
 . . **calcium tungstates**

calcium vanadates
GS calcium compounds
 . **calcium vanadates**
 vanadium compounds
 . vanadates
 . . **calcium vanadates**

calculation
USE **computation**

calculators
RT arithmetic
computation
computers

calculi
UF *renal calculi*
GS deposits
 . **calculi**
 . . dental calculi
RT lithiasis
urolithiasis

calculus
SN (LIMITED TO MATHEMATICS)
GS analysis (mathematics)
 . **calculus**
 . . continuity (mathematics)
 . . differential calculus
 . . Fourier-Bessel transformations
 . . Graeff calculus

. . integral calculus
. . limits (mathematics)
. . series (mathematics)
. . . asymptotic series
. . . Campbell-Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. MaLaurin series
. . . progressions
. . . Prony series
. . . sine series
. . vector analysis
. . collinearity
. . coplanarity
. . curl (vectors)
. . . . vorticity
RT analytic geometry
asymptotes
differential equations
functions (mathematics)
∞ mathematics
monotone functions
operational calculus
real variables

calculus of variations

UF *variation method*
GS analysis (mathematics)
 . real variables
 . . **calculus of variations**
RT Biot method
Castigliano variational theorem
differential equations
Euler-Lagrange equation
integral equations
invariant imbeddings
Jacobi matrix method
maxima
operational calculus
pontryagin principle
steepest descent method
variational principles

calderas

DEF Large, basin-shaped volcanic depressions, more or less circular in form, the diameter of which is many times greater than that of the included vent or vents.
GS landforms
 . **calderas**
RT cones (volcanoes)
craters
lava
Mars volcanoes
volcanic eruptions
volcanoes
volcanology

calendars

DEF Orderly arrangements of days, weeks, months, etc. to suit a particular need such as civil life.
GS **calendars**
 . crop calendars
RT month
scheduling
time

calibrating

UF *graduation*
GS **calibrating**
 . intercalibration
 . wind tunnel calibration
RT accuracy
instrument compensation
instrument errors
measuring instruments
∞ scaling
Solar Cell Calibration Facility
standardization
standards

temperature scales

California

GS nations
 . United States
 . . **California**
RT Cascade Range (CA-OR-WA)
Coachella Valley (CA)
coastal ranges (CA)
Death Valley (CA)
Feather River Basin (CA)
Great Basin (US)
Imperial Valley (CA)
Lake Tahoe (CA-NV)
Mojave Desert (CA)
Monterey Bay (CA)
Palo Verde Valley (CA)
Peninsular Ranges (CA)
Sacramento Valley (CA)
Salton Sea (CA)
San Andreas Fault
San Francisco (CA)
San Francisco Bay (CA)
San Joaquin Valley (CA)
San Pablo Bay (CA)
Sierra Nevada Mountains (CA)
Southern California

californium

GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **californium**
 californium isotopes
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **californium**
 californium isotopes
 metals
 . actinide series
 . . transuranium elements
 . . . **californium**
 californium isotopes
RT californium compounds

californium 252

USE **californium isotopes**

californium compounds

GS actinide series compounds
 . **californium compounds**
RT californium

californium isotopes

UF *californium 252*
GS chemical elements
 . actinide series
 . . transuranium elements
 . . . californium
 **californium isotopes**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 californium
 **californium isotopes**
 metals
 . actinide series
 . . transuranium elements
 . . . californium
 **californium isotopes**

Callisto

DEF A satellite of Jupiter orbiting at a mean distance of 1,884,000 kilometers. Also called Jupiter IV.
GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Callisto**
 . . . Jupiter satellites
 . . . Galilean satellites
 **Callisto**
RT Charon

- extraterrestrial oceans
- Ganymede
- Io
- Jupiter (planet)
- calmodulin**
 - GS biopolymers
 - . proteins
 - . . **calmodulin**
 - organic compounds
 - . proteins
 - . . **calmodulin**
 - RT calcium
 - calcium metabolism
 - cytoplasm
 - gravitropism
 - regulatory mechanisms (biology)
- caloric requirements**
 - GS nutritional requirements
 - . **caloric requirements**
 - RT diets
 - ∞ food
 - metabolism
 - mineral metabolism
 - ∞ nutrients
 - nutrition
- caloric stimuli**
 - RT ∞ stimuli
- calorimeters**
 - DEF Instruments designed to measure heat evolved or absorbed. Used for microcalorimeters.
 - UF *microcalorimeters*
 - GS measuring instruments
 - . **calorimeters**
 - . . bomb calorimeters
 - . . drop calorimeters
 - . . flame calorimeters
 - RT heat measurement
 - high temperature tests
 - scintillating fibers
 - temperature measuring instruments
- calorimetry*
 - USE **heat measurement**
- calutrons*
 - USE **cyclotrons**
- calves**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . cattle
 - **calves**
 - RT livestock
- Calypso**
 - (added January 1996)
 - DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Calypso**
 - RT Saturn (planet)
- CAM (manufacturing)*
 - USE **computer aided manufacturing**
- camber**
 - GS **camber**
 - . conical camber
 - . wing camber
 - RT airfoils
 - bending
 - ∞ bows
 - cambered wings
 - curvature
 - curved beams
 - deflection
 - deformation
 - distortion
- cambered wings**
 - GS airfoils
 - . wings
 - . . **cambered wings**
 - RT camber
 - fixed wings
 - twisted wings
 - uncambered wings
 - wing camber
- Cambodia**
 - UF *Kampuchea*
 - GS nations
 - . **Cambodia**
 - RT Asia
- Cambrian Period**
 - (added June 1989)
 - GS Paleozoic Era
 - . **Cambrian Period**
 - RT geochronology
 - paleontology
 - Precambrian period
- Camel aircraft*
 - USE **TU-104 aircraft**
- camera shutters**
 - RT cameras
 - irises (mechanical apertures)
 - Kerr cells
 - panoramic cameras
 - ∞ shutters
 - streak cameras
- camera tubes**
 - GS electron tubes
 - . **camera tubes**
 - . . image dissector tubes
 - . . orthicons
 - . . . image orthicons
 - . . vidicons
 - . . . return beam vidicons
 - thermicons
 - RT cameras
 - dynodes
 - image converters
 - image transducers
 - monoscopes
 - planotrons
 - television cameras
 - video equipment
- cameras**
 - GS optical equipment
 - . **cameras**
 - . . Baker-Nunn camera
 - . . ballistic cameras
 - . . CCD cameras
 - . . Delft camera
 - . . diffraction limited cameras
 - . . faint object camera
 - . . high speed cameras
 - . . . framing cameras
 - . . digital cameras
 - . . I2S cameras
 - . . Lallemand cameras
 - . . multispectral band cameras
 - . . panoramic cameras
 - . . pinhole cameras
 - . . Schmidt cameras
 - . . streak cameras
 - . . television cameras
 - . . photographic equipment
 - . **cameras**
 - . . Baker-Nunn camera
 - . . ballistic cameras
 - . . CCD cameras
 - . . Delft camera
 - . . diffraction limited cameras
 - . . faint object camera
- flexing
- fuselages
- lift
- warpage
- . . high speed cameras
 - . . . framing cameras
 - . . digital cameras
 - . . I2S cameras
 - . . Lallemand cameras
 - . . multispectral band cameras
 - . . panoramic cameras
 - . . pinhole cameras
 - . . Schmidt cameras
 - . . streak cameras
 - . . television cameras
- RT camera shutters
 - camera tubes
 - cinematography
 - focusing
 - lenses
 - photography
 - SIM
 - streak photography
 - ultraviolet photography
 - underwater photography
 - wide angle lenses
- Cameroon**
 - GS nations
 - . **Cameroon**
 - RT Africa
- camouflage**
 - RT air defense
 - coverings
 - netting (materials/structures)
 - stealth technology
- Campbell-Hausdorff series**
 - GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . **Campbell-Hausdorff series**
 - . . real variables
 - . . series (mathematics)
 - . . . **Campbell-Hausdorff series**
- camphor**
 - GS ketones
 - . **camphor**
 - terpenes
 - . **camphor**
- cams**
 - GS positioning devices (machinery)
 - . **cams**
 - RT actuators
 - eccentrics
 - internal combustion engines
 - linkages
 - mechanical devices
- Canada**
 - GS nations
 - . **Canada**
 - . . Alberta
 - . . British Columbia
 - . . Manitoba
 - . . New Brunswick
 - . . Newfoundland
 - . . Northwest Territories
 - . . Nova Scotia
 - . . Ontario
 - . . Prince Edward Island
 - . . Quebec
 - . . Saskatchewan
 - . . Yukon Territory
 - RT Anik 1
 - Anik 2
 - Anik 3
 - Beaufort Sea (North America)
 - Canadian space program
 - Canadian spacecraft
 - Communications Technology Satellite
 - Great Lakes (North America)
 - Great Plains Corridor (North America)
 - Hudson Bay (Canada)
 - International Field Year for Great Lakes
 - International Hydrological Decade

Canadair aircraft

Labrador
Lake Champlain Basin (NY-VT)
North America
Pacific Northwest (US)
Rocky Mountains (North America)
St Lawrence Valley (North America)
Williston Basin (North America)

Canadair aircraft

UF *Canadair CF-104 aircraft*
CF-104 aircraft
GS **Canadair aircraft**
. CL-41 aircraft
. CL-44 aircraft
. CL-84 aircraft
. CL-600 challenger aircraft
RT ∞ aircraft
General Dynamics aircraft

Canadair CF-104 aircraft
USE **Canadair aircraft**
F-104 aircraft

Canadair CL-41 aircraft
USE **CL-41 aircraft**

Canadair CL-44 aircraft
USE **CL-44 aircraft**

Canadair CL-84 aircraft
USE **CL-84 aircraft**

Canadarm (ISS)
(added September 2001)
USE **Space Station Mobile Servicing System**

Canadian Shield

RT geology
meteorite craters
Precambrian period

Canadian space program

DEF Space research, programs, and activities undertaken by Canada.
GS programs
. space programs
. . **Canadian space program**
. . . Alouette project
RT aerospace technology transfer
Anik 1
Anik 2
Anik 3
Anik satellites
Canada
Canadian spacecraft
Communications Technology Satellite
NASA programs
Radarsat
scientific satellites
Space Station Mobile Servicing System
synchronous satellites
technology assessment
technology utilization

Canadian spacecraft

DEF Spacecraft of the Canadian Government. The following satellites have been developed: Alouette satellites, ISIS satellites, Anik satellites, and Hermes satellite. RADARSAT and MSAT are in the process of being developed.

GS **Canadian spacecraft**
. Alouette satellites
. . Alouette 1 satellite
. . Alouette 2 satellite
. . Alouette B satellite
. Anik satellites
. . Anik 1
. . Anik 2
. . Anik 3
. Radarsat
RT Canada
Canadian space program

∞ spacecraft

canals

GS landforms
. **canals**
waterways
. **canals**
RT ditches
flood control
fluid flow
gates (openings)
Great Lakes (North America)
irrigation
Mars surface
materials handling
Panama
seepage
straits
troughs
water flow

canard configurations

DEF Pertaining to an aerodynamic vehicle in which horizontal surfaces used for trim and control are forward of the main lifting surface; the horizontal trim and control surfaces in such an arrangement.

GS aerodynamic configurations
. **canard configurations**
RT aircraft structures
∞ configurations
control surfaces
JAS-39 aircraft
Saab 37 aircraft
tandem wing aircraft
X-31 aircraft

Canary Islands

GS landforms
. islands
. . **Canary Islands**
nations
. Spain
. . **Canary Islands**

Canberra aircraft

GS BAC aircraft
. **Canberra aircraft**
jet aircraft
. **Canberra aircraft**
monoplanes
. **Canberra aircraft**
RT ∞ aircraft
B-57 aircraft

Canberra bomber
USE **B-57 aircraft**

cancellation

RT contracts
elimination
removal
stopping

cancellation circuits

GS circuits
. **cancellation circuits**
RT display devices
moving target indicators
pulse Doppler radar
radar

cancer

UF *carcinoma*
sarcoma
GS diseases
. tumors
. . neoplasms
. . . **cancer**
. . . . leukemias
RT bone marrow
carcinogens
cells (biology)
metastasis
oncogenes
radiation therapy

tissues (biology)
ulcers

cancer genes
(added July 2002)
USE **oncogenes**

canisters
USE **cans**

canning

GS food processing
. **canning**
RT encapsulating
∞ food

Cannonball 2 satellite

GS artificial satellites
. scientific satellites
. . **Cannonball 2 satellite**

cannons

USE **guns (ordnance)**

cannulae

RT ∞ tubes

canonical forms

GS algebra
. vector spaces
. . matrices (mathematics)
. . . **canonical forms**
RT fibers (mathematics)

canopies

RT aircraft structures
airframes
cockpits
fairings
windshields

canopies (vegetation)

DEF The topmost layers of leaves and branches of forest trees or other plants.

GS vegetation
. **canopies (vegetation)**
RT foliage
forests
grasses
leaf area index
leaves
plants (botany)
rain forests
sod
trees (plants)
vegetative index

cans

UF *canisters*
RT ∞ containers
drums (containers)

cant

USE **slopes**

cantilever beams

GS cantilever members
. **cantilever beams**
structural members
. beams (supports)
. . **cantilever beams**
RT box beams
I beams

cantilever members

GS **cantilever members**
. cantilever beams
. cantilever plates
RT levers

cantilever plates

GS cantilever members
. **cantilever plates**
structural members
. plates (structural members)

- RT . . **cantilever plates**
anisotropic plates
- cantilever wings*
USE **wings**
- canyons**
UF *coulees*
gorges
GS landforms
. **canyons**
. . Grand Canyon (AZ)
RT arroyos
cliffs
fans (landforms)
ravines
rivers
valleys
water erosion
- cap clouds**
UF *orographic clouds*
GS clouds (meteorology)
. **cap clouds**
RT atmospheric moisture
climatology
cloud cover
meteorology
nephanalysis
precipitation (meteorology)
weather
- capacitance**
DEF That property of a system of conductors and dielectrics which permits the storage of electrically separated charges when potential differences exist between the conductors. It is the ratio of a quantity, Q , of electricity to a potential difference, V . A capacitance value is always positive. The units are farads when the charge is expressed in coulombs and the potential in volts: $C = Q/V$. Capacitance is symbolized as C .
GS electrical properties
. **capacitance**
RT capacitance-voltage characteristics
capacitors
∞ capacity
dielectric properties
electric charge
electrical impedance
electrostatic charge
inductance
open circuit voltage
RC circuits
reactance
RLC circuits
- capacitance switches**
GS switches
. **capacitance switches**
RT capacitors
dielectrics
RLC circuits
switching circuits
- capacitance-voltage characteristics**
DEF The characteristics of a metal semiconductor contact or a semiconductor junction that manifests a measured capacitance as a function of a dc bias voltage with small, superimposed ac voltage applied to that junction or contact.
GS electrical properties
. **capacitance-voltage characteristics**
RT capacitance
∞ characteristics
electric potential
metal oxide semiconductors
volt-ampere characteristics
- capacitive fuel gages**
GS measuring instruments
. fuel gages
. . **capacitive fuel gages**
- RT dielectrics
- capacitors**
GS **capacitors**
. electrochemical capacitors
amplifiers
RT ballasts (impedances)
capacitance
capacitance switches
circuit protection
circuits
∞ condensers
dielectrics
electrets
electric bridges
electric energy storage
electric filters
electric reactors
energy storage
Gerdien condensers
parallel plates
solid state devices
- ∞ **capacity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT capacitance
channel capacity
output
production engineering
risk
volume
- Cape Hatteras (NC)**
GS landforms
. capes (landforms)
. . **Cape Hatteras (NC)**
RT Atlantic Ocean
North Carolina
- Cape Kennedy launch complex**
GS launching bases
. **Cape Kennedy launch complex**
RT ground support equipment
- Cape Verde**
GS nations
. **Cape Verde**
RT Africa
Atlantic Ocean
islands
- capes (landforms)**
GS landforms
. **capes (landforms)**
. . Cape Hatteras (NC)
RT land
- ∞ **capillaries**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT capillaries (anatomy)
capillary tubes
- capillaries (anatomy)**
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . **capillaries (anatomy)**
. . . . glomerulus
RT blood
∞ capillaries
- capillary circulation*
USE **capillary flow**
- capillary flow**
UF *capillary circulation*
GS fluid flow
. **capillary flow**
RT blood flow
laminar flow
liquid bridges
surface tension driven convection
- thermocapillary migration
- capillary pumped loops**
(added September 2003)
DEF Passive, two-phase heat transport systems that utilize the capillary pressure developed in a fine pore evaporator wick to circulate the working fluid. Often used for cooling electronic components in spacecraft, telecommunications, and other systems.
UF *CPL (heat transfer)*
RT capillary tubes
cooling systems
cryogenic cooling
evaporative cooling
heat transfer
liquid cooling
temperature control
- capillary tubes**
RT ∞ capillaries
capillary pumped loops
∞ tubes
- capillary waves**
GS elastic waves
. **capillary waves**
. . gravity waves
. . . baroclinic waves
. . ripples
surface waves
. **capillary waves**
. . gravity waves
. . . baroclinic waves
. . ripples
RT interfacial tension
two dimensional flow
water waves
- ∞ **caps**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT caps (explosives)
coverings
nose cones
polar caps
seals (stoppers)
spherical caps
- caps (explosives)**
GS explosive devices
. initiators (explosives)
. . **caps (explosives)**
igniters
. initiators (explosives)
. . **caps (explosives)**
RT ∞ caps
detonators
exploding wires
fuses (ordnance)
primers (explosives)
- ∞ **capsules**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ buckets
∞ containers
fuel capsules
shells (structural forms)
space capsules
tablets
test chambers
∞ test equipment
test vehicles
∞ vessels
- capsules (spacecraft)*
USE **space capsules**
- captive tests**
DEF Holddown tests of a propulsive subsystem, rocket engine or motor as distinguished from a flight test.
GS **captive tests**
. static tests

capture effect

- . . static firing
- RT engine tests
- ground tests
- missile tests
- prefiring tests
- prelaunch tests
- ∞ tests

capture cross sections

USE **absorption cross sections**

capture effect

DEF An effect in frequency-modulation (FM) reception where the stronger signal of two stations on the same frequency completely suppresses the weaker signal.

- RT absorbance
- ∞ absorption
- ∞ effects
- electron capture
- frequency modulation
- frequency synchronization
- nuclear capture
- recombination reactions
- trajectory analysis

captured air bubble vehicles

- GS surface vehicles
- . **captured air bubble vehicles**
- water vehicles
- . **captured air bubble vehicles**
- RT hydrofoil craft
- surface effect ships
- SWATH (ship)
- ∞ vehicles

Caravelle aircraft

USE **SE-210 aircraft**

Carbamates (tradename)

- GS esters
- . **Carbamates (tradename)**
- . . urethanes
- poisons
- . pesticides
- . . insecticides
- . . . **Carbamates (tradename)**
- urethanes

carbamides

- GS nitrogen compounds
- . amides
- . . **carbamides**

carbazoles

- GS organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . azoles
- pyrroles
- **carbazoles**

carbenes

DEF An organic radical containing divalent carbon.

- RT free radicals

carbides

DEF Compounds of carbon with one or more metallic elements.

- GS carbon compounds
- . **carbides**
- . . aluminum carbides
- . . boron carbides
- . . cementite
- . . chromium carbides
- . . hafnium carbides
- . . molybdenum carbides
- . . niobium carbides
- . . silicon carbides
- . . tantalum carbides
- . . titanium carbides
- . . tungsten carbides
- . . uranium carbides
- . . vanadium carbides
- . . zirconium carbides

- RT ceramic nuclear fuels
- refractory materials

carbohydrate metabolism

- GS metabolism
- . **carbohydrate metabolism**
- . . hyperglycemia
- . . hypoglycemia
- RT cortisone
- diabetes mellitus
- glucocorticoids
- hydrogen metabolism

carbohydrates

- UF *saccharides*
- GS organic compounds
- . **carbohydrates**
- . . citric acid
- . . glucosides
- . . . nucleosides
- adenines
- guanosines
- . . polysaccharides
- . . . cellulose
- Fortisan (trademark)
- . . . chitin
- . . . dextrans
- . . . glycogens
- . . . starches
- . . . sugars
- . . . dextrans
- . . . inositols
- . . . lactose
- . . . mannitol
- . . . monosaccharides
- hexoses
- galactose
- glucose
- pentose
- ribose
- xylose
- . . . sucrose
- RT alcohols
- ethyl alcohol
- ∞ food
- glycerols
- ∞ nutrients
- ∞ optical activity
- ∞ oxygen compounds
- photosynthesis
- stereochemistry
- synthetic food

carbon

- GS chemical elements
- . **carbon**
- . . carbon isotopes
- . . . carbon 12
- . . . carbon 13
- . . . carbon 14
- RT activated carbon
- bitumens
- buckminsterfullerene
- carbon nanotubes
- charcoal
- coke
- decarburization
- diamonds
- fullerenes
- glassy carbon
- graphite
- soot

carbon 12

- GS chemical elements
- . carbon
- . . carbon isotopes
- . . . **carbon 12**
- . . . nuclides
- . . . isotopes
- . . . carbon isotopes
- **carbon 12**

carbon 13

- GS chemical elements
- . carbon

- . . carbon isotopes
- . . . **carbon 13**
- . . . nuclides
- . . . isotopes
- . . . carbon isotopes
- **carbon 13**

carbon 14

- GS chemical elements
- . carbon
- . . carbon isotopes
- . . . **carbon 14**
- . . . nuclides
- . . . isotopes
- . . . carbon isotopes
- **carbon 14**
- . . . radioactive isotopes
- **carbon 14**

carbon arcs

- GS electric current
- . electric discharges
- . . electric arcs
- . . . **carbon arcs**
- RT arc lamps
- image furnaces

carbon compounds

- SN (RESTRICTED TO INORGANIC COMPOUNDS)
- GS **carbon compounds**
- . carbides
- . . aluminum carbides
- . . boron carbides
- . . cementite
- . . chromium carbides
- . . hafnium carbides
- . . molybdenum carbides
- . . niobium carbides
- . . silicon carbides
- . . tantalum carbides
- . . titanium carbides
- . . tungsten carbides
- . . uranium carbides
- . . vanadium carbides
- . . zirconium carbides
- . carbon dioxide
- . carbon disulfide
- . carbon monoxide
- . carbon suboxides
- . carbon tetrachloride
- . carbon tetrafluoride
- . carbonates
- . . bastnasite
- . . calcium carbonates
- . . . akermanite
- . . . aragonite
- . . . calcite
- . . . chalk
- . . . dolomite (mineral)
- . . polycarbonates
- . . . Lexan (trademark)
- . . siderites
- . . sodium carbonates
- . . tetraethyl orthocarbonates
- . halocarbons
- . . chlorocarbons
- . . chlorofluorocarbons
- . . fluorocarbons
- . . halon
- . carbon nitrides
- . fullerides
- RT carbonaceous materials
- ∞ chemical compounds
- ∞ Group 4A compounds
- hydrocarbons
- methylidyne
- Swan bands

carbon cycle

DEF The path of carbon in living beings in which carbon dioxide is fixed by photosynthesis to form organic nutrients and ultimately restored to the inorganic state by respiration and protoplasmic decay.

- GS cycles
- . **carbon cycle**

- RT animals
 - ∞ biology
 - biomass
 - ecology
 - organisms
 - plants (botany)
 - viability
- carbon dioxide**
 - GS carbon compounds
 - . carbon dioxide
 - chalcogenides
 - . oxides
 - . . . dioxides
 - carbon dioxide
 - gases
 - . carbon dioxide
 - RT Chlorella
 - metabolic wastes
 - synthane
- carbon dioxide concentration**
 - GS composition (property)
 - . chemical composition
 - . . carbon dioxide concentration
 - . concentration (composition)
 - . . carbon dioxide concentration
 - . gas composition
 - . . carbon dioxide concentration
 - RT air purification
 - atmospheric composition
 - climate change
 - decontamination
 - rebreathing
 - spacecraft cabin atmospheres
- carbon dioxide lasers**
 - GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . carbon dioxide lasers
 - RT chemical lasers
 - continuous wave lasers
 - gas masers
 - infrared lasers
 - Mach-Zehnder interferometers
 - molecular oscillations
 - organic lasers
 - polar gases
 - pulsed lasers
 - Q switched lasers
 - stimulated emission
 - TEA lasers
 - waveguide lasers
- carbon dioxide removal**
 - GS removal
 - . carbon dioxide removal
 - RT air purification
 - decontamination
 - rebreathing
 - smoke abatement
- carbon dioxide tension**
 - GS carbon dioxide tension
 - . hypercapnia
 - . hypocapnia
- carbon disulfide**
 - GS carbon compounds
 - . carbon disulfide
 - chalcogenides
 - . sulfides
 - . . disulfides
 - . . . carbon disulfide
 - sulfur compounds
 - . sulfides
 - . . disulfides
 - . . . carbon disulfide
- carbon fiber reinforced plastics**
 - UF CFRP
 - GS composite materials
 - . fiber composites
 - . . carbon fiber reinforced plastics
 - . . . carbon-phenolic composites
 - . polymer matrix composites
 - . . reinforced plastics
 - . . . carbon fiber reinforced plastics
 - carbon-phenolic composites
 - plastics
 - . reinforced plastics
 - . . carbon fiber reinforced plastics
 - . . . carbon-phenolic composites
- RT braided composites
- fibers
- graphite-epoxy composites
- lay-up
- PEEK
- reinforcing fibers
- superhybrid materials
- woven composites
- carbon fibers**
 - GS fibers
 - . reinforcing fibers
 - . . carbon fibers
 - RT boron fibers
 - carbon-phenolic composites
 - chemical vapor infiltration
 - composite materials
 - fiber composites
 - fiber pullout
 - ∞ filaments
 - polyacrylonitrile
- carbon isotopes**
 - GS chemical elements
 - . carbon
 - . . carbon isotopes
 - . . . carbon 12
 - . . . carbon 13
 - . . . carbon 14
 - . nuclides
 - . . isotopes
 - . . . carbon isotopes
 - carbon 12
 - carbon 13
 - carbon 14
- carbon lasers**
 - GS stimulated emission devices
 - . lasers
 - . . carbon lasers
 - RT chemical lasers
 - gas lasers
 - infrared lasers
 - liquid lasers
 - organic lasers
 - stimulated emission
- carbon monoxide**
 - GS carbon compounds
 - . carbon monoxide
 - chalcogenides
 - . oxides
 - . . carbon monoxide
 - gases
 - . carbon monoxide
 - RT Hopcalite (trademark)
 - smog
 - synthane
- carbon monoxide lasers**
 - GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . carbon monoxide lasers
 - RT chemical lasers
 - continuous wave lasers
 - infrared lasers
 - molecular oscillations
 - stimulated emission
 - TEA lasers
- carbon monoxide poisoning**
 - GS diseases
 - . toxic diseases
 - . . carbon monoxide poisoning
 - toxicity
 - . carbon monoxide poisoning
 - RT carboxyhemoglobin
- lethality
- occupational diseases
- pathological effects
- ∞ poisoning
- carbon nanotubes**
 - (added September 2001)
 - DEF Single- or multilayer nanotubes composed of cylindrical graphene sheets of bonded carbon atoms, and closed at either end with caps containing pentagonal rings. These nanotubes are single molecules typically measuring a few nanometers in diameter and several microns in length.
 - UF CNT (nanotechnology)
 - tubular fullerenes
 - GS nanostructures (devices)
 - . nanotubes
 - . . carbon nanotubes
 - RT carbon
 - fullerenes
 - graphite
 - nanostructure (characteristics)
- carbon nitrides**
 - (added October 2001)
 - GS carbon compounds
 - . carbon nitrides
 - nitrogen compounds
 - . nitrides
 - . . carbon nitrides
 - RT amorphous materials
 - boron nitrides
 - ceramic coatings
 - protective coatings
 - semiconductors (materials)
 - thin films
- carbon stars**
 - UF C stars
 - GS celestial bodies
 - . stars
 - . . giant stars
 - . . . red giant stars
 - carbon stars
 - . . late stars
 - . . . cool stars
 - carbon stars
 - RT asymptotic giant branch stars
 - irregular variable stars
 - Mira variables
 - R Coronae Borealis stars
 - stellar composition
 - subgiant stars
 - Wolf-Rayet stars
- carbon steels**
 - GS alloys
 - . iron alloys
 - . . steels
 - . . . carbon steels
 - low carbon steels
 - RT high strength steels
- carbon suboxides**
 - DEF Colorless lacrimatory gases having unpleasant odors and boiling points of approximately -7 degrees C.
 - GS carbon compounds
 - . carbon suboxides
 - chalcogenides
 - . oxides
 - . . carbon suboxides
 - gases
 - . carbon suboxides
 - RT ∞ oxygen compounds
- carbon tetrachloride**
 - UF tetrachloromethane
 - GS carbon compounds
 - . carbon tetrachloride
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . carbon tetrachloride
 - . halides

carbon tetrachloride poisoning

- . . chlorides
- . . . **carbon tetrachloride**

carbon tetrachloride poisoning

- GS diseases
- . toxic diseases
- . . **carbon tetrachloride poisoning**
- toxicity
- . **carbon tetrachloride poisoning**
- RT industrial safety
- ∞ poisoning
- toxicity and safety hazard
- toxicology

carbon tetrafluoride

- GS carbon compounds
- . **carbon tetrafluoride**
- halogen compounds
- . fluorine compounds
- . . fluoro compounds
- . . . fluorine organic compounds
- fluorohydrocarbons
- **carbon tetrafluoride**
- organic compounds
- . fluorine organic compounds
- . . fluorohydrocarbons
- . . . **carbon tetrafluoride**
- . hydrocarbons
- . . fluorohydrocarbons
- . . . **carbon tetrafluoride**

carbonaceous chondrites

DEF A group name for friable, dull-black, chondritic stoney meteorites, characterized by the presence of hydrated clay type silicate minerals, by considerable amounts and a great variety of organic compounds believed to be of extraterrestrial origin; by a near or total lack of free nickel-iron; and by an abnormally high content of inert gases.

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- **carbonaceous chondrites**
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . chondrites
- **carbonaceous chondrites**
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite

carbonaceous materials

DEF Substance composed of or containing carbon or carbon compounds.

- GS **carbonaceous materials**
- . graphite
- . . pyrolytic graphite
- . peat
- RT carbon compounds
- coal
- crude oil
- fossil fuels
- lignite
- ∞ materials
- organic materials
- solvent refined coal

carbonaceous meteorites

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . **carbonaceous meteorites**
- carbonaceous chondrites

- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureillites
- RT exobiology
- meteoritic composition

carbonaceous rocks

- GS rocks
- . sedimentary rocks
- . . **carbonaceous rocks**
- . . . coal
- anthracite
- lignite
- solvent refined coal
- RT carbonates
- regolith
- shatter cones
- soils

carbonates

- UF *bicarbonates*
- GS carbon compounds
- . **carbonates**
- . . bastnasite
- . . calcium carbonates
- . . . akermanite
- . . . aragonite
- . . . calcite
- . . . chalk
- . . dolomite (mineral)
- . . polycarbonates
- . . . Lexan (trademark)
- . . siderites
- . . sodium carbonates
- . . tetraethyl orthocarbonates
- RT alkalies
- carbonaceous rocks
- carbonic acid
- molten carbonate fuel cells
- ∞ oxygen compounds

carbon-carbon composites

- GS composite materials
- . **carbon-carbon composites**
- RT fiber composites
- fracture strength
- reinforcing fibers
- thermal protection
- thermal resistance

carbonic acid

- GS acids
- . **carbonic acid**
- RT carbonates

carbonic anhydrase

- GS biopolymers
- . proteins
- . . enzymes
- . . . **carbonic anhydrase**
- organic compounds
- . proteins
- . . enzymes
- . . . **carbonic anhydrase**
- RT acetazolamide

carbonization

- GS chemical reactions
- . **carbonization**
- RT charring
- decarbonation

carbon-phenolic composites

- (added January 1993)
- GS composite materials
- . fiber composites
- . . carbon fiber reinforced plastics
- . . . **carbon-phenolic composites**
- . . polymer matrix composites
- . . reinforced plastics

- . . . carbon fiber reinforced plastics
- **carbon-phenolic composites**
- . resin matrix composites
- . . **carbon-phenolic composites**
- plastics
- . reinforced plastics
- . . carbon fiber reinforced plastics
- . . . **carbon-phenolic composites**
- RT ablative materials
- carbon fibers
- phenolic resins
- rocket nozzles

carbonyl compounds

- RT ∞ chemical compounds
- oxetane polymers

carborane

- GS boron compounds
- . boron hydrides
- . . boranes
- . . . **carborane**
- hydrogen compounds
- . hydrides
- . . boron hydrides
- . . . boranes
- **carborane**

Carborandum (trademark)

- RT abrasives
- refractory materials
- silicon carbides

carboxyhemoglobin

- GS biopolymers
- . proteins
- . . hemoglobin
- . . . **carboxyhemoglobin**
- organic compounds
- . proteins
- . . hemoglobin
- . . . **carboxyhemoglobin**
- organometallic compounds
- . hemoglobin
- . . **carboxyhemoglobin**
- RT blood circulation
- carbon monoxide poisoning
- erythrocytes

carboxyhemoglobin test

- GS physiological tests
- . **carboxyhemoglobin test**
- RT blood
- hematology

carboxyl group

- RT carboxylic acids

carboxylates

- GS esters
- . **carboxylates**
- RT carboxylic acids

carboxylation

- GS chemical reactions
- . **carboxylation**
- RT decarboxylation

carboxylic acids

- GS acids
- . **carboxylic acids**
- . . acrylic acid
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . citric acid
- . . dicarboxylic acids
- . . fatty acids
- . . . acetic acid
- ethylenediaminetetraacetic acids
- iodoacetic acid
- acetylsalicylic acid
- benzoic acid
- benzoic acid
- lipoic acid
- oleic acid

- ... palmitic acid
 - ... propionic acid
 - ... sebamic acid
 - ... valeric acid
 - .. folic acid
 - .. formhydroxamic acid
 - .. formic acid
 - .. Hexogenes (trademark)
 - .. lactic acid
 - .. lysine
 - .. nicotinic acid
 - .. oxalic acid
 - .. oxamic acids
 - .. tryptophan
 - organic compounds
 - . **carboxylic acids**
 - .. acrylic acid
 - .. alanine
 - ... phenylalanine
 - .. aspartic acid
 - .. citric acid
 - .. dicarboxylic acids
 - .. fatty acids
 - ... acetic acid
 - ... ethylenediaminetetraacetic acids
 - ... iodoacetic acid
 - ... acetylsalicylic acid
 - ... benzilic acid
 - ... benzoic acid
 - ... lipoic acid
 - ... oleic acid
 - ... palmitic acid
 - ... propionic acid
 - ... sebamic acid
 - ... valeric acid
 - .. folic acid
 - .. formhydroxamic acid
 - .. formic acid
 - .. Hexogenes (trademark)
 - .. lactic acid
 - .. lysine
 - .. nicotinic acid
 - .. oxalic acid
 - .. oxamic acids
 - .. tryptophan
 - RT carboxyl group
 - carboxylates
 - terephthalate
- carburetors**
- UF *injection carburetors*
 - RT chokes (fuel systems)
 - contactors
 - engine parts
 - engines
 - fuel injection
 - fuel systems
 - injectors
 - ∞ internal combustion engines
 - jet nozzles
 - mixers
 - premixed flames
 - throats
- carburizing**
- DEF Introducing carbon into a solid ferrous alloy by holding above Ac1 in contact with a suitable carbonaceous material. The carburized alloy is usually quench hardened.
 - GS hardening (materials)
 - . **carburizing**
 - RT decarburization
- carcinogens**
- DEF Agents producing or inciting cancerous growth.
 - RT cancer
 - hazardous materials
 - neoplasms
- carcinoma*
- USE **cancer**
- carcinotrons**
- GS amplifiers
 - . **carcinotrons**
- electron tubes
 - . vacuum tubes
 - .. microwave tubes
 - ... traveling wave tubes
 - ... **carcinotrons**
 - microwave equipment
 - . microwave tubes
 - .. traveling wave tubes
 - ... **carcinotrons**
 - RT helitrons
- cardiac auricles**
- GS anatomy
 - . circulatory system
 - .. cardiovascular system
 - ... heart
 - ... **cardiac auricles**
 - RT His bundle
- cardiac output**
(added March 1991)
- GS output
 - . **cardiac output**
 - .. heart minute volume
 - .. stroke volume
 - RT blood volume
 - cardiovascular system
 - heart function
 - heart rate
 - physiological tests
- cardiac ventricles**
- GS anatomy
 - . circulatory system
 - .. cardiovascular system
 - ... heart
 - ... **cardiac ventricles**
 - RT diastolic pressure
 - echocardiography
 - His bundle
 - systole
- cardiograms**
- RT biomedical data
 - cardiography
 - heart
- cardiography**
- GS bioengineering
 - . biometrics
 - ... **cardiography**
 - ... ballistocardiography
 - ... electrocardiography
 - ... magnetocardiography
 - ... phonocardiography
 - ... echocardiography
 - ... seismocardiography
 - ... vectorcardiography
 - RT cardiograms
 - cardiovascular system
 - heart
 - heart diseases
 - heart function
 - medical equipment
 - physiological tests
- cardiology**
- GS medical science
 - . **cardiology**
 - RT angiography
 - artificial cardiac pacemaker
 - heart
 - heart diseases
 - heart rate
 - radiocardiography
- cardiotachometers**
- GS medical equipment
 - . **cardiotachometers**
 - RT heart
- cardiovascular system**
- DEF The system of an animal pertaining to the heart and blood vessels. Used for vascular system.
 - UF *vascular system*
- GS anatomy
 - . circulatory system
 - .. **cardiovascular system**
 - ... blood vessels
 - ... arteries
 - ... aorta
 - ... capillaries (anatomy)
 - ... glomerulus
 - ... veins
 - .. heart
 - ... cardiac auricles
 - ... cardiac ventricles
 - ... epicardium
 - ... myocardium
 - RT angiography
 - baroreflexes
 - blood
 - blood volume
 - cardiac output
 - cardiography
 - carotid sinus body
 - carotid sinus reflex
 - cerebral vascular accidents
 - diastole
 - fat embolisms
 - head up tilt
 - heart diseases
 - hematopoiesis
 - hematopoietic system
 - hemodynamics
 - hemorrhages
 - lower body negative pressure
 - stroke volume
 - ∞ systems
 - systole
- cards**
- GS **cards**
 - . punched cards
 - RT computer storage devices
 - data storage
- caret wings**
- GS airfoils
 - . wings
 - .. **caret wings**
 - planforms
 - . **caret wings**
 - RT arrow wings
 - delta wings
 - waveriders
- CARETS (test site)*
- USE **Central Atlantic Regional Ecol Test Site**
- cargo**
- UF *freight*
 - GS **cargo**
 - . air cargo
 - .. air mail
 - . baggage
 - RT air drop operations
 - airdrops
 - delivery
 - freight costs
 - harbors
 - hauling
 - materials handling
 - railroad humping tests
 - rapid transit systems
 - transportation
 - transportation energy
 - trucks
- cargo aircraft**
- GS transport aircraft
 - . **cargo aircraft**
 - .. Breguet 941 aircraft
 - .. C-1A aircraft
 - .. C-2 aircraft
 - .. C-5 aircraft
 - .. C-9 aircraft
 - .. C-15 aircraft
 - .. C-17 aircraft
 - .. C-33 aircraft

cargo ships

- .. C-35 aircraft
- .. C-46 aircraft
- .. C-47 aircraft
- .. C-54 aircraft
- .. C-118 aircraft
- .. C-119 aircraft
- .. C-121 aircraft
- .. C-123 aircraft
- .. C-124 aircraft
- .. C-130 aircraft
- .. C-131 aircraft
- .. C-133 aircraft
- .. C-135 aircraft
- .. C-140 aircraft
- .. C-141 aircraft
- .. C-160 aircraft
- .. CH-21 helicopter
- .. CL-44 aircraft
- .. DC 3 aircraft
- .. DC 7 aircraft
- .. P-160 aircraft
- .. P-166 aircraft
- .. spanloader aircraft
- .. YC-14 aircraft

RT air cargo
 ∞ aircraft
 Boeing 727 aircraft
 Boeing 737 aircraft
 Boeing 767 aircraft
 commercial aircraft
 heavy lift helicopters
 jet aircraft
 materials handling
 Mercure aircraft
 MH-262 aircraft
 ∞ military aircraft
 monoplanes
 passenger aircraft
 SC-7 aircraft
 supersonic transports
 T-39 aircraft
 TU-154 aircraft
 utility aircraft
 VC-10 aircraft
 very large transport aircraft

cargo ships

UF *LOTS cargo ships*
 GS surface vehicles
 . **cargo ships**
 .. Savannah nuclear ship
 .. tanker ships
 water vehicles
 . ships
 .. **cargo ships**
 ... Savannah nuclear ship
 ... tanker ships
 RT artificial harbors
 deepwater terminals
 nuclear powered ships
 offshore docking
 offshore platforms
 shipyards
 tanker terminals
 wharves

cargo spacecraft

RT Automated Transfer Vehicle
 ferry spacecraft
 ∞ spacecraft

Cargomaster aircraft

USE **C-133 aircraft**

Caribbean region

DEF The region that consists of all or parts of the islands of the Caribbean Sea, the Bahamas, the British dependent territories, the Virgin Islands, and the mainland areas of the three Guianas and Belize.

RT Antigua and Barbuda
 Bahamas
 Barbados
 Belize
 Cuba
 developing nations

Dominican Republic
 French Guiana
 Grenada
 Guyana
 Haiti
 Jamaica
 Martinique
 Surinam
 Trinidad and Tobago
 Virgin Islands
 West Indies

Caribbean Sea

GS seas
 . **Caribbean Sea**
 RT Belize
 Cuba
 Dominican Republic
 Gulf of Mexico
 Gulf Stream
 Haiti
 Panama Canal Zone
 Virgin Islands

Caribou aircraft

USE **DHC 4 aircraft**

caribous

GS animals
 . vertebrates
 .. mammals
 ... deer
 **caribous**

Carme

(added January 1996)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 22,600,000 kilometers.
 GS celestial bodies
 . natural satellites
 .. Jupiter satellites
 ... **Carme**
 RT Jupiter (planet)

carnitine

GS organic compounds
 . cyclic compounds
 .. heterocyclic compounds
 ... **carnitine**
 vitamins
 . **carnitine**

Carnot cycle

DEF An idealized reversible thermodynamic cycle. The Carnot cycle consists of four stages: (a) an isothermal expansion of the gas at temperature T1; (b) an adiabatic expansion to temperature T2; (c) an isothermal compression at temperature T2; (d) an adiabatic compression to the original state of the gas to complete the cycle.

GS cycles
 . thermodynamic cycles
 .. **Carnot cycle**
 RT adiabatic conditions
 Rankine cycle
 Stirling cycle

carotene

GS organic compounds
 . hydrocarbons
 .. **carotene**
 pigments
 . **carotene**
 RT retinene
 skin (anatomy)

carotid sinus body

RT arteries
 blood vessels
 cardiovascular system
 carotid sinus reflex
 chemoreceptors
 circulatory system
 nerves

sinuses

carotid sinus reflex

GS reflexes
 . baroreflexes
 .. **carotid sinus reflex**
 RT arteries
 blood vessels
 cardiovascular system
 carotid sinus body
 circulatory system
 heart function
 nerves
 sinuses

Carpathian Mountains (Europe)

GS landforms
 . mountains
 .. **Carpathian Mountains (Europe)**
 RT Europe

carriages

RT carts
 chassis
 dollies
 frames
 landing gear
 supports
 undercarriages

carrier density (solid state)

DEF The charge carrier concentrations of holes and/or electrons in a semiconductor which determines its electronic characteristics and function.

GS density (number/volume)
 . particle density (concentration)
 .. electron density (concentration)
 ... **carrier density (solid state)**
 RT acceptor materials
 carrier lifetime
 carrier transport (solid state)
 ∞ carriers
 donor materials
 electron-hole drops
 semiconductors (materials)
 Zener effect

carrier frequencies

GS frequencies
 . **carrier frequencies**
 RT carrier to noise ratios
 frequency division multiplexing
 harmonic generations
 modulation
 multiplexing
 radio frequencies
 single channel per carrier
 transmission
 sweep frequency
 unified S band

carrier injection

GS injection
 . **carrier injection**
 RT additives
 Barritt diodes
 bipolar transistors
 carrier lifetime
 charge carriers
 charge transfer
 injection locking
 ion injection
 majority carriers
 minority carriers
 radiative recombination
 semiconductors (materials)
 Suhl effect
 traveling solvent method

carrier lifetime

GS life (durability)
 . **carrier lifetime**
 RT carrier density (solid state)
 carrier injection
 carrier mobility

- carrier transport (solid state)
charge carriers
minority carriers
solar cells
- carrier mobility**
GS electrical properties
. **carrier mobility**
. . . electron mobility
. . . hole mobility
mobility
. **carrier mobility**
. . . electron mobility
. . . hole mobility
transport properties
. **carrier mobility**
. . . electron mobility
. . . hole mobility
RT carrier lifetime
electrical resistivity
electromagnetic properties
excitons
Hall effect
ion implantation
superconductors (materials)
- carrier modulation*
USE **modulation**
- carrier rockets*
USE **launch vehicles**
- carrier sense multiple access**
(added April 2000)
DEF A data transmission protocol for multi-access networks where each node in the network senses traffic and waits for it to clear before transmitting; if two or more nodes transmit simultaneously, they wait a random interval before attempting to re-transmit.
GS protocol (computers)
. **carrier sense multiple access**
telecommunication
. multiple access
. . . **carrier sense multiple access**
transmission
. signal transmission
. . . data transmission
. . . . multiple access
. . . . **carrier sense multiple access**
RT communication networks
computer networks
Ethernet
local area networks
packet transmission
- carrier systems*
USE **wireless communication**
- carrier to noise ratios**
DEF RF signal power input to the receiver divided by the noise power input.
RT carrier frequencies
communication satellites
data transmission
downlinking
Earth terminals
frequency modulation
signal to noise ratios
transmission efficiency
uplinking
- carrier transport (solid state)**
DEF The mobility of conduction electrons or holes in semiconductors.
RT carrier density (solid state)
carrier lifetime
diffusion length
energy conversion efficiency
solar cells
- carrier waves**
DEF Waves generated at a point in the transmitting system and modulated by the signal. Used for subcarrier waves.
UF *subcarrier waves*
- RT modulation
radio spectra
- ∞ **carriers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft carriers
carrier density (solid state)
charge carriers
Zener effect
- Carrington rotation*
USE **solar rotation**
- Cartan space**
RT compressible flow
fluid flow
potential flow
∞ space
- Cartesian coordinates**
DEF A coordinate system in which the locations of points in space are expressed by reference to three planes, called coordinate planes, no two of which are parallel. Used for rectangular coordinates.
UF *rectangular coordinates*
GS coordinates
. **Cartesian coordinates**
geometry
. Euclidean geometry
. . . **Cartesian coordinates**
RT cylindrical coordinates
oblique coordinates
- cartilage**
GS anatomy
. musculoskeletal system
. . . **cartilage**
tissues (biology)
. connective tissue
. . . **cartilage**
RT bones
larynx
- cartography*
USE **mapping**
- cartridge actuated devices*
USE **actuators**
explosive devices
- cartridges**
RT cases (containers)
∞ containers
packages
projectiles
propellants
- carts**
GS **carts**
. Crew Equipment Translation Aid (ISS)
RT carriages
materials handling
undercarriages
- cascade control**
UF *multiloop systems*
GS automatic control
. feedback control
. . . **cascade control**
RT ∞ cascades
∞ control
electronic control
optical control
remote control
- cascade flow**
GS fluid flow
. **cascade flow**
RT ∞ cascades
outlet flow
- turbomachine blades
- Cascade Range (CA-OR-WA)**
GS land
. **Cascade Range (CA-OR-WA)**
landforms
. mountains
. . . **Cascade Range (CA-OR-WA)**
RT California
Oregon
United States
Washington
- cascade wind tunnels**
GS test facilities
. wind tunnels
. . . hypersonic wind tunnels
. . . . **cascade wind tunnels**
. . . hypervelocity wind tunnels
. . . . **cascade wind tunnels**
RT hypersonic flow
shock tunnels
- ∞ **cascades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cascade control
cascade flow
circuits
cosmic ray showers
electron photon cascades
- cascades (fluid dynamics)*
USE **fluid dynamics**
- cascode devices**
(added August 1998)
DEF Amplifier devices consisting of a common grounded-emitter (cathode) or source stage that drives a grounded-base output stage, resulting in high-impedance, high-gain, and low-noise,
GS amplifiers
. **cascode devices**
electronic equipment
. solid state devices
. . . semiconductor devices
. . . . **cascode devices**
RT CMOS
field effect transistors
high electron mobility transistors
switching circuits
transistor amplifiers
transistor circuits
transistors
- cascode MOSFET*
USE **field effect transistors**
- case bonded propellants**
GS propellants
. solid propellants
. . . **case bonded propellants**
RT ammunition
composite propellants
explosives
hybrid propellants
inhibitors
plasticizers
solid rocket propellants
- case histories**
GS histories
. **case histories**
RT anthropology
biography
clinical medicine
documentation
etiology
phenomenology
records
sociology
- cases (containers)**
GS **cases (containers)**

casing

- . rocket engine cases
- RT boxes (containers)
 - cartridges
 - ∞ containers
 - missile bodies
 - packages
 - ∞ shelves
- ∞ **casing**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT coverings
 - enclosure
 - jackets
 - linings
 - pipes (tubes)
 - sheaths
- casks*
 - USE **barrels (containers)**
- Caspian Sea**
 - GS seas
 - . **Caspian Sea**
 - RT coasts
- Cassegrain antennas**
 - GS antennas
 - . **Cassegrain antennas**
 - RT antenna design
 - Gregorian antennas
 - parabolic antennas
 - reflector antennas
 - subreflectors
 - two reflector antennas
- Cassegrain optics**
 - RT fiber optics
 - geometrical optics
 - mirrors
 - ∞ optics
 - reflecting telescopes
 - telescopes
- Cassini mission**
 - (added August 1988)
 - GS space missions
 - . **Cassini mission**
 - RT European Space Agency
 - European space programs
 - Huygens probe
 - international cooperation
 - Mariner Mark 2 Spacecraft
 - ∞ missions
 - NASA space programs
 - Saturn (planet)
 - space exploration
 - space probes
 - Titan
 - Titan 4B launch vehicle
- Cassiopeia A**
 - GS celestial bodies
 - . nebulae
 - . . **Cassiopeia A**
 - . radio sources (astronomy)
 - . . **Cassiopeia A**
 - RT Orion nebula
- Cassiopeia constellation**
 - GS constellations
 - . **Cassiopeia constellation**
 - RT celestial bodies
 - celestial sphere
 - stars
- cast alloys**
 - GS alloys
 - . **cast alloys**
 - RT castings
 - mechanical properties
 - microstructure
 - rheocasting

squeeze casting

Castigliano variational theorem

- GS theorems
 - . **Castigliano variational theorem**
- RT calculus of variations
 - energy methods
 - Euler-Lagrange equation
 - stress analysis
 - structural analysis

casting

- GS forming techniques
 - . **casting**
 - . . centrifugal casting
 - . . investment casting
 - . . propellant casting
 - . . rheocasting
 - . . sand casting
 - . . slip casting
 - . . squeeze casting
- RT baking
 - billets
 - dies
 - extruding
 - forging
 - inclusions
 - ingots
 - liquid metals
 - melting
 - metal working
- ∞ metallurgy
 - microstructure
 - molding materials
 - molds
 - mushy zones
 - pinholes
 - polymeric films
 - pouring
 - pultrusion
 - resin transfer molding
 - shrinkage
 - solidification

casting solvents

USE **plasticizers**

castings

- GS **castings**
 - . ingots
 - . . propellant casting
- RT billets
 - cast alloys
 - defects
 - degassing
 - flat patterns
 - inclusions
 - microstructure
 - molds
 - pinholes
 - pouring
 - risers
 - solidification

Castor 2 engine

USE **TX-354 engine**

castor oil

- GS oils
 - . **castor oil**
 - organic compounds
 - . lipids
 - . . **castor oil**
- RT fatty acids

casts

- RT damage assessment
 - gauze
 - plasters
 - splints

casualties

- RT death
 - disasters

evacuating (transportation)

CAT scanner

USE **computer aided tomography**

catabolism

- GS metabolism
 - . **catabolism**
- RT physiology

cataclysmic variables

- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - **cataclysmic variables**
 - . . variable stars
 - . . . **cataclysmic variables**
- RT dwarf stars
 - eclipsing binary stars
 - flare stars
 - hot stars
 - novae
 - periodic variations
 - solar oscillations
 - stellar flares
 - stellar mass ejection
 - stellar oscillations
 - superhumps (astronomy)
 - white dwarf stars

catalase

- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **catalase**
- organic compounds
 - . proteins
 - . . enzymes
 - . . . **catalase**
- RT cells (biology)

∞ catalogs

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT astronomical catalogs
 - catalogs (publications)
 - hardware utilization lists
 - indexes (documentation)
 - lists

catalogs (publications)

- GS documents
 - . **catalogs (publications)**
 - . . astronomical catalogs
- RT ∞ catalogs
 - categories
 - documentation
 - information dissemination
 - libraries

catalysis

- GS **catalysis**
 - . autocatalysis
- RT ∞ acceleration
 - activation
 - catalytic activity
 - cracking (chemical engineering)
 - Fischer-Tropsch process
 - reaction kinetics

catalysts

- GS **catalysts**
 - . electrocatalysts
 - . Hopcalite (trademark)
 - . Ziegler catalyst
- RT accelerating agents
 - additives
 - admixture
 - coal derived gases
 - coal derived liquids
 - enzymes
 - Grignard reactions
 - high energy fuels
 - inhibitors
- ∞ initiators

- platinum black
propellant additives
reagents
retardants
synthesis gas
- catalytic activity**
RT activity (biology)
autocatalysis
catalysis
cracking (chemical engineering)
Fischer-Tropsch process
- catapults**
DEF A power-actuated machine or device for hurling forth something, as an airplane or missile, at a high initial speed; also a device usually explosive, for ejecting a person from an aircraft.
GS launchers
. **catapults**
. . . rocket catapults
RT aircraft launching devices
missile launchers
sea launching
- cataracts**
GS diseases
. eye diseases
. . **cataracts**
RT lenses
occupational diseases
- catastrophé theory**
RT discontinuity
divergence
predictions
∞ theories
topology
- catchers**
RT electron bunching
klystrons
output
- catchment areas*
USE **watersheds**
- catecholamine**
GS amines
. **catecholamine**
. . epinephrine
. . norepinephrine
RT dopamine
hormones
neurotransmitters
- categories**
RT catalogs (publications)
classes
∞ groups
∞ sections
- catenaries**
GS geometry
. curves (geometry)
. . **catenaries**
. Euclidean geometry
. . analytic geometry
. . . **catenaries**
- catheterization**
RT blood vessels
intravenous procedures
- cathetometers**
GS measuring instruments
. optical measuring instruments
. . **cathetometers**
optical equipment
. optical measuring instruments
. . **cathetometers**
- cathode glow**
GS emission
- . light emission
. . luminescence
. . . **cathode glow**
RT cathodoluminescence
glow discharges
rarefied plasmas
- cathode ray tubes**
DEF Vacuum tubes consisting essentially of an electron gun producing a concentrated electron beam (or cathode ray) which impinges on a phosphorescent coating on the back of a viewing face (or screen). The excitation of the phosphor produces light, the intensity of which is controlled by the flow of electrons. Deflection of the beam is achieved either electromagnetically by currents in coils around the tube, or electrostatically by voltages on internal deflection plates.
GS electron tubes
. vacuum tubes
. . **cathode ray tubes**
. . . monoscopes
. . . picture tubes
RT display devices
electron guns
electron optics
image tubes
magnetic lenses
oscilloscopes
printers
raster scanning
television equipment
video equipment
- cathodes**
DEF In electron tubes, electrodes through which a primary stream of electrons enters the interelectrode space.
GS electrodes
. **cathodes**
. . cell cathodes
. . hollow cathodes
. . tube cathodes
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
RT anodes
cold cathode tubes
electrode materials
electron emission
∞ filaments
frequency modulation photomultipliers
photomultiplier tubes
phototubes
thermionics
tube anodes
- cathodic coatings**
DEF Material forming a continuous film on a base metal by mechanical coating or by electroplating.
GS coatings
. **cathodic coatings**
RT anodic coatings
cladding
electrode materials
electrodeposition
electroplating
metal oxides
mischmetal
oxide films
oxides
plating
- cathodoluminescence**
DEF Luminescence produced when high velocity electrons bombard a metal in a vacuum, thus vaporizing small amounts of the metal which, in an excited state, emit radiation characteristic of the metal.
GS emission
. light emission
. . luminescence
- . . . **cathodoluminescence**
RT cathode glow
light sources
porous silicon
visible spectrum
- catholytes**
GS conductors
. electrolytes
. . **catholytes**
RT anolytes
cell cathodes
diaphragms (mechanics)
- cations**
DEF Positively-charged ions.
GS ions
. positive ions
. . **cations**
. . . formyl ions
. . . vanadyl radical
RT anions
cell cathodes
ionic mobility
metal ions
- cats**
GS animals
. vertebrates
. . mammals
. . . **cats**
- CATT devices**
DEF Controlled avalanche transit time triodes which use avalanche multiplication in the collector depletion region of a silicon, bipolar, transistor-like structure to increase the gain and thereby achieve a higher frequency operation of silicon bipolar transistors. Used for controlled avalanche transit time devices.
UF *controlled avalanche transit time devices*
RT electron avalanche
power gain
transit time
triodes
- cattle**
GS animals
. vertebrates
. . mammals
. . . **cattle**
. . . calves
RT grazing
livestock
rangelands
- CATV*
USE **cable television**
- Caucasus Mountains (U. S. S. R.)**
GS landforms
. mountains
. . **Caucasus Mountains (U. S. S. R.)**
)
RT U. S. S. R.
- Cauchy integral formula**
GS analysis (mathematics)
. complex variables
. . **Cauchy integral formula**
- Cauchy problem**
UF *Riemann problem*
GS boundary value problems
. **Cauchy problem**
RT differential equations
Godunov method
∞ problems
- Cauchy-Riemann equations**
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Cauchy-Riemann equations**

caulking

- RT analytic functions
- ∞ equations
- Godunov method

caulking

DEF Material ranging in physical characteristics from plastic to solid to preformed. Used to seal and waterproof joints and overlaps in structures, other assemblies or portions thereof where movement may occur.

- RT moisture resistance
- plugging
- sealing
- waterproofing

causes

- RT ∞ effects
- etiology
- ∞ origins
- ∞ sources

caustic lines

DEF The locations of wave front interactions induced by the maneuvers of supersonic aircraft in changing direction and/or attitude.

- RT flight paths
- shock waves
- sonic booms
- supersonic flight
- wave fronts

caustics

- USE **alkalies**

caustics (optics)

DEF The envelope of rays diffracted by surface defects in materials.

- RT diffraction
- fracture mechanics
- ∞ optics
- polarized radiation
- ∞ rays
- surface defects

caves

- RT cavities
- karst
- kettles (geology)
- underground structures

cavitation

- USE **cavitation flow**

cavitation corrosion

- GS corrosion
- . **cavitation corrosion**
- RT cavitation flow
- corrosion prevention
- corrosion resistance
- corrosion tests
- erosion

cavitation flow

DEF The formation of bubbles in a liquid, occurring whenever the static pressure at any point in the fluid flow becomes less than the fluid vapor pressure. Used for cavitation and gaseous cavitation.

- UF *cavitation*
- gaseous cavitation*
- GS fluid flow
- . turbulent flow
- . . **cavitation flow**
- . . . supercavitating flow
- RT bubbles
- cavitation corrosion
- erosion
- flow distribution
- impingement
- separated flow
- ultrasonic cleaning
- vortices
- wakes

water

cavities

- UF *bores*
- GS **cavities**
- . laser cavities
- RT apertures
- boreholes
- caves
- cavity flow
- ∞ cells
- crack geometry
- cracks
- defects
- ducts
- gas pockets
- hole distribution (mechanics)
- ∞ holes
- holes (mechanics)
- ∞ hollow
- interstices
- karst
- kettles (geology)
- leakage
- openings
- orifices
- outlets
- passageways
- perforated plates
- perforated shells
- ∞ perforation
- ports (openings)
- recesses
- tooth diseases
- vents
- voids

cavitons

- DEF Density cavities created by localized oscillating electric fields.
- RT electric fields
- plasma density
- plasma physics
- plasma resonance

cavity flow

- (added November 1991)
- GS fluid flow
- . internal flow
- . . **cavity flow**
- RT cavities
- channel flow
- corner flow
- ducted flow
- engine inlets
- ∞ flow
- fluid boundaries
- open channel flow
- pipe flow

cavity resonators

- UF *resonant cavities*
- GS resonators
- . **cavity resonators**
- . . superconducting cavity resonators
- RT circulators (phase shift circuits)
- cyclotron resonance devices
- electron tubes
- field mode theory
- Helmholtz resonators
- klystrons
- magnetrons
- microwave resonance
- multimode resonators
- oscillators
- resonant frequencies
- traveling wave masers
- velocity modulation

cavity vapor generators

- RT ∞ generators
- vaporizers

vapors

cays

- USE **keys (islands)**

CC-106 aircraft

- USE **CL-44 aircraft**

CCD

- USE **charge coupled devices**

CCD cameras

(added September 1995)

- GS optical equipment
- . cameras
- . . **CCD cameras**
- photographic equipment
- . cameras
- . . **CCD cameras**
- RT CCD star tracker
- charge coupled devices
- Clementine spacecraft
- digital cameras
- photography

CCD star tracker

DEF Navigation instrument designed for the NASA space transportation system. Used for stellar (star tracker).

- UF *Stellar (star tracker)*
- GS tracking (position)
- . star trackers
- . . **CCD star tracker**
- RT CCD cameras
- celestial navigation
- charge coupled devices
- spacecraft guidance

CDC 160-A computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 160-A computer**
- . . digital computers
- . . . **CDC 160-A computer**

CDC 1604 computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 1604 computer**
- . . digital computers
- . . . **CDC 1604 computer**

CDC 3100 computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 3100 computer**
- . . digital computers
- . . . **CDC 3100 computer**

CDC 3200 computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 3200 computer**
- . . digital computers
- . . . **CDC 3200 computer**

CDC 3600 computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 3600 computer**
- . . digital computers
- . . . **CDC 3600 computer**

CDC 3800 computer

- GS data processing equipment
- . computers
- . . CDC computers
- . . . **CDC 3800 computer**
- . . digital computers

... **CDC 3800 computer**

CDC 6000 series computers
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC 6000 series computers**
 CDC 6400 computer
 CDC 6600 computer
 CDC 6700 computer
 .. digital computers
 ... **CDC 6000 series computers**
 CDC 6400 computer
 CDC 6600 computer
 CDC 6700 computer

CDC 6400 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... CDC 6000 series computers
 **CDC 6400 computer**
 .. digital computers
 ... CDC 6000 series computers
 **CDC 6400 computer**

CDC 6600 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... CDC 6000 series computers
 **CDC 6600 computer**
 .. digital computers
 ... CDC 6000 series computers
 **CDC 6600 computer**

CDC 6700 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... CDC 6000 series computers
 **CDC 6700 computer**
 .. digital computers
 ... CDC 6000 series computers
 **CDC 6700 computer**

CDC 7000 series computers
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC 7000 series computers**
 CDC 7600 computer
 .. digital computers
 ... **CDC 7000 series computers**
 CDC 7600 computer

CDC 7600 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... CDC 7000 series computers
 **CDC 7600 computer**
 .. digital computers
 ... CDC 7000 series computers
 **CDC 7600 computer**

CDC 8090 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC 8090 computer**
 .. digital computers
 ... **CDC 8090 computer**

CDC computers
 GS data processing equipment
 . computers
 ... **CDC computers**
 CDC 160-A computer
 CDC 1604 computer
 CDC 3100 computer
 CDC 3200 computer
 CDC 3600 computer
 CDC 3800 computer
 CDC 6000 series computers
 CDC 6400 computer

... CDC 6600 computer
 ... CDC 6700 computer
 ... CDC 7000 series computers
 ... CDC 7600 computer
 ... CDC 8090 computer
 ... CDC Cyber 170 series computers
 ... CDC Cyber 175 computer
 ... CDC Cyber 174 computer
 ... CDC Cyber 203 computer
 ... CDC Cyber 205 computer
 ... CDC Star 100 computer
 RT digital computers

CDC Cyber 74 computer
 UF *Cyber 74 computer*
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Cyber 74 computer**
 .. digital computers
 ... **CDC Cyber 74 computer**

CDC Cyber 170 series computers
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Cyber 170 series computers**
 CDC Cyber 175 computer
 .. digital computers
 ... **CDC Cyber 170 series computers**
 CDC Cyber 175 computer

CDC Cyber 174 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Cyber 174 computer**
 .. digital computers
 ... **CDC Cyber 174 computer**

CDC Cyber 175 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... CDC Cyber 170 series computers
 **CDC Cyber 175 computer**
 .. digital computers
 ... CDC Cyber 170 series computers
 **CDC Cyber 175 computer**

CDC Cyber 203 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Cyber 203 computer**
 .. digital computers
 ... **CDC Cyber 203 computer**

CDC Cyber 205 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Cyber 205 computer**
 .. digital computers
 ... **CDC Cyber 205 computer**

CDC Star 100 computer
 GS data processing equipment
 . computers
 .. CDC computers
 ... **CDC Star 100 computer**
 .. digital computers
 ... **CDC Star 100 computer**

CDMA
 USE **code division multiple access**

CD-ROM
 (added September 1992)
 GS computer components
 . computer storage devices
 .. read-only memory devices
 ... **CD-ROM**

RT data bases
 information retrieval
 information systems
 optical disks
 optical memory (data storage)

CE/SE method
 (added June 2002)
 USE **space-time CE/SE method**

Cedar Rapids (IA)
 GS cities
 . **Cedar Rapids (IA)**
 RT Iowa

CEFOAM checkout equipment
 RT checkout
 ∞ test equipment

ceiling (aircraft capability)
 RT ∞ aircraft
 aircraft specifications
 ∞ ceilings
 flight altitude
 flight characteristics

∞ **ceilings**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ceiling (aircraft capability)
 ceilings (architecture)
 ceilings (meteorology)

ceilings (architecture)
 RT buildings
 ∞ ceilings
 ∞ diffusers
 floors
 insulation
 panels
 reflectors

ceilings (meteorology)
 DEF The height above the Earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", overcast" or "obscuration" and not classified as "thin" or "partial".
 RT aircraft landing
 ∞ ceilings
 cloud height indicators
 meteorological parameters
 meteorology
 visibility

ceilometers
 USE **cloud height indicators**

telescopes
 GS electron tubes
 . vacuum tubes
 .. microwave tubes
 ... **telescopes**
 microwave equipment
 . microwave tubes
 .. **telescopes**
 mirrors
 . **telescopes**
 optical equipment
 . image converters
 .. **telescopes**
 telescopes
 . **telescopes**
 RT solar instruments

celestial bodies
 DEF Any aggregations of matter in space constituting a unit for astronomical study, as the sun, moon, a planet, comet, star, or nebula. Also called heavenly bodies.
 GS **celestial bodies**
 . asteroid belts
 .. Toro asteroid
 . asteroids
 .. Amor asteroid

celestial bodies

- . . Amphitrite asteroid
- . . Apollo asteroids
- . . Ceres asteroid
- . . Chiron
- . . EROS asteroid
- . . Gaspra asteroid
- . . Icarus asteroid
- . . Ida asteroid
- . . Quaoar
- . . Toro asteroid
- . . Toutatis asteroid
- . . Trojan asteroids
- . . Vesta asteroid
- . blazars
- . . BL Lacertae objects
- . comet heads
- . comet nuclei
- . comet tails
- . comets
- . . Arend-Roland comet
- . . Austin comet
- . . Brorsen-Metcalf comet
- . . Encke comet
- . . Giacobini-Zinner comet
- . . Grigg-Skjellerup comet
- . . Hale-Bopp comet
- . . Halley's comet
- . . Humason comet
- . . IRAS-Araki-Alcock comet
- . . Kohoutek comet
- . . Morehouse comet
- . . Mrkos comet
- . . Okazaki-Levy-Rudenko comet
- . . Schwassmann-Wachmann comet
- . . Shoemaker-Levy 9 comet
- . . Tempel 2 comet
- . . West comet
- . . Wild 2 comet
- . faint objects
- . galactic clusters
- . . local group (astronomy)
- . . Virgo galactic cluster
- . galaxies
- . . active galaxies
- . . . Markarian galaxies
- . . . radio galaxies
- . . . Seyfert galaxies
- . . compact galaxies
- . . disk galaxies
- . . dwarf galaxies
- . . elliptical galaxies
- . . interacting galaxies
- . . irregular galaxies
- . . Maffei galaxies
- . . Magellanic clouds
- . . peculiar galaxies
- . . ring galaxies
- . . shell galaxies
- . . spiral galaxies
- . . Andromeda Galaxy
- . . . barred galaxies
- . . . Milky Way Galaxy
- . . protogalaxies
- . . starburst galaxies
- . . Virgo galactic cluster
- . infrared sources (astronomy)
- . infrared stars
- . meteorites
- . iron meteorites
- . . Aroos meteorite
- . . Lazarev meteorite
- . . Odessa meteorite
- . . Sikhote-Alin meteorite
- . micrometeorites
- . stony meteorites
- . . achondrites
- . . . Bondoc meteorite
- . . . chassignites
- . . . Kapoeta achondrite
- . . . nakhlites
- . . . Norton County achondrite
- . . . shergottites
- . . . SNC meteorites
- . . . ureilites
- . . carbonaceous meteorites
- . . . carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . ureilites
- . . . chondrites
- . . . Bruderheim meteorite
- . . . carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . Harleton meteorite
- . . . Hvittis chondrite
- . . . Okhansk meteorite
- . . . Pantar chondrites
- . . . Pribram meteorite
- . . tektites
- . . . australites
- . . . bediasites
- . . Tungusk meteorite
- . stony-iron meteorites
- . meteoroid showers
- . Aquarid meteoroids
- . Arietid meteoroids
- . . Cyrillid meteoroids
- . Draconid meteoroids
- . Geminid meteoroids
- . Leonid meteoroids
- . Orionid meteoroids
- . Perseid meteoroids
- . . Quadrantid meteoroids
- . Taurid meteoroids
- . meteoroids
- . . Aquarid meteoroids
- . . Arietid meteoroids
- . . bolides
- . . Cyrillid meteoroids
- . . Draconid meteoroids
- . . Geminid meteoroids
- . . Leonid meteoroids
- . . micrometeoroids
- . . meteoroid dust clouds
- . . . zodiacal dust
- . . Orionid meteoroids
- . . Perseid meteoroids
- . . Quadrantid meteoroids
- . radio meteors
- . . sporadic meteoroids
- . . Taurid meteoroids
- . moonlets
- . natural satellites
- . . icy satellites
- . . . Ariel
- . . . Callisto
- . . . Dione
- . . . Enceladus
- . . . Europa
- . . . Ganymede
- . . . Hyperion
- . . . Iapetus
- . . . Mimas
- . . . Rhea (astronomy)
- . . . Tethys
- . . . Titania
- . . Jupiter satellites
- . . . Adrastea
- . . . Amalthea
- . . . Carme
- . . . Elara
- . . . Galilean satellites
- . . . Callisto
- . . . Europa
- . . . Ganymede
- . . . Io
- . . . Himalia
- . . . Leda
- . . . Lysithea
- . . . Metis
- . . . Pasiphae
- . . . Sinope
- . . . Thebe
- . Mars satellites
- . . Deimos
- . . Phobos
- . moon
- . Neptune satellites
- . . Galatea
- . . Larissa
- . . Naiad
- . . Nereid
- . . Proteus
- . . Triton
- . Pluto satellites
- . . Charon
- . Saturn satellites
- . . Calypso
- . . Dione
- . . Enceladus
- . . Epimetheus
- . . Helene
- . . Hyperion
- . . Iapetus
- . . Janus
- . . Mimas
- . . Pandora
- . . Phoebe
- . . Prometheus
- . . Rhea (astronomy)
- . . Telesto
- . . Tethys
- . . Titan
- . Uranus satellites
- . . Ariel
- . . Cordelia
- . . Miranda
- . . Oberon
- . . Puck
- . . Titania
- . . Umbriel
- . nebulae
- . . Cassiopeia A
- . . Crab nebula
- . . Gum nebula
- . . H I regions
- . . H II regions
- . . Herbig-Haro objects
- . . Orion nebula
- . . planetary nebulae
- . . reflection nebulae
- . . solar nebula
- . planetary rings
- . . Jupiter rings
- . . Saturn rings
- . . Uranus rings
- . planets
- . . extrasolar planets
- . . gas giant planets
- . . . Jupiter (planet)
- . . . Neptune (planet)
- . . . Saturn (planet)
- . . . Uranus (planet)
- . . Pluto (planet)
- . . terrestrial planets
- . . . Earth (planet)
- . . . Mars (planet)
- . . . Mercury (planet)
- . . . Venus (planet)
- . . hypothetical planets
- . protoplanets
- . radio sources (astronomy)
- . . Cassiopeia A
- . . extragalactic radio sources
- . . . radio galaxies
- . . . radio jets (astronomy)
- . . quasars
- . . radio stars
- . . pulsars
- . solar system
- . star clusters
- . . globular clusters
- . . open clusters
- . . Pleiades cluster
- . . Praesepe star clusters
- . stars
- . . black holes (astronomy)
- . . brown dwarf stars

- .. double stars
- ... binary stars
- cataclysmic variables
- companion stars
- Nemesis (star)
- eclipsing binary stars
- dwarf novae
- Lambda Tauri stars
- Zeta Aurigae star
- Sigma Orionis
- symbiotic stars
- x ray binaries
- .. early stars
- .. hot stars
- ... A stars
- ... B stars
- shell stars
- Sigma Orionis
- blue stars
- ... O stars
- ... white dwarf stars
- ... Wolf-Rayet stars
- .. F stars
- .. G stars
- .. sun
- .. giant stars
- .. asymptotic giant branch stars
- .. Omicron Ceti star
- .. red giant stars
- .. carbon stars
- .. horizontal branch stars
- .. infrared stars
- .. late stars
- .. cool stars
- carbon stars
- flare stars
- K stars
- M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- .. magnetic stars
- .. magnetars
- .. main sequence stars
- .. dwarf stars
- dwarf novae
- flare stars
- red dwarf stars
- .. sun
- .. massive stars
- .. metallic stars
- .. neutron stars
- .. magnetars
- .. pulsars
- .. soft gamma repeaters
- .. peculiar stars
- .. shell stars
- .. Sigma Orionis
- .. symbiotic stars
- .. Praesepe star clusters
- .. protostars
- .. pre-main sequence stars
- T Tauri stars
- .. radio stars
- .. pulsars
- .. reference stars
- .. subdwarf stars
- .. subgiant stars
- .. supergiant stars
- ... R Coronae Borealis stars
- .. supermassive stars
- .. triple stars
- .. variable stars
- cataclysmic variables
- cepheid variables
- flare stars
- irregular variable stars
- R Coronae Borealis stars
- Lambda Tauri stars
- Mira variables
- Omicron Ceti star
- novae
- dwarf novae
- Hercules nova
- .. semiregular variable stars
- .. supernovae

- supernova 1987A
- symbiotic stars
- T Tauri stars
- .. white holes (astronomy)
- .. x ray stars
- ... soft gamma repeaters
- ... x ray binaries
- .. Population I stars
- .. Population II stars
- .. Population III stars
- .. massive compact halo objects
- .. meteorite parent bodies
- .. near Earth objects
- .. stellar systems
- RT Aries constellation
- asteroid capture
- astrodynamics
- astrolabes
- astronomical observatories
- astronomy
- astrophysics
- ∞ bodies
- Cassiopeia constellation
- Centaurus constellation
- Corona Borealis constellation
- Cygnus constellation
- gravitational waves
- impact melts
- interstellar matter
- Lyra constellation
- orbits
- solar neighborhood
- space flight
- universe

celestial geodesy

DEF The determination of the form of the Earth, of the Earth's gravitational field, and of relative positions of satellite trajectories.

GS geodesy

.. **celestial geodesy**

RT Explorer 29 satellite
 Explorer 36 satellite
 geodetic satellites
 GEOS 1 satellite
 GEOS 2 satellite
 GEOS 3 satellite
 International Satellite Geodesy
 Experiment
 satellite laser ranging
 time

celestial mechanics

DEF The study of the theory of motions of celestial bodies under the influence of gravitational fields.

GS classical mechanics

.. space mechanics

.. **celestial mechanics**

RT astrodynamics
 astronomy
 astrophysics
 ephemerides
 equations of motion
 four body problem
 gravitational waves
 hyperbolic trajectories
 Lagrangian equilibrium points
 long term effects
 many body problem
 ∞ mechanics (physics)
 orbital mechanics
 orbital resonances (celestial mechanics)
 orbits
 perturbation theory
 planets
 Roche limit
 Schach effect
 solar system
 stars
 stellar orbits
 sun
 terrestrial planets
 three body problem
 trajectory analysis
 Trojan orbits

two body problem
 Wolf-Rayet stars

celestial navigation

DEF The process of directing a craft from one point to another by reference to celestial bodies of known constants.

GS navigation

.. **celestial navigation**

.. Astroguide Navigation System

.. astronavigation

RT

air navigation
 autonomous navigation
 CCD star tracker
 inertial navigation
 injection guidance
 interplanetary navigation
 polar navigation
 radar navigation
 radio navigation
 reference stars
 solar position
 space navigation
 spacecraft guidance
 star trackers
 surface navigation

celestial observation

USE **astronomy**

celestial reference systems

RT

air navigation
 astronomical coordinates
 astronomical maps
 azimuth
 coordinates
 geocentric coordinates
 inertial reference systems
 interplanetary navigation
 interstellar travel
 laser guide stars
 planetocentric coordinates
 ∞ reference systems
 solar longitude
 spherical coordinates
 ∞ systems

celestial sphere

DEF An imaginary sphere of infinite radius concentric with the Earth, on which all celestial bodies except the Earth are assumed to be projected.

GS symmetrical bodies

.. bodies of revolution

.. spheres

... **celestial sphere**

RT

Aries constellation
 astronomical maps
 Cassiopeia constellation
 Centaurus constellation
 constellations
 Corona Borealis constellation
 Cygnus constellation
 horizon
 Lyra constellation
 orbital position estimation
 planispheres
 zenith

cell anodes

GS electrodes

.. anodes

.. **cell anodes**

RT

anions
 anolytes
 cell cathodes
 electrode materials

cell cathodes

GS electrodes

.. cathodes

.. **cell cathodes**

RT

catholytes
 cations
 cell anodes
 electrode materials

cell division

electrodeposition

cell division

GS cytogenesis
 . **cell division**

RT ∞ division
 mitosis
 reproduction (biology)

cell membranes (biology)

GS membranes
 . **cell membranes (biology)**

RT cells (biology)
 cytology
 ion channels (biology)
 osmosis

cellophane

RT cellulose
 ∞ polymers

∞ cells

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT activation (biology)
 cavities
 cells (biology)
 compartments
 cores
 electrochemical cells
 electrolytic cells
 fillers
 fuel cells
 geophysical fluid flow cells
 hexagonal cells
 honeycomb structures
 Kerr cells
 lithium sulfur batteries
 particle in cell technique
 photoconductive cells
 photoelectric cells
 photovoltaic cells
 porous materials
 resolution cell
 solar cells
 tissues (biology)
 topology

cells (biology)

UF *biological cells*

GS **cells (biology)**
 . blood cells
 . . erythrocytes
 . . . reticulocytes
 . . hemocytes
 . . leukocytes
 . . . eosinophils
 . . . lymphocytes
 . eukaryotes
 . fibroblasts
 . gametocytes
 . . eggs
 . . spermatozoa
 . macrophages
 . neurons
 . . axons
 . . neuroblasts
 . osteoblasts
 . prokaryotes
 . protoplasts

RT anatomy
 apoptosis

∞ biology
 cancer
 catalase
 cell membranes (biology)

∞ cells
 chlorophylls
 chloroplasts
 chromosomes
 cloning (biology)
 cytogenesis
 cytology
 cytometry
 cytoplasm
 endoplasmic reticulum

endothelium
 ganglia
 hematopoiesis
 hemoglobin
 histochemical analysis
 Krebs cycle
 lysosomes
 mitochondria
 mitosis
 mutagens
 mutations
 necrosis
 neuroglia
 neurotransmitters
 nuclei (cytology)
 organelles
 organs
 plasmolysis
 sarcoplasmic reticulum
 tissue engineering
 tissues (biology)

cellular automata

(added May 2003)

DEF A discrete, dynamical system consisting of a regular array of cells, each of which can have one of a finite number of states. With each time step, the cell is updated according to a set of local rules based on the state of neighboring cells.

RT automata theory
 Turing machines

cellular manufacturing

(added April 2000)

USE **group technology (manufacturing)**

cellular materials (non biological)

USE **foams**

cellulose

DEF The carbohydrate that is the principal constituent of wood and forms of structural framework of the wood cells.

GS biopolymers
 . polysaccharides
 . . **cellulose**
 . . . Fortisan (trademark)
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **cellulose**
 Fortisan (trademark)

RT cellophane
 lignin
 Masonite (trademark)
 synthetic food
 tenite
 wood

cellulose nitrate

UF *nitrocellulose*
pyroxylin

GS esters
 . organic nitrates
 . . **cellulose nitrate**
 explosives
 . **cellulose nitrate**
 nitrogen compounds
 . nitrates
 . . organic nitrates
 . . . **cellulose nitrate**

RT double base propellants
 double base rocket propellants

cementation

RT adhesive bonding
 agglomeration
 agglutination
 bonding
 heating
 precipitation (chemistry)

cementite

DEF An intermetallic compound containing iron and carbon.

GS carbon compounds
 . carbides
 . . **cementite**

RT iron alloys
 microstructure
 pearlite
 steels

cements

RT adhesives
 binders (materials)
 bricks
 concretes
 ∞ construction materials
 grout
 masonry
 mortars (material)
 sealing

CEMS system

USE **Central Electronic Management System**

Cenozoic Era

(added June 1989)

DEF An era of geologic time, from the beginning of the Tertiary Period to the present. (Some authors do not include the Quaternary, considering it a separate era.) It is characterized by the evolution and abundance of mammals, advanced mollusks, and birds and paleobotanically, by angiosperms. The Cenozoic Era is considered to have begun about 65 million years ago.

GS **Cenozoic Era**
 . Quaternary period
 . Tertiary Period
 . . Holocene epoch
 . . Pleistocene epoch

RT Cretaceous-Tertiary boundary
 extinction
 geochronology
 paleontology

censored data (mathematics)

GS data processing
 . **censored data (mathematics)**

RT approximation

∞ data
 error analysis
 probability density functions
 reliability
 sampling
 statistical analysis
 statistical distributions

census

RT animals
 demography
 human beings

∞ statistics
 urban planning

Centaur launch vehicle

UF *Centaur vehicle*

GS launch vehicles
 . **Centaur launch vehicle**
 . Atlas Centaur launch vehicle
 rocket vehicles
 . **Centaur launch vehicle**
 . Atlas Centaur launch vehicle

RT Atlas D ICBM
 liquid propellant rocket engines
 Saturn project
 Titan Centaur launch vehicle

Centaur project

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Centaur project**
 . projects
 . . **Centaur project**
 . space programs
 . . NASA space programs
 . . . **Centaur project**

- RT Atlas Centaur launch vehicle
launch vehicles
Mariner program
RL-10 engines
Surveyor project
- Centaur vehicle*
USE **Centaur launch vehicle**
- Centaurus constellation**
GS constellations
. **Centaurus constellation**
RT celestial bodies
celestial sphere
stars
- center of gravity**
DEF The center of mass of a system of masses, as the barycenter of the Earth-moon system. Used for barycenter.
UF *barycenter*
RT center of mass
∞ centers
centroids
gravitational fields
lunar rotation
mass
moments of inertia
- center of mass**
DEF A point of a material body or system of bodies which moves as though the system's total mass existed at that point and all external forces were applied at the point.
GS mass
. **center of mass**
RT center of gravity
mascons
weight (mass)
- center of pressure**
RT ∞ centers
hydrostatic pressure
moments of inertia
pressure
pressure distribution
pressure heads
- centerbodies**
RT afterbodies
aircraft structures
∞ bodies
cylindrical bodies
forebodies
fuselages
- ∞ **centers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT center of gravity
center of pressure
color centers
concentricity
foci
loci
world data centers
- centimeter waves**
DEF Electromagnetic radiation in the 3,000 to 30,000 MHz range.
GS electromagnetic radiation
. radio waves
. . . short wave radiation
. . . . microwaves
. . . . **centimeter waves**
RT cosmic noise
extraterrestrial radio waves
microwave frequencies
superhigh frequencies
- Central African Republic**
GS nations
. **Central African Republic**
- RT Africa
- Central America**
GS regions
. **Central America**
RT Belize
Costa Rica
El Salvador
Guatemala
Honduras
Nicaragua
North America
Panama
Panama Canal Zone
South America
- Central Atlantic Region (US)**
GS regions
. **Central Atlantic Region (US)**
RT United States
- Central Atlantic Regional Ecol Test Site**
SN (CENTRAL ATLANTIC REGIONAL ECOLOGICAL TEST SITE)
UF *CARETS (test site)*
GS sites
. **Central Atlantic Regional Ecol Test Site**
test facilities
. **Central Atlantic Regional Ecol Test Site**
RT ecology
environment protection
- central bulge (galaxies)*
USE **galactic bulge**
- Central Electronic Management System**
UF *CEMS system*
GS data processing
. **Central Electronic Management System**
RT management
∞ systems
- Central Europe**
GS continents
. Europe
. . **Central Europe**
regions
. **Central Europe**
RT Austria
continents
Czechoslovakia
East Germany
Germany
Hungary
Poland
Romania
West Germany
- central nervous system**
GS anatomy
. nervous system
. . **central nervous system**
. . . brain
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. cerebral cortex
. occipital lobes
. diencephalon
. hypothalamus
. pineal gland
. thalamus
. hippocampus
. spinal cord
RT blood-brain barrier
psychopharmacology
psychotropic drugs
∞ systems
- central nervous system depressants**
GS depressants
. **central nervous system depressants**
drugs
. **central nervous system depressants**
RT amobarbital
psychopharmacology
∞ systems
tranquilizers
- central nervous system stimulants**
GS drugs
. stimulants
. . **central nervous system stimulants**
RT amphetamines
psychopharmacology
∞ systems
- Central Piedmont (US)**
GS landforms
. terraces (landforms)
. . plateaus
. . . piedmonts
. . . . **Central Piedmont (US)**
RT mountains
- central processing units**
DEF The units of computing systems that include the circuits controlling the interpretation of instructions and their execution. Used for processors (computers).
UF *processors (computers)*
GS computer components
. **central processing units**
. . arithmetic and logic units
. . . RISC processors
RT chips (electronics)
computer storage devices
computers
control units (computers)
logic circuits
microprocessors
registers (computers)
- centrifugal casting**
GS forming techniques
. casting
. . **centrifugal casting**
RT investment casting
- centrifugal compressors**
GS compressors
. **centrifugal compressors**
turbomachinery
. **centrifugal compressors**
RT blowers
compressor blades
compressor rotors
impellers
pump impellers
pumps
radial flow
rotors
superchargers
turbocompressors
- centrifugal force**
DEF The apparent force in a rotating system, deflecting masses radially from the axis or rotation.
RT angular acceleration
centrifuges
centripetal force
∞ force
Goertler instability
- centrifugal pumps**
GS pumps
. **centrifugal pumps**
turbomachinery
. **centrifugal pumps**
RT axial flow pumps
fuel pumps
impellers
pump impellers

centrifuges

turbine pumps
turbocompressors

centrifuges

DEF Specifically in aerospace, large motor driven apparatus with long arms at the end of which human and animal subjects or equipment can be revolved and rotated at various speeds to simulate (very closely) the (prolonged) accelerations in high performance aircraft, rockets, and spacecraft. Sometimes called astronaut centrifuges. Used for cyclones (equipment).

UF *cyclones (equipment)*

GS **centrifuges**

. human centrifuges

RT centrifugal force

centrifuging

centripetal force

classifiers

clinostats

concentrators

extraction

flight simulators

fluid filters

high gravity environments

separators

space simulators

∞ test equipment

training simulators

centrifuging

RT centrifuges

clinorotation

concentrating

extraction

materials recovery

∞ separation

swirling

centrifuging stress

GS stress (biology)

. acceleration stresses (physiology)

. . . **centrifuging stress**

stress (physiology)

. acceleration stresses (physiology)

. . . **centrifuging stress**

RT acceleration tolerance

gravitational physiology

centripetal force

RT angular acceleration

centrifugal force

centrifuges

∞ force

revolving

centroids

RT center of gravity

moments of inertia

Centurion aircraft

USE **Cessna 210 aircraft**

cephalagia

USE **headache**

cephalopods

GS animals

. invertebrates

. . . mollusks

. . . . **cephalopods**

. . . . octopuses

cepheid variables

GS celestial bodies

. stars

. . . variable stars

. . . . **cepheid variables**

RT Cepheus constellation

Cepheus constellation

GS constellations

. **Cepheus constellation**

RT cepheid variables

cepstra

DEF The Fourier transformation of the logarithm of the power spectrum.

GS spectra

. power spectra

. . . **cepstra**

RT quefrecencies

cepstral analysis

DEF The application of cepstral methods to wave or signal phenomena in seismology, speech analysis, echos, underwater acoustics, etc.

GS data processing

. signal analysis

. . . **cepstral analysis**

. voice data processing

. . . **cepstral analysis**

spectrum analysis

. **cepstral analysis**

RT acoustic measurement

audio frequencies

echoes

multipath transmission

power spectra

signal reflection

signature analysis

spectral signatures

speech recognition

time lag

vibration measurement

ceramal protective coatings

USE **cermets**

protective coatings

ceramals

USE **cermets**

ceramic bonding

GS bonding

. **ceramic bonding**

RT ceramic matrix composites

ceramics

ceramic coatings

SN (COATINGS CONSISTING OF CERAMIC MATERIALS)

GS coatings

. inorganic coatings

. . . **ceramic coatings**

. protective coatings

. . . **ceramic coatings**

RT carbon nitrides

finishes

metal coatings

porcelain

sprayed coatings

vacuum deposition

ceramic fibers

DEF Fibers composed of ceramic materials. They are usually used for reinforcement.

GS fibers

. synthetic fibers

. . . **ceramic fibers**

RT boron carbides

ceramic matrix composites

ceramics

chemical vapor infiltration

composite wrapping

cordage

fiber composites

fiber orientation

fiber strength

filament winding

∞ filaments

polycarbosilanes

reinforcing fibers

silicon carbides

strands

titanium carbides

ceramic honeycombs

RT ceramic matrix composites

honeycomb cores

honeycomb structures

ceramic matrix composites

DEF Composite materials consisting of a reinforced ceramic matrix.

GS composite materials

. **ceramic matrix composites**

RT aircraft construction materials

boron reinforced materials

ceramic bonding

ceramic fibers

ceramic honeycombs

ceramics

cermets

chemical vapor infiltration

composite structures

crack bridging

fiber pullout

fiber pushout

functionally gradient materials

matrix materials

nanocomposites

reinforcing fibers

silicon nitrides

titanium carbides

titanium nitrides

ceramic nuclear fuels

GS ceramics

. **ceramic nuclear fuels**

fuels

. nuclear fuels

. . . **ceramic nuclear fuels**

RT carbides

cermets

nitrides

plutonium compounds

plutonium oxides

sol-gel processes

thorium compounds

uranium carbides

uranium compounds

uranium oxides

ceramic-metal composites

USE **cermets**

ceramics

DEF Inorganic compounds or mixtures requiring heat treatment to fuse them into homogeneous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles.

GS **ceramics**

. ceramic nuclear fuels

. lead zirconate titanates

. piezoelectric ceramics

. porcelain

. Pyroceram (trademark)

RT abrasives

Bakelite (trademark)

bricks

ceramic bonding

ceramic fibers

ceramic matrix composites

cermets

clays

dielectrics

ferroelastic materials

ferroelectric materials

frit

glass

glazes

heat engines

high temperature superconductors

injection molding

masonry

∞ materials science

mortars (material)

photoacoustic microscopy

- pyrolytic materials
 - reaction bonding
 - refractories
 - refractory coatings
 - refractory materials
 - sialon
 - silicon dioxide
 - tiles
 - vitrification
 - YBCO superconductors
 - yttria-stabilized zirconia
- cerebellum**
- GS anatomy
 - . nervous system
 - .. central nervous system
 - ... brain
 - **cerebellum**
- cerebral cortex**
- GS anatomy
 - . nervous system
 - .. central nervous system
 - ... brain
 - cerebrum
 - **cerebral cortex**
 - RT ∞ cortexes
- cerebral vascular accidents**
- RT cardiovascular system
 - ∞ strokes
- cerebral ventricles**
- GS anatomy
 - . nervous system
 - .. central nervous system
 - ... brain
 - **cerebral ventricles**
 - RT cerebrospinal fluid
 - cerebrum
- cerebrospinal fluid**
- GS body fluids
 - . **cerebrospinal fluid**
 - RT brain
 - cerebral ventricles
 - ∞ fluids
- cerebrum**
- GS anatomy
 - . nervous system
 - .. central nervous system
 - ... brain
 - **cerebrum**
 - cerebral cortex
 - occipital lobes
 - RT cerebral ventricles
- Cerenkov counters**
- GS measuring instruments
 - . counters
 - .. radiation counters
 - ... **Cerenkov counters**
 - .. radiation measuring instruments
 - .. radiation counters
 - ... **Cerenkov counters**
 - RT Alpha Magnetic Spectrometer
 - scintillation counters
- Cerenkov effect*
- USE **Cerenkov radiation**
- Cerenkov radiation**
- DEF The radiation from a charged particle whose velocity is greater than the phase velocity that an electromagnetic wave would have if it were propagating in the medium. The particle will continue to lose energy by radiation until its velocity is less than this phase velocity. Used for Cerenkov effect.
- UF *Cerenkov effect*
- GS electromagnetic radiation
 - . **Cerenkov radiation**
 - RT bremsstrahlung
 - corpuscular radiation
 - cosmic rays
- ∞ effects
 - gamma ray bursts
 - gamma rays
 - light (visible radiation)
 - nuclear radiation
 - ∞ radiation
 - ultraviolet radiation
- Ceres asteroid**
- GS celestial bodies
 - . asteroids
 - .. **Ceres asteroid**
 - RT asteroid belts
- ceresin**
- GS organic compounds
 - . hydrocarbons
 - .. aliphatic hydrocarbons
 - ... alkanes
 - ... paraffins
 - **ceresin**
 - waxes
 - . **ceresin**
 - RT phase change materials
- cerium**
- GS chemical elements
 - . rare earth elements
 - .. **cerium**
 - ... cerium isotopes
 - cerium 137
 - cerium 144
 - metals
 - . rare earth elements
 - .. **cerium**
 - ... cerium isotopes
 - cerium 137
 - cerium 144
 - RT mischmetal
- cerium 137**
- GS chemical elements
 - . nuclides
 - . isotopes
 - ... cerium isotopes
 - **cerium 137**
 - ... radioactive isotopes
 - **cerium 137**
 - . rare earth elements
 - .. cerium
 - ... cerium isotopes
 - **cerium 137**
 - metals
 - . rare earth elements
 - .. cerium
 - ... cerium isotopes
 - **cerium 137**
- cerium 144**
- GS chemical elements
 - . nuclides
 - . isotopes
 - ... cerium isotopes
 - **cerium 144**
 - ... radioactive isotopes
 - **cerium 144**
 - . rare earth elements
 - .. cerium
 - ... cerium isotopes
 - **cerium 144**
 - metals
 - . rare earth elements
 - .. cerium
 - ... cerium isotopes
 - **cerium 144**
- cerium compounds**
- GS rare earth compounds
 - . **cerium compounds**
 - .. bastnasite
 - .. cerium oxides
 - RT ∞ chemical compounds
 - ∞ metal compounds
- cerium isotopes**
- GS chemical elements
 - . nuclides
 - .. isotopes
 - ... **cerium isotopes**
 - cerium 137
 - cerium 144
- cerium oxides**
- GS chalcogenides
 - . oxides
 - .. metal oxides
 - ... **cerium oxides**
 - rare earth compounds
 - .. cerium compounds
 - .. **cerium oxides**
- cermets**
- DEF Bodies consisting of ceramic particles bonded with a metal; used in aircraft, rockets, and spacecraft for high strength, high temperature applications. The name is derived from a combination of CERamic and METal. Used for ceramal protective coatings and ceramals.
- UF *ceramal protective coatings*
 - ceramals*
 - ceramic-metal composites*
 - GS composite materials
 - . **cermets**
 - RT ceramic matrix composites
 - ceramic nuclear fuels
 - ceramics
 - combustion synthesis
 - heat resistant alloys
 - metals
 - powder metallurgy
 - refractories
 - refractory materials
 - YBCO superconductors
- certification**
- DEF Personnel - The act of verifying and documenting that personnel have completed required training and have demonstrated specific proficiency. Process & Software - An act, whereby a responsible official provides a written guarantee that a product, process, or service satisfies all performance and design requirements.
- RT aircraft reliability
 - checkout
 - evaluation
 - flight tests
 - performance tests
 - physiological tests
 - psychological tests
 - qualifications
 - quality control
 - selection
 - site selection
 - training evaluation
- cesium**
- GS chemical elements
 - . alkali metals
 - .. **cesium**
 - ... cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - metals
 - . alkali metals
 - .. **cesium**
 - ... cesium isotopes
 - cesium 133
 - cesium 134

- ... cesium 137
 - ... cesium 144
- RT cesium alloys
 - cesium antimonides
 - cesium bromides
 - cesium diodes
 - cesium engines
 - cesium fluorides
 - cesium halides
 - cesium hydrides
 - cesium iodides
 - cesium ions
 - cesium plasma
 - cesium vapor
- cesium 133**
 - GS chemical elements
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 133**
 - . nuclides
 - . isotopes
 - ... cesium isotopes
 - ... **cesium 133**
 - metals
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 133**
- cesium 134**
 - GS chemical elements
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 134**
 - . nuclides
 - . isotopes
 - ... cesium isotopes
 - ... **cesium 134**
 - ... radioactive isotopes
 - ... **cesium 134**
 - metals
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 134**
- cesium 137**
 - GS chemical elements
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 137**
 - . nuclides
 - . isotopes
 - ... cesium isotopes
 - ... **cesium 137**
 - ... radioactive isotopes
 - ... **cesium 137**
 - metals
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 137**
- cesium 144**
 - GS chemical elements
 - . alkali metals
 - . cesium
 - ... cesium isotopes
 - ... **cesium 144**
 - . nuclides
 - . isotopes
 - ... cesium isotopes
 - ... **cesium 144**
 - ... radioactive isotopes
 - ... **cesium 144**
 - metals
 - . alkali metals
 - . cesium
 - ... cesium isotopes
- ... cesium 144
- cesium alloys**
 - GS alloys
 - . **cesium alloys**
 - RT alkali metals
 - cesium
- cesium antimonides**
 - GS antimony compounds
 - . antimonides
 - . **cesium antimonides**
 - cesium compounds
 - . **cesium antimonides**
 - RT cesium
- cesium bromides**
 - GS cesium compounds
 - . cesium halides
 - . **cesium bromides**
 - halogen compounds
 - . bromine compounds
 - . bromides
 - . **cesium bromides**
 - halides
 - . bromides
 - . **cesium bromides**
 - metal halides
 - . alkali halides
 - . cesium halides
 - . **cesium bromides**
 - RT cesium
- cesium compounds**
 - GS **cesium compounds**
 - . cesium antimonides
 - . cesium halides
 - . cesium bromides
 - . cesium fluorides
 - . cesium iodides
 - . cesium hydrides
 - . cesium oxides
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - ∞ metal compounds
 - metal fuels
- cesium diodes**
 - GS electron tubes
 - . thermionic diodes
 - . **cesium diodes**
 - vacuum tubes
 - . **cesium diodes**
 - electronic equipment
 - . diodes
 - . thermionic diodes
 - . **cesium diodes**
 - RT cesium
 - plasma diodes
 - thermionic converters
- cesium engines**
 - GS engines
 - . rocket engines
 - . electric rocket engines
 - . electrostatic engines
 - . ion engines
 - . **cesium engines**
 - RT cesium
- cesium fluorides**
 - GS cesium compounds
 - . cesium halides
 - . **cesium fluorides**
 - halogen compounds
 - . fluorine compounds
 - . fluorides
 - . metal fluorides
 - . **cesium fluorides**
 - halides
 - . fluorides
 - . metal fluorides
 - . **cesium fluorides**
 - metal halides
 - . alkali halides
 - . cesium halides
- ... cesium fluorides
- metal fluorides
- ... cesium fluorides
- cesium compounds
- RT cesium
- cesium halides**
 - GS cesium compounds
 - . **cesium halides**
 - cesium bromides
 - cesium fluorides
 - cesium iodides
 - halogen compounds
 - . halides
 - . metal halides
 - . alkali halides
 - . **cesium halides**
 - cesium bromides
 - cesium fluorides
 - cesium iodides
 - RT cesium
- cesium hydrides**
 - GS cesium compounds
 - . **cesium hydrides**
 - hydrogen compounds
 - . hydrides
 - . metal hydrides
 - . **cesium hydrides**
 - RT cesium
- cesium iodides**
 - GS cesium compounds
 - . cesium halides
 - . **cesium iodides**
 - halogen compounds
 - . halides
 - . metal halides
 - . alkali halides
 - . cesium halides
 - . **cesium iodides**
 - iodine compounds
 - . iodides
 - . **cesium iodides**
 - RT cesium
- cesium ions**
 - GS ions
 - . **cesium ions**
 - RT cesium
- cesium isotopes**
 - GS chemical elements
 - . alkali metals
 - . cesium
 - ... **cesium isotopes**
 - ... cesium 133
 - ... cesium 134
 - ... cesium 137
 - ... cesium 144
 - . nuclides
 - . isotopes
 - ... **cesium isotopes**
 - ... cesium 133
 - ... cesium 134
 - ... cesium 137
 - ... cesium 144
 - metals
 - . alkali metals
 - . cesium
 - ... **cesium isotopes**
 - ... cesium 133
 - ... cesium 134
 - ... cesium 137
 - ... cesium 144
- cesium oxides**
 - GS cesium compounds
 - . **cesium oxides**
 - chalcogenides
 - . oxides
 - . metal oxides
 - . **cesium oxides**
- cesium plasma**
 - GS particles
 - . charged particles

- .. energetic particles
 - ... plasmas (physics)
 - ... metallic plasmas
 - ... **cesium plasma**
 - . corpuscular radiation
 - .. energetic particles
 - ... plasmas (physics)
 - ... metallic plasmas
 - ... **cesium plasma**
- RT cesium
 - thermionic converters
- cesium vapor**
 - GS chemical elements
 - . alkali metals
 - .. **cesium vapor**
 - . nuclides
 - .. isotopes
 - ... **cesium vapor**
 - metals
 - . alkali metals
 - .. **cesium vapor**
 - vapors
 - . **cesium vapor**
- RT cesium
 - mercury vapor
- Cessna 172 aircraft**
 - GS Cessna aircraft
 - . **Cessna 172 aircraft**
 - general aviation aircraft
 - . **Cessna 172 aircraft**
 - light aircraft
 - . **Cessna 172 aircraft**
 - monoplanes
 - . **Cessna 172 aircraft**
 - passenger aircraft
 - . **Cessna 172 aircraft**
 - single engine aircraft
 - . **Cessna 172 aircraft**
 - RT ∞ aircraft
- Cessna 205 aircraft**
 - GS Cessna aircraft
 - . **Cessna 205 aircraft**
 - general aviation aircraft
 - . **Cessna 205 aircraft**
 - light aircraft
 - . **Cessna 205 aircraft**
 - monoplanes
 - . **Cessna 205 aircraft**
 - passenger aircraft
 - . **Cessna 205 aircraft**
 - single engine aircraft
 - . **Cessna 205 aircraft**
 - RT ∞ aircraft
- Cessna 210 aircraft**
 - UF *Centurion aircraft*
 - GS Cessna aircraft
 - . **Cessna 210 aircraft**
 - general aviation aircraft
 - . **Cessna 210 aircraft**
 - light aircraft
 - . **Cessna 210 aircraft**
 - monoplanes
 - . **Cessna 210 aircraft**
 - passenger aircraft
 - . **Cessna 210 aircraft**
 - single engine aircraft
 - . **Cessna 210 aircraft**
- Cessna 402B aircraft**
 - DEF A lighter, twin-engine, short-haul cargo/passenger aircraft manufactured by the Cessna Aircraft Company.
 - GS Cessna aircraft
 - . **Cessna 402B aircraft**
 - general aviation aircraft
 - . **Cessna 402B aircraft**
 - light aircraft
 - . **Cessna 402B aircraft**
 - monoplanes
 - . **Cessna 402B aircraft**
 - passenger aircraft
 - . **Cessna 402B aircraft**
- transport aircraft
 - . short haul aircraft
 - .. **Cessna 402B aircraft**
- RT ∞ aircraft
- Cessna aircraft**
 - GS **Cessna aircraft**
 - . A-37 aircraft
 - . Cessna 172 aircraft
 - . Cessna 205 aircraft
 - . Cessna 210 aircraft
 - . Cessna 402B aircraft
 - . Cessna L-19 aircraft
 - . T-37 aircraft
 - RT ∞ aircraft
- Cessna L-19 aircraft**
 - GS Cessna aircraft
 - . **Cessna L-19 aircraft**
 - light aircraft
 - . **Cessna L-19 aircraft**
 - monoplanes
 - . **Cessna L-19 aircraft**
 - observation aircraft
 - . **Cessna L-19 aircraft**
 - reconnaissance aircraft
 - . **Cessna L-19 aircraft**
 - RT ∞ aircraft
- CETA cart (ISS)**
 - (added December 2002)
 - USE **Crew Equipment Translation Aid (ISS)**
- cetane**
 - GS organic compounds
 - . hydrocarbons
 - .. aliphatic hydrocarbons
 - ... alkanes
 - ... **cetane**
- cetyl compounds**
 - GS alkyl compounds
 - . **cetyl compounds**
 - RT ∞ chemical compounds
- Ceylon*
 - USE **Sri Lanka**
- CF-104 aircraft*
 - USE **Canadair aircraft F-104 aircraft**
- CF-700 engine**
 - GS engines
 - . air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - ... turbofan engines
 - ... **CF-700 engine**
 - . internal combustion engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - ... turbofan engines
 - ... **CF-700 engine**
 - . turbine engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - ... turbofan engines
 - ... **CF-700 engine**
 - RT vertical takeoff aircraft
- CFCs*
 - USE **chlorofluorocarbons**
- CFD*
 - USE **charge flow devices**
- CFRP*
 - USE **carbon fiber reinforced plastics**
- CH (methylidyne)*
 - USE **methylidyne**
- CH-3 helicopter**
 - GS passenger aircraft
 - . **CH-3 helicopter**
 - Sikorsky aircraft
 - . **CH-3 helicopter**
 - transport aircraft
 - . **CH-3 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **CH-3 helicopter**
 - ... rigid rotor helicopters
 - ... **CH-3 helicopter**
- RT S-61 helicopter
- CH-21 helicopter**
 - UF *H-21 helicopter*
 - Shawnee helicopter*
 - Workhorse helicopter*
 - GS Boeing aircraft
 - . **CH-21 helicopter**
 - transport aircraft
 - . cargo aircraft
 - .. **CH-21 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **CH-21 helicopter**
- CH-34 helicopter**
 - UF *Choctaw helicopter*
 - H-34 helicopter*
 - GS Sikorsky aircraft
 - . **CH-34 helicopter**
 - transport aircraft
 - . **CH-34 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **CH-34 helicopter**
 - RT S-58 helicopter
- CH-46 helicopter**
 - UF *CH-113 helicopter*
 - HRB-1 helicopter*
 - Sea Knight helicopter*
 - Voyageur helicopter*
 - GS Boeing aircraft
 - . **CH-46 helicopter**
 - passenger aircraft
 - . **CH-46 helicopter**
 - transport aircraft
 - . **CH-46 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **CH-46 helicopter**
 - ... tandem rotor helicopters
 - ... **CH-46 helicopter**
- CH-47 helicopter**
 - UF *Chinook helicopter*
 - HC-1 helicopter*
 - GS Boeing aircraft
 - . **CH-47 helicopter**
 - passenger aircraft
 - . **CH-47 helicopter**
 - transport aircraft
 - . **CH-47 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **CH-47 helicopter**
 - ... tandem rotor helicopters
 - ... **CH-47 helicopter**
- CH-53 helicopter*
 - USE **H-53 helicopter**
- CH-54 helicopter**
 - UF *S-64 helicopter*
 - Sikorsky S-64 helicopter*
 - Skycrane helicopter*

CH-62 helicopter

- GS passenger aircraft
 . **CH-54 helicopter**
 Sikorsky aircraft
 . **CH-54 helicopter**
 transport aircraft
 . **CH-54 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . military helicopters
 **CH-54 helicopter**
- CH-62 helicopter**
 GS Boeing aircraft
 . **CH-62 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . heavy lift helicopters
 **CH-62 helicopter**
 . . . military helicopters
 **CH-62 helicopter**
 RT ∞ military aircraft
- CH-113 helicopter*
 USE **CH-46 helicopter**
- Chad**
 GS nations
 . **Chad**
 RT Africa
- chaff**
 GS countermeasures
 . electronic countermeasures
 . . **chaff**
 RT deception
 electronic warfare
 radar echoes
- chain reactions (chemistry)**
(added May 1999)
 GS chemical reactions
 . **chain reactions (chemistry)**
 RT chemical lasers
 combustion chemistry
- chain reactions (nuclear physics)**
(added May 1999)
 GS nuclear reactions
 . nuclear fission
 . . **chain reactions (nuclear physics)**
 RT fission products
 neutrons
- chains**
 SN (EXCLUDES CHEMICAL BONDS AND NUCLEAR REACTIONS)
 RT ∞ barriers
 cables (ropes)
 fasteners
 ∞ links
 molecular chains
- chairs*
 USE **seats**
- chalcogenides**
 GS **chalcogenides**
 . oxides
 . . alkoxides
 . . anhydrides
 . . . peroxides
 inorganic peroxides
 hydrogen peroxide
 organic peroxides
 potassium peroxides
 sodium peroxides
 . . boron oxides
 . . brucite
 . . carbon monoxide
 . . carbon suboxides
 . . chlorine oxides
 . . dioxides
 . . . carbon dioxide
 . . . flint
 . . . hydrogen peroxide
 . . . silicon dioxide
 quartz
 coesite
 stishovite
 . . . sulfur dioxides
 germanium oxides
 . . . heavy water
 . . indium oxides
 . . metal oxides
 . . . alkaline earth oxides
 barium oxides
 beryllium oxides
 alexandrite
 calcium oxides
 akermanite
 magnesium oxides
 akermanite
 periclase
 . . . aluminum oxides
 alexandrite
 sapphire
 . . . bismuth oxides
 . . . cerium oxides
 . . . cesium oxides
 . . . chromium oxides
 . . . cobalt oxides
 . . . copper oxides
 . . . gallium oxides
 . . . hafnium oxides
 . . . iron oxides
 hematite
 ilmenite
 . . . magnetite
 . . . lanthanum oxides
 . . . lead oxides
 . . . lithium oxides
 . . . manganese oxides
 Hopcalite (trademark)
 . . . mercury oxides
 . . . mixed oxides
 BSCCO superconductors
 YBCO superconductors
 . . . molybdenum oxides
 . . . nickel oxides
 . . . niobium oxides
 . . . platinum oxides
 . . . plutonium oxides
 . . . potassium oxides
 . . . scandium oxides
 . . . silver oxides
 . . . sodium peroxides
 . . . strontium oxides
 . . . tantalum oxides
 . . . thorium oxides
 . . . tin oxides
 . . . titanium oxides
 anatase
 ilmenite
 rutile
 . . . tungsten oxides
 scheelite
 . . . uranium oxides
 . . . vanadium oxides
 . . . yttrium oxides
 . . . zinc oxides
 . . . zirconium oxides
 yttria-stabilized zirconia
 . . nitrogen oxides
 . . . nitric oxide
 . . . nitrogen dioxide
 . . . nitrogen tetroxide
 . . . nitrous oxides
 . . . phosphorus oxides
 . . pyroxenes
 . . . enstatite
 . . selenium oxides
 . . silicon oxides
 . . muscovite
 . . nephelite
 . . silicon dioxide
 quartz
 coesite
 stishovite
 . . . spodumene
 . . sulfur oxides
 . . . sulfur dioxides
 . . selenides
 . . cadmium selenides
 . . copper selenides
 . . . copper indium selenides
 . . gallium selenides
 . . indium selenides
 . . . copper indium selenides
 . . lead selenides
 . . zinc selenides
 . sulfides
 . disulfides
 . . carbon disulfide
 . . inorganic sulfides
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zincblende
 . . pyrites
 . . pyrrhotite
 . . . troilite
 . tellurides
 . . bismuth tellurides
 . . cadmium tellurides
 . . indium tellurides
 . . lanthanum tellurides
 . . lead tellurides
 . . mercury tellurides
 . . . mercury cadmium tellurides
 . . tin tellurides
 . . zinc tellurides
 RT ∞ Group 6A compounds
- chalk**
 GS calcium compounds
 . calcium carbonates
 . . **chalk**
 carbon compounds
 . carbonates
 . . calcium carbonates
 . . . **chalk**
 RT gypsum
- Challenger (Orbiter)**
 UF *Space Shuttle Orbiter 099*
 GS manned spacecraft
 . space shuttles
 . . Space Shuttle orbiters
 . . . **Challenger (Orbiter)**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . space shuttles
 Space Shuttle orbiters
 **Challenger (Orbiter)**
 RT Endeavour (orbiter)
 Space Shuttle mission 31-B
 Space Shuttle mission 31-C
 Space Shuttle mission 31-D
 Space Shuttle mission 41-B
 Space Shuttle mission 41-C
 Space Shuttle mission 41-G
 Space Shuttle mission 51-B
 Space Shuttle mission 51-E
 Space Shuttle mission 51-F
 Space Shuttle mission 51-L
 Space Shuttle mission 61-A
 ∞ spacecraft
- ∞ **chambers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT anechoic chambers
 arc chambers
 bubble chambers

cloud chambers
 combustion chambers
 cylindrical chambers
 flexing
 flow chambers
 hyperbaric chambers
 ionization chambers
 plenum chambers
 pressure chambers
 reverberation chambers
 spark chambers
 test chambers
 thrust chambers
 vacuum chambers

Chance-Vought aircraft
 RT ∞ aircraft

Chandler motion
 USE **polar wandering (geology)**

Chandler wobble
(added September 1992)
 SN (EXCLUDES CHANDLER MOTION)
 DEF A movement in the Earth's axis of rotation whose period of motion is about 14 months. Used for Eulerian nutation.
 UF *Eulerian nutation*
 GS nutation
 . **Chandler wobble**
 RT Earth axis
 ∞ Earth motion
 Earth orientation
 Earth rotation
 geodynamics
 geophysics
 polar wandering (geology)

Chandra X Ray Astrophysics Facility
(added March 1999)
 USE **X Ray Astrophysics Facility**

Chandrasekhar equation
 GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . **Chandrasekhar equation**
 RT electromagnetic absorption
 ∞ equations

change detection
 DEF A process of examining imagery to detect changes on a planetary surface or astronomical body.
 GS detection
 . **change detection**
 RT aerial photography
 aerial reconnaissance
 Earth Resources Program
 image classification
 image processing
 imagery
 land use
 multispectral band scanners
 multispectral photography
 pattern recognition
 photointerpretation
 radar imagery
 remote sensing
 scene analysis
 side-looking radar
 terrain analysis

channel capacity
 RT Aloha system
 bandwidth
 ∞ capacity
 cochannel interference
 demand assignment multiple access
 frequencies
 packet transmission
 transmission rate (communications)

channel flow
 GS fluid flow
 . internal flow

. . **channel flow**
 . . . open channel flow
 RT annular flow
 Brinkman number
 cavity flow
 choked flow
 corner flow
 dredged materials
 ducted flow
 flow geometry
 fluid injection
 incompressible fluids
 outlet flow
 pipe flow
 wall flow

channel multipliers
 UF *channeltrons*
 GS multipliers
 . **channel multipliers**
 RT auroral spectroscopy
 electron avalanche
 microchannel plates
 photomultiplier tubes
 radiation counters

channel noise
 DEF In communications bursts of interruptive pulses caused mainly by contact closures in electromagnetic equipment or by transient voltages in electric cables during transmission of signals or data. Impulsive noise is the frequent cause of transmission errors.
 RT Aloha system
 background noise
 cochannel interference
 electromagnetic noise
 noise spectra
 random noise
 signal to noise ratios
 thermal noise
 time division multiple access
 trellis coding

channel wings
 GS airfoils
 . wings
 . . **channel wings**
 planforms
 . wing planforms
 . . **channel wings**
 RT aerodynamic configurations
 aircraft design
 aircraft parts
 aircraft structures

∞ **channels**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT channels (data transmission)
 computer storage devices
 dredged materials
 ducts
 frequencies
 media
 parallel plates
 structural members
 telecommunication
 throats

channels (data transmission)
 UF *data busses*
 RT asynchronous transfer mode
 ∞ channels
 ∞ data
 data links
 data processing
 data transmission
 protocol (computers)
 Rayleigh fading

single channel per carrier
 transmission

channeltrons
 USE **channel multipliers**

chaos
(added June 1989)
 RT attractors (mathematics)
 branching (mathematics)
 mathematical models
 nonlinear systems
 period doubling
 stochastic processes
 strange attractors

chaotic cloud patterns
 USE **clouds (meteorology)**

chaparral
 GS plants (botany)
 . brush (botany)
 . . **chaparral**
 RT botany
 Earth resources
 trees (plants)

Chaparral missile
 GS missiles
 . surface to air missiles
 . . **Chaparral missile**
 RT space weapons

Chaplygin equation
 GS flow equations
 . **Chaplygin equation**
 RT ∞ equations
 hodographs
 vector spaces

Chapman shear layer
 USE **shear layers**

Chapman-Enskog theory
 UF *Enskog-Chapman theory*
 GS kinetic theory
 . transport theory
 . . **Chapman-Enskog theory**
 RT Boltzmann transport equation
 Burnett equations
 distribution functions
 flow distribution
 monatomic gases
 rarefied gas dynamics
 temperature gradients
 ∞ theories
 thermal diffusion

Chapman-Ferraro problem
 RT atmospheric models
 Earth magnetosphere
 interplanetary magnetic fields
 magnetopause
 ∞ problems
 solar wind

Chapman-Jouget flame
 USE **chemical equilibrium detonation flame propagation**

character recognition
 GS recognition
 . pattern recognition
 . . **character recognition**
 RT artificial intelligence
 contrast
 ∞ detectors
 graphology
 handwriting
 legibility
 optical data processing
 optical scanners
 perception
 readers
 reading

characteristics

resolution
scene analysis
∞ sensors
symbols
visibility

characteristic equations

USE **eigenvalues**
eigenvectors

characteristic functions

USE **eigenvalues**
eigenvectors

characteristic method

USE **method of characteristics**

∞ characteristics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF Specifically, distinguishing qualities, properties, features or capabilities of an entity.

RT aerodynamic characteristics
capacitance-voltage characteristics
dynamic characteristics
flight characteristics
flow characteristics
method of characteristics
nanostructure (characteristics)
polarization characteristics
Segre characteristic
spray characteristics
static aerodynamic characteristics
volt-ampere characteristics

characterization

RT descriptions
examination
representations

characters

USE **symbols**

charcoal

GS **charcoal**
. activated carbon
RT adsorbents
carbon
coke
fuels

charge carriers

GS **charge carriers**
. free electrons
. holes (electron deficiencies)
. majority carriers
. minority carriers
RT carrier injection
carrier lifetime
∞ carriers
electron mobility
hole mobility

charge coupled devices

DEF Semiconductor devices arrayed so that the electric charge at the output of one provides the input stimulus to the next. Use for CCD.

UF *CCD*

GS electronic equipment
. solid state devices
. semiconductor devices
. . . charge transfer devices
. . . . **charge coupled devices**
RT bucket brigade devices
CCD cameras
CCD star tracker
charge injection devices
focal plane devices
ITO (semiconductors)

charge distribution

GS distribution (property)
. **charge distribution**
electrical properties

. charge distribution

RT current distribution
electron distribution
electrostatic charge
force distribution
hole distribution (electronics)
ion distribution
mass distribution
neutral atoms
polarization (charge separation)

charge efficiency

DEF The efficiency of electric cell recharging.

GS efficiency

. charge efficiency

RT battery chargers
∞ charging
electric batteries
primary batteries
recharging
storage batteries

charge exchange

SN (LIMITED TO COLLISIONAL TRANSFER OF AN ELECTRON FROM A NEUTRAL ATOM OR MOLECULE TO AN ION—EXCLUDES SEMICONDUCTOR AND PHOTOCHEMICAL CHARGE TRANSFER)

DEF The collisional transfer of an electron from a neutral atom or molecule to an ion.

GS exchanging

. charge exchange

. . resonance charge exchange
RT electron transfer
ion atom interactions
ion charge
ion production rates
plasma-particle interactions
recoil ions

charge flow devices

DEF Metal oxide semiconductor (MOS) devices used for fire detectors and humidity sensors. Used for CFD.

UF *CFD*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. **charge flow devices**
RT integrated circuits
∞ sensors

charge injection devices

UF *CID*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **charge injection devices**
RT charge coupled devices
electro-optics
imaging techniques
semiconductors (materials)
star trackers

charge separation

USE **polarization (charge separation)**

charge transfer

SN (EXCLUDES COLLISIONAL CHARGE EXCHANGE)
RT carrier injection
charged particles
electron transfer
ion exchanging
ionic reactions
mass transfer
photochemical reactions
polarization (charge separation)
transferring

charge transfer devices

UF *CTD*
GS electronic equipment
. solid state devices

. . semiconductor devices
. . . **charge transfer devices**
. . . . bucket brigade devices
. . . . charge coupled devices
. . . . charge injection devices
RT ITO (semiconductors)
organic charge transfer salts
tunable filters

charged particles

SN (FOR IONIC PARTICLES SEE IONS)
GS particles

. charged particles

. . antiprotons
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . plasma focus
. strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . cesium plasma
. . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. solar wind
. stellar winds
. . . . dusty plasmas
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . . . ionized gases
. . . . Lorentz gas
. . . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
. . . partons
. . . plasma clouds
. . . magnetic clouds

. . . plasma jets
 . . . radio jets (astronomy)
 . . . plasma layers
 . . . plasma sheaths
 . . . plasma slabs
 . . . positrons
 . . . protons
 . . . recoil protons
 . . . solar protons
 RT antineutrinos
 antiparticles
 bosons
 charge transfer
 corpuscular radiation
 Coulomb collisions
 Coulomb potential
 cyclotron frequency
 cyclotron radiation
 cyclotron resonance
 deuteron irradiation
 electron-positron pairs
 elementary particles
 eta-mesons
 gyrofrequency
 Helios Project
 hyperons
 ion charge
 kaons
 leptons
 Lorentz force
 meson-nucleon interactions
 mesons
 muon spin rotation
 muons
 neutral sheets
 neutrons
 nonadiabatic theory
 ∞ nuclei
 nucleon-nucleon interactions
 nucleons
 omega-mesons
 particle charging
 particle precipitation
 particle trajectories
 pions
 Reissner-Nordstrom solution
 rho-mesons
 sigma-mesons
 single event upsets
 trapped particles
 ∞ **charging**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT battery chargers
 charge efficiency
 electric charge
 electrostatic charge
 explosive devices
 explosives
 filling
 injection
 magnetic charge density
 SCATHA satellite
charm (particle physics)
 DEF A quantum number which has been proposed to account for an apparent lack of symmetry in the behavior of hadrons relative to that of leptons, to explain why certain reactions of elementary particles do not occur, and to account for the longevity of the J particle.
 RT hadrons
 leptons
 particle interactions
 particle theory
 ∞ physics
 quantum theory
 theoretical physics
Charon
 DEF Natural satellite of the planet Pluto, discovered and named by Dr. James W. Christy.
 GS celestial bodies
 . natural satellites
 . . Pluto satellites

. . . **Charon**
 RT Callisto
 Deimos
 Earth-Moon system
 Europa
 Galilean satellites
 Ganymede
 Iapetus
 Io
 planetary orbits
 Pluto (planet)
 solar system
 Titan
Charpy impact test
 GS impact tests
 . **Charpy impact test**
 notch tests
 . **Charpy impact test**
 RT brittleness
 drop tests
 hardness
 ∞ materials tests
 notch sensitivity
charring
 RT ablation
 carbonization
 combustion
 decomposition
 fire damage
 oxidation
 thermal absorption
charts
 GS **charts**
 . flow charts
 . graphs (charts)
 . . bond graphs
 . . Gompertz curves
 . . Mollier diagram
 . . Patterson map
 . meteorological charts
 . nautical charts
 RT block diagrams
 diagrams
 display devices
 drawings
 graphic arts
 maps
 navigation aids
 nomographs
 ∞ plots
 statistical analysis
 statistical tests
 visual aids
chassignites
 (added August 1991)
 DEF Achondritic stony meteorites composed almost entirely (958) of olivine, with accessory amounts of chromite, and lacking nickel-iron. It resembles terrestrial dunite.
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . achondrites
 . . . **chassignites**
 RT nakhlites
 shergottites
 SNC meteorites
chassis
 GS frames
 . **chassis**
 RT automobiles
 carriages
 ∞ headers
 struts
 supports
 undercarriages
Chebyshev approximation
 GS analysis (mathematics)
 . numerical analysis
 . . approximation

. . . **Chebyshev approximation**
 RT series (mathematics)
 statistical analysis
checkout
 SN (SEQUENCE OF TESTS TO DETERMINE FUNCTIONAL READINESS OF EQUIPMENT)
 DEF A sequence of actions taken to test or examine a thing as to its readiness for incorporation into a new phase of use, or for the performance of its intended function. The sequence of steps taken to familiarize a person with the operation of an airplane or other piece of equipment. Used for debugging.
 UF *debugging*
 RT aircraft maintenance
 CEFOAM checkout equipment
 certification
 cold flow tests
 countdown
 file maintenance (computers)
 inspection
 maintenance
 performance tests
 preferring tests
 program verification (computers)
 self tests
 space vehicle checkout program
 spacecraft maintenance
 ∞ test equipment
 ∞ tests
checkout equipment
 USE **test equipment**
chelate compounds
 USE **chelates**
chelates
 UF *chelate compounds*
 RT chelation
 ∞ chemical compounds
 organometallic compounds
chelation
 RT chelates
 chemical reactions
chemical analysis
 GS chemical tests
 . **chemical analysis**
 . . chromatography
 . . . gas chromatography
 . . . liquid chromatography
 . . . paper chromatography
 . . . thin layer chromatography
 . . electrophotometry
 . . gas analysis
 . . . ozonometry
 . . . Van Slyke method
 . . . iodimetry
 . . . Karl Fischer reagent
 . . microanalysis
 . . neutron activation analysis
 . . potentiometric analysis
 . . qualitative analysis
 . . quantitative analysis
 . . . Kjeldahl method
 . . . Van Slyke method
 . . spectroscopic analysis
 . . urinalysis
 . . volumetric analysis
 RT alkalinity
 analytical chemistry
 ∞ analyzing
 assaying
 Auger spectroscopy
 ∞ chemistry
 colorimetry
 coulometers
 density measurement
 diffractometers
 electron probes
 fuel tests
 gas spectroscopy
 hydrometers

chemical attack

hygrometers
identifying
inductively coupled plasma mass spectrometry
infrared spectrophotometers
infrared spectroscopy
ion selective electrodes
isotopic labeling
laser spectroscopy
Mars surface samples
mass spectrometers
mass spectroscopy
∞ materials tests
∞ measurement
metallicity
methylene blue
moisture meters
mutagens
nephanalysis
optical measurement
particle tracks
particulate sampling
photometry
physical chemistry
polarimeters
polarography
psychrometers
radiochemistry
reagents
sampling
spectral signatures
spectrometers
spectrophotometers
spectroscopy
∞ tests
thermogravimetry
titrimeters
x ray analysis

chemical attack

GS **chemical attack**
. intergranular corrosion
. transgranular corrosion
RT ∞ attack
corrosion
corrosion prevention
corrosion resistance
corrosion tests
degradation
dissolving
impregnating
oxidation
passivity
pitting
rusting
scale (corrosion)

chemical auxiliary power units

GS auxiliary power sources
. **chemical auxiliary power units**
RT electric batteries
fuel cells
lead acid batteries
magnesium cells

chemical bonds

UF *molecular bonds*
GS **chemical bonds**
. covalent bonds
. hydrogen bonds
RT agglutination
binding energy
bonding
coupled modes
covalence
crystal lattices
ionic crystals
ligands
molecules
monatomic molecules
octets
polyatomic molecules
polywater
saturation (chemistry)
Swan bands
unsaturation (chemistry)

valence

chemical cleaning

GS cleaning
. **chemical cleaning**
. . . pickling (metallurgy)
RT descaling
dissolving

chemical clouds

DEF Artificial clouds of chemical compounds released in the ionosphere for observation of dispersion and other characteristics.
GS clouds (meteorology)
. artificial clouds
. . **chemical clouds**
. . . barium ion clouds
RT chemical release modules
CRRES (satellite)
particles
plasma clouds

chemical compatibility

(added September 1995)
GS compatibility
. **chemical compatibility**
RT affinity
liquid rocket propellants
metal matrix composites
propellant tests
stability

chemical composition

GS composition (property)
. **chemical composition**
. . carbon dioxide concentration
. . stellar composition
RT alkalinity
atmospheric composition
atom concentration
body composition (biology)
distribution (property)
gas composition
ionospheric composition
ligands
metallic stars
metallicity
planetary structure
spectral signatures

∞ chemical compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Distinct substances formed by a union of two or more ingredients in definite proportions by weight.
RT acetyl compounds
actinide series compounds
adducts
∞ alkali metal compounds
∞ alkaline earth compounds
alkyl compounds
allyl compounds
aluminum compounds
ammines
ammonium compounds
antimony compounds
∞ aromatic compounds
arsenic compounds
azo compounds
barium compounds
beryllium compounds
bismuth compounds
boron compounds
boron-epoxy composites
bromine compounds
cadmium compounds
calcium compounds
carbon compounds
carbonyl compounds
cerium compounds
cesium compounds
cetyl compounds
chelates
∞ chemicals
chlorine compounds

chromium compounds
clathrates
cobalt compounds
complex compounds
compound A
∞ compounds
congeners
copper compounds
curium compounds
cyano compounds
cyclic compounds
deuterium compounds
diallyl compounds
dibasic compounds
dibutyl compounds
difluoro compounds
diphenyl compounds
dopa
dysprosium compounds
epoxy compounds
erbium compounds
ethyl compounds
ethylene compounds
europium compounds
fluorine compounds
fluorine organic compounds
fluoro compounds
fullerides
furans
gallium compounds
germanium compounds
∞ Group 1B compounds
∞ Group 2B compounds
∞ Group 3A compounds
∞ Group 3B compounds
∞ Group 4A compounds
∞ Group 4B compounds
∞ Group 5A compounds
∞ Group 5B compounds
∞ Group 6A compounds
∞ Group 6B compounds
∞ Group 7B compounds
∞ Group 8 compounds
hafnium compounds
halocarbons
halogen compounds
heterocyclic compounds
hexyl compounds
hydrazinium compounds
hydrazonium compounds
hydrogen compounds
hydroxyl compounds
indium aluminum arsenides
indium compounds
indium oxides
inorganic compounds
intercalation
iodine compounds
iridium compounds
iron compounds
isopropyl compounds
lanthanum compounds
lead compounds
lead organic compounds
lithium compounds
lutetium compounds
magnesium compounds
manganese compounds
mercury compounds
∞ metal compounds
methoxy systems
methyl compounds
molecules
molybdenum compounds
monatomic molecules
neodymium compounds
neptunium compounds
nickel compounds
niobium compounds
nitro compounds
nitrogen compounds
nitronium compounds
nitroso compounds
organic aluminum compounds
organic boron compounds
organic compounds
organic germanium compounds

- organic lithium compounds
- organic phosphorus compounds
- organic semiconductors
- organic silicon compounds
- organic sulfur compounds
- organic tin compounds
- organometallic compounds
- osmium compounds
- ∞ oxygen compounds
- oxynitrides
- palladium compounds
- phosgene
- phosphonium compounds
- phosphorus compounds
- platinum compounds
- plutonium compounds
- polonium compounds
- polyatomic molecules
- polynuclear organic compounds
- polyquinoxalines
- potassium compounds
- praseodymium compounds
- propyl compounds
- protactinium compounds
- rare earth compounds
- ∞ rare gas compounds
- refractory materials
- rhenium compounds
- rhodium compounds
- rubidium compounds
- ruthenium compounds
- samarium compounds
- scandium compounds
- selenium compounds
- silicon compounds
- silver compounds
- sodium compounds
- strontium compounds
- strontium oxides
- styphnates
- sulfur compounds
- sulfur hexafluoride
- tantalum compounds
- technetium compounds
- tellurium compounds
- tetrahydrofuran
- thiols
- thorium compounds
- thulium compounds
- tin compounds
- titanium compounds
- triethyl compounds
- trimethyl compounds
- trinitro compounds
- tropyl compounds
- tungsten compounds
- uranium compounds
- vanadium compounds
- vanadyl compounds
- Wiswesser notations
- xenon compounds
- ytterbium compounds
- yttrium compounds
- zinc compounds
- zirconium compounds
- zwitterions

chemical defense

DEF All actions and counteractions designed for the protection of personnel and material against offensive chemical agents.

- RT civil defense
 - clothing
 - drugs
 - first aid
 - injuries
 - masks
 - neurology
 - physiological factors
 - protective clothing
 - safety devices
 - warfare

chemical effects

- RT biological effects
- ∞ effects
 - sterilization effects

temperature effects

chemical elements

- GS **chemical elements**
 - . actinide series
 - . . actinium
 - . . radium
 - . . . radium isotopes
 - radium 226
 - . . thorium
 - . . . thorium isotopes
 - . . transuranium elements
 - . . . americium
 - americium isotopes
 - americium 241
 - . . . berkelium
 - . . . californium
 - californium isotopes
 - . . . curium
 - curium isotopes
 - curium 242
 - curium 244
 - . . . einsteinium
 - . . . fermium
 - . . . lawrencium
 - . . . mendeleevium
 - . . . neptunium
 - neptunium isotopes
 - . . . nobelium
 - . . . plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - . . . sergenium
 - . . uranium
 - . . . uranium isotopes
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
 - alkali metals
 - . . . cesium
 - cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . . . cesium vapor
 - . . francium
 - . . lithium
 - . . . liquid lithium
 - . . . lithium isotopes
 - potassium
 - liquid potassium
 - potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - . . . rubidium
 - rubidium isotopes
 - rubidium 86
 - . . . sodium
 - liquid sodium
 - sodium isotopes
 - sodium 22
 - sodium 24
 - sodium vapor
 - alkaline earth metals
 - . . . barium isotopes
 - aluminum
 - aluminum isotopes
 - aluminum 26
 - aluminum 27
 - barium
 - barium isotopes
 - beryllium
 - beryllium isotopes
 - beryllium 7
 - beryllium 9
 - beryllium 10
 - . . . bismuth
 - bismuth isotopes
 - . . . cadmium

- . . cadmium isotopes
- . . calcium
- . . . calcium isotopes
- . . carbon
- . . . carbon isotopes
- carbon 12
- carbon 13
- carbon 14
- . . chromium
- . . . chromium isotopes
- . . cobalt
- . . . cobalt isotopes
- cobalt 58
- cobalt 60
- . . copper
- . . . copper isotopes
- . . gallium
- . . . gallium isotopes
- . . gold
- . . . gold isotopes
- gold 198
- . . hafnium
- . . . hafnium isotopes
- . . hahnium
- . . halogens
- . . . astatine
- . . . bromine
- bromine isotopes
- . . . chlorine
- . . . fluorine
- fluorine isotopes
- liquid fluorine
- . . . iodine
- iodine isotopes
- iodine 125
- iodine 131
- iodine 132
- . . . heavy elements
- . . hydrogen
- . . . hydrogen isotopes
- deuterium
- hydrogen 4
- metallic hydrogen
- tritium
- . . . liquid hydrogen
- . . indium
- . . iridium
- . . . iridium isotopes
- . . iron
- . . . iron isotopes
- iron 57
- iron 58
- iron 59
- . . . lead (metal)
- . . . lead isotopes
- . . light elements
- . . magnesium
- . . . magnesium isotopes
- . . manganese
- . . . manganese isotopes
- . . mercury (metal)
- . . . mercury isotopes
- . . . mercury vapor
- . . metalloids
- . . . antimony
- antimony isotopes
- . . . arsenic
- arsenic isotopes
- . . . boron
- boron isotopes
- boron 10
- . . . germanium
- germanium isotopes
- . . . polonium
- polonium isotopes
- polonium 208
- polonium 209
- polonium 210
- . . . silicon
- amorphous silicon
- porous silicon
- silicon isotopes
- tellurium
- tellurium isotopes
- . . . molybdenum
- . . . nickel
- nickel isotopes

chemical elements

- . niobium
- .. niobium isotopes
- ... niobium 95
- . nitrogen
- .. liquid nitrogen
- .. nitrogen isotopes
- ... nitrogen 15
- ... nitrogen 16
- .. solid nitrogen
- . nuclides
- .. isotopes
- ... aluminum isotopes
- aluminum 26
- aluminum 27
- ... antimony isotopes
- .. argon isotopes
- .. arsenic isotopes
- .. barium isotopes
- .. beryllium isotopes
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- .. bismuth isotopes
- .. boron isotopes
- ... boron 10
- .. bromine isotopes
- .. cadmium isotopes
- .. calcium isotopes
- .. carbon isotopes
- ... carbon 12
- ... carbon 13
- ... carbon 14
- .. cerium isotopes
- ... cerium 137
- ... cerium 144
- .. cesium isotopes
- ... cesium 133
- ... cesium 134
- ... cesium 137
- ... cesium 144
- .. cesium vapor
- .. chromium isotopes
- .. cobalt isotopes
- ... cobalt 58
- ... cobalt 60
- .. dysprosium isotopes
- .. erbium isotopes
- .. europium isotopes
- .. fluorine isotopes
- .. gadolinium isotopes
- .. gallium isotopes
- .. germanium isotopes
- .. gold isotopes
- ... gold 198
- .. hafnium isotopes
- .. helium isotopes
- .. holmium isotopes
- .. hydrogen isotopes
- ... deuterium
- ... hydrogen 4
- ... metallic hydrogen
- ... tritium
- .. iodine isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- .. iridium isotopes
- .. iron isotopes
- ... iron 57
- ... iron 58
- ... iron 59
- .. krypton isotopes
- ... krypton 85
- .. lanthanum isotopes
- .. lead isotopes
- .. lithium isotopes
- .. lutetium
- ... lutetium isotopes
- .. magnesium isotopes
- .. manganese isotopes
- .. mercury isotopes
- .. molybdenum isotopes
- .. neodymium isotopes
- .. neon isotopes
- .. nickel isotopes
- .. niobium isotopes
- ... niobium 95
- ... nitrogen isotopes
- nitrogen 15
- nitrogen 16
- .. nobelium isotopes
- .. osmium isotopes
- .. oxygen isotopes
- ... oxygen 17
- ... oxygen 18
- .. palladium isotopes
- .. phosphorus isotopes
- ... phosphorus 32
- .. platinum isotopes
- .. polonium isotopes
- ... polonium 208
- ... polonium 209
- ... polonium 210
- .. potassium isotopes
- ... potassium 38
- ... potassium 39
- ... potassium 40
- .. praseodymium isotopes
- .. promethium isotopes
- .. protactinium isotopes
- .. radioactive isotopes
- ... astatine isotopes
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- ... carbon 14
- ... cerium 137
- ... cerium 144
- ... cesium 134
- ... cesium 137
- ... cesium 144
- ... cobalt 58
- ... cobalt 60
- .. copper isotopes
- ... gold 198
- .. indium isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- ... iron 59
- ... krypton 85
- ... niobium 95
- ... nitrogen 16
- ... phosphorus 32
- ... polonium 208
- ... polonium 209
- ... polonium 210
- ... potassium 38
- ... potassium 40
- ... rubidium 86
- ... sodium 22
- ... sodium 24
- ... strontium 85
- ... strontium 88
- ... strontium 89
- ... strontium 90
- .. transuranium elements
- ... americium
- ... americium isotopes
- americium 241
- berkelium
- californium
- californium isotopes
- curium
- ... curium isotopes
- curium 242
- curium 244
- ... einsteinium
- ... fermium
- ... lawrencium
- ... mendelevium
- ... neptunium
- ... neptunium isotopes
- ... nobelium
- ... plutonium
- ... plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- ... sergenium
- ... tritium
- ... uranium 232
- ... uranium 233
- ... uranium 238
- ... xenon 133
- ... xenon 135
- ... zirconium 95
- .. radium isotopes
- ... radium 226
- .. radon isotopes
- .. rhenium isotopes
- .. rhodium isotopes
- .. rubidium isotopes
- ... rubidium 86
- .. ruthenium isotopes
- .. samarium isotopes
- .. scandium isotopes
- .. selenium isotopes
- .. silicon isotopes
- .. silver isotopes
- .. sodium isotopes
- ... sodium 22
- ... sodium 24
- .. strontium isotopes
- ... strontium 85
- ... strontium 87
- ... strontium 89
- ... strontium 90
- .. sulfur isotopes
- .. tantalum isotopes
- .. technetium isotopes
- .. tellurium
- ... tellurium isotopes
- .. terbium isotopes
- .. thallium isotopes
- .. thorium isotopes
- .. thulium isotopes
- .. tin isotopes
- .. titanium isotopes
- .. tungsten isotopes
- .. uranium isotopes
- ... uranium 232
- ... uranium 233
- ... uranium 234
- ... uranium 235
- ... uranium 238
- .. vanadium isotopes
- .. xenon isotopes
- ... xenon 129
- ... xenon 133
- ... xenon 135
- .. ytterbium isotopes
- .. yttrium isotopes
- .. zinc isotopes
- .. zirconium isotopes
- ... zirconium 95
- . osmium
- .. osmium isotopes
- . oxygen
- .. liquid oxygen
- .. oxygen isotopes
- ... oxygen 17
- ... oxygen 18
- . palladium
- . phosphorus
- .. phosphorus isotopes
- ... phosphorus 32
- . platinum
- .. platinum isotopes
- . protactinium
- .. protactinium isotopes
- . rare earth elements
- .. cerium
- .. cerium isotopes
- ... cerium 137
- ... cerium 144
- .. dysprosium
- .. dysprosium isotopes
- .. erbium
- .. erbium isotopes
- .. europium
- .. europium isotopes
- .. gadolinium
- .. gadolinium isotopes
- .. holmium
- .. holmium isotopes
- .. lanthanum
- .. lanthanum isotopes
- .. lutetium

- . . . lutetium isotopes
- . . . neodymium
- . . . neodymium isotopes
- . . . praseodymium
- . . . praseodymium isotopes
- . . . promethium
- . . . promethium isotopes
- . . . samarium
- . . . samarium isotopes
- . . . scandium
- . . . scandium isotopes
- . . . terbium
- . . . terbium isotopes
- . . . thulium
- . . . thulium isotopes
- . . . ytterbium
- . . . ytterbium isotopes
- . . . yttrium
- . . . yttrium isotopes
- . rare gases
- . . argon
- . . . argon isotopes
- . . helium
- . . . helium isotopes
- . . . liquid helium
- liquid helium 2
- . . krypton
- . . . krypton isotopes
- krypton 85
- . . neon
- . . . liquid neon
- . . . neon isotopes
- . . radon
- . . . radon isotopes
- . . xenon
- . . . xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- . rhenium
- . . rhenium isotopes
- . rhodium
- . . rhodium isotopes
- . ruthenium
- . . ruthenium isotopes
- . rutherfordium
- . selenium
- . silver
- . . silver isotopes
- . strontium
- . . strontium isotopes
- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90
- . sulfur
- . . sulfur isotopes
- . tantalum
- . . tantalum isotopes
- . technetium
- . thallium
- . . thallium isotopes
- . tin
- . . tin isotopes
- . titanium
- . . titanium isotopes
- . tungsten
- . vanadium
- . . vanadium isotopes
- . zinc
- . . zinc isotopes
- . zirconium
- . . zirconium isotopes
- . . . zirconium 95
- . bohrium
- . dubnium
- . hassium
- . meitnerium
- . seaborgium
- . siderophile elements
- RT atoms
- ∞ chemicals
- ∞ elements
- ferrous metals
- ions
- isotopic enrichment
- light ions

- metals
- nonferrous metals
- nuclear isobars
- plasmas (physics)
- trace contaminants

chemical energy

DEF Energy produced or absorbed in the process of a chemical reaction. In any such a reaction, energy losses or gains usually involve only the outermost electrons of the atoms or ions of the system undergoing change; here a chemical bond of some type is established or broken without disrupting the original atomic or ionic identities of the constituents.

- GS **chemical energy**
- . energy of formation
- RT ∞ energy
- free energy
- internal energy
- kinetic energy
- level
- ∞ molecular energy levels
- ∞ nuclear energy
- potential energy

chemical engineering

- RT aérothermochemistry
- ∞ chemistry
- combustion chemistry
- cracking (chemical engineering)
- diffusion
- ∞ engineering
- fluid flow
- furnaces
- heat transfer
- materials handling
- ∞ operations
- thermochemistry

chemical equilibrium

- UF *Chapman-Jouget flame*
- chemical shift*
- GS **chemical equilibrium**
- . acid base equilibrium
- RT association reactions
- buffers (chemistry)
- dissociation
- ∞ equilibrium
- heat of dissociation
- phase rule
- reaction kinetics
- thermodynamic equilibrium

chemical evolution

DEF The theory of the creation or production of living matter from nonliving matter.

- GS evolution (development)
- . **chemical evolution**
- RT abiogenesis
- biological evolution
- ∞ evolution
- exobiology
- life sciences
- organic compounds
- protein synthesis
- protobiology
- self assembly

chemical explosions

- GS explosions
- . **chemical explosions**
- . . gas explosions
- . . propellant explosions
- RT aerial explosions
- combustion
- detonable gas mixtures
- detonation
- explosives
- flammable gases
- turbulent combustion
- underground explosions

- underwater explosions

chemical extinguishers

USE **fire extinguishers**

chemical fractionation

- GS fractionation
- . **chemical fractionation**
- RT distillation
- refining
- ∞ separation

chemical fuels

DEF Fuels that depend upon an oxidizer for combustion or for development of thrust, such as liquid or solid rocket fuel or internal combustion engine fuel; distinguished from nuclear fuel.

- GS fuels
- . **chemical fuels**
- . . endothermic fuels
- . . high energy fuels
- . . hydrocarbon fuels
- . . . diesel fuels
- . . . fossil fuels
- coal
- anthracite
- lignite
- solvent refined coal
- . . . crude oil
- . . . natural gas
- liquefied natural gas
- . . . peat
- . . . shale oil
- . . gasoline
- . . jet engine fuels
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel
- . . . synthane
- . . liquid fuels
- . . . antimisting fuels
- . . diesel fuels
- . . gasoline
- . . hydrogen fuels
- . . jet engine fuels
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel
- . . fuel oils
- . . kerosene
- . . metal fuels
- . . synthetic fuels
- . . . gasohol (fuel)
- . . . synthane

- RT clean fuels
- explosives
- fuel production
- gelled propellants
- gelled rocket propellants
- hybrid propellants
- monopropellants
- plastic propellants
- propellants
- pyrotechnics
- solid propellants

chemical indicators

- RT biomarkers
- ∞ indicators
- methylene blue
- phloroglucinol

chemical kinetics

USE **reaction kinetics**

chemical lasers

- GS stimulated emission devices
- . lasers
- . . **chemical lasers**
- . . . HCL lasers
- HCL argon lasers
- . . . chemical oxygen-iodine lasers

chemical machining

RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
chain reactions (chemistry)
gas lasers
HCN lasers
HF lasers
infrared lasers
liquid lasers
organic lasers
Q switched lasers
TEA lasers
tube lasers

chemical machining

UF *chemical milling*
GS machining
. **chemical machining**
. . . electrochemical machining
RT milling (machining)

chemical milling

USE **chemical machining**

chemical oxygen-iodine lasers

(added August 1997)
UF *COIL (lasers)*
GS stimulated emission devices
. lasers
. . . chemical lasers
. . . **chemical oxygen-iodine lasers**
. . . iodine lasers
. . . **chemical oxygen-iodine lasers**
RT continuous wave lasers

chemical properties

GS **chemical properties**
. acidity
. salinity
. thermochemical properties
. . . heat of combustion
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . heat of fusion
. . . heat of vaporization
RT adsorptivity
∞ high resistance
hydrophobicity
hygroscopicity
∞ low resistance
moisture content
passivity
∞ physical properties
propellant properties
∞ properties
∞ resistance
thermodynamic properties
toxicity
toxicity and safety hazard

chemical propulsion

UF *chemonuclear propulsion*
GS propulsion
. **chemical propulsion**
. . . hybrid propulsion
RT jet propulsion
marine propulsion
spacecraft propulsion
underwater propulsion

chemical reaction control

RT agitation
∞ control
∞ reaction control
temperature control

chemical reactions

UF *flame interaction*
GS **chemical reactions**
. acylation
. . . acetylation
. alkylation
. ammonolysis

. association reactions
. atomic recombination
. . . oxygen recombination
. carbonization
. carboxylation
. copolymerization
. cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. decarbonation
. decarboxylation
. defluorination
. dehydrogenation
. deionization
. denitrogenation
. depolymerization
. desulfurizing
. endothermic reactions
. epoxidation
. exothermic reactions
. fermentation
. Friedel-Craft reaction
. glycolysis
. Grignard reactions
. halogenation
. . bromination
. . chlorination
. . fluorination
. hydroboration
. hydrogenolysis
. hydrocracking
. hydrolysis
. ion recombination
. metal-water reactions
. metathesis
. methanation
. methylation
. Michael reaction
. nitration
. nitriding
. nitrogenation
. nitrolysis
. oxidation
. . electrochemical oxidation
. . photooxidation
. . rusting
. oxidation-reduction reactions
. oxygenation
. phosphorylation
. photochemical reactions
. . photochromism
. . photodecomposition
. . photolysis
. . photooxidation
. . photosynthesis
. . radiolysis
. pyrohydrolysis
. reduction (chemistry)
. . deoxidizing
. . hydrogenation
. Sabatier reaction
. sulfation
. sulfidation
. thermal decomposition
. . pyrolysis
. cycloaddition
. thermal dissociation
. titration
. . Diels-Alder reactions
. chain reactions (chemistry)

RT biosynthesis
chelation
combustion chemistry
corrosion
gas-metal interactions
hydration
interstellar chemistry
∞ operations
particle interactions
plasma jet synthesis
polymerization
radiochemical separation
reacting flow
∞ reaction
reaction bonding
reaction kinetics
reactivity

reagents
sodalite
solvation
stoichiometry
surface reactions
∞ synthesis
synthesis (chemistry)
synthetic fuels
thermochemistry

chemical reactors

RT autoclaves
beds (process engineering)
burners
columns (process engineering)
contactors
fluidized bed processors
furnaces
gas generators
∞ gas reactors
reactor design
reactor materials
reactor safety
∞ reactors
synthesizers
tanks (containers)
water cooled reactors

chemical relaxation

USE **molecular relaxation**

chemical release modules

DEF Shuttle launched, free-flying spacecraft containing canisters for injecting chemicals into the upper atmosphere and the measurement of the reactions.
GS modules
. **chemical release modules**
RT chemical clouds
CRRES (satellite)
dispersing

chemical shift

USE **chemical equilibrium**

chemical sterilization

GS cleaning
. sterilization
. . **chemical sterilization**
RT antiseptics
bactericides
ethylene oxide
purification
sewage treatment
spacecraft sterilization

chemical tests

GS **chemical tests**
. chemical analysis
. . chromatography
. . . gas chromatography
. . . liquid chromatography
. . . paper chromatography
. . . thin layer chromatography
. electrophotometry
. gas analysis
. . . ozonometry
. . . Van Slyke method
. . . iodimetry
. . . Karl Fischer reagent
. . . microanalysis
. . . neutron activation analysis
. . . potentiometric analysis
. . . qualitative analysis
. . . quantitative analysis
. . . Kjeldahl method
. . . Van Slyke method
. . . spectroscopic analysis
. . . urinalysis
. . . volumetric analysis
. salt spray tests
RT corrosion resistance
gas spectroscopy
high temperature tests
inspection
low temperature tests

- nondestructive tests
quality control
sampling
staining
∞ tests
- chemical vapor deposition*
USE **vapor deposition**
- chemical vapor infiltration**
(added December 1992)
UF *CVI (fabrication)*
GS infiltration
. **chemical vapor infiltration**
RT carbon fibers
ceramic fibers
ceramic matrix composites
composite materials
densification
fiber composites
- chemical warfare**
GS warfare
. **chemical warfare**
RT biochemistry
biological weapons
physiological factors
- chemically reacting flow*
USE **reacting flow**
- ∞ **chemicals**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
chemical elements
- chemiluminescence**
DEF Any luminescence produced by chemical action.
GS emission
. light emission
. . luminescence
. . . **chemiluminescence**
RT airglow
phosphorescence
- chemisorption**
DEF The binding of a liquid or gas on the surface or in the interior of a solid by chemical bonds or forces.
GS sorption
. adsorption
. . **chemisorption**
RT adatoms
adsorptivity
atomic clusters
gas-metal interactions
hydrogen embrittlement
masking
metal clusters
molecular clusters
- ∞ **chemistry**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The science that studies the composition, structure, properties, interactions, and transformations of elemental matter and compounds.
RT aerothermochemistry
aerothermodynamics
analytical chemistry
atmospheric chemistry
biochemistry
biogeochemistry
chemical analysis
chemical engineering
chemotherapy
combustion chemistry
computational chemistry
cosmochemistry
cryochemistry
electrochemistry
environmental chemistry
- geochemistry
hydroxyl radicals
inorganic chemistry
interstellar chemistry
marine chemistry
nuclear chemistry
organic chemistry
photoelectrochemistry
physical chemistry
∞ physical sciences
Physics and Chemistry Experiment in Space
physiochemistry
plasma chemistry
polymer chemistry
precipitation (chemistry)
propellant chemistry
quantum chemistry
radiation chemistry
radiochemistry
reduction (chemistry)
saturation (chemistry)
stereochemistry
stoichiometry
synthesis (chemistry)
thermochemistry
unsaturation (chemistry)
Wiswesser notations
- chemonuclear propulsion*
USE **chemical propulsion**
nuclear propulsion
- chemoreceptors**
GS anatomy
. sense organs
. . **chemoreceptors**
receptors (physiology)
. **chemoreceptors**
RT carotid sinus body
olfactory perception
taste
- chemosphere**
DEF The vaguely defined region of the upper atmosphere in which photochemical reactions take place. It is generally considered to include the stratosphere (or the top thereof) and the mesosphere, and sometimes the lower part of the thermosphere.
GS Earth atmosphere
. **chemosphere**
RT biosphere
Earth ionosphere
heterosphere
homosphere
lower atmosphere
mesosphere
middle atmosphere
ozonosphere
plasmasphere
stratosphere
thermosphere
troposphere
upper atmosphere
- chemotherapy**
UF *drug therapy*
GS therapy
. **chemotherapy**
RT antiseptics
∞ chemistry
drugs
- Chena River Basin (AK)**
GS landforms
. structural basins
. . river basins
. . . **Chena River Basin (AK)**
RT Alaska
- Chesapeake Bay (US)**
GS bays (topographic features)
. **Chesapeake Bay (US)**
RT estuaries
Maryland
- river basins
sounds (topographic features)
Virginia
- chest**
GS anatomy
. **chest**
RT thorax
torso
- chewing*
USE **mastication**
- chiasms**
GS crossings
. **chiasms**
- chickens**
GS animals
. vertebrates
. . birds
. . . **chickens**
- child device**
RT learning
learning theory
training devices
- Child-Langmuir law**
GS laws
. **Child-Langmuir law**
RT perveance
space charge
thermionic diodes
- children**
RT females
human beings
males
parents
progeny
- Chile**
GS nations
. **Chile**
RT European Southern Observatory
South America
- chilling*
USE **cooling**
- chimes*
USE **auditory signals**
- chimneys**
RT buildings
exhaust systems
flues
furnaces
plumes
stacks
vents
waste energy utilization
- chimpanzees**
GS animals
. vertebrates
. . mammals
. . . primates
. . . . apes
. . . . **chimpanzees**
RT human beings
- chin**
GS anatomy
. face (anatomy)
. . **chin**
RT bones
head (anatomy)
- China**
UF *China (communist) mainland*
Chinese Peoples Republic
GS nations
. **China**

Chinese aircraft

RT Asia
Chinese aircraft
Chinese space program
Chinese spacecraft
Hong Kong
Taiwan

China (communist) mainland
USE **China**

Chinese aircraft
RT ∞ aircraft
China

Chinese Peoples Republic
USE **China**

Chinese space program
GS programs
. space programs
. . **Chinese space program**
RT China
Long March launch vehicles
∞ research projects
Shenzhou 5 spacecraft
space missions
Taiwan

Chinese spacecraft
DEF Spacecraft built and launched by the Chinese Peoples Republic.
GS **Chinese spacecraft**
. Shenzhou 5 spacecraft
RT China
Long March launch vehicles
∞ spacecraft
Taiwan

chinone
USE **quinones**

Chinook helicopter
USE **CH-47 helicopter**

chipping
RT abrasion
comminution
cutting
flaking
fracturing
fragmentation
pitting
∞ separation
spalling
splitting
wear

chips
RT chips (electronics)
fragments
scrap

chips (electronics)
DEF Integrated microcircuits mounted on substrates and performing significant numbers of functions.

GS **chips (electronics)**
. chips (memory devices)
. systems-on-a-chip
RT application specific integrated circuits
central processing units
chips
computer design
integrated circuits
large scale integration
microelectronics
microprocessors
reconfigurable hardware
RISC processors
systolic arrays
very large scale integration
VHSIC (circuits)

chips (memory devices)
DEF Integrated microcircuit devices used collectively to perform the functions of data

storage: accepting, retaining, and emitting bits of data.

GS chips (electronics)
. **chips (memory devices)**
computer components
. **chips (memory devices)**
RT ∞ devices
integrated circuits
memory (computers)
metal-nitride-oxide-semiconductors
semiconductor devices

chiral dynamics
RT chirality
∞ dynamics
group theory
Lagrange multipliers
matrices (mathematics)

chirality
(added August 1994)
GS symmetry
. **chirality**
RT antisymmetry
chiral dynamics
enantiomers
group theory
handedness

Chiron
DEF Minor planet 2060, a solar system asteroid discovered by Charles T. Kowal of Hale Observatories. Used for Minor Planet 2060.
UF *Minor Planet 2060*
GS celestial bodies
. asteroids
. . **Chiron**
RT Apollo asteroids
asteroid belts
meteoroids
planets
solar system
space debris

chironomus flies
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **chironomus flies**
RT Drosophila
infestation

chirp
DEF An all encompassing term for the various techniques of pulse expansion-pulse compression applied to pulse radar; a technique to expand narrow pulses to wide pulses for transmission, and compress wide received pulses to the original narrow pulse width and wave shape, to gain improvement in signal-to-noise ratio without degradation to range resolution and range discrimination.

GS electromagnetic interference
. radio frequency interference
. . **chirp**
. . . chirp signals

chirp signals
GS electromagnetic interference
. radio frequency interference
. . chirp
. . . **chirp signals**
RT electromagnetic noise
∞ signals

chitin
SN (A POLYSACCHARIDE WHICH IS THE PRINCIPAL CONSTITUENT OF THE SHELLS OF CRABS AND LOBSTERS, THE SHARDS OF BEETLES, AND IS ALSO FOUND IN CERTAIN FUNGI)
DEF A polysaccharide which is the principal constituent of the shells of crabs and lobsters and of the shards of beetles. It is also found in certain fungi.
GS biopolymers

. polysaccharides
. . **chitin**
organic compounds
. carbohydrates
. . polysaccharides
. . . **chitin**
RT gums (substances)
starches

chloral
GS aldehydes
. **chloral**

chlorates
GS halogen compounds
. chlorine compounds
. . **chlorates**
RT ∞ oxygen compounds
perchlorates

Chlorella
DEF A genus of unicellular green algae to be adapted to converting carbon dioxide into oxygen in a closed ecological system.
GS plants (botany)
. algae
. . **Chlorella**
RT aerospace medicine
carbon dioxide
culture techniques
life support systems
oxygen
photosynthesis

chlorides
UF *pentachlorides*
trichlorides
GS halogen compounds
. chlorine compounds
. . **chlorides**
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitril chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. halides
. . **chlorides**
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . hydrochloric acid

- ... iron chlorides
 - ... lanthanum chlorides
 - ... lead chlorides
 - ... lithium chlorides
 - ... magnesium chlorides
 - ... nitrosyl chlorides
 - ... nitroxychlorides
 - ... nitril chlorides
 - ... phosgene
 - ... potassium chlorides
 - ... silicon tetrachloride
 - ... silver chlorides
 - ... sodium chlorides
 - ... sulfur chlorides
 - ... tetrachlorides
 - ... titanium chlorides
 - ... tungsten chlorides
 - ... zinc chlorides
 - RT methyl chloride
 - polyvinyl chloride
 - salt beds
- chlorination**
- GS chemical reactions
 - halogenation
 - ... **chlorination**
 - RT bleaching
 - hydrometallurgy
 - pyrometallurgy
 - water treatment
- chlorine**
- GS chemical elements
 - halogens
 - ... **chlorine**
- chlorine compounds**
- GS halogen compounds
 - ... **chlorine compounds**
 - ... chlorates
 - ... chlorides
 - ... aluminum chlorides
 - ... ammonium chlorides
 - ... beryllium chlorides
 - ... boron chlorides
 - ... cadmium chlorides
 - ... calcium chlorides
 - ... carbon tetrachloride
 - ... copper chlorides
 - ... dichlorides
 - ... germanium chlorides
 - ... hydrochlorides
 - ... hydrogen chlorides
 - ... hydrochloric acid
 - ... iron chlorides
 - ... lanthanum chlorides
 - ... lead chlorides
 - ... lithium chlorides
 - ... magnesium chlorides
 - ... nitrosyl chlorides
 - ... nitroxychlorides
 - ... nitril chlorides
 - ... phosgene
 - ... potassium chlorides
 - ... silicon tetrachloride
 - ... silver chlorides
 - ... sodium chlorides
 - ... sulfur chlorides
 - ... tetrachlorides
 - ... titanium chlorides
 - ... tungsten chlorides
 - ... zinc chlorides
 - ... chlorine fluorides
 - ... chlorine oxides
 - ... chlorocarbons
 - ... chlorosilanes
 - ... DDT
 - ... meclizine
 - ... perchlorates
 - ... aluminum perchlorates
 - ... ammonium perchlorates
 - ... hydrazine perchlorates
 - ... hydrogen perchlorate
 - ... hydroxylammonium perchlorates
 - ... lithium perchlorates
 - ... magnesium perchlorates
 - ... nitronium perchlorate
- ... potassium perchlorates
 - ... trichloroethylene
 - RT ∞ chemical compounds
 - halocarbons
- chlorine fluorides**
- GS halogen compounds
 - chlorine compounds
 - ... **chlorine fluorides**
 - ... fluorine compounds
 - ... fluorides
 - ... **chlorine fluorides**
 - ... halides
 - ... fluorides
 - ... **chlorine fluorides**
 - RT liquid rocket propellants
- chlorine oxides**
- GS chalcogenides
 - oxides
 - ... **chlorine oxides**
 - halogen compounds
 - chlorine compounds
 - ... **chlorine oxides**
- chloroaromatics**
- GS **chloroaromatics**
 - chlorobenzenes
 - RT ∞ aromatic compounds
- chlorobenzenes**
- GS chloroaromatics
 - ... **chlorobenzenes**
 - organic compounds
 - cyclic compounds
 - ... cyclic hydrocarbons
 - ... **chlorobenzenes**
 - hydrocarbons
 - ... cyclic hydrocarbons
 - ... **chlorobenzenes**
 - RT benzene
- chlorocarbons**
- DEF All compounds containing chlorine and carbon with or without other elements.
 - GS carbon compounds
 - halocarbons
 - ... **chlorocarbons**
 - halogen compounds
 - chlorine compounds
 - ... **chlorocarbons**
 - halocarbons
 - ... **chlorocarbons**
 - RT chlorofluorocarbons
- chloroethylene**
- GS ethylene compounds
 - ... **chloroethylene**
 - ... trichloroethylene
- chlorofluorocarbons**
(added December 1991)
- DEF A family of compounds of chlorine, fluorine, and carbon, entirely of industrial origin. CFCs include refrigerants, propellants for spray cans and for blowing plastic-foam insulation, styrofoam packaging, and solvents for cleaning electronic circuit boards.
 - UF CFCs
 - GS carbon compounds
 - halocarbons
 - ... **chlorofluorocarbons**
 - halogen compounds
 - halocarbons
 - ... **chlorofluorocarbons**
 - RT air pollution
 - chlorocarbons
 - chlorofluoromethane
 - contaminants
 - fluorocarbons
 - greenhouse effect
 - ozone depletion
 - ozonosphere
- chlorofluoromethane**
- GS halogen compounds
- ... fluorine compounds
 - ... fluoro compounds
 - ... fluorine organic compounds
 - ... fluorohydrocarbons
 - ... **chlorofluoromethane**
 - organic compounds
 - fluorine organic compounds
 - fluorohydrocarbons
 - ... **chlorofluoromethane**
 - hydrocarbons
 - fluorohydrocarbons
 - ... **chlorofluoromethane**
 - RT air pollution
 - chlorofluorocarbons
 - contaminants
 - methane
 - ozone depletion
- chloroform**
- GS drugs
 - anesthetics
 - ... **chloroform**
 - RT anesthesiology
- chloroformate**
- GS esters
 - ... **chloroformate**
 - formates
 - ... **chloroformate**
- chlorophylls**
- GS magnesium compounds
 - ... **chlorophylls**
 - organometallic compounds
 - ... **chlorophylls**
 - pigments
 - ... **chlorophylls**
 - porphyrins
 - ... **chlorophylls**
 - RT algae
 - brown wave effect
 - cells (biology)
 - chloroplasts
 - Coastal Zone Color Scanner
 - dissolved organic matter
 - green wave effect
 - ocean color scanner
 - photosynthesis
 - plants (botany)
 - porphines
 - Sea-viewing Wide Field-of-view Sensor
 - skin (anatomy)
- chloroplasts**
- GS organelles
 - ... **chloroplasts**
 - RT cells (biology)
 - chlorophylls
 - cytoplasm
 - photosynthesis
- chloroprene resins**
- UF *neoprenes*
 - GS elastomers
 - rubber
 - ... synthetic rubbers
 - ... **chloroprene resins**
- chlorosilanes**
- GS halogen compounds
 - chlorine compounds
 - ... **chlorosilanes**
 - hydrogen compounds
 - hydrides
 - silanes
 - ... **chlorosilanes**
 - silicon compounds
 - silanes
 - ... **chlorosilanes**
- chlorpromazine**
- GS hydrazines

choked flow

. **chlorpromazine**

Choctaw helicopter
USE **CH-34 helicopter**

choice
USE **selection**

choked flow
(added July 1992)
GS fluid flow
RT **choked flow**
channel flow
ducted flow
flow velocity
inlet flow
nozzle flow
orifice flow
pipe flow

chokes
SN (EXCLUDES FUEL SYSTEM AND ELECTRONIC DEVICES)
RT chokes (restrictions)
∞ diffusers
electric coils
mixing
nozzle inserts
∞ nozzles

chokes (fuel systems)
RT carburetors
chokes (restrictions)
fuel systems
orifices
∞ systems

chokes (restrictions)
RT chokes
chokes (fuel systems)
closures
constrictions
impedance
∞ nozzles
orifices
throats
valves

cholera
GS diseases
. infectious diseases
. . . bacterial diseases
. . . **cholera**
RT human pathology
kidney diseases
pathogenesis
pathological effects
physiological effects

Cholesky factorization
DEF A numerical algorithm used to solve linear systems of equations.
GS factorization
. **Cholesky factorization**
RT conjugates
finite element method
iterative solution
real variables

cholesterol
GS organic compounds
. lipids
. . . steroids
. . . **cholesterol**
RT arteriosclerosis
liquid crystals

choline
GS organic compounds
. **choline**

RT vitamins

cholinergic blocking agents
USE **anticholinergics**

cholinergics
GS drugs
. **cholinergics**
. . . anticholinergics
RT cyclic AMP

cholinesterase
GS biopolymers
. proteins
. . . enzymes
. . . **cholinesterase**
organic compounds
. proteins
. . . enzymes
. . . **cholinesterase**
RT neuromuscular transmission

chondrites
DEF Meteoritic stones characterized by small rounded grains or spherules.
GS celestial bodies
. meteorites
. . . stony meteorites
. . . **chondrites**
. . . . Bruderheim meteorite
. . . . carbonaceous chondrites
. . . . Alais meteorite
. . . . Allende meteorite
. . . . Cold Bokkeveld meteorite
. . . . Ivuna meteorite
. . . . Murchison meteorite
. . . . Murray meteorite
. . . . Orgueil meteorite
. . . . Tonk meteorite
. . . . Harleton meteorite
. . . . Hvittis chondrite
. . . . Okhansk meteorite
. . . . Pantar chondrites
. . . . Pribram meteorite
RT achondrites
chondrule
siderophile elements
tektites

chondrule
RT chondrites
enstatite
meteorites
meteoritic microstructures
mineralogy

choppers (electric)
USE **electric choppers**

chords (geometry)
DEF Straight lines intersecting circles or other curves, or straight lines connecting the ends of arcs. In aeronautics, straight lines intersecting or touching airfoil profiles at two points; specifically, those parts of lines between two points of intersections. Used for aerodynamic chords.
UF *aerodynamic chords*
GS geometry
. Euclidean geometry
. . . lines (geometry)
. . . **chords (geometry)**
RT curves (geometry)
geodesic lines
tangential blowing
tangents

choroid membranes
GS anatomy
. sense organs
. . . eye (anatomy)
. . . **choroid membranes**
membranes
. **choroid membranes**

RT vision

chorus (dawn phenomenon)
USE **dawn chorus**

chorus phenomenon
USE **dawn chorus**

chromates
UF *dichromates*
GS chromium compounds
. **chromates**
. . . potassium chromates
RT ∞ oxygen compounds

chromatography
DEF The separation of chemical substances by making use of differences in the rates at which the substances travel through or along a stationary medium.
GS chemical tests
. chemical analysis
. . . **chromatography**
. . . . gas chromatography
. . . . liquid chromatography
. . . . paper chromatography
. . . . thin layer chromatography
RT adsorption
colorimetry
quantitative analysis
sorption

chrome
USE **chromium**

chromic acid
GS acids
. **chromic acid**
chromium compounds
. **chromic acid**

chromites
GS minerals
. **chromites**
RT chromium
chromium oxides
peridotite
serpentine

chromium
UF *chrome*
GS chemical elements
. **chromium**
. . . chromium isotopes
metals
. refractory metals
. . . **chromium**
. . . . chromium isotopes
. . . . transition metals
. . . **chromium**
. . . . chromium isotopes
refractory materials
. refractory metals
. . . **chromium**
. . . . chromium isotopes
RT chromites
heavy metals
strategic materials

chromium alloys
GS alloys
. **chromium alloys**
. . . Astroloy (trademark)
. . . chromium steels
. . . Rene 41
. . . Rene 63
. . . Rene 77
. . . Rene 95
RT heat resistant alloys
Inconel (trademark)
stainless steels
Stellite (trademark)
Waspaloy

chromium borides
GS boron compounds

- . borides
- . . **chromium borides**
- chromium compounds
- . **chromium borides**
- chromium bromides**
- GS chromium compounds
- . **chromium bromides**
- halogen compounds
- . bromine compounds
- . . bromides
- . . . **chromium bromides**
- . halides
- . . bromides
- . . . **chromium bromides**
- . . metal halides
- . . . **chromium bromides**
- chromium carbides**
- GS carbon compounds
- . carbides
- . . **chromium carbides**
- chromium compounds
- . **chromium carbides**
- chromium compounds**
- GS **chromium compounds**
- . chromates
- . . potassium chromates
- . chromic acid
- . chromium borides
- . chromium bromides
- . chromium carbides
- . chromium fluorides
- . chromium oxides
- . sodium chromites
- RT ∞ chemical compounds
- ∞ Group 6B compounds
- ∞ metal compounds
- chromium fluorides**
- GS chromium compounds
- . **chromium fluorides**
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . metal fluorides
- **chromium fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **chromium fluorides**
- . . metal halides
- . . . metal fluorides
- **chromium fluorides**
- chromium isotopes**
- GS chemical elements
- . chromium
- . . **chromium isotopes**
- . nuclides
- . . isotopes
- . . . **chromium isotopes**
- metals
- . refractory metals
- . . chromium
- . . . **chromium isotopes**
- . transition metals
- . . chromium
- . . . **chromium isotopes**
- refractory materials
- . refractory metals
- . . chromium
- . . . **chromium isotopes**
- chromium oxides**
- GS chalcogenides
- . oxides
- . . metal oxides
- . . . **chromium oxides**
- chromium compounds
- . **chromium oxides**
- RT chromites
- chromium steels**
- DEF Steels containing chromium as the main alloying element.
- GS alloys
- . chromium alloys
- . . **chromium steels**
- . iron alloys
- . . steels
- . . . **chromium steels**
- RT ferritic stainless steels
- chromophores**
- (added July 1994)
- RT color
- dyes
- electrochromism
- nonlinear optics
- optical activity
- optical materials
- ∞ optics
- pigments
- chromosomes**
- DEF The self replicating genetic structure of cells containing the cellular DNA that bears in it's nucleotidesequence the linear array of genes.
- RT cells (biology)
- congenital anomalies
- cytology
- gene expression
- gene therapy
- genes
- genetic code
- genetics
- mitosis
- mutations
- ∞ nuclei
- reproductive systems
- tetrad theory
- chromosphere**
- DEF A thin layer of relatively transparent gases above the photosphere of the sun.
- GS environments
- . extraterrestrial environments
- . . stellar atmospheres
- . . . **chromosphere**
- RT coronal loops
- faculae
- photosphere
- solar atmosphere
- solar corona
- solar prominences
- solar transition region
- spicules
- stellar structure
- stellar winds
- Transition Region and Coronal Explorer
- chronaxy**
- GS time
- . reaction time
- . . **chronaxy**
- RT responses
- sensory stimulation
- thresholds (perception)
- chronic conditions**
- GS conditions
- . **chronic conditions**
- RT blood volume
- diseases
- disorders
- health
- chronobiology*
- USE **rhythm (biology)**
- chronographs*
- USE **chronometers**
- chronology**
- UF *age determination*
- dating*
- GS **chronology**
- . geochronology
- RT time
- chronometers**
- UF *chronographs*
- GS measuring instruments
- . time measuring instruments
- . . clocks
- . . . **chronometers**
- RT atomic clocks
- clock paradox
- time measurement
- timing devices
- chronophotography**
- UF *time lapse photography*
- GS imagery
- . photography
- . . **chronophotography**
- RT black and white photography
- motion pictures
- chronotrons*
- USE **pulse rate**
- time lag**
- chugging*
- USE **combustion stability**
- Chukchi Sea**
- DEF Part of the Arctic Ocean north of the Bering Strait between Asia and North America.
- GS seas
- . **Chukchi Sea**
- RT Arctic regions
- chutes**
- UF *slides*
- RT conveyors
- materials handling
- CID*
- USE **charge injection devices**
- cinder cones*
- USE **cones (volcanoes)**
- cinefluorography*
- USE **motion pictures**
- radiography**
- cinematography**
- GS imagery
- . photography
- . . **cinematography**
- RT animation
- black and white photography
- cameras
- color photography
- infrared photography
- motion pictures
- stereophotography
- streak cameras
- video tapes
- cineradiography*
- USE **motion pictures**
- radiography**
- cinespectrographs**
- RT optical measuring instruments
- spectroscopy
- cinetheodolites**
- GS measuring instruments
- . optical measuring instruments
- . . transits
- . . . theodolites
- **cinetheodolites**
- optical equipment
- . optical measuring instruments
- . . transits
- . . . theodolites

circadian rhythms

. . . . **cinetheodolites**
RT photographic tracking
satellite tracking

circadian rhythms
DEF Regular changes in physiological function occurring in approximately 24 hour cycles. Used for diurnal rhythms.
UF *diurnal rhythms*
GS rhythm (biology)
. **circadian rhythms**
RT activity cycles (biology)
zeitgebers

circles (geometry)
GS geometry
. Euclidean geometry
. . **circles (geometry)**
. . . great circles
RT circumferences
curves (geometry)
ellipses
radii
∞ rings
∞ sectors
segments
spheres

circuit boards
RT electronic packaging
printed circuits

circuit breakers
UF *breakers (electric)*
RT disconnect devices
dropouts
electric relays
∞ fuses
switches
switching circuits

circuit diagrams
UF *schematics*
GS diagrams
. **circuit diagrams**
RT engineering drawings
layouts
photomasks

circuit protection
GS protection
. **circuit protection**
RT capacitors
circuits
current regulators
electric fuses
electric power transmission
electric reactors
electrical faults
electrical grounding
electrical insulation
expulsion
∞ fuses
overvoltage
phase control
phase error
sneak circuit analysis
suppressors
surges
transformers
transmission circuits
transmission lines
voltage regulators

circuit reliability
GS reliability
. **circuit reliability**
RT aircraft reliability
component reliability
drift (instrumentation)
quality control
sneak circuit analysis
spacecraft reliability

circuits
DEF Networks providing one or more

closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits.

UF *electric circuits*
exploding conductor circuits
shunts
subcircuits

GS **circuits**
. adding circuits
. analog circuits
. autodynes
. bistable circuits
. . flip-flops
. cancellation circuits
. clamping circuits
. coincidence circuits
. comparator circuits
. conjugated circuits
. counting circuits
. . scalars
. coupling circuits
. delay circuits
. . phantastrons
. digital integrators
. diplexers
. discriminators
. . Fraunhofer line discriminators
. . frequency discriminators
. echo suppressors
. electric bridges
. . wire bridge circuits
. . . Wheatstone bridges
. equivalent circuits
. feedback circuits
. fire control circuits
. fluidic circuits
. gates (circuits)
. . field-programmable gate arrays
. . threshold gates
. hybrid circuits
. integrated circuits
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . field-programmable gate arrays
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits
. . very large scale integration
. . VHSIC (circuits)
iterative networks
. LC circuits
. limiter circuits
. . clipper circuits
. linear circuits
. magnetic circuits
. matrices (circuits)
. microwave circuits
. mixing circuits
. multivibrators
. . flip-flops
. . monostable multivibrators
. negative resistance circuits
. Ohms law
. phase detectors
. . synchrosopes
. phase shift circuits
. . circulators (phase shift circuits)
. pneumatic circuits
. power supply circuits
. printed circuits
. RC circuits
. RL circuits
. . RLC circuits
. squelch circuits
. sweep circuits
. switching circuits
. . fluid switching elements
. logic circuits
. transistor circuits
. transmission circuits
. trigger circuits
. varactor diode circuits
. . threshold gates
RT amplifiers
breadboard models

capacitors
∞ cascades
circuit protection
differentiators
digital electronics
duality principle
duplexers
electric connectors
electric current
∞ electric equipment
electric filters
electric motors
electric power transmission
electric wire
electrical grounding
electromechanics
electron tubes
flat conductors
inductors
integrators
Kirchhoff law of networks
loops
microelectronics
microminiaturization
microstrip devices
miniature electronic equipment
miniaturization
modules
network analysis
oscillators
selectors
short circuits
signal generators
solid state devices
solions
∞ strip
transmission lines
trees (mathematics)
underground transmission lines
voltage controlled oscillators
wiring

circular cones
GS cones
. **circular cones**
RT half cones
nose cones

circular cylinders
RT ∞ cylinders
cylindrical bodies
cylindrical shells
elliptical cylinders

circular orbits
GS orbits
. **circular orbits**
. . stationary orbits
RT Earth orbits
eccentric orbits
elliptical orbits
equatorial orbits
geosynchronous orbits
lunar orbits
orbital mechanics
planetary orbits
polar orbits
quadratures
satellite orbits
solar orbits
spacecraft orbits
twenty-four hour orbits

circular plates
GS structural members
. plates (structural members)
. . **circular plates**
RT annular plates
disks (shapes)
end plates
flat plates

circular polarization
GS polarization (waves)
. **circular polarization**
RT elliptical polarization

optical polarization

circular shells

- GS shells (structural forms)
 - . **circular shells**
- RT cylindrical shells
 - hemispherical shells
 - metal shells
 - spherical shells

circular tubes

- RT cylindrical shells
 - duct geometry
 - pipes (tubes)
- ∞ tubes

circular waveguides

- DEF Small hollow tubes that are designed to transmit a specific wavelength along the length of the tube.
- GS waveguides
 - . **circular waveguides**
- RT microwave transmission
 - propagation modes

circulation

- DEF The flow or motion of a fluid in or through a given area or volume. A precise measure of the average flow of a fluid along a given closed curve. Used for recirculation.
- UF *recirculation*
- GS **circulation**
 - . atmospheric circulation
 - . . zonal flow (meteorology)
 - . blood circulation
 - . . brain circulation
 - . . coronary circulation
 - . . intercranial circulation
 - . . ocular circulation
 - . . peripheral circulation
 - . . pulmonary circulation
 - . water circulation
 - . . water currents
 - . . . ocean currents
 - coastal currents
 - el Nino
 - Gulf Stream
 - Lomonosov current
 - . . thermohaline circulation
- RT blowing
 - circulation distribution
 - congestion
- ∞ currents
 - delivery
 - diffusion
 - dispersing
- ∞ flow
 - fluid flow
 - purging
 - rotation

circulation control airfoils

- DEF Airfoils in which a high lift capability is produced by supercirculation where control of the stagnation points by the jet sheet produces high lift coefficients.
- GS airfoils
 - . **circulation control airfoils**
 - . . circulation control rotors
- RT blowing
 - boundary layer control
 - Coanda effect
- ∞ control
 - lift augmentation
 - short takeoff aircraft
 - tangential blowing
 - under surface blowing
 - upper surface blowing

circulation control rotors

- DEF Rotors that provide STOL capability on high performance aircraft by means of tangential blowing over a rounded trailing edge and mass flow characteristic of turbine engine bleed.
- GS airfoils
 - . circulation control airfoils

. . **circulation control rotors**

- . wings
 - . . rotary wings
 - . . . **circulation control rotors**
- rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **circulation control rotors**
- RT ∞ control
 - vertical takeoff aircraft
 - x wing rotors

circulation distribution

- DEF The line integral of the velocity component around a curve along the closed contour.
- RT atmospheric circulation
 - circulation
- ∞ distribution
 - velocity distribution

circulators (phase shift circuits)

- GS circuits
 - . phase shift circuits
 - . . **circulators (phase shift circuits)**
- RT cavity resonators
 - delay circuits
 - duplexers
 - Faraday effect
 - Hall generators
 - limiter circuits

circulatory system

- GS anatomy
 - . **circulatory system**
 - . . cardiovascular system
 - . . . blood vessels
 - arteries
 - aorta
 - capillaries (anatomy)
 - glomerulus
 - veins
 - . . . heart
 - cardiac auricles
 - cardiac ventricles
 - epicardium
 - myocardium
- RT arteriosclerosis
 - artificial cardiac pacemaker
 - blood circulation
 - blood pumps
 - carotid sinus body
 - carotid sinus reflex
 - exercise physiology
 - hypervolemia
 - organs

circumferences

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . **circumferences**
- RT boundaries
 - circles (geometry)
 - diameters
 - radii

circumlunar communication

- GS telecommunication
 - . space communication
 - . . lunar communication
 - . . . **circumlunar communication**
- RT interplanetary communication
 - radar
 - radio communication
 - satellite communication
 - spacecraft communication
 - unified S band

circumlunar trajectories

- GS trajectories
 - . round trip trajectories
 - . . **circumlunar trajectories**
 - . . . spacecraft trajectories
 - . . . lunar trajectories
 - **circumlunar trajectories**
- RT Earth orbits

Earth-Moon trajectories

- lunar flight
- lunar orbits
- moon-Earth trajectories
- reentry trajectories
- rendezvous trajectories
- transfer orbits

circumpolar westerlies

- GS wind (meteorology)
 - . **circumpolar westerlies**
- RT atmospheric circulation
 - jet streams (meteorology)
 - winds aloft
 - zonal flow (meteorology)

circumsolar radiation

- DEF Radiation from small angle scattering of direct sunlight from atmospheric aerosols with dimensions on the order of or greater than the wavelength of light.
- GS extraterrestrial radiation
 - . solar radiation
 - . . **circumsolar radiation**
- RT atmospheric scattering
 - light scattering
- ∞ radiation
 - scattering
 - sunlight

circumsolar telescopes

- DEF Optical instruments for measuring the circumsolar radiation for application to solar energy systems. Mirrors and lenses are utilized for incident sunlight concentration.
- GS telescopes
 - . **circumsolar telescopes**
- RT lenses
 - measuring instruments
 - mirrors
 - optical equipment
 - radiation pyrometers
 - solar radiation

circumstellar matter

- USE **stellar envelopes**

cirques (landforms)

- GS landforms
 - . structural basins
 - . . **cirques (landforms)**
- RT glaciers
 - ice
 - mountains
 - snow

cirrocumulus clouds

- DEF Cerriform clouds appearing as a thin sheet of small white puffs resembling flakes or patches of cotton without shadows.
- GS clouds (meteorology)
 - . **cirrocumulus clouds**
- RT atmospheric moisture
 - cirrostratus clouds
 - climatology
 - cloud cover
 - fog
 - meteorology
 - nephanalysis
 - precipitation (meteorology)
 - thunderstorms
 - weather

cirrostratus clouds

- DEF Cirriform clouds appearing as a whitish veil. Usually fibrous, sometimes smooth, they often produce halo phenomena. This form may totally cover the sky.
- GS clouds (meteorology)
 - . **cirrostratus clouds**
- RT atmospheric moisture
 - cirrocumulus clouds
 - climatology
 - cloud cover
 - fog
 - meteorology

cirrus clouds

nephanalysis
precipitation (meteorology)
thunderstorms
weather

cirrus clouds

DEF Cirriform clouds in the form of thin, white featherlike shapes in patches or narrow bands. They have a fibrous and/or silky sheen. Large ice crystals often trail downward a considerable vertical distance in fibrous, slanted, or irregularly curved wisps called mares' tails.

GS clouds (meteorology)
. **cirrus clouds**

cirrus shields

GS clouds (meteorology)
. **cirrus shields**
RT climatology
meteorology
weather forecasting

CIS

USE **Commonwealth of Independent States**

cislunar space

DEF Of or pertaining to phenomena, projects, or activity in the space between the Earth and the moon, or between the Earth and the moon's orbit.

GS environments
. aerospace environments
. . **cislunar space**
. extraterrestrial environments
. . **cislunar space**

RT deep space
Earth-Moon trajectories
interplanetary space
lunar flight
lunar orbits
∞ space

cities

UF *metropolitan areas*
urban areas

GS **cities**
. Atlanta (GA)
. Cedar Rapids (IA)
. Houston (TX)
. Manitou (CO)
. Moscow
. New Haven (CT)
. New York City (NY)
. Phoenix (AZ)
. Pontiac (MI)
. San Francisco (CA)
. Vatican City

RT anthropology
communities
heat islands
industrial areas
inhabitants
megalopolises
nations
residential areas
sociology
suburban areas
urban development
urban planning
urban research

citrates

RT citric acid
esters

citric acid

GS acids
. carboxylic acids
. . **citric acid**
organic compounds
. carbohydrates
. . **citric acid**
. carboxylic acids
. . **citric acid**

RT citrates

citrus trees

GS plants (botany)
. trees (plants)
. . **citrus trees**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
curing
∞ food
irrigation
orchards
seeds

civil aviation

UF *commercial aviation*
RT ∞ aeronautics
air law
airline operations
aviation meteorology
commercial aircraft
general aviation aircraft
passenger aircraft

civil defense

RT air defense
antimissile defense
chemical defense
∞ defense
defense program
evacuating (transportation)
nuclear explosions
nuclear warfare
protection
Sentinel system
shelters
survival
warning
warning systems

CL-41 aircraft

UF *Canadair CL-41 aircraft*
CT-114 aircraft
Tutor aircraft
GS attack aircraft
. **CL-41 aircraft**
Canadair aircraft
. **CL-41 aircraft**
General Dynamics aircraft
. **CL-41 aircraft**
jet aircraft
. **CL-41 aircraft**
monoplanes
. **CL-41 aircraft**
RT ∞ aircraft

CL-44 aircraft

UF *Canadair CL-44 aircraft*
CC-106 aircraft
Yukon aircraft
GS Canadair aircraft
. **CL-44 aircraft**
General Dynamics aircraft
. **CL-44 aircraft**
jet aircraft
. turboprop aircraft
. . **CL-44 aircraft**
monoplanes
. **CL-44 aircraft**
transport aircraft
. cargo aircraft
. . **CL-44 aircraft**
RT ∞ aircraft

CL-84 aircraft

UF *Canadair CL-84 aircraft*
GS antisubmarine warfare aircraft
. **CL-84 aircraft**
Canadair aircraft
. **CL-84 aircraft**
General Dynamics aircraft
. **CL-84 aircraft**

jet aircraft
. turboprop aircraft
. . **CL-84 aircraft**
tilt wing aircraft
. **CL-84 aircraft**
transport aircraft
. **CL-84 aircraft**
V/STOL aircraft
. **CL-84 aircraft**
RT ∞ aircraft

CL-595 helicopter

USE **XH-51 helicopter**

CL-600 challenger aircraft

DEF Canadair turboprop aircraft with supercritical wings.

GS Canadair aircraft
. **CL-600 challenger aircraft**
general aviation aircraft
. **CL-600 challenger aircraft**
jet aircraft
. turboprop aircraft
. . **CL-600 challenger aircraft**
RT ∞ aircraft
∞ military aircraft
supercritical wings

CL-823 aircraft

UF *Lockheed CL-823 aircraft*
GS jet aircraft
. **CL-823 aircraft**
Lockheed aircraft
. **CL-823 aircraft**
supersonic aircraft
. supersonic transports
. . **CL-823 aircraft**
transport aircraft
. **CL-823 aircraft**
RT ∞ aircraft

cladding

DEF A coating placed on the surface of a material and usually bonded to the material.

GS metal working
. **cladding**
RT anodic stripping
cathodic coatings
cold working
composite materials
explosive welding
extruding
laminates
metal coatings
metallizing
plating
protective coatings

claiming

RT ∞ law
patents
preempting

clamped structures

(added February 1998)

RT beams (supports)
clamps
composite structures
joints (junctions)
laminates
plates (structural members)
shells (structural forms)
structural members
structural vibration
∞ structures

clamping circuits

DEF Circuits which maintain either extremity of a waveform at a prescribed potential. Networks for adjusting the absolute voltage level of waveforms.

GS circuits
. **clamping circuits**
RT limiter circuits

- power limiters
- clamps**
RT ∞ bands
clamped structures
clips
fasteners
holders
jigs
mechanical devices
sealing
straps
- clarity**
RT atmospheric optics
electromagnetic properties
haze
opacity
optical properties
purity
∞ sharpness
solubility
transparence
turbidity
- Clark Y airfoil*
USE **airfoil profiles**
- classes**
RT categories
∞ groups
∞ sections
- Classic aircraft*
USE **IL-62 aircraft**
- classical mechanics**
GS **classical mechanics**
. space mechanics
. . astrodynamics
. . . celestial mechanics
. . . orbital mechanics
. . . Kepler laws
. . . minimum variance orbit
determination
RT angular momentum
continuum mechanics
equations of motion
Euler-Lagrange equation
Hamiltonian functions
Lagrange coordinates
Maxwell bodies
∞ mechanics (physics)
momentum
phase-space integral
Poisson equation
quaternions
statistical mechanics
- classifications**
GS **classifications**
. hierarchies
. . BBGKY hierarchy
. . dichotomies
. indexes (documentation)
. . KWIC indexes
. . Wiswesser notations
. subjects
RT astronomical catalogs
∞ breakdown
∞ classifying
cluster analysis
congeners
image classification
taxonomy
- classifiers**
GS separators
. **classifiers**
. . sizing screens
. . thickeners (equipment)
RT centrifuges
concentrating
concentrators
flotation
∞ separation
- shakers
size determination
size separation
spirals (concentrators)
- ∞ **classifying**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *sorting*
RT classifications
concentrators
discriminant analysis (statistics)
evaluation
image classification
security
selection
size separation
sorting algorithms
taxonomy
- clathrates**
RT ∞ chemical compounds
crystal structure
crystals
inclusions
- clays**
GS **clays**
. illite
. kaolinite
. montmorillonite
. vermiculite
RT alluvium
boreholes
bricks
ceramics
colloids
fans (landforms)
grout
masonry
mining
molding materials
mud
refractory materials
rocks
sedimentary rocks
sediments
shales
sizing materials
soils
strip mining
- clean energy**
RT air pollution
environment pollution
environmental engineering
geothermal energy conversion
renewable energy
tidepower
water pollution
waterwave energy
windpower utilization
- clean fuels**
DEF Energy sources from which pollutants and other impurities have been removed by refining, purification, and other means, to produce fuels less conducive to pollution.
GS fuels
. **clean fuels**
RT beneficiation
chemical fuels
hydrocarbon fuels
pollution
refining
synthetic fuels
- clean rooms**
DEF Areas in which the temperature, humidity, and the airborne particulate contamination are controlled as required.
GS rooms
. **clean rooms**
RT assembling
cleanliness
controlled atmospheres
- environmental control
- cleaners**
GS **cleaners**
. air filters
RT ∞ absorbers
absorbers (equipment)
absorbers (materials)
cleaning
cleanliness
separators
ultrasonic cleaning
washers (cleaners)
- cleaning**
GS **cleaning**
. chemical cleaning
. . pickling (metallurgy)
. housekeeping (spacecraft)
. sterilization
. . chemical sterilization
. . spacecraft sterilization
. ultrasonic cleaning
. washing
. . bathing
RT abrasion
antifouling
antiseptics
bleaching
cleaners
cleanliness
clearing
corrosion prevention
decontamination
descaling
dissolving
dust
flushing
metal finishing
metal polishing
paint removal
polishing
purification
∞ reduction
refining
scarfing
scavenging
scrubbers
∞ separation
surface finishing
trichloroethylene
waste water
- cleanliness**
GS **cleanliness**
. housekeeping (spacecraft)
RT clean rooms
cleaners
cleaning
hygiene
oral hygiene
- clear air turbulence**
GS turbulence
. atmospheric turbulence
. . **clear air turbulence**
RT aviation meteorology
gusts
jet streams (meteorology)
thermal instability
turbulent diffusion
wind shear
- clearances**
RT adjusting
alignment
allowances
datum (elevation)
spacing
tightness
tolerances (mechanics)
- clearing**
RT cleaning
purging

clearings (openings)

removal

clearings (openings)

UF *slashes*

GS **clearings (openings)**

. firebreaks

. polynyas

RT deforestation

forests

trees (plants)

cleavage

UF *scission*

RT brittle materials

brittleness

Clebsch-Gordan coefficients

GS coefficients

. **Clebsch-Gordan coefficients**

RT angular momentum

coupling

Clementine spacecraft

(added May 1997)

DEF A spacecraft launched in January 1994 as part of a joint NASA/DoD-BMDO (Ballistic Missile Defense Organization) mission to space-qualify several lightweight electronic instruments and systems (including an ultraviolet/visible CCD camera, a near infrared and long-wavelength infrared camera, and a combined high-resolution CCD camera and laser ranging system). The Clementine mission also provided the first complete systematic surface mapping of the moon from the ultraviolet to near infrared spectral regions. A software malfunction in May of 1994 precluded a planned flyby of the asteroid Geographos. +

RT asteroid missions

CCD cameras

flyby missions

lunar exploration

lunar maps

lunar spacecraft

lunar surface

∞ spacecraft

client server systems

(added May 1996)

GS networks

. computer networks

. . **client server systems**

RT architecture (computers)

computer systems design

distributed processing

internets

Java (programming language)

on-line systems

cliffs

UF *bluffs (landforms)*

RT canyons

escarpments

fiords

landslides

ledges

∞ shelves

slopes

topography

climate

UF *macroclimate*

RT climate change

climatology

long term effects

meteorology

paleoclimatology

Southern Oscillation

weather

climate change

RT air pollution

atmospheric composition

atmospheric temperature

biomass burning

carbon dioxide concentration

climate

climate models

climatology

global warming

greenhouse effect

man environment interactions

Mission to Planet Earth

paleoclimatology

stratospheric warming

climate models

(added March 1995)

GS models

. **climate models**

RT atmospheric models

climate change

environment models

hydrology models

ocean models

climatology

DEF Branch of meteorology that studies the average weather conditions and statistical variations for a specified region over an extended period of time.

UF *Milankovitch theory*

GS **climatology**

. agroclimatology

. hydroclimatology

. microclimatology

. paleoclimatology

RT Antarctic regions

anvil clouds

Arctic regions

atmospheric circulation

Atmospheric General Circulation

Models

cap clouds

cirrocumulus clouds

cirrostratus clouds

cirrus shields

climate

climate change

cloud cover

cloud dispersal

clouds (meteorology)

dendrochronology

desertline

deserts

environmental chemistry

environmental engineering

FIRE (climatology)

fog dispersal

geography

hailstorms

heat islands

humidity

hurricanes

hydrology

intraseasonal variations

ISCCP Project

lightning suppression

Madden-Julian Oscillation

meteorology

middle atmosphere

periodic variations

phenology

polar meteorology

polar regions

precipitation (meteorology)

primitive equations

quasi-biennial oscillation

rainmaking

sea breeze

seasons

snowstorms

solar radiation

storm enhancement

storm suppression

storms

storms (meteorology)

sunlight

teleconnections (meteorology)

temperate regions

temperature

tropical regions

weather

wind (meteorology)

zonal flow (meteorology)

climbing flight

GS ascent

. **climbing flight**

RT ascent trajectories

coasting flight

∞ flight

flight paths

horizontal flight

parabolic flight

rocket flight

soaring

takeoff

turning flight

vertical flight

clinical medicine

GS medical science

. **clinical medicine**

RT anesthesiology

bed rest

case histories

diagnosis

examination

healing

health

human beings

∞ medicine

∞ operations

sports medicine

surgery

transplantation

∞ treatment

clinorotation

(added July 2000)

DEF Rotational motion of a test subject about one or more axes that are inclined with respect to the gravitational vector; often applied to simulate a microgravity environment.

UF *clinostat rotation*

clinostating

GS gyration

. rotation

. . **clinorotation**

RT centrifuging

clinostats

gravitational effects

gravitational physiology

microgravity

rotating environments

space environment simulation

weightlessness

weightlessness simulation

clinostat rotation

(added July 2000)

USE **clinorotation**

clinostating

(added August 2000)

USE **clinorotation**

clinostats

(added July 2000)

DEF Devices for producing vector-averaged gravitational environments which mimic microgravity.

UF *random positioning machines*

GS simulators

. environment simulators

. . space simulators

. . . **clinostats**

RT bioreactors

centrifuges

clinorotation

gravitational effects

gravitational physiology

microgravity

rotating environments

space environment simulation

tissue engineering

- weightlessness simulation
- clipper circuits**
 GS circuits
 . limiter circuits
 . . **clipper circuits**
 RT comparator circuits
 power limiters
- clips**
 RT anchors (fasteners)
 ∞ bands
 clamps
 couplings
 fasteners
 holders
 mechanical devices
- clock paradox**
 GS time measurement
 . **clock paradox**
 RT atomic clocks
 chronometers
 time signals
 timing devices
- clocks**
 UF *watches*
 GS measuring instruments
 . time measuring instruments
 . . **clocks**
 . . . atomic clocks
 . . . autonomous spacecraft clocks
 . . . chronometers
 RT time measurement
 time synchronization
 timing devices
- clogging*
 USE **plugging**
- cloning (biology)**
 (*added August 1997*)
 RT biotechnology
 cells (biology)
 culture techniques
 deoxyribonucleic acid
 gene expression
 genes
 genetic code
 genetic engineering
 genetics
 plasmids
 reproduction (biology)
- close packed lattices**
 GS crystal lattices
 . **close packed lattices**
 RT body centered cubic lattices
 face centered cubic lattices
- closed basins*
 USE **structural basins**
- closed circuit television**
 GS communication equipment
 . **closed circuit television**
 telecommunication
 . **closed circuit television**
 television systems
 . **closed circuit television**
 RT cable television
 color television
 educational television
 stereotelevision
 television cameras
 television receivers
 television transmission
 wireless communication
- closed cycles**
 SN (EXCLUDES CLOSED LOOP CONTROL SYSTEMS)
 RT control theory
 cooling systems
 electric generators
- gas turbines
 loops
 nuclear reactors
 plasma generators
 thermal cycling tests
 thermodynamic cycles
- closed ecological systems**
 DEF Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by photosynthesis into oxygen, water, and food. Used for bioregenerative life support systems.
 UF *bioregenerative life support systems*
 GS support systems
 . life support systems
 . . **closed ecological systems**
 RT aerospace medicine
 bioastronautics
 ecology
 ecosystems
 food production (in space)
 gnotobiotics
 long term effects
 oxygen production
 space habitats
 spacecraft cabin atmospheres
 spacecraft environments
 survival
 ∞ systems
- closed faults*
 USE **geological faults**
- closed loop systems*
 USE **feedback control**
- closing**
 RT blocking
 plugging
 sealing
 stopping
- Clostridium**
 GS microorganisms
 . bacteria
 . . **Clostridium**
 . . . Clostridium botulinum
 RT bacterial diseases
- Clostridium botulinum**
 GS microorganisms
 . bacteria
 . . Clostridium
 . . . **Clostridium botulinum**
 RT bacteriology
 pathogens
 toxic diseases
- closure law**
 GS laws
 . **closure law**
 RT field theory (physics)
 k-epsilon turbulence model
 statistical mechanics
 turbulent flow
- closure**
 RT ∞ barriers
 blocking
 chokes (restrictions)
 constrictions
 couplings
 coverings
 enclosures
 end plates
 fasteners
 fittings
 ∞ gates
 joints (junctions)
 plugging
 plugs
 seals (stoppers)
- tightness
 valves
- cloth*
 USE **fabrics**
- clothing**
 GS **clothing**
 . boots (footwear)
 . cotton fibers
 . coveralls
 . flight clothing
 . garments
 . gloves
 . goggles
 . protective clothing
 . . helmets
 . . pressure suits
 . . . space suits
 extravehicular mobility units
 . . vapor barrier clothing
 . shoes
 . socks
 . suits
 . . pressure suits
 . . . space suits
 extravehicular mobility units
 RT chemical defense
 consumables (spacecrew supplies)
 cotton
 cuffs
 fabrics
 leather
 textiles
 vests
- clotting**
 RT blood coagulation
 embolisms
 thrombocytes
 thromboplastin
- cloud chambers**
 DEF Devices for observing the paths of ionizing particles, based on the principle that supersaturated vapor condenses more readily on ions than on neutral molecules.
 GS ionization chambers
 . **cloud chambers**
 RT bubble chambers
 ∞ chambers
 radiation counters
 spark chambers
- cloud cover**
 UF *overcast*
 RT anvil clouds
 ∞ blankets
 cap clouds
 cirrocumulus clouds
 cirrostratus clouds
 climatology
 clouds (meteorology)
 FIRE (climatology)
 flight conditions
 ISCCP Project
 meteorological parameters
 meteorology
 METEOSAT satellite
 nephanalysis
 shadows
 sky
 sky brightness
 solar radiation
 sunlight
 Venus clouds
 Venus surface
 weather forecasting
- cloud dispersal**
 GS weather modification
 . **cloud dispersal**
 RT climatology
 clouds (meteorology)

cloud glaciation

dispersing

cloud glaciation

GS ice formation

. **cloud glaciation**

RT freezing
graupel
hail
ice clouds
ice nuclei
snow
snow cover

cloud height indicators

UF *ceilometers*

GS measuring instruments
. indicating instruments
. . **cloud height indicators**
. meteorological instruments
. . **cloud height indicators**

RT ceilings (meteorology)

cloud photographs

GS photographs
. **cloud photographs**

RT aerial photography
all sky photography
photography
spaceborne photography
TIROS project

cloud photography

GS imagery
. photography
. . **cloud photography**

RT aerial photography
all sky photography
black and white photography
ESSA satellites
meteorological satellites
METEOSAT satellite
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus project
Nimbus satellites
spaceborne photography
TIROS operational satellite system
TIROS project
TIROS satellites

cloud physics

DEF A subdivision of physical meteorology concerned with physical properties of clouds in the atmosphere and the processes occurring therein.

GS atmospheric physics
. **cloud physics**

RT Aitken nuclei
Atmospheric Cloud Physics Lab
(Spacelab)
atmospheric electricity
condensation nuclei
condensing
convection clouds
drop size
fog dispersal
graupel
nephanalysis
Ophiuchi clouds

∞ physics

∞ precipitation (meteorology)

∞ science

Venus clouds
weather modification

cloud seeding

DEF Any technique carried out with the intent of adding to a natural cloud in a planetary atmosphere certain substances that will alter the natural development of that cloud.

GS nucleation
. **cloud seeding**
weather modification
. **cloud seeding**

RT clouds (meteorology)
precipitation (meteorology)

rain
rainmaking
stimulation

∞ **clouds**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT clouds (meteorology)
dust
electron clouds
exhaust clouds
H I regions
H II regions
hydrogen clouds
ice clouds
infrared cirrus (astronomy)
Magellanic clouds
magnetic clouds
meteoroid dust clouds
molecular clouds
Oort cloud
Ophiuchi clouds
particles
plasma clouds
Venus clouds

clouds (meteorology)

DEF A visible mass of water vapor suspended in the atmosphere above the Earth's surface.

UF *chaotic cloud patterns*

GS **clouds (meteorology)**
. artificial clouds
. . chemical clouds
. . . barium ion clouds
. cap clouds
. cirrocumulus clouds
. cirrostratus clouds
. cirrus clouds
. cirrus shields
. convection clouds
. . arc clouds
. . cumulonimbus clouds
. . . anvil clouds
. . cumulus clouds
. . . anvil clouds
. ice clouds
. nimbostratus clouds
. noctilucent clouds
. stratocumulus clouds
. stratus clouds

RT acid rain
Alpine meteorology
atmospheric correction
atmospheric moisture
climatology
cloud cover
cloud dispersal
cloud seeding

∞ clouds
condensation nuclei
drop size
FIRE (climatology)
fog
fog dispersal
ISCCP Project
meteorology
nephanalysis
precipitation (meteorology)
shadows
sky
thunderstorms
weather

cloud-to-cloud discharges
(added August 1999)

GS electric current
. electric discharges
. . lightning
. . . **cloud-to-cloud discharges**

cloud-to-ground discharges
(added August 1999)

GS electric current
. electric discharges
. . lightning

. . . **cloud-to-ground discharges**

RT elves
sprites (atmospheric physics)

clumps

RT agglomeration
atomic clusters

∞ clusters
metal clusters
molecular clusters
pattern recognition
regression analysis

cluster analysis

DEF The analysis of data with the object of finding natural groupings within the data either by hand or with the aid of a computer.

RT classifications
data mining
image analysis
image processing
pattern recognition
remote sensing
statistical analysis

Cluster Mission
(added September 1989)

GS space missions
. **Cluster Mission**

RT Earth magnetosphere
European space programs
international cooperation

∞ missions
NASA space programs
scientific satellites
SOHO Mission
solar terrestrial interactions
solar wind
space plasmas

cluster variation method
(added July 1997)

DEF An exact, statistical-mechanical technique for approximating the configurational entropy of a crystalline material, such as an alloy. The method is based on the cluster-cumulant expansion of entropy, that involves the expansion of the thermodynamic quantities of an infinite system in terms of the density matrices of finite groups of lattice sites called clusters. The method, first proposed by Kikuchi, was developed as a theoretical tool for dealing with atomic ordering.

UF *CVM (solid state)*

RT binary alloys
body centered cubic lattices
face centered cubic lattices
Hamiltonian functions
intermetallics
Ising model

∞ methodology
order-disorder transformations
phase diagrams
phase transformations
solid solutions
statistical mechanics
ternary alloys

∞ **clusters**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT atomic clusters
clumps
galactic clusters
globular clusters
metal clusters
micelles
molecular clusters
Pleiades cluster
Praesepe star clusters
star clusters
Virgo galactic cluster

clutches

RT engine parts
mechanical devices

mechanical drives

deserts

synthesis gas

clutter

DEF Atmospheric noise, extraneous signals, etc. which tend to obscure the reception of a desired signal in a radio receiver, radarscope, etc.

- GS echoes
 - . radar echoes
 - . . **clutter**
- RT airborne radar
 - jamming
 - radio frequency interference
 - space-time adaptive processing

C-M diagram

USE **color-magnitude diagram**

CMBR (astronomy)

(added July 2000)

USE **cosmic microwave background radiation****CMOS**

DEF The combination of a PMOS (p-type channel metal oxide semiconductor) with an NMOS (n-type channel metal oxide semiconductor). Used for complementary metal oxide semiconductors.

- UF *complementary metal oxide semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . metal oxide semiconductors
 - **CMOS**
 - semiconductors (materials)
 - . metal oxide semiconductors
 - . . **CMOS**
- RT cascode devices
 - ITO (semiconductors)
 - latch-up

CN emission

DEF Radio waves emitted from incandescent gaseous cyanide (CN) in space under low pressures at wavelengths characteristic of the elements comprising the gas. Used for cyanide emission.

- UF *cyanide emission*
- GS electromagnetic radiation
 - . radio waves
 - . . radio emission
 - . . . **CN emission**
 - emission
 - . radio emission
 - . . **CN emission**
- RT hydrocyanic acid
 - millimeter waves
 - radio sources (astronomy)

cnoidal waves

DEF Finite amplitude progressive waves in shallow water having a wave profile represented by the Jacobian elliptic function "CN."

- RT elastic waves
 - gravity waves
 - shallow water
 - solitary waves
 - surface waves
 - water depth
 - water waves
- ∞ waves

CNSR

USE **Rosetta mission**

CNT (nanotechnology)

(added September 2001)

USE **carbon nanotubes****Coachella Valley (CA)**

- GS valleys
 - . **Coachella Valley (CA)**
- RT California

coagulation

- GS **coagulation**
 - . blood coagulation
- RT accumulations
 - agglomeration
 - Aitken nuclei
 - blood
 - coalescing
 - concentrating
 - deposition
 - embolisms
 - fibrin
 - flocculating
 - flotation
 - gelation
 - hardening (materials)
 - hemorrhages
 - lumping
 - precipitation (chemistry)
 - ∞ separation
 - ∞ setting
 - settling
 - solidification
 - thrombopenia
 - water treatment

coal

DEF A brown to black combustible sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains.

- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . fossil fuels
 - **coal**
 - anthracite
 - lignite
 - solvent refined coal
 - resources
 - . Earth resources
 - . . fossil fuels
 - . . . **coal**
 - anthracite
 - lignite
 - solvent refined coal
 - rocks
 - . sedimentary rocks
 - . . carbonaceous rocks
 - . . . **coal**
 - anthracite
 - lignite
 - solvent refined coal
- RT ashes
 - asphaltenes
 - bitumens
 - carbonaceous materials
 - coal derived gases
 - coal derived liquids
 - coal gasification
 - coal liquefaction
 - coal utilization
 - coke
 - energy policy
 - fly ash
 - hydropyrolysis
 - peat
 - regolith
 - soils
 - strip mining
 - synthane

coal derived gases

DEF The gases which are derived from various coal gasification processes.

- RT catalysts
 - coal
 - coal derived liquids
 - coal gasification
 - coal utilization
 - methane

coal derived liquids

DEF Fluid hydrocarbons derived from the liquefaction of coal.

- RT asphaltenes
 - catalysts
 - coal
 - coal derived gases
 - coal gasification
 - coal liquefaction
 - coal utilization

coal gasification

- GS gasification
 - . **coal gasification**
 - . . hydropyrolysis
- RT coal
 - coal derived gases
 - coal derived liquids
 - coal liquefaction
 - cracking (chemical engineering)
 - energy policy
 - fuel cell power plants
 - gases
 - hydrocarbon fuels
 - hydrocracking
 - lignite
 - methanation
 - synthane
 - synthesis gas
 - volatility

coal liquefaction

- GS phase transformations
 - . liquefaction
 - . . **coal liquefaction**
- RT asphaltenes
 - coal
 - coal derived liquids
 - coal gasification
 - energy policy
 - hydrocarbon fuels
 - hydrocracking
 - hydropyrolysis
 - lignite
 - melting
 - solvent refined coal

coal utilization

- GS utilization
 - . **coal utilization**
- RT coal
 - coal derived gases
 - coal derived liquids
 - energy consumption
 - energy policy
 - energy technology
 - hydrocarbon fuels
 - lignite
 - solvent refined coal

*coalescence*USE **coalescing****coalescing**

DEF Growing of grains at the expense of the remainder by adsorption or the growth of a phase or particle at the expense of the remainder by absorption or by reprecipitation. Used for coalescence.

- UF *coalescence*
- RT agglomeration
 - agitation
 - coagulation
 - concentrating
 - flocculating
 - magnetic islands
 - mixers
 - ∞ separation
 - settling
 - thickeners (equipment)

Coanda effect

- RT ∞ attachment
 - bubbles

coarseness

- circulation control airfoils
- ∞ effects
- entrainment
- fluid amplifiers
- jet amplifiers
- jet streams (meteorology)
- reattached flow
- ∞ separation
- thrust augmentation

coarseness

- RT fineness
- Ostwald ripening
- reflectance
- roughness
- surface properties
- surface roughness
- surface stability
- surface temperature

coastal currents

DEF Ocean currents caused by the approach of waves to coasts at an angle. They flow parallel to and near the shore. Used for littoral currents and longshore currents.

- UF *littoral currents*
- longshore currents*
- GS circulation
- . water circulation
- . . water currents
- . . . ocean currents
- **coastal currents**
- RT beaches
- coasts
- ∞ currents
- gyres
- oceanography
- oceans
- sea truth
- seas
- tides
- wetlands

coastal dunes

USE **dunes**

coastal ecology

- GS ecology
- . **coastal ecology**
- RT biometeorology
- coasts
- Earth resources
- environment effects
- environments
- marine environments
- marine resources
- oil pollution
- phenology
- thermal pollution
- waterfowl
- wetlands

coastal marshlands

USE **marshlands**

coastal plains

- GS land
- . plains
- . . **coastal plains**
- landforms
- . plains
- . . **coastal plains**
- RT bars (landforms)
- beaches
- biometeorology
- coasts
- Earth resources
- ecology
- environments
- pedmonts
- wetlands

coastal ranges (CA)

- GS landforms
- . mountains
- . . **coastal ranges (CA)**

- RT California
- Pacific Ocean

coastal water

- GS water
- . nearshore water
- . . **coastal water**
- RT Coastal Zone Color Scanner
- environment effects
- ocean color scanner
- oceans
- sea water
- shellfish
- shorelines
- vadose water
- water depth
- wetlands

Coastal Zone Color Scanner

DEF A spaceborne instrument devoted to the measurement of ocean color. Every parameter is optimized for use over water to the exclusion of other types of sensing.

- GS scanners
- . ocean color scanner
- . . **Coastal Zone Color Scanner**
- RT chlorophylls
- coastal water
- colorimetry
- multispectral band scanners
- ocean data acquisitions systems
- oceanographic parameters
- oceanography
- photomapping
- remote sensing
- remote sensors
- satellite imagery
- Sea-viewing Wide Field-of-view
- Sensor
- water color

coasting flight

DEF The flight of a rocket between burnout of thrust cutoff of one stage and ignition of another, or between burnout and summit altitude or maximum horizontal range.

- RT ascent trajectories
- ballistic trajectories
- climbing flight
- cruising flight
- descent trajectories
- ∞ flight
- midcourse trajectories
- parabolic flight
- rocket flight
- soaring

coasts

DEF The strips of land of indefinite width (may be many kilometers) that extend from the low tide line inland to the first major change in landforms.

- RT beaches
- Caspian Sea
- coastal currents
- coastal ecology
- coastal plains
- coral reefs
- cusps (landforms)
- dunes
- estuaries
- lagoons
- lakes
- littoral drift
- marine environments
- oceans
- seas
- shorelines
- storm surges
- tidal flats
- upwelling water

coating

- GS **coating**
- . anodizing
- . electroplating

- . encapsulating
- . metallizing
- RT anodic stripping
- coatings
- corrosion prevention
- deposition
- flame plating
- flame spraying
- HVOF thermal spraying
- lining processes
- metal finishing
- metal spraying
- ∞ metallurgy
- metalorganic chemical vapor
- deposition
- plasma spraying
- ∞ priming
- sealing
- siliconizing
- spraying
- surface finishing
- surface properties
- surface treatment
- vapor deposition

coatings

DEF Liquid, liquefiable or mastic compositions which are converted to a solid protective, decorative, or functional adherent film after application as a thin layer.

- GS **coatings**
- . antiradar coatings
- . antireflection coatings
- . birefringent coatings
- . cathodic coatings
- . electroplating
- . enamels
- . encapsulating
- . glass coatings
- . glazes
- . inorganic coatings
- . . anodic coatings
- . . ceramic coatings
- . lacquers
- . magnetic films
- . metal coatings
- . . aluminum coatings
- . . gold coatings
- . . nickel coatings
- . . zinc coatings
- . metallizing
- . paints
- . . pressure sensitive paints
- . . temperature sensitive paints
- . plastic coatings
- . protective coatings
- . . anodic coatings
- . . ceramic coatings
- . . primers (coatings)
- . . refractory coatings
- . rubber coatings
- . sprayed coatings
- . thermal control coatings

- RT additives
- coating
- composite materials
- corrosion
- corrosion prevention
- coverings
- cryodeposits
- deposition
- deposits
- diamond films
- dipping
- electroless deposition
- energy absorption films
- epoxy resins
- fabrics
- ∞ films
- finishes
- flame spraying
- furan resins
- hot corrosion
- impregnating
- inhibitors
- laminates
- Langmuir-Blodgett films

- ∞ layers
- lining processes
- linings
- metal films
- metal finishing
- metal spraying
- ∞ metallurgy
- moisture resistance
- passivity
- pavements
- plasma spraying
- plasticizers
- ∞ priming
- protection
- rusting
- sealers
- sealing
- ∞ sheets
- siliconizing
- solvents
- spraying
- substrates
- surface finishing
- surface properties
- thin films
- vapor deposition
- veneers
- waterproofing
- waxes
- weatherproofing
- wings

coaxial cables

- DEF Waveguides consisting of two concentric conductors insulated from each other. Used for coaxial transmission.
- UF *coaxial transmission*
- GS transmission lines
 - . communication cables
 - . . **coaxial cables**
- RT ∞ cables
 - power lines
 - submarine cables
 - waveguides

coaxial flow

- GS fluid flow
 - . **coaxial flow**
- RT annular flow
 - annular nozzles
 - axial flow
 - axisymmetric flow
 - flow geometry
 - Hilsch tubes
 - shear flow
 - stratified flow
 - two dimensional flow

coaxial nozzles

- DEF Class of nozzle configurations in jet aircraft for reducing noise.
- RT aircraft noise
 - axial flow
 - fluid flow
 - noise reduction
 - nozzle geometry
- ∞ nozzles
 - supersonic nozzles
 - variable cycle engines

coaxial plasma accelerators

- GS plasma accelerators
 - . **coaxial plasma accelerators**
- RT ∞ accelerators
 - magnetic nozzles
 - plasma engines
 - plasma guns

coaxial transmission

- USE **coaxial cables transmission**

cobalt

- GS chemical elements
 - . **cobalt**
 - . . cobalt isotopes

- . . . cobalt 58
- . . . cobalt 60
- metals
 - . transition metals
 - . . **cobalt**
 - . . . cobalt isotopes
 - . . . cobalt 58
 - . . . cobalt 60
- RT strategic materials

cobalt 58

- GS chemical elements
 - . cobalt
 - . . cobalt isotopes
 - . . . **cobalt 58**
 - . . nuclides
 - . . isotopes
 - . . . cobalt isotopes
 - **cobalt 58**
 - . . . radioactive isotopes
 - **cobalt 58**
- metals
 - . transition metals
 - . . cobalt
 - . . . cobalt isotopes
 - **cobalt 58**

cobalt 60

- GS chemical elements
 - . cobalt
 - . . cobalt isotopes
 - . . . **cobalt 60**
 - . . nuclides
 - . . isotopes
 - . . . cobalt isotopes
 - **cobalt 60**
 - . . . radioactive isotopes
 - **cobalt 60**
- metals
 - . transition metals
 - . . cobalt
 - . . . cobalt isotopes
 - **cobalt 60**

cobalt acetates

- GS acetates
 - . **cobalt acetates**
- cobalt compounds
 - . **cobalt acetates**
- esters
 - . **cobalt acetates**

cobalt alloys

- GS alloys
 - . **cobalt alloys**
 - . . Astroloy (trademark)
 - . . Rene 41
 - . . Rene 63
 - . . Rene 77
 - . . Rene 95
- RT heat resistant alloys
 - Kovar (trademark)
 - Stellite (trademark)
 - Waspaloy

cobalt compounds

- GS **cobalt compounds**
 - . cobalt acetates
 - . cobalt fluorides
 - . cobalt oxalates
 - . cobalt oxides
 - . cohenite
- RT ∞ chemical compounds
 - ∞ Group 8 compounds
 - ∞ metal compounds

cobalt fluorides

- GS cobalt compounds
 - . **cobalt fluorides**
- halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **cobalt fluorides**
- halides
 - . . fluorides

- . . . metal fluorides
- **cobalt fluorides**
- . . metal halides
- . . metal fluorides
- **cobalt fluorides**

cobalt isotopes

- GS chemical elements
 - . cobalt
 - . . **cobalt isotopes**
 - . . . cobalt 58
 - . . . cobalt 60
 - . . nuclides
 - . . isotopes
 - . . . **cobalt isotopes**
 - cobalt 58
 - cobalt 60
- metals
 - . transition metals
 - . . cobalt
 - . . . **cobalt isotopes**
 - cobalt 58
 - cobalt 60

cobalt oxalates

- GS cobalt compounds
 - . **cobalt oxalates**
- oxalates
 - . **cobalt oxalates**

cobalt oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **cobalt oxides**
- cobalt compounds
 - . **cobalt oxides**

COBE

- USE **Cosmic Background Explorer satellite**

Cobol

- UF *Common Business Oriented Language*
- GS languages
 - . programming languages
 - . . **Cobol**
- RT FORTRAN
 - PL/1

Cobra Dane (radar)

- DEF Radar installation for monitoring Soviet missiles.
- GS radar
 - . surveillance radar
 - . . **Cobra Dane (radar)**
 - . tracking radar
 - . . **Cobra Dane (radar)**
- RT antenna arrays
 - early warning systems
 - missile trajectories
 - radar signatures

Coccomyces

- GS plants (botany)
 - . fungi
 - . . **Coccomyces**

cochannel interference

- (added April 2000)
- DEF Interference caused by multiple, simultaneous transmissions occurring in the same communication channel.
- GS electromagnetic interference
 - . radio frequency interference
 - . . **cochannel interference**
- RT channel capacity
 - channel noise
 - intersymbolic interference
 - phase shift keying

cochlea

- GS anatomy
 - . sense organs
 - . . ear

cockpit simulators

. . . labyrinth
. . . . **cochlea**
. Corti organ

Cock aircraft

USE **AN-22 aircraft**

cockpit assistant systems

(added October 1997)

USE **pilot support systems**

cockpit simulators

GS simulators
. training simulators
. . flight simulators
. . . **cockpit simulators**
training devices
. training simulators
. . flight simulators
. . . **cockpit simulators**
RT spacecraft cabin simulators
training devices
virtual reality

cockpit weather information systems

(added August 1996)

DEF A cockpit display system that provides flight crews with a graphical display of interactive weather information, including surface observations, terminal forecasts, radar summaries, and lightning strike data. The system also provides weather trend information and has zooming capabilities that enable the user to see information for the entire nation or to focus on specific areas.

GS information systems
. **cockpit weather information systems**
RT airborne equipment
cockpits
display devices
flight conditions
flight instruments
meteorological parameters
weather forecasting

cockpits

RT aircraft compartments
cabin atmospheres
∞ cabins
canopies
cockpit weather information systems
ejection seats
flying ejection seats
fuselages
pilot support systems
pressurized cabins
space capsules
spacecraft cabin atmospheres
spacecraft cabins
windshields

cockroaches

UF *Blattidae*
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **cockroaches**

cocks

UF *stopcocks*
GS valves
. **cocks**
RT gas valves
hydraulic equipment

COD (cracks)

USE **crack opening displacement**

COD aircraft

USE **C-2 aircraft**

code division multiple access

DEF Multiple access system in which users are segregated by means of pseudorandom

signal coding and bandwidth spreading so that the complete time and frequency axes are occupied and only the power is shared. Used for CDMA.

UF *CDMA*
GS telecommunication
. multiple access
. . **code division multiple access**
. . radio communication
. . radio relay systems
. . . **code division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **code division multiple access**
RT Aloha system
frequency division multiple access
multichannel communication
multiplexing
satellite networks
switching
wideband communication

code division multiplexing

DEF The separation of two or more simultaneous radio transmissions over a common path by signal coding and bandwidth spreading.

GS transmission
. multiplexing
. . **code division multiplexing**
RT data transmission
demultiplexing
frequency division multiple access
radio communication
radio transmission
satellite transmission
signal transmission
telecommunication
wavelength division multiplexing

coders

UF *encoders*
RT analog to digital converters
coding
decoders
programmers

∞ codes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT BCH codes
binary codes
biternary code
coding
color coding
concatenated codes
cryptography
digits
error correcting codes
error detection codes
Morse code
Reed-Solomon codes
standards
symbols
trellis coding

coding

UF *encoding notation*
GS **coding**
. decoding
. redundancy encoding
. signal encoding
. . amplitude modulation
. . . quadrature amplitude modulation
. . frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . frequency shift keying
. . pulse frequency modulation
. . phase modulation
. . . FM/PM (modulation)
. . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying

. . pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . . delta modulation
. . . differential pulse code modulation
. . . pulse frequency modulation
. . . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation
. . trellis coding
. Wiswesser notations
RT abbreviations
addressing
alphabets
analog to digital converters
BCH codes
coders
∞ codes
color coding
computer programming
computer programs
concatenated codes
cryptography
data transmission
dictionaries
digital techniques
error detection codes
identifying
information theory
languages
parity
pulse compression
Reed-Solomon codes
symbolic programming
symbols
vector quantization
Viterbi decoders

coefficient of friction

UF *friction coefficient*
GS coefficients
. **coefficient of friction**
surface properties
. **coefficient of friction**
RT friction
friction factor
friction reduction
kinetic friction
sliding friction
static friction
wear resistance

coefficients

GS **coefficients**
. accommodation coefficient
. aerodynamic coefficients
. attenuation coefficients
. binomial coefficients
. Clebsch-Gordan coefficients
. coefficient of friction
. coherence coefficient
. correlation coefficients
. coupling coefficients
. diffusion coefficient
. . Soret coefficient
. flow coefficients
. discharge coefficient
. heat transfer coefficients
. hydrodynamic coefficients
. influence coefficient
. . structural influence coefficients
. ionization coefficients
. nozzle thrust coefficients
. Onsager phenomenological coefficient
. recombination coefficient
. regression coefficients
. scattering coefficients
. virial coefficients
. Wigner coefficient
RT ∞ constant
constants
mechanical properties
optical properties
polynomials
Racah coefficient

- statistical analysis
∞ weight
- coenzymes**
GS organic compounds
. **coenzymes**
. . . adenosine diphosphate
. . . adenosine triphosphate
. . . cyclic AMP
. . . glutathione
. . . thiamine
RT enzymes
- coercivity**
RT magnetic properties
magnetization
- coesite**
DEF A polymorph of silicon dioxide.
GS chalcogenides
. oxides
. . . dioxides
. . . . silicon dioxide
. . . . quartz
. **coesite**
. . . . silicon oxides
. . . . silicon dioxide
. . . . quartz
. **coesite**
minerals
. quartz
. . **coesite**
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . **coesite**
RT Earth crust
Earth mantle
meteorites
rutile
stishovite
stony meteorites
tektites
- coffee**
GS farm crops
. **coffee**
RT beverages
- Coffin-Manson law**
DEF A relationship which enables one to estimate the fatigue life from the cyclic plastic strain range. The specific life for a given metal or alloy is determined by its tensile ductility.
GS laws
. **Coffin-Manson law**
RT crack propagation
fatigue life
fatigue tests
metal fatigue
- cogeneration**
DEF The generation of electricity or shaft power by an energy conversion system and the concurrent use of the rejected thermal energy from the conversion system as an auxiliary energy source.
RT electric generators
electric power plants
energy conversion
∞ generation
heat generation
∞ power plants
solar energy conversion
thermal energy
waste energy utilization
- cognition**
RT artificial intelligence
cognitive psychology
decision making
identifying
IFF systems (identification)
information processing (biology)
knowledge representation
- perception
- cognitive psychology**
GS psychology
. **cognitive psychology**
RT cognition
information processing (biology)
intelligence
mental performance
- COGO (programming language)**
UF *coordinate geometry language*
GS languages
. programming languages
. . **COGO (programming language)**
- cohenite**
GS cobalt compounds
. **cohenite**
iron compounds
. **cohenite**
minerals
. **cohenite**
nickel compounds
. **cohenite**
- ∞ **coherence**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coherent radiation
coherent scattering
cohesion
congruences
elastic scattering
intelligibility
laser outputs
lasers
maser outputs
phase coherence
wave dispersion
wave propagation
- coherence coefficient**
GS coefficients
. **coherence coefficient**
RT coherent radar
coherent radiation
∞ interference
noise propagation
phase coherence
stochastic processes
- coherent acoustic radiation**
GS coherent radiation
. **coherent acoustic radiation**
elastic waves
. **coherent acoustic radiation**
RT ∞ radiation
ultrasonic radiation
underwater acoustics
- coherent anti-Stokes Raman spectroscopy*
USE **Raman spectroscopy**
- coherent electromagnetic radiation**
GS coherent radiation
. **coherent electromagnetic radiation**
radiation
. . coherent light
. . laser beams
electromagnetic radiation
. **coherent electromagnetic radiation**
radiation
. . coherent light
. . laser beams
RT beams (radiation)
holography
infrared radiation
interstellar masers
ionizing radiation
krypton fluoride lasers
lasers
light (visible radiation)
masers
modulated continuous radiation
monochromatic radiation
- ∞ radiation
radio waves
squeezed states (quantum theory)
stimulated emission
stimulated emission devices
traveling wave masers
ultraviolet radiation
- coherent light**
DEF Light in which the phase relationship between points in a beam remains constant throughout the beam.
GS coherent radiation
. coherent electromagnetic radiation
. . **coherent light**
electromagnetic radiation
. coherent electromagnetic radiation
. . **coherent light**
light (visible radiation)
. . **coherent light**
RT four-wave mixing
gamma ray lasers
HCN lasers
holographic interferometry
holography
laser outputs
lasers
monochromatic radiation
neodymium lasers
optical computers
optical memory (data storage)
phase coherence
plasmadynamic lasers
rare gas-halide lasers
scatter plates (optics)
Shiva laser system
speckle holography
squeezed states (quantum theory)
stimulated emission
two-wavelength lasers
ultraviolet lasers
- coherent radar**
DEF A type of radar that employs circuitry which permits comparison of the phase of successive received target signals.
GS radar
. **coherent radar**
RT coherence coefficient
continuous wave radar
Doppler radar
moving target indicators
pulse Doppler radar
pulse radar
radar detection
search radar
surveillance radar
tracking radar
- coherent radiation**
UF *coherent sources*
coherent transmission
GS **coherent radiation**
. coherent acoustic radiation
. coherent electromagnetic radiation
. . coherent light
. . laser beams
RT beams (radiation)
∞ coherence
coherence coefficient
continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
light (visible radiation)
optical properties
∞ radiation
∞ rays
∞ wave propagation
- coherent scattering**
DEF Scattering of photons or particles in which there are definite phase relationships between the incoming and scattered waves. Ordinary scattering is coherent. With coherent scattering, interference occurs between the waves

cohesion

scattered by two or more scattering centers. The total intensity is the vector sum of the amplitudes of the various waves.

- GS scattering
 - . **coherent scattering**
- RT ∞ coherence
 - Compton effect
 - elastic scattering
 - incoherent scattering
 - inelastic scattering
 - nuclear scattering

coherent sources

- USE **coherent radiation radiation sources**

coherent transmission

- USE **coherent radiation**

cohesion

DEF The mutual attraction by which elements of a substance are held together.

- RT agglutination
 - bonding
- ∞ coherence
 - internal friction
 - internal pressure
 - plastic properties
 - spreading

cohomology

- USE **homology**

COIL (lasers)

(added August 1997)

- USE **chemical oxygen-iodine lasers**

∞ coils

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electric coils
 - inductors
 - magnet coils
 - magnetic coils
 - springs (elastic)
 - toroids
 - wire

COIN aircraft

- UF *counterinsurgency aircraft*
 - LARA aircraft*
 - light armed reconnaissance aircraft*
- GS attack aircraft
 - . **COIN aircraft**
 - .. F-5 aircraft
 - .. OV-10 aircraft
- RT ∞ aircraft
 - light intratheater transport

coincidence circuits

DEF Circuits that produce a usable output only when each of two or more input circuits receive pulses simultaneously or within an assignable time interval.

- GS circuits
 - . **coincidence circuits**
- RT anticoincidence detectors
 - gates (circuits)
 - radiation counters
 - synchronism

coining

- GS forming techniques
 - . pressing (forming)
 - .. **coining**
 - metal working
 - . **coining**
- RT cold pressing
 - cold working
 - dies
 - forging
 - hot isostatic pressing
 - hot pressing
 - sizing (shaping)

stamping

coke

- GS fuels
 - . **coke**
- RT bitumens
 - carbon
 - charcoal
 - coal
 - lignite

Coke aircraft

- USE **AN-24 aircraft**

colchicine

- GS bases (chemical)
 - . alkaloids
 - .. **colchicine**
- nitrogen compounds
 - . alkaloids
 - .. **colchicine**
- organic compounds
 - . cyclic compounds
 - .. cyclic hydrocarbons
 - ... **colchicine**
 - .. heterocyclic compounds
 - ... alkaloids
 - ... **colchicine**
 - . hydrocarbons
 - .. cyclic hydrocarbons
 - ... **colchicine**

cold acclimatization

- GS adaptation
 - . acclimatization
 - .. **cold acclimatization**
- RT heat acclimatization
 - subzero temperature

cold blooded animals

- USE **poikilothermia**

Cold Bokkeveld meteorite

- GS celestial bodies
 - . meteorites
 - .. stony meteorites
 - ... carbonaceous meteorites
 - ... carbonaceous chondrites
 - ... **Cold Bokkeveld meteorite**
 - ... chondrites
 - ... carbonaceous chondrites
 - ... **Cold Bokkeveld meteorite**

cold cathode tubes

DEF Electron tubes containing cold cathodes.

- GS electron tubes
 - . **cold cathode tubes**
 - .. phototubes
 - ... photomultiplier tubes
 - ... frequency modulation photomultipliers
- RT cathodes
 - electrodes
 - gas discharges
- ∞ gas tubes
 - tube cathodes
 - tunnel cathodes

cold cathodes

DEF Cathodes that function without the application of heat.

- GS electrodes
 - . cathodes
 - .. tube cathodes
 - ... **cold cathodes**
- RT gas discharges
 - tunnel cathodes

cold drawing

DEF Reducing the cross section (of wire) by pulling through a die or dies, at a temperature lower than the recrystallization temperature.

- RT deep drawing
 - ∞ drawing

metal drawing

cold flow tests

SN (EXCLUDES MECHANICAL CREEP TESTS)

DEF Tests of liquid rockets without firing them to check or verify the efficiency of a propulsion subsystem, providing for the conditioning and flow of propellants (including tank pressurization, propellant loading, and propellant feeding).

- GS engine tests
 - . **cold flow tests**
- ground tests
 - . **cold flow tests**
- RT checkout
 - feed systems
 - plastic properties
 - prelaunch tests
 - propellant tests
 - propulsion system performance
 - rocket engine design
 - static tests
- ∞ tests

cold forming

- USE **cold working**

cold fronts

- GS fronts (meteorology)
 - . **cold fronts**
- RT air masses
 - ∞ fronts
 - meteorological parameters
 - meteorology
 - storms
 - synoptic meteorology
 - thunderstorms
 - tornadoes
 - warm fronts
 - weather forecasting

cold gas

- GS gases
 - . **cold gas**
- RT attitude control
 - gas jets
 - jet thrust

cold hardening

- SN (LIMITED TO HARDENING OF MATERIALS BY COOLING TO VERY LOW TEMPERATURES-- EXCLUDES PRECIPITATION HARDENING AT OR NEAR ROOM TEMPERATURE AND HARDENING VIA COLD WORKING)
- GS hardening (materials)
 - . **cold hardening**
- RT brittleness
 - hardness
 - phase transformations
 - precipitation hardening
 - work hardening

cold neutrons

DEF Neutrons of less velocity than thermal neutrons; at 152 deg. C their energy is below 0.01 eV.

- GS particles
 - . elementary particles
 - .. fermions
 - ... neutrons
 - ... **cold neutrons**
 - . neutral particles
 - .. neutrons
 - ... **cold neutrons**
- RT baryons

cold plasmas

- UF *low temperature plasmas*
- GS particles
 - . charged particles
 - .. energetic particles
 - ... plasmas (physics)
 - ... **cold plasmas**
 - . corpuscular radiation
 - .. energetic particles
 - ... plasmas (physics)

- **cold plasmas**
 RT collisionless plasmas
 rarefied plasmas
- cold pressing**
 RT coining
 compacting
 hot isostatic pressing
 hot pressing
 metal working
 ∞ pressing
 pressing (forming)
 upsetting
- cold rolling**
 GS forming techniques
 . cold working
 . . **cold rolling**
 RT metal working
- cold strength**
 GS mechanical properties
 . **cold strength**
 RT high temperature tests
 low temperature environments
 low temperature tests
 ∞ strength
- cold surfaces**
 UF *cold walls*
 RT cryogenic fluid storage
 ∞ surfaces
- cold tolerance**
 GS tolerances (physiology)
 . **cold tolerance**
 RT body temperature
 exposure
 frostbite
 heat tolerance
 homeostasis
 subzero temperature
 thermoregulation
 vasoconstriction
- cold traps**
 GS traps
 . **cold traps**
 RT condensers (liquefiers)
 cryogenic temperature
 cryogenics
 cryotrapping
 freezing
 refrigerating
 vacuum apparatus
 vapor traps
- cold walls*
 USE **cold surfaces**
walls
- cold water**
 GS water
 . **cold water**
 RT potable water
- cold weather**
 GS weather
 . **cold weather**
 RT frost damage
 low temperature environments
 pressure ice
 snow cover
 subzero temperature
 weatherproofing
 winter
- cold weather tests**
 GS environmental tests
 . **cold weather tests**
 RT high temperature tests
 low temperature tests
 ∞ tests
- cold welding**
 GS welding
- . pressure welding
 . . **cold welding**
 RT adhesion
 bonding
 high vacuum
 vacuum effects
- cold working**
 DEF Deforming metal plasticity at a temperature lower than the recrystallization temperature. Used for cold forming.
 UF *cold forming*
 GS forming techniques
 . **cold working**
 . . cold rolling
 . . electrohydraulic forming
 . . explosive forming
 RT cladding
 coining
 deep drawing
 extruding
 forging
 ∞ joining
 magnetic forming
 metal drawing
 metal spinning
 metal working
 peening
 roll forming
 shearing
 shot peening
 stamping
 stretch forming
 stretching
 swaging
 temper (metallurgy)
 upsetting
 winding
- Coleoptera**
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **Coleoptera**
 beetles
 tribolia
 boll weevils
- colic**
 GS diseases
 . **colic**
 RT gastrointestinal system
 intestines
- collagens**
 RT bone mineral content
 connective tissue
 gelatins
 leather
 proteins
 skin (anatomy)
- collapse**
 GS **collapse**
 . gravitational collapse
 RT buckling
 deformation
 failure
 structural failure
- collating**
 RT binding
 compilers
 correlation
 insertion
 position (location)
 positioning
- collection**
 RT accumulations
 acquisition
 assembling
 input
 lumping
 museums
- ∞ receiving
 sampling
 selection
 stockpiling
- collectors*
 USE **accumulators**
- colleges*
 USE **universities**
- collimation**
 GS **collimation**
 . beamforming
 RT adjusting
 alignment
 beam steering
 directivity
 four-wave mixing
 microbeams
 ∞ orientation
 polarization (waves)
- collimators**
 DEF Optical devices which render rays of light parallel. Used for autocollimators.
 UF *autocollimators*
 GS optical equipment
 . **collimators**
 RT beam waveguides
 mirrors
 optical measurement
- collinearity**
 GS analysis (mathematics)
 . calculus
 . . vector analysis
 . . . **collinearity**
 . real variables
 . . vector analysis
 . . . **collinearity**
 geometry
 . vector analysis
 . . **collinearity**
 linearity
 . **collinearity**
- collision avoidance**
 UF *collision warning devices*
 GS avoidance
 . **collision avoidance**
 . . Beacon Collision Avoidance
 System
 RT air navigation
 air traffic
 air traffic control
 aircraft approach spacing
 aircraft guidance
 aircraft safety
 airspace
 approach control
 automatic traffic advisory and
 resolution
 collisions
 flight paths
 flight rules
 flight safety
 midair collisions
 National Airspace Utilization System
 radar
 radar navigation
 radio navigation
 threat evaluation
 traffic control
 visual flight
 warning
 warning systems
- collision parameters**
 DEF In orbit computation, the distances between centers of attraction of central force fields and the extension of velocity vectors of moving objects at great distances from the centers. In gas dynamics and atomic physics, any of several parameters such as cross section, collision rate, mean free path, etc. , which provide a

collision rates

measure of the probability of collision.

GS **collision parameters**
. collision rates

RT ∞ absorption
beam interactions
∞ cross sections
mean free path
nuclear interactions
particle interactions
particle theory
scattering

collision rates

DEF Ratios defined by the average number of collisions per second suffered by a molecule or other particle moving through a gas.

GS collision parameters
. **collision rates**
rates (per time)
. **collision rates**

collision warning devices

USE **collision avoidance**
warning systems

collisional plasmas

GS particles
. charged particles
. . . energetic particles
. . . plasmas (physics)
. . . . **collisional plasmas**
. strongly coupled plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **collisional plasmas**
. strongly coupled plasmas
RT electron runaway (plasma physics)
high temperature plasmas
nuclear fusion
plasma conductivity
plasma density
plasma waves

collisionless plasmas

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **collisionless plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **collisionless plasmas**
RT cold plasmas
ionic waves
Kelvin-Helmholtz instability
low density research
magnetic islands
rarefied plasmas

collisions

GS **collisions**
. atomic collisions
. cometary collisions
. Coulomb collisions
. inelastic collisions
. ionic collisions
. meteorite collisions
. midair collisions
. . bird-aircraft collisions
. asteroid collisions
. molecular collisions
. particle collisions
RT air bag restraint devices
air traffic control
aircraft accidents
aircraft hazards
aircraft safety
collision avoidance
crashes
flight hazards
flight paths
gas atomization
impact velocity
pilot error

recoiling
scattering

collocation

RT assemblies
∞ assembly
congruences
position (location)
positioning

colloidal generators

RT atomizing
dispersions
∞ generators
plasma diffusion
plasma generators
sprayers
vaporizers

colloidal propellants

UF *cordite*
GS mixtures
. dispersions
. . colloids
. . . **colloidal propellants**
propellants
. **colloidal propellants**
RT gelled propellants
slurry propellants
solid propellants
solid suspensions

colloidal suspensions

(added May 2001)

USE **colloids**

colloiding

UF *lyophilization*
GS mixing
. **colloiding**
RT agitation
atomizing
colloids
comminution
compounding
dispersing
flocculating
gelation
homogenizing
precipitation (chemistry)
suspending (mixing)

colloids

UF *colloidal suspensions*
lyophils
GS mixtures
. dispersions
. . **colloids**
. . . aerosols
. . . . fog
. . . . colloidal propellants
RT Brownian movements
clays
colloiding
electrodialysis
electrophoresis
emulsions
foams
gels
homeostasis
micelles
nonNewtonian fluids
particles
plastisols
∞ separation

Colombia

GS nations
. **Colombia**
RT Llanos Orientales (Colombia)
Magdalena-Cauca Valley (Colombia)
South America

colonies

RT bacteria

bacteriology

color

UF *coloration*
GS electromagnetic properties
. optical properties
. . **color**
. . . iridescence
. . . stellar color
. . . water color
RT brightness
chromophores
colorimetry
contrast
darkness
dichroism
discoloration
electrochromism
fading
human factors engineering
incandescence
isochromatics
light (visible radiation)
perception
phototropism
∞ physical properties
prewhitening
spectra
surface properties
symbols
thermochromatic materials
vegetative index
visibility
vision
wave dispersion

color (particle physics)

USE **quantum chromodynamics**

color centers

UF *F centers*
RT ∞ centers
Franck-Condon principle

color coding

DEF Any system of colors used for purposes of identification. Used for color enhancement.

UF *color enhancement*
RT ∞ codes
coding

color enhancement

USE **color coding**

color infrared photography

DEF A representation of temperature differences using false colors.

GS imagery
. photography
. . multispectral photography
. . . infrared photography
. . . . **color infrared photography**
RT color photography
infrared imagery

color perception

USE **color vision**

color photography

GS imagery
. photography
. . **color photography**
RT aerial photography
black and white photography
cinematography
color infrared photography
orthophotography
photochromism
photomapping
shadowgraph photography
stereophotography
ultraviolet photography

underwater photography

color television

- GS telecommunication
 - . **color television**
- television systems
 - . **color television**
- RT closed circuit television
 - communicating
 - communication equipment
 - educational television
 - satellite television
 - spacecraft television
 - stereotelevision
 - television reception
 - television transmission

color vision

- UF *color perception*
- GS vision
 - . **color vision**
- RT eye (anatomy)
 - Young-Helmholtz theory

Colorado

- GS nations
 - . United States
 - . . **Colorado**
- RT Colorado Plateau (US)
 - Colorado River (North America)
 - Manitou (CO)
 - Pike's Peak (CO)
 - San Juan Mountains (CO)

Colorado Plateau (US)

- GS land
 - . **Colorado Plateau (US)**
 - landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . **Colorado Plateau (US)**
- RT Arizona
 - Colorado
 - highlands
 - New Mexico
 - Utah

Colorado River (North America)

- GS rivers
 - . **Colorado River (North America)**
- RT Arizona
 - Colorado
 - Mexico
 - Utah

coloration

USE **color**

color-color diagram

DEF A two-axis coordinate graph showing the distribution of stars or other objects with reference to different color indices.

- GS diagrams
 - . **color-color diagram**
- RT color-magnitude diagram
 - Hertzsprung-Russell diagram
 - stellar color
 - stellar spectra
 - stellar spectrophotometry
 - UBV spectra

colorimetry

- GS optical measurement
 - . **colorimetry**
- RT chemical analysis
 - chromatography
 - Coastal Zone Color Scanner
 - color
 - electrophotometry
 - liquid chromatography
 - ocean color scanner
 - optical measuring instruments
 - photometry
 - spectrophotometry
 - spectroscopy

thermochromatic materials

color-magnitude diagram

DEF The plot of the absolute or apparent magnitude against the color index for a group of stars. Also known as C-M diagram. Used for C-M diagram.

- UF *C-M diagram*
- GS diagrams
 - . **color-magnitude diagram**
- RT asymptotic giant branch stars
 - color-color diagram
 - globular clusters
 - Hertzsprung-Russell diagram
 - horizontal branch stars
 - main sequence stars
 - star clusters
 - stellar color
 - stellar evolution
 - stellar magnitude

cols

USE **gaps (geology)**

Columbia (Orbiter)

- UF *Space Shuttle Orbiter 102*
 - GS manned spacecraft
 - . space shuttles
 - . . Space Shuttle orbiters
 - . . . **Columbia (Orbiter)**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . space shuttles
 - Space Shuttle orbiters
 - **Columbia (Orbiter)**
 - RT manned space flight
 - Space Shuttle mission 31-A
 - Space Shuttle mission 41-A
 - Space Shuttle mission 61-A
 - Space Shuttle mission 61-C
 - Space Shuttle mission 61-E
- ∞ spacecraft

Columbia River Basin (ID-OR-WA)

- GS landforms
 - . structural basins
 - . . river basins
 - . . . **Columbia River Basin (ID-OR-WA)**
- RT Idaho
 - Oregon
 - rivers
 - Washington

columbium

USE **niobium**

Columbus space station

DEF The European Space Agency's manned orbital platform.

- GS artificial satellites
 - . space stations
 - . . **Columbus space station**
 - ESA spacecraft
 - . **Columbus space station**
 - manned spacecraft
 - . **Columbus space station**
 - space platforms
 - . **Columbus space station**
 - stations
 - . space stations
 - . . **Columbus space station**
- RT AEPS
 - Automated Transfer Vehicle
 - bioastronautics
 - ferry spacecraft
 - International Space Station
 - intraorbit transfer vehicles
 - large space structures
 - man tended free flyers
 - manned orbital laboratories
 - military spacecraft
 - orbital servicing
 - rendezvous spacecraft
 - shape control

space shuttles
Space Station Freedom
space station polar platforms

∞ **columns**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT columns (process engineering)
 - columns (supports)

columns (process engineering)

- RT absorbers (equipment)
 - chemical reactors
- ∞ columns
 - concentrators
 - condensers (liquefiers)
 - contactors
 - contractors
 - dehydration
 - dehydrogenation
 - distillation equipment
 - drying apparatus
 - extraction
 - scrubbers
 - separators
 - vaporizers

columns (supports)

- GS structural members
 - . **columns (supports)**
 - . . tapered columns
- RT beams (supports)
 - ∞ columns
 - pylon mounting
 - pylons
 - struts
 - studs (structural members)
 - Timoshenko beams
 - towers

∞ **coma**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aberration
 - blackout (physiology)
 - blackout prevention
 - comet heads
 - comet nuclei
 - comet tails
 - cometary atmospheres
 - comets
 - Grigg-Skjellerup comet
 - Kohoutek comet
 - screen effect
 - Tempel 2 comet
 - unconsciousness

combat

- GS military operations
 - . **combat**
 - warfare
 - . **combat**
- RT aircraft survivability
 - B-1 aircraft
 - electronic warfare

∞ **combination**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT admixtures
 - consolidation
 - mixtures
 - permutations

combinations (mathematics)

- GS analysis (mathematics)
 - . combinatorial analysis
 - . . **combinations (mathematics)**
- RT partitions (mathematics)
 - permutations

combinatorial analysis

- GS analysis (mathematics)
 - . **combinatorial analysis**
 - . . binomial coefficients

combined cycle power generation

- . . combinations (mathematics)
- . . factorials
- . . partitions (mathematics)
- . . permutations

RT ∞ analyzing
∞ applications of mathematics
graph theory
information theory
number theory
probability theory
set theory

combined cycle power generation

DEF Power generation which combines an open-cycle gas turbine and a closed-cycle steam turbine.

RT electric generators
electric power plants
energy technology
gas turbines
steam turbines

Combined Release and Radiation Effects Sat

USE **CRRES (satellite)**

combined stress

GS stresses
. **combined stress**
RT fatigue life
stress analysis
stress concentration
stress intensity factors

combustibility

USE **flammability**

combustible flow

GS fluid flow
. reacting flow
. . **combustible flow**
RT boundary layer combustion
combustion physics
combustion products
detonation waves
dump combustors
flame propagation
fuel flow
turbulent combustion
turbulent flames
turbulent flow

combustion

DEF A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light either as a glow or flames. Some oxidation such as that of hydrogen emits radiation outside the visible spectrum. Used for burning and burning process.

UF *burning*
burning process

GS **combustion**
. afterburning
. boundary layer combustion
. deflagration
. erosive burning
. fuel combustion
. . nuclear fuel burnup
. hydrocarbon combustion
. hypersonic combustion
. metal combustion
. propellant combustion
. . solid propellant combustion
. . . solid propellant ignition
. biomass burning
. smoldering
. spontaneous combustion
. supersonic combustion
. turbulent combustion

RT backfire
burning rate
burning time
burnout
charring
chemical explosions
combustion chambers
combustion chemistry

combustion control
combustion efficiency
combustion physics
combustion products
combustion stability
combustion synthesis
combustion temperature
combustion vibration
detonation
diffusion flames
exothermic reactions
explosions
extinguishing
fire damage
firebreaks
fires
flame propagation
flameout
flames
flammability
flashback
forest fires
heat balance
heat generation
ignition
ignition limits
incendiary ammunition
internal combustion engines
oxidation
∞ physics
quenching (cooling)
spark ignition
supersonic combustion ramjet engines

combustion chambers

DEF Containers in which the actual burning of fuel takes place. Used for combustors.

UF *combustors*

GS **combustion chambers**

. dump combustors
RT burners
∞ chambers
combustion
engine parts
engines
flame holders
flameout
furnaces
internal combustion engines
jet engines
pistons
refractories
spark plugs
thrust chambers

combustion chemistry

DEF The study of the exothermic oxidation reactions occurring immediately before and during combustion.

GS thermochemistry
. **combustion chemistry**
RT chain reactions (chemistry)
chemical engineering
chemical reactions
∞ chemistry
combustion
combustion physics
combustion products
combustion stability
combustion synthesis
exothermic reactions
flame temperature
oxidation
reacting flow
reaction kinetics

combustion control

DEF Control of factors (temperature, pre-heating, draft, excess or deficient air, etc.) which affects combustion efficiency.

RT automatic control
burning rate
combustion
∞ control
engine control
fuel control

temperature control

combustion efficiency

DEF The efficiency with which fuel is burned, expressed as the ratio of the actual energy released by the combustion to the potential chemical energy of the fuel.

GS efficiency
. **combustion efficiency**
RT ACEE program
burning rate
burning time
combustion
dump combustors
exhaust gases
fuel combustion
fuel consumption
fuel-air ratio
power efficiency
propellant combustion
propellant consumption
propulsion system performance
propulsive efficiency
thermodynamic efficiency

combustion heat

USE **heat of combustion**

combustion instability

USE **combustion stability**

combustion physics

GS thermodynamics
. **combustion physics**
RT aerothermodynamics
combustible flow
combustion
combustion chemistry
Damkohler number
flame propagation
heat of combustion
ignition
∞ physics
plasmas (physics)
reaction-diffusion equations
∞ science
thermochemistry
turbulent combustion

combustion products

GS products
. reaction products
. . **combustion products**
RT air pollution
ashes
biomass burning
combustible flow
combustion
combustion chemistry
dilutents
dust
exhaust gases
flue gases
fly ash
high temperature gases
odors
particulates
pollution transport
polycyclic aromatic hydrocarbons
rocket exhaust
smog
smoke
soot
vapors
wastes

combustion stability

UF *acoustic combustion*
chugging
combustion instability
GS dynamic characteristics
. dynamic stability
. . **combustion stability**
. . . flame stability
stability
. dynamic stability

. . **combustion stability**
 . . . flame stability
 RT axial modes
 burning rate
 combustion
 combustion chemistry
 fuel combustion
 motion stability
 pressure oscillations
 propellant combustion
 smoldering
 solid propellant combustion
 thermal instability
 thermoacoustic effects
 turbulent combustion
 velocity coupling

combustion synthesis
 (added April 1993)
 RT annealing
 cermets
 combustion
 combustion chemistry
 exothermic reactions
 functionally gradient materials
 powder metallurgy
 sintering

combustion temperature
 GS temperature
 . **combustion temperature**
 RT combustion
 erosive burning
 flame temperature
 flash point
 ignition temperature
 operating temperature
 spontaneous combustion

combustion vibration
 GS vibration
 . **combustion vibration**
 RT combustion
 elastic waves
 structural stability

combustion waves
 USE **flame propagation**

combustion wind tunnels
 GS test facilities
 . wind tunnels
 . . **combustion wind tunnels**
 RT hypersonic wind tunnels
 hypervelocity wind tunnels

combustors
 USE **combustion chambers**

Comet 4 aircraft
 UF *de Havilland DH 106 aircraft*
DH 106 aircraft
 GS commercial aircraft
 . **Comet 4 aircraft**
de Havilland aircraft
 . **Comet 4 aircraft**
Hawker Siddeley aircraft
 . **Comet 4 aircraft**
jet aircraft
 . **Comet 4 aircraft**
monoplanes
 . **Comet 4 aircraft**
passenger aircraft
 . **Comet 4 aircraft**
 RT ∞ aircraft

comet heads
 GS celestial bodies
 . **comet heads**
 RT ∞ coma
 cometary atmospheres
 solar system

comet nuclei
 GS celestial bodies
 . **comet nuclei**

RT ∞ coma
 Comet Nucleus Tour
 cometary atmospheres
 Oort cloud
 Rosetta mission
 solar system
 Stardust Mission

Comet Nucleus Tour
 (added February 1999)
 DEF A NASA Discovery-class mission to acquire imagery and comparative spectral maps of comet nuclei and analyze comet dust flows. The mission spacecraft will fly to within 100 kilometers of at least three near-Earth comets including Comet Encke, Comet Schwassmann-Wachmann, and Comet d'Arrest.
 UF *CONTOUR (mission)*
 GS space missions
 . flyby missions
 . . **Comet Nucleus Tour**
 RT comet nuclei
 Encke comet
 Schwassmann-Wachmann comet
 swingby technique

Comet Rendezvous Asteroid Flyby Mission
 (added November 1988)
 UF *CRAF mission*
 GS space missions
 . asteroid missions
 . . **Comet Rendezvous Asteroid Flyby Mission**
 . flyby missions
 . . **Comet Rendezvous Asteroid Flyby Mission**
 RT Mariner Mark 2 Spacecraft
 ∞ missions
 NASA space programs
 Near Earth Asteroid Rendezvous Mission
 Rosetta mission

comet tails
 GS celestial bodies
 . **comet tails**
 RT ∞ coma
 cometary atmospheres
 Grigg-Skjellerup comet
 radiation pressure
 solar system
 solar wind

cometary atmospheres
 DEF The region of the coma of a comet as well as the gaseous part surrounding the coma that often is a hydrogen atmosphere that contains particulate matter.
 RT astronomical photometry
 ∞ atmospheres
 ∞ coma
 comet heads
 comet nuclei
 comet tails
 cometary magnetospheres
 comets
 ionopause

cometary collisions
 (added June 1994)
 GS collisions
 . **cometary collisions**
 RT asteroid collisions
 craters
 Cretaceous-Tertiary boundary
 hypervelocity impact
 meteorite collisions
 near Earth objects
 shatter cones
 Shoemaker-Levy 9 comet

cometary magnetospheres
 (added September 1988)
 RT cometary atmospheres
 comets

∞ magnetospheres

comets
 DEF Luminous members of the solar system composed of a head, or coma, and often with a spectacular gaseous tail extending a great distance from the head.

GS celestial bodies
 . **comets**
 . . Arend-Roland comet
 . . Austin comet
 . . Brorsen-Metcalf comet
 . . Encke comet
 . . Giacobini-Zinner comet
 . . Grigg-Skjellerup comet
 . . Hale-Bopp comet
 . . Halley's comet
 . . Humason comet
 . . IRAS-Araki-Alcock comet
 . . Kohoutek comet
 . . Morehouse comet
 . . Mrkos comet
 . . Okazaki-Levy-Rudenko comet
 . . Schwassmann-Wachmann comet
 . . Shoemaker-Levy 9 comet
 . . Tempel 2 comet
 . . West comet
 . . Wild 2 comet
 RT Bessel-Bredichin theory
 ∞ coma
 cometary atmospheres
 cometary magnetospheres
 hypothetical planets
 Kuiper belt
 meteorite parent bodies
 meteoroid showers
 meteoroids
 near Earth objects
 Oort cloud
 solar system

comfort
 RT acoustics
 air conditioning
 efficiency
 environmental engineering
 glare
 human factors engineering
 humidity
 illuminating
 ∞ performance
 physiological effects
 psychological effects
 reward (psychology)
 riding quality
 seats
 temperature
 ventilation

command and control
 UF *command-control*
 RT ∞ automation
 autonomy
 AWACS aircraft
 ∞ commands
 ∞ control
 decision making
 E-2 aircraft
 E-3A aircraft
 E-4A aircraft
 ground support equipment
 logistics
 management
 surveillance
 targets

command guidance
 DEF The guidance of a spacecraft or rocket by means of electronic signals sent to receiving devices in the vehicle. Used for command systems.
 UF *command systems*
 GS guidance (motion)
 . **command guidance**
 RT ∞ commands
 ground support equipment

command languages

injection guidance
midcourse guidance
rendezvous guidance
rendezvous spacecraft
spacecraft guidance
terminal guidance

command languages

DEF Vocabularies to interactively execute activities such as computer retrieval or input.

GS languages
. **command languages**
. . query languages

RT human-computer interface
information retrieval

command modules

GS compartments
. **command modules**
modules
. spacecraft modules
. . **command modules**
spacecraft components
. spacecraft modules
. . **command modules**

RT Apollo spacecraft
∞ commands
Marquardt R4D engine
service modules
spacecraft docking modules
spacecrew transfer

command service modules

UF *CSM*
GS modules
. spacecraft modules
. . **command service modules**
spacecraft components
. spacecraft modules
. . **command service modules**

RT Apollo project
lunar orbits
manned spacecraft
Skylab 1
Skylab 2
Skylab 3
Skylab 4
spacecraft docking modules

command systems

USE **command guidance**

command-control

USE **command and control**

Commando aircraft

USE **C-46 aircraft**

∞ commands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT autonomy
command and control
command guidance
command modules
decisions

commerce

GS **commerce**
. electronic commerce
commercial spacecraft
consumption
costs
economic development
finance
gross national product
industrial areas
industries
∞ investment
liabilities
losses
manufacturing
market research
marketing
PERT
product development

project management
risk
supplying

commerce lab

RT government/industry relations
∞ microgravity applications
mission planning
space commercialization
Space Shuttle payloads
user requirements

commercial aircraft

UF *commercial aviation*
GS **commercial aircraft**
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Comet 4 aircraft
. CV-340 aircraft
. CV-440 aircraft
. CV-880 aircraft
. CV-990 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DO-328 aircraft
. Electra aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
. F-28 transport aircraft
. IL-62 aircraft
. Jetstream aircraft
. L-1011 aircraft
. Lear jet aircraft
. light transport aircraft
. MD 11 aircraft
. MD 80 aircraft
. P-160 aircraft
. SE-210 aircraft
. supersonic commercial air transport
. . Boeing 2707 aircraft
. . TU-144 aircraft
. Boeing 717 aircraft
. TU-104 aircraft
. TU-124 aircraft
. TU-134 aircraft
. TU-154 aircraft
. TU-204 aircraft
. VC-10 aircraft
RT air transportation
∞ aircraft
airline operations
cargo aircraft
civil aviation
commuter aircraft
EH-101 helicopter
general aviation aircraft
ground effect machines
jet aircraft
passenger aircraft
rotary wing aircraft
supersonic transports
transport aircraft
utility aircraft
V/STOL aircraft
water takeoff and landing aircraft

commercial aviation

USE **civil aviation**
commercial aircraft

commercial energy

RT allocations

distributing
domestic energy
economic factors
∞ energy
energy consumption
energy conversion
industrial energy
transportation energy

commercial off-the-shelf products

(added March 2001)
DEF Readily-available, commercially-developed products; often referring to commercial products that can be used as an alternative to in-house or customized product development.

UF *COTS products*

GS products

. **commercial off-the-shelf products**

RT commercialization
cost effectiveness
government procurement
procurement management
product development

commercial spacecraft

DEF Commercial satellites and other spacecraft operated by the private sector.

GS **commercial spacecraft**

. RCA Satcom satellites
RT aerospace industry
aerospace vehicles
commerce
communication satellites
industries
space commercialization
space industrialization
space manufacturing
space processing
VentureStar launch vehicle

commercialization

(added March 1997)

GS **commercialization**

. space commercialization
RT commercial off-the-shelf products
government/industry relations
marketing
product development
technology transfer

comminution

UF *attrition (materials)*

GS **comminution**

. crushing
. grinding (comminution)
. shredding

RT atomizing
beneficiation
chipping
colloiding
crushers
cutting
disintegration
flaking
fragmentation
gas atomization
grinding mills
metal powder
∞ milling
particle production
powder metallurgy
∞ reduction

Committee on Space Research

UF *COSPAR (committee)*

RT ∞ aerospace sciences
conferences
European space programs
international cooperation
NASA programs
programs

commodities

RT government procurement
manufacturing
market research

procurement management products

Common Business Oriented Language
USE **Cobol**

commonality

DEF The factors which are common in equipment or systems.

GS standardization
. **commonality**

RT aircraft equipment
cost reduction
efficiency
equipment specifications
ground support systems
interoperability
spacecraft components specifications

Commonwealth of Independent States

(added September 1993)

UF CIS
RT Asia
Europe
nations
Russian Space Program

communicating

GS **communicating**

. aircraft communication
. electrocutaneous communication
. ground-air-ground communication
. information dissemination
. . . messages
. . . selective dissemination of information
. interstellar communication
. lip reading
. point to point communication
. . . NASCOM network
. underground communication
. verbal communication
. . . conversation

RT color television
computer conferencing
crosstalk
education
frequency assignment
information
information flow
information management
message processing
Morse code
stereotelevision
systems engineering
TDR satellites
technology transfer
telecommunication

communication

GS telecommunication
. **communication**
. . . facsimile communication
. . . automatic picture transmission
. . . line of sight communication
. . . optical communication
. . . free-space optical communication
. . . ship to shore communication
. . . underwater communication
. . . voice communication
. . . telephony
. . . quantum communication

RT computer conferencing
information
information flow
information management
Marisat satellites
message processing
spread spectrum transmission
technology transfer

communication cables

GS transmission lines
. **communication cables**
. . . coaxial cables

RT cable television
∞ cables
electric wire
optical fibers
submarine cables
waveguides

communication equipment

GS **communication equipment**
. Advanced Vidicon Camera System (AVCS)

. closed circuit television
. duplexers
. interphones
. PLAT system
. radio receivers
. . . superheterodyne receivers
. . . transmitter receivers
. . . whistler recorders
. spacecraft television
. . . digital spacecraft television
. . . Ranger block 3 television system
. . . satellite television
. stereotelevision

RT antenna components

biotelemetry
color television
Earth terminals
educational television
∞ equipment
furlable antennas
high definition television
inertialless steerable antennas
information adaptive system
logarithmic receivers
matched filters
orbiting dipoles
P. A. C. M. telemetry
pulse frequency modulation
pulse frequency modulation telemetry
radio communication
radio equipment
radio relay systems
radio telegraphy
radio telemetry
spherical antennas
telemetry
telephony
television systems
unified S band

communication networks

DEF Organization of facilities for the rapid reception of, transmission of, and/or relaying of electrical impulses for reproduction as printed messages, pictures, or other data.

GS networks
. **communication networks**

. . . Aloha system
. . . Deep Space Network
. . . internets
. . . ARPA computer network
. . . World Wide Web
. . . Iridium network
. . . local area networks
. . . NASCOM network
. . . VSAT (network)
. . . wide area networks

RT access control
asynchronous transfer mode
broadcasting
carrier sense multiple access
data links
defense communications system (DCS)
demand assignment multiple access
electronic bulletin boards
electronic mail
frequency division multiplexing
network control
packet switching
packets (communication)
protocol (computers)
pulse communication
radio communication
satellite constellations
satellite networks

telecommunication
video conferencing

communication satellites

DEF Satellites designed to reflect or relay electromagnetic signals used for communication.

UF *Iridium satellites*
GS artificial satellites

. **communication satellites**

. . . ACTS
. . . aeronautical satellites
. . . . Aerosat satellites
. . . Arcomsat
. . . Communications Technology Satellite
. . . ComStar C
. . . NATO 3B satellite
. . . ComStar satellites
. . . direct broadcast satellites
. . . European Communications Satellite
. . . Intelsat satellites
. . . low frequency transionospheric satellites

. . . L-Sat
. . . Marecs maritime satellites
. . . Marots (ESA)
. . . Molniya satellites
. . . MSAT
. . . Palapa satellites
. . . . Palapa 2 satellite
. . . Raduga satellite
. . . RCA Satcom satellites
. . . Relay satellites
. . . . Relay 1 satellite
. . . . Relay 2 satellite
. . . Symphonie satellites
. . . SYNCOM satellites
. . . . Early Bird satellites
. . . . SYNCOM 1 satellite
. . . . SYNCOM 2 satellite
. . . . SYNCOM 3 satellite
. . . . SYNCOM 4 satellite
. . . TDR satellites
. . . Westar satellites

RT Advent Project
ATS
carrier to noise ratios
commercial spacecraft
Comsat program
Defense Communications Satellite System
demand assignment multiple access
domestic satellite communications systems
downlinking
Earth terminal measurement system
Echo project
electronic mail
Fleet Satellite Communication System
geophysical satellites
ground-air-ground communication
HET experiment
Indian space program
INMARSAT satellites
Iridium network
land mobile satellite service
mobile communication systems
network control
orbit spectrum utilization
passive satellites
radio relay systems
satellite communication
satellite constellations
satellite networks
Skynet satellites
space commercialization
space communication
Synchronous Communications Satellite Proj
Synchronous Meteorological Satellite
synchronous platforms
synchronous satellites
telecommunication
teleconferencing
Telstar project

unmanned spacecraft
uplinking
wireless communication

communication systems

USE **telecommunication**

communication theory

UF *statistical communication theory*
RT cross coupling
cybernetics
data transmission
high level languages
information theory
intelligibility
languages
lattices (mathematics)
messages
network synthesis
quantum communication
random noise
random processes
redundancy
semantics
sentences
signal to noise ratios
switching theory
∞ theories

Communications Technology Satellite

UF *Hermes satellite*
GS artificial satellites
. communication satellites
. . **Communications Technology Satellite**
. . . ComStar C
. . . NATO 3B satellite
RT Canada
Canadian space program
international cooperation
NASA programs
synchronous satellites
technology assessment
technology utilization

communities

GS **communities**
. inhabitants
. . mountain inhabitants
. space colonies
RT cities
demography
ethnic factors
integrated energy systems
megalopolises
minorities
Modular Integrated Utility System
nations
police
politics
regimes
sociology
Starsite program
United Nations
urban development
urban planning
urban research

commutation

DEF Sequential sampling, on a repetitive timesharing basis, of multiple data sources for transmitting or recording, or both, on a single channel.

RT commutators
interpolation
switching theory

commutators

DEF Devices used to accomplish time division multiplexing by repetitive sequential switching.

GS **commutators**
. decommutators
RT armatures
commutation
distributors

electric contacts
electric motors
∞ rotating electrical machines
rotating generators

commuter aircraft

(added October 1988)

GS passenger aircraft
. **commuter aircraft**
. . ATR-72 aircraft
RT air transportation
∞ aircraft
commercial aircraft
general aviation aircraft

compact disk read-only memory devices

USE **optical disks**

compact galaxies

(added November 1988)

GS celestial bodies
. galaxies
. . **compact galaxies**
RT galactic structure

compacting

RT agglomeration
cold pressing
densification
hot isostatic pressing
hot pressing
powder metallurgy
presses
∞ pressing
pressing (forming)
vibration

compactness

USE **void ratio**

companding

DEF A process in which compression is followed by expansion, as in noise reduction systems.

RT frequency modulation
modulation
radio transmission
signal processing
signal to noise ratios

companion stars

GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **companion stars**
. . . . Nemesis (star)
RT brown dwarf stars
parallax
stellar motions
triple stars
variable stars
x ray binaries

comparator circuits

GS circuits
. **comparator circuits**
RT clipper circuits
delay circuits
discrimination
time discrimination

comparators

DEF In computer operations, devices or circuits for comparing information from two sources.

GS measuring instruments
. **comparators**
RT anticoincidence detectors
discriminators
error signals
harmonic generators
monochromators

reflectometers

comparison

RT analogies
cost analysis
economic analysis
estimates
evaluation
examination
intercalibration
matching
pattern registration
ranking

compartmentation

USE **compartments**

compartments

UF *compartmentation*
GS **compartments**
. air locks
. . airlock modules
. aircraft compartments
. command modules
. pressurized cabins
. spacecraft cabins
. test chambers
. . anechoic chambers
. . pressure chambers
. . . hyperbaric chambers
. . . vacuum chambers
. reverberation chambers
RT bays (structural units)
∞ cells
crew experiment stations
crew observation stations
crew workstations
enclosures
modules
rooms
space station modules
spacecraft modules

COMPASS (programming language)

GS languages
. programming languages
. . Assembly language
. . . **COMPASS (programming language)**
RT compilers
computer programming

compasses

DEF Instruments for indicating a horizontal reference direction, specifically, magnetic compasses.

GS measuring instruments
. indicating instruments
. . **compasses**
. . gyrocompasses
. . magnetic compasses
. . solar compasses
navigation aids
. navigation instruments
. . **compasses**
. . gyrocompasses
. . magnetic compasses
. . solar compasses
RT aircraft instruments
beacons
buoys
flight instruments
radar beacons
radio direction finders
transits

compatibility

DEF A characteristic ascribed to a major subsystem that indicates it functions well in the overall system. Also applied to the overall system with reference to how well its various subsystems work together, as in 'the vehicle has good compatibility.' Also applied to materials which can be used in conjunction with other materials and not react with each other under

normal operating conditions.

GS **compatibility**
 . biocompatibility
 . chemical compatibility
 . electromagnetic compatibility
 . systems compatibility

RT acceptability
 affinity
 conventions
 permissivity
 stability
 suitability
 versatility

∞ **compensation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT allowances
 errors
 image motion compensation
 instrument compensation
 temperature compensation
 transient response

compensators

RT balance
 bias
 compensators
 error signals
 feedback
 loop transfer recovery
 video equipment

compensatory tracking

GS tracking (position)
 . **compensatory tracking**

RT infrared tracking
 optical tracking
 radar tracking

competition

RT athletes
 human performance
 human reactions
 physical fitness

compilation (computers)
 USE **compilers**

compiler programs
 USE **compilers**

compilers

SN (PROGRAM-MAKING ROUTINES FOR DIGITAL COMPUTERS)

UF *compilation (computers)*
compiler programs

GS computer programs
 . **compilers**

RT assembler routines
 autocoders
 C (programming language)
 collating
 COMPASS (programming language)
 computer program integrity
 computer systems programs
 data conversion routines
 disk operating system (DOS)
 FORTRAN
 operating systems (computers)
 parsing algorithms
 Pascal (programming language)
 PL/1
 programmed instruction
 subroutines

∞ **complement**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An angle equal to 90 deg. minus a given angle. The true complement of any quantity in positional notation, i. e. the quantity which, when added to the first quantity, gives the least quantity containing one more place. The base-minus-one complement of any quantity in positional notation; i. e. , the quantity which when

added to the first quantity containing the same number of places.

RT complement (biology)
 complements (mathematics)
 personnel

complement (biology)

RT ∞ biology
 ∞ complement
 hemolysis

complementary metal oxide semiconductors
 USE **CMOS**

complements (mathematics)

RT angles (geometry)
 ∞ complement
 ∞ logic

completeness

RT achievement
 computer program integrity
 integrity

complex compounds

DEF Chemical compounds in which part of the molecular bonding is of the coordinate type.

RT ∞ chemical compounds
 molecular structure
 transition metals

complex numbers

RT geometry
 integers
 ∞ numbers
 real numbers

complex systems

RT parameter identification
 reliability engineering
 system identification
 ∞ systems
 systems analysis

complex variables

GS analysis (mathematics)
 . **complex variables**
 . . Airy function
 . . analytic functions
 . . . entire functions
 . . Bessel functions
 . . . Hankel functions
 . . Cauchy integral formula
 . . conformal mapping
 . . conjugates
 . . . conjugate points
 . . exponential functions
 . . . logarithms
 . . gamma function
 . . harmonic functions
 . . hyperbolic functions
 . . hypergeometric functions
 . . Laguerre functions
 . . Legendre functions
 . . Liouville theorem
 . . Mathieu function
 . . meromorphic functions
 . . . elliptic functions
 . . . rational functions
 . . nonholonomic equations
 . . orthogonal functions
 . . . Walsh function
 . . Schwarz-Christoffel transformation
 . . singularity (mathematics)
 . . . naked singularities
 . . spherical harmonics

RT aperiodic functions
 complexity
 dependent variables
 Euler-Cauchy equations
 functional analysis
 Joukowski transformation
 maximum principle
 real variables
 Schauder fixpoint theorem
 stability derivatives

Theodorsen transformation
 uniqueness theorem
 ∞ variable

complexity

UF *complication*

GS **complexity**
 . task complexity

RT complex variables
 feedback
 ∞ performance
 statistical distributions

compliance (elasticity)
 USE **modulus of elasticity**

complication
 USE **complexity**

component reliability

GS reliability
 . **component reliability**

RT aircraft reliability
 circuit reliability
 cumulative damage
 process control (industry)
 quality control
 retirement for cause
 spacecraft reliability
 structural reliability
 systems health monitoring

∞ **components**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An article which is a self-contained element of a complete operating unit and performs a function necessary to the operation of that unit. Used for parts.

UF *parts*

RT accessories
 antenna components
 assemblies
 computer components
 content
 engine parts
 fractions
 ingredients
 missile components
 modules
 redundant components
 segments
 spacecraft components
 spare parts
 structural members
 subassemblies

composite functions

GS analysis (mathematics)
 . real variables
 . . **composite functions**
 functions (mathematics)
 . **composite functions**

composite materials

DEF Structural materials of metals, ceramics, or plastics with built-in strengthening agents which may be in the form of filaments, foils, powders, or flakes of a different compatible material. Used for composites and pyrographalloy.

UF *composites*
pyrographalloy

GS **composite materials**
 . Boral
 . boron reinforced materials
 . . aluminum boron composites
 . . boron-epoxy composites
 . carbon-carbon composites
 . ceramic matrix composites
 . cermets
 . composite propellants
 . fiber composites
 . . aramid fiber composites
 . . braided composites
 . . carbon fiber reinforced plastics

composite propellants

- . . . carbon-phenolic composites
- . . . glass fiber reinforced plastics
- . . . woven composites
- . functionally gradient materials
- . glassy carbon
- . hybrid composites
- . metal matrix composites
- . . . aluminum boron composites
- . . . aluminum graphite composites
- . . . Borsic (tradename)
- . . . eutectic composites
- . particulate reinforced composites
- . plywood
- . polymer matrix composites
- . . . epoxy matrix composites
- . . . boron-epoxy composites
- . . . graphite-epoxy composites
- . . . graphite-polyimide composites
- . . . reinforced plastics
- . . . carbon fiber reinforced plastics
- . . . carbon-phenolic composites
- . . . glass fiber reinforced plastics
- . . . micarta
- . resin matrix composites
- . . boron-epoxy composites
- . . carbon-phenolic composites
- . . graphite-epoxy composites
- . superhybrid materials
- . . graphite-epoxy composites
- . nanocomposites
- . three dimensional composites
- . whisker composites
- RT aircraft construction materials
- airframe materials
- aramid fibers
- bimetals
- boron fibers
- carbon fibers
- chemical vapor infiltration
- cladding
- coatings
- ∞ construction materials
- E glass
- fiber orientation
- fiber pullout
- fiber pushout
- fiber volume fraction
- fiber-matrix interfaces
- fibers
- insulation
- interlaminar stress
- laminates
- lay-up
- low density research
- ∞ materials
- ∞ matrices
- matrix materials
- metals
- micromechanics
- mixtures
- modular ratios
- monotectic alloys
- multilayer insulation
- ply orientation
- powder metallurgy
- preforms
- prepregs
- reinforcement (structures)
- reinforcing fibers
- reinforcing materials
- resin film infusion
- resin transfer molding
- rigid structures
- ∞ rovings
- S glass
- sandwich structures
- sheet molding compounds
- smart materials
- solid suspensions
- spiral wrapping
- stacking sequence (composite materials)
- thermosetting resins

composite propellants

DEF Solid rocket propellants consisting of a fuel and an oxidizer neither of which would burn

without the presence of the other.

GS composite materials

- . **composite propellants**
- propellants
- . solid propellants
- . . **composite propellants**

RT case bonded propellants

- double base propellants
- double base rocket propellants
- explosives
- fuel production
- plastic propellants
- plastisols
- polysulfides
- polyurethane resins
- propellant additives
- propellant binders
- solid rocket propellants

composite structures

GS **composite structures**

- . laminates
- . . Boral
- . . plywood

RT boron-epoxy composites

- ceramic matrix composites
- clamped structures
- functionally gradient materials
- glass fiber reinforced plastics
- honeycomb cores
- honeycomb structures
- hybrid structures
- lay-up
- pultrusion
- resin film infusion
- sheet molding compounds
- smart structures
- steel structures

∞ structures

composite wrapping

RT ceramic fibers

- fiber composites
- filament winding
- isotensoid structures
- spiral wrapping

∞ wrap

composites

USE **composite materials**

∞ composition

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT composition (property)

- content
- formulations
- ingredients
- stoichiometry

composition (property)

GS **composition (property)**

- . atmospheric composition
- . . atmospheric moisture
- . . ionospheric composition
- . body composition (biology)
- . chemical composition
- . . carbon dioxide concentration
- . . stellar composition
- . concentration (composition)
- . . atom concentration
- . . carbon dioxide concentration
- . . fiber volume fraction
- . . low concentrations
- . . mascons
- . . meteoroid concentration
- . . moisture content
- . . . atmospheric moisture
- . gas composition
- . . carbon dioxide concentration
- . isotope ratios
- . lunar composition
- . meteoritic composition
- . planetary composition
- . plasma composition

RT ∞ composition

- gradients
- Henry law
- lumping
- mixtures
- Raoult law
- solutions
- stoichiometry

composting

GS disposal

- . waste disposal
- . . **composting**
- management
- . waste management
- . . waste disposal
- . . . **composting**

RT garbage

- metabolic wastes
- shredding
- solid wastes
- waste treatment
- waste utilization

compound A

GS halogen compounds

- . fluorine compounds
- . . fluorides
- . . . **compound A**
- . halides
- . . fluorides
- . . . **compound A**

RT ∞ chemical compounds

compound helicopters

GS V/STOL aircraft

- . rotary wing aircraft
- . . helicopters
- . . . **compound helicopters**
- . . . S-67 helicopter

RT aeronautical engineering

- air transportation

∞ aircraft

- aircraft configurations
- aircraft design
- helicopter design
- short takeoff aircraft
- vertical takeoff aircraft

compounding

UF *milling (mixing)*

GS mixing

- . **compounding**

RT colloid

- dissolving
- grinding (comminution)
- homogenizing

∞ milling

∞ compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ chemical compounds

- potting compounds

compressed air

GS gases

- . gas mixtures
- . . air
- . . . **compressed air**
- mixtures
- . solutions
- . . gas mixtures
- . . . air
- **compressed air**

RT compressors

- drills
- energy storage
- man operated propulsion systems
- oxygen supply equipment
- pneumatic equipment

∞ pumping

compressed gas

DEF Any gaseous materials or mixtures having a container pressure exceeding 40 psi at 70 degrees F, or 104 psi at 130 degrees F.

Compressed gases are further defined as flammable or nonflammable.

- GS gases
 - . compressed gas
 - . . high pressure oxygen
- RT compressors
 - gas pressure
 - pneumatic control

compressed video

- USE **video compression**

compressibility

DEF The property of a substance, as air, by virtue of which its density increases with increase in pressure.

- GS mechanical properties
 - . **compressibility**
- RT bulk modulus
 - compressible flow
 - compressive strength
 - density (mass/volume)
 - equations of state
 - Gruneisen constant
 - hydroelasticity
 - incompressibility
 - metal powder
 - porosity
 - powder (particles)

compressibility effects

- RT buffeting
 - compressible flow
- ∞ effects
 - flutter
 - heat transfer
 - oscillating flow
 - pressure effects
 - relaxation (physiology)
 - secondary flow
 - supersonic flow
 - transonic flow

compressible boundary layer

- GS boundary layers
 - . **compressible boundary layer**
- RT laminar boundary layer
 - three dimensional boundary layer
 - turbulent boundary layer

compressible flow

DEF In aerodynamics, flow at speeds sufficiently high that density changes in the fluid cannot be neglected.

- GS fluid flow
 - . **compressible flow**
 - . . Ringleb flow
 - . . transonic flow
- RT aerodynamics
 - air flow
 - Cartan space
 - compressibility
 - compressibility effects
 - Crocco method
 - gas flow
 - Hugoniot equation of state
 - hypersonic flow
 - incompressible flow
 - magnetohydrodynamic flow
 - Newton pressure law
 - stagnation flow
 - stagnation pressure
 - stagnation temperature
 - subsonic flow
 - supersonic flow

compressible fluids

- RT aerodynamic heating
 - Crocco method
 - fluid power
- ∞ fluids
 - hydroelasticity
 - ideal fluids
 - incompressible fluids
 - Maxwell fluids
 - method of characteristics

P waves
superfluidity

compressing

- UF *recompression*
squeezing
- GS **compressing**
 - . plasma compression
 - . speech baseband compression
- RT adiabatic conditions
 - anvils
 - axial compression loads
 - blowing
 - compressors
 - concentrating
 - densification
 - internal compression inlets
 - magnetic compression
 - mechanical properties
 - metal powder
 - piston theory
- ∞ pressing
 - pressure
 - pressure reduction
 - pulse compression
- ∞ pumping
 - rarefaction
 - squeeze casting
 - superchargers

compression loads

- GS loads (forces)
 - . **compression loads**
 - . . axial compression loads
 - . . impact loads
- RT aerodynamic loads
 - axial loads
 - buckling
 - compressive strength
 - contact loads
 - dynamic loads
 - edge loading
 - kink bands
 - kinking
 - mechanical properties
 - shock loads
 - static loads
 - structural design criteria
 - thrust loads

compression ratio

DEF In internal combustion engines, the ratio between the volume displaced by the piston plus the clearance space, to the volume of the clearance space.

- GS ratios
 - . **compression ratio**
- RT efficiency
 - fuel-air ratio

compression testers

- USE **compression tests**

compression tests

- UF *compression testers*
meteorite compression tests
- RT creep tests
 - destructive tests
 - hardness tests
 - impact tests
 - load tests
- ∞ materials tests
 - static tests
- ∞ tests

compression waves

DEF In acoustics, waves in an elastic medium which cause an element of the medium to change its volume without undergoing rotation. Mathematically, a compression wave is one whose velocity wave has zero curl.

- GS elastic waves
 - . **compression waves**
- RT P waves

wave rotors

compressive strength

DEF The maximum load sustained by a standard specimen of a material when subjected to a crushing force.

- GS mechanical properties
 - . **compressive strength**
- RT compressibility
 - compression loads
 - ductility
 - elastic properties
 - fiber strength
 - high strength
 - load carrying capacity
 - Poisson ratio
 - resilience
 - shear strength
- ∞ strength
 - toughness

compressor blades

DEF Blades which are either rotor blades or stator blades in axial-flow compressors; sometimes used restrictively (and ambiguously) for compressor rotor blades.

- GS turbomachine blades
 - . **compressor blades**
- RT ∞ blades
 - centrifugal compressors
 - fan blades
 - rotating stalls
 - rotor blades (turbomachinery)
 - stator blades
 - turbine blades
 - turbocompressors
 - vanes

compressor efficiency

- GS efficiency
 - . **compressor efficiency**
- RT power efficiency
 - thermodynamic efficiency

compressor rotors

- GS rotating bodies
 - . rotors
 - . . **compressor rotors**
- RT centrifugal compressors
 - compressors
- ∞ fans
 - impellers
 - rotor blades (turbomachinery)
 - turbine wheels
 - turbocompressors

compressors

SN (EXCLUDES DATA COMPRESSORS)
DEF Machines for compressing air or other fluids.

- GS **compressors**
 - . centrifugal compressors
 - . superchargers
 - . supersonic compressors
 - . transonic compressors
 - . turbocompressors
- RT air conditioning equipment
 - blowers
 - compressed air
 - compressed gas
 - compressing
 - compressor rotors
 - condensers (liquefiers)
 - coolers
- ∞ fans
 - refrigerating machinery
 - stators
 - turbomachinery
 - vacuum pumps
 - vaneless diffusers

Compton effect

DEF The decrease in frequency and increase in wavelength of x rays or gamma rays when scattered by free electrons.

- GS scattering

compulsators

- . **Compton effect**
- RT coherent scattering
- ∞ effects
- inelastic scattering
- nuclear reactions
- photoelectricity
- Sunyaev-Zeldovich effect

Compton Gamma Ray Observatory
USE **Gamma Ray Observatory**

compulsators

DEF Compensated pulsed alternators, i. e. , single phased alternators designed for pulsed power duty with air gap armature windings and air gap compensating windings.

- RT AC generators
- compensators
- electric power supplies
- pulse generators

computation

- UF *calculation*
- GS **computation**
- . computational geometry
- . orbit calculation
- . . minimum variance orbit determination
- . . orbital position estimation
- . quantum computation

- RT addition
- ∞ applications of mathematics
- arithmetic
- calculators
- computational astrophysics
- computational electromagnetics
- computational fluid dynamics
- computers
- data processing
- data reduction
- dividing (mathematics)
- flux vector splitting
- ∞ formulas
- ill-conditioned problems (mathematics)
- interpolation
- linear prediction
- multiplication
- subtraction
- sums
- systolic arrays

computational aerodynamics
(added April 1997)
USE **computational fluid dynamics**

computational astrophysics

- GS analysis (mathematics)
- . numerical analysis
- . . **computational astrophysics**
- astrophysics
- . **computational astrophysics**
- RT computation
- computerized simulation
- mathematical models
- ∞ science

computational chemistry

DEF A complementary method for determining properties of gases, solids, and their interactions from first principle calculations. It extends testing capabilities to realms that are too dangerous or too costly to obtain experimentally.

- GS analysis (mathematics)
- . numerical analysis
- . . **computational chemistry**
- RT ∞ chemistry
- computer techniques
- computerized simulation
- configuration interaction
- physical chemistry
- self consistent fields

∞ tests

computational electromagnetics

(added March 1995)

- GS analysis (mathematics)
- . numerical analysis
- . . **computational electromagnetics**
- RT computation
- computational fluid dynamics
- electromagnetism
- finite difference time domain method
- parallel processing (computers)
- perfectly matched layers
- radar cross sections

computational fluid dynamics

DEF The application of large computer systems for the numerical solutions of complex fluid dynamics equations.

- UF *computational aerodynamics*
- GS analysis (mathematics)
- . numerical analysis
- . . **computational fluid dynamics**
- fluid mechanics
- . fluid dynamics
- . . **computational fluid dynamics**

- RT Baldwin-Lomax turbulence model
- BGK model
- Burnett equations
- computation
- computational electromagnetics
- convection-diffusion equation
- direct numerical simulation
- ∞ dynamics
- equations of motion
- finite element method
- flow deflection
- flow equations
- flux difference splitting
- flux vector splitting
- Godunov method
- grid generation (mathematics)
- hydrodynamic coefficients
- interactional aerodynamics
- k-epsilon turbulence model
- k-omega turbulence model
- large eddy simulation
- multiblock grids
- multigrid methods
- Navier-Stokes equation
- numerical flow visualization
- panel method (fluid dynamics)
- relaxation method (mathematics)
- Reynolds averaging
- space-time CE/SE method
- spectral methods
- structured grids (mathematics)
- turbulence models
- TVD schemes
- unstructured grids (mathematics)
- upwind schemes (mathematics)
- vortex in cell technique
- vortex lattice method

computational geometry

(added August 1988)

- GS computation
- . **computational geometry**
- geometry
- . **computational geometry**
- RT computer aided design
- Voronoi diagrams

computational grids

- UF *grids (mathematics)*
- mesh (mathematics)*
- GS coordinates
- . **computational grids**
- . . structured grids (mathematics)
- . . . multiblock grids
- . . unstructured grids (mathematics)
- RT grid generation (mathematics)
- grid refinement (mathematics)
- ∞ grids
- mathematical models
- multigrid methods

numerical analysis
perfectly matched layers
problem solving
three dimensional models

computational grids (computer networks)
(added December 2003)

USE **grid computing (computer networks)**

computer aided design

DEF The use of the computer in design work. Used for CAD (design), computer aided engineering, and computerized design.

- UF *CAD (design)*
- computer aided engineering*
- computerized design*
- GS computer techniques
- . **computer aided design**
- . . IPAD
- RT aircraft design
- amplifier design
- computational geometry
- computer graphics
- computerized simulation
- ∞ design
- design optimization
- drafting machines
- engine design
- helicopter design
- human-computer interface
- lens design
- lofting
- logic design
- missile design
- multidisciplinary design optimization
- rapid prototyping
- reactor design
- robotics
- satellite design
- spacecraft design
- structural design
- structured programming
- three dimensional models

computer aided engineering

USE **computer aided design**

computer aided manufacturing

DEF Interactive computing in support of manufacturing. Used for CAM (manufacturing).

- UF *CAM (manufacturing)*
- GS computer techniques
- . **computer aided manufacturing**
- manufacturing
- . **computer aided manufacturing**
- RT computer graphics
- computerized simulation
- group technology (manufacturing)
- rapid prototyping
- robotics

computer aided mapping

DEF Creating data bases of topographic and man-made features for the production of traditional maps and digital maps. Resultant digital maps have great flexibility and can be easily updated. The user can select the appropriate scale, view selected features, and view any desired area.

- GS computer techniques
- . **computer aided mapping**
- mapping
- . **computer aided mapping**
- RT computer graphics
- computerized simulation
- maps
- robotics

computer aided tomography

- UF *CAT scanner*
- GS computer techniques
- . **computer aided tomography**
- imagery
- . radiography
- . . tomography

- ... **computer aided tomography**
 RT computer graphics
 image processing
- computer animation**
 GS arts
 . graphic arts
 . . animation
 . . . **computer animation**
 computer graphics
 . **computer animation**
 computer techniques
 . **computer animation**
 RT computerized simulation
 motion pictures
- computer architecture*
 USE **architecture (computers)**
- computer assisted instruction**
 DEF The use of a computer to present instructional material and to accept and evaluate student responses.
 UF *CAI*
 GS computer techniques
 . **computer assisted instruction**
 education
 . programmed instruction
 . . **computer assisted instruction**
 RT language programming
 symbolic programming
- computer bulletin boards*
 USE **electronic bulletin boards**
- computer codes*
 USE **computer programs**
- computer compatible tapes**
 DEF Machine readable tapes.
 GS computer components
 . computer storage devices
 . . **computer compatible tapes**
 magnetic tapes
 . **computer compatible tapes**
 RT computers
 data processing equipment
 digital computers
 ∞ tapes
- computer components**
 GS **computer components**
 . adding circuits
 . central processing units
 . . arithmetic and logic units
 . . RISC processors
 . chips (memory devices)
 . computer storage devices
 . . bubble memory devices
 . . buffer storage
 . . computer compatible tapes
 . . cryogenic computer storage
 . . delay lines (computer storage)
 . . magnetic disks
 . . magnetic drums
 . . optical disks
 . . random access memory
 . . . core storage
 . . read-only memory devices
 . . . CD-ROM
 . . registers (computers)
 . . . accumulators (computers)
 . microprocessors
 . . Intel 8080 microprocessor
 . peripheral equipment (computers)
 . . printers (data processing)
 . . remote consoles
 . shift registers
 RT architecture (computers)
 binary to decimal converters
 ∞ components
 computers
 consoles
 control units (computers)
 counters
 decimal to binary converters
- digital electronics
 firmware
 logical elements
 remote consoles
- computer conferencing**
(added September 1993)
 DEF A form of teleconferencing that allows one or more users to exchange messages on a computer network.
 GS telecommunication
 . teleconferencing
 . . **computer conferencing**
 RT communicating
 communication
 electronic bulletin boards
 electronic mail
 electronic publishing
 World Wide Web
- computer design**
 SN (DESIGN OF COMPUTERS--EXCLUDES COMPUTERIZED DESIGN AND SYSTEMS ENGINEERING)
 RT architecture (computers)
 chips (electronics)
 computers
 ∞ design
 fluid logic
 hardware description languages
 logic design
 memory (computers)
 microprocessors
 MIMD (computers)
 optical computers
 product development
 read-only memory devices
 SIMD (computers)
- computer graphics**
 DEF The technique of combining computer calculations with various display devices, printers, plotters, etc. to render information in graphical or pictorial format. Used for interactive graphics.
 UF *interactive graphics*
 GS **computer graphics**
 . computer animation
 computer aided design
 computer aided manufacturing
 computer aided tomography
 computers
 data processing terminals
 display devices
 graphical user interface
 IBM personal computers
 Macintosh personal computers
 multimedia
 plotters
 raster scanning
 remote consoles
 scene generation
 scientific visualization
 tomography
 windows (computer programs)
- computer information security**
 DEF Protective measures to prevent destruction, larceny, and/or unauthorized use of information in computerized files. Used for computer security.
 GS security
 . computer security
 . . **computer information security**
 RT access control
 computer viruses
 cryptography
 data processing
 disk operating system (DOS)
 electronic commerce
 firewalls (computers)
 information resources management
 operating systems (computers)
 privacy
 quantum cryptography
 selective dissemination of information
- steganography
 terrorism
- computer methods*
 USE **computer programs**
- computer networks**
 DEF The interconnection of two or more computers for the mutual or individual processing of data to and from a multitude of terminals or stations by utilizing appropriate switching techniques, transmission systems, or miniprocessors.
 GS networks
 . **computer networks**
 . . internets
 . . . ARPA computer network
 . . . World Wide Web
 . . client server systems
 . . local area networks
 . . wide area networks
 RT Aloha system
 carrier sense multiple access
 computer security
 distributed interactive simulation
 distributed processing
 electronic mail
 Ethernet
 firewalls (computers)
 grid computing (computer networks)
 interprocessor communication
 intrusion detection (computers)
 network control
 protocol (computers)
 VSAT (network)
- computer program integrity**
 DEF The completeness of a program to execute its intended function.
 GS integrity
 . **computer program integrity**
 reliability
 . software reliability
 . . **computer program integrity**
 RT compilers
 completeness
 computer viruses
 computers
 digital computers
 errors
 programs
 redundancy
 security
- computer program reliability*
 USE **software reliability**
- computer programming**
 DEF The preparation of a formalized sequence of instructions that can be recognized and implemented by a computer.
 UF *Legendre code*
 GS **computer programming**
 . assembler routines
 . language programming
 . logic programming
 . microprogramming
 . multiprogramming
 . object-oriented programming
 . on-line programming
 . parallel programming
 . structured programming
 . symbolic programming
 RT Ada (programming language)
 addressing
 ALGOL
 algorithms
 APL (programming language)
 Assembly language
 autocoders
 BASIC (programming language)
 batch processing
 BCH codes
 block diagrams
 C (programming language)
 coding

computer programs

- COMPASS (programming language)
- computer viruses
- context free languages
- data structures
- digital techniques
- expert systems
- file maintenance (computers)
- firmware
- flow charts
- formalism
- format
- Forth (programming language)
- FORTRAN
- HAL/S (language)
- heuristic methods
- kinofom
- linear programming
- LISP (programming language)
- logic design
- machine-independent programs
- MAP (programming language)
- MIMD (computers)
- natural language (computers)
- numerical analysis
- open source licensing (computers)
- Pascal (programming language)
- PL/1
- program verification (computers)
- programmed instruction
- programmers
- ∞ programming
- programming environments
- programming languages
- Prolog (programming language)
- real time operation
- response time (computers)
- reverse engineering
- RISC processors
- run time (computers)
- sequential control
- SIMD (computers)
- software engineering
- software reliability
- software reuse
- systems analysis
- theorem proving
- time sharing
- UNIX (operating system)

computer programs

- UF *computer codes*
 - computer methods*
 - software (computers)*
- GS **computer programs**
 - . applications programs (computers)
 - . . NASTRAN
 - . . spreadsheets
 - . compilers
 - . computer systems programs
 - . . assembler routines
 - . . input/output routines
 - . . operating systems (computers)
 - . . . disk operating system (DOS)
 - . . . UNIX (operating system)
 - . . subroutine libraries (computers)
 - . editing routines (computers)
 - . machine-independent programs
 - . merging routines
 - . multiple output programs
 - . object programs
 - . software development tools
 - . source programs
 - . subroutines
- RT algorithms
 - Assembly language
 - batch processing
 - block diagrams
 - coding
 - computer viruses
 - computers
 - data conversion routines
 - data flow analysis
 - data processing
 - data transfer (computers)
 - digital computers
 - error detection codes
 - fixed point arithmetic

- floating point arithmetic
- Goddard Trajectory Determination System
- IBM personal computers
- instruction sets (computers)
- intellectual property
- laser guidance
- machine translation
- Macintosh personal computers
- modularity
- NASA Interactive Planning System
- numerical control
- on-line systems
- programmed instruction
- programming environments
- programs
- report generators
- ∞ routines
- software engineering
- software reliability
- software reuse
- structured programming
- ∞ translators
- user manuals (computer programs)

computer security

(added February 2003)

- DEF Measures and controls taken to prevent unauthorized access, misuse, or destruction of computer systems and networks, software, or the information stored in computer files.
- GS security
 - . **computer security**
 - . . computer information security
 - . . firewalls (computers)
 - . . intrusion detection (computers)
- RT access control
 - computer networks
 - computer systems design
 - computer viruses
 - internets
 - protocol (computers)

computer simulation

USE **computerized simulation**

computer storage devices

- UF *machine storage*
- GS computer components
 - . **computer storage devices**
 - . . bubble memory devices
 - . . buffer storage
 - . . computer compatible tapes
 - . . cryogenic computer storage
 - . . delay lines (computer storage)
 - . . magnetic disks
 - . . magnetic drums
 - . . optical disks
 - . . random access memory
 - . . . core storage
 - . . read-only memory devices
 - . . . CD-ROM
 - . . registers (computers)
 - . . . accumulators (computers)
- RT acoustic delay lines
 - associative memory
 - cards
 - central processing units
 - ∞ channels
 - cryosar
 - ∞ equipment
 - flip-flops
 - hole burning
 - magnetic storage
 - memory (computers)
 - microprocessors
 - optical memory (data storage)
 - parametrons
 - peripheral equipment (computers)
 - punched cards
 - punched tapes
 - random access
 - shift registers
 - ∞ storage

thin films

computer systems design

- GS systems engineering
 - . **computer systems design**
- RT client server systems
 - computer security
 - concurrent processing
 - ∞ design
 - disk operating system (DOS)
 - distributed processing
 - firewalls (computers)
 - interprocessor communication
 - man machine systems
 - operating systems (computers)
 - peripheral equipment (computers)
 - programmable logic devices
 - read-only memory devices
 - relational data bases
 - software development tools
 - software engineering
 - ∞ systems
 - virtual memory systems

computer systems performance

- DEF The efficiency and reliability that characterize the real operation of the system.
- RT consistency
 - data sampling
 - efficiency
 - evaluation
 - operator performance
 - output
 - ∞ performance
 - performance tests
 - quality
 - reliability
 - response time (computers)
 - RISC processors
 - software reliability
 - ∞ systems

computer systems programs

- GS computer programs
 - . **computer systems programs**
 - . . assembler routines
 - . . input/output routines
 - . . operating systems (computers)
 - . . . disk operating system (DOS)
 - . . . UNIX (operating system)
 - . . subroutine libraries (computers)
- RT algorithms
 - application programming interface
 - Assembly language
 - autocoders
 - compilers
 - computer viruses
 - computers
 - data flow analysis
 - data processing
 - digital computers
 - editing routines (computers)
 - error detection codes
 - report generators
 - ∞ routines
 - software engineering
 - ∞ systems
 - systems analysis

computer systems simulation

- DEF Forecasting of computer requirements by the use of predictive modeling and estimating computer workloads.
- GS simulation
 - . systems simulation
 - . . **computer systems simulation**
- RT analog simulation
 - data processing equipment
 - digital simulation
 - hardware description languages
 - mathematical models
 - operations research
 - simulators
 - ∞ systems

systems analysis

computer techniques

- GS **computer techniques**
 - . computer aided design
 - . . IPAD
 - . computer aided manufacturing
 - . computer aided mapping
 - . computer aided tomography
 - . computer animation
 - . computer assisted instruction
- RT
 - adaptive optics
 - ARPA computer network
 - backpropagation (artificial intelligence)
 - belief networks
 - computational chemistry
 - computers
 - decision support systems
 - flight management systems
 - knowledge based systems
 - management information systems
 - management methods
 - management systems
 - microprocessors
 - NASTRAN
 - numerical differentiation
 - on-line systems
 - parsing algorithms
 - personal computers
 - sorting algorithms
 - spreadsheets
 - word processing

computer viruses

(added March 1989)

- RT
 - computer information security
 - computer program integrity
 - computer programming
 - computer programs
 - computer security
 - computer systems programs
 - intrusion detection (computers)
 - software engineering

computer vision

- DEF Capability of computers to analyze and act on visual input.
- UF *machine vision*
- RT artificial intelligence
- ∞ automation
 - edge detection
 - Gabor filters
 - optical flow (image analysis)
 - pattern recognition
 - position sensing
 - robot sensors
 - robotics
 - robots

computerized control

USE **numerical control**

computerized design

USE **computer aided design**

computerized simulation

- DEF Computer-calculated representation of a process, device, or concept in mathematical form. Used for ARIP (impact prediction), automatic rocket impact predictors, computer simulation, and IP (impact prediction).
- UF *ARIP (impact prediction)*
 - automatic rocket impact predictors*
 - computer simulation*
 - IP (impact prediction)*
- GS simulation
 - . **computerized simulation**
 - . . analog simulation
 - . . digital simulation
 - . . distributed interactive simulation
- RT algorithms
 - altitude simulation
 - computational astrophysics
 - computational chemistry
 - computer aided design
 - computer aided manufacturing

- computer aided mapping
- computer animation
- computers
- control simulation
- differential analyzers
- flight simulation
- hardware-in-the-loop simulation
- highly maneuverable aircraft
- hydraulic analogies
- landing simulation
- Lennard-Jones potential
- mathematical models
- ∞ missile simulators
- molecular dynamics
- motion simulators
- multiscale models
- numerical flow visualization
- numerical weather forecasting
- operations research
- scientific visualization
- simulated annealing
- systems simulation
- target simulators
- three dimensional models
- two dimensional models
- virtual reality

computers

- GS data processing equipment
 - . **computers**
 - . . analog computers
 - . . . EAI 680 computer
 - . . . Honeywell 600/6000 computer
 - . . . SIGMA 5 computer
 - . . . Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - . . CDC computers
 - . . . CDC 160-A computer
 - . . . CDC 1604 computer
 - . . . CDC 3100 computer
 - . . . CDC 3200 computer
 - . . . CDC 3600 computer
 - . . . CDC 3800 computer
 - . . . CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - . . . CDC 7000 series computers
 - CDC 7600 computer
 - . . . CDC 8090 computer
 - . . . CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - . . . CDC Cyber 74 computer
 - . . . CDC Cyber 174 computer
 - . . . CDC Cyber 203 computer
 - . . . CDC Cyber 205 computer
 - . . . CDC Star 100 computer
 - . . counting rate computers
 - . . DDP computers
 - . . . DDP 516 computer
 - . . digital computers
 - . . . CDC 160-A computer
 - . . . CDC 1604 computer
 - . . . CDC 3100 computer
 - . . . CDC 3200 computer
 - . . . CDC 3600 computer
 - . . . CDC 3800 computer
 - . . . CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - . . . CDC 7000 series computers
 - CDC 7600 computer
 - . . . CDC 8090 computer
 - . . . CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - . . . CDC Cyber 74 computer
 - . . . CDC Cyber 174 computer
 - . . . CDC Cyber 203 computer
 - . . . CDC Cyber 205 computer
 - . . . CDC Star 100 computer
 - . . . EAI 680 computer
 - . . . EAI 8400 computer
- . . . EAI 8900 computer
- . . . EMR 6050 computer
- . . . Ferranti Mercury computer
- . . . GE computers
- GE 625 computer
- GE 635 computer
- . . . Hewlett-Packard computers
- . . . Honeywell computers
- DDP 516 computer
- Honeywell 600/6000 computer
- Honeywell ADEPT computer
- Honeywell DDP 116 computer
- . . . IBM 360 computer
- . . . IBM 370 computer
- . . . IBM 650 computer
- . . . IBM 704 computer
- . . . IBM 709 computer
- . . . IBM 1130 computer
- . . . IBM 1401 computer
- . . . IBM 1410 computer
- . . . IBM 1620 computer
- . . . IBM 2250 computer
- . . . IBM 7030 computer
- . . . IBM 7040 computer
- . . . IBM 7044 computer
- . . . IBM 7070 computer
- . . . IBM 7074 computer
- . . . IBM 7090 computer
- . . . IBM 7094 computer
- . . . ICL computers
- . . . Iliac computers
- Iliac 3 computer
- Iliac 4 computer
- . . . microcomputers
- personal computers
- IBM personal computers
- Macintosh personal computers
- minicomputers
- Nova computers
- . . . Modcomp II computer
- . . . Modcomp IV computer
- . . . parallel computers
- massively parallel processors
- Connection Machine
- MIMD (computers)
- SIMD (computers)
- . . . PDP 15 computer
- . . . PDP computers
- PDP 7 computer
- PDP 8 computer
- PDP 9 computer
- PDP 10 computer
- PDP 11 computer
- PDP 11/20 computer
- PDP 11/40 computer
- PDP 11/45 computer
- PDP 11/50 computer
- PDP 11/70 computer
- PDP 12 computer
- . . . Philco 2000 computer
- . . . Raytheon computers
- . . . RCA spectra 70 computer
- . . . SDS 900 series computers
- SDS 930 computer
- SDS 9300 computer
- . . . SEL computers
- . . . sequential computers
- . . . SIGMA 5 computer
- . . . SIGMA computers
- SIGMA 9 computer
- . . . Solomon computers
- . . . Univac 1100 series computers
- Univac 1105 computer
- Univac 1106 computer
- Univac 1107 computer
- Univac 1108 computer
- Univac 1110 computer
- . . . Univac 800 computer
- . . . Univac 418 computer
- . . . Univac 490 computer
- . . . Univac 494 computer
- . . . Univac 1230 computer
- . . . Univac Larc computer
- . . . VAX computers
- VAX-11 series computers
- VAX-11/780 computer
- . . . embedded computer systems

- ... airborne/spaceborne computers
- .. hybrid computers
- .. hypercube multiprocessors
- .. IBM computers
 - ... IBM 360 computer
 - ... IBM 370 computer
 - ... IBM 650 computer
 - ... IBM 704 computer
 - ... IBM 709 computer
 - ... IBM 1130 computer
 - ... IBM 1401 computer
 - ... IBM 1410 computer
 - ... IBM 1620 computer
 - ... IBM 2250 computer
 - ... IBM 7030 computer
 - ... IBM 7040 computer
 - ... IBM 7044 computer
 - ... IBM 7070 computer
 - ... IBM 7074 computer
 - ... IBM 7090 computer
 - ... IBM 7094 computer
 - ... IBM personal computers
- .. MINOS computer
- .. optical computers
- .. Pegasus computer
- .. RCA computers
 - ... RCA spectra 70 computer
 - ... RCA-110 computers
- .. Siemens 2002 computer
- .. site data processors
- .. supercomputers
 - ... Connection Machine
 - ... Cray computers
 - .. transputers
 - .. Univac computers
 - ... Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - ... Univac 80 computer
 - ... Univac 418 computer
 - ... Univac 490 computer
 - ... Univac 494 computer
 - ... Univac 1230 computer
 - ... Univac Larc computer
- .. quantum computers
- RT applications programs (computers)
- arithmetic and logic units
- artificial intelligence
- automata theory
- ∞ automation
- calculators
- central processing units
- computation
- computer compatible tapes
- computer components
- computer design
- computer graphics
- computer program integrity
- computer programs
- computer systems programs
- computer techniques
- computerized simulation
- control data (computers)
- control units (computers)
- cybernetics
- data converters
- data processing
- digital to voice translators
- file maintenance (computers)
- fixed point arithmetic
- floating point arithmetic
- HAL/S (language)
- ∞ hardware
- information retrieval
- information theory
- Intel 8080 microprocessor
- logic circuits
- machine-independent programs
- ∞ machinery
- memory (computers)
- multiprocessing (computers)
- printers (data processing)
- read-only memory devices
- real time operation

- run time (computers)
- telecommunication
- vocoders

Comsat program

- GS programs
 - .. **Comsat program**
- RT communication satellites
 - Early Bird satellites
 - Telstar project
 - Telstar satellites

ComStar C

DEF The third in a series of Comsat domestic communications satellites launched in a transfer orbit by NASA for COMSAT.

- GS artificial satellites
 - .. communication satellites
 - .. Communications Technology Satellite
 - ... **ComStar C**

ComStar satellites

DEF Series of domestic Comsat communication satellites.

- GS artificial satellites
 - .. communication satellites
 - .. **ComStar satellites**
- RT satellite networks

concatenated codes

DEF Two or more codes which are encoded and decoded in series.

- RT binary codes
- ∞ codes
 - coding
 - data transmission
 - decoding
 - error correcting codes
 - redundancy encoding
 - Reed-Solomon codes
 - signal encoding
 - trellis coding

concavity

- RT contour sensors
- contours
- convexity
- flatness
- shapes
- ∞ surface geometry

concentrating

- RT accumulations
- adsorption
- agglomeration
- beneficiation
- centrifuging
- classifiers
- coagulation
- coalescing
- compressing
- ∞ concentration
- concentrators
- condensing
- crystallization
- distillation
- drying
- enrichment
- evaporation
- extraction
- filtration
- flocculating
- flotation
- percolation
- precipitation (chemistry)
- ∞ separation
- separators
- settling
- sorption
- stress concentration
- upgrading

- vaporizing

∞ **concentration**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The quantity of a substance contained in a unit quantity of sample.
- RT concentrating
 - concentration (composition)
 - crowding
 - filtration
 - isotopic enrichment

concentration (composition)

- UF *volume fraction*
- GS composition (property)
 - .. **concentration (composition)**
 - .. atom concentration
 - .. carbon dioxide concentration
 - .. fiber volume fraction
 - .. low concentrations
 - .. mascons
 - .. meteoroid concentration
 - .. moisture content
 - ... atmospheric moisture
- RT ∞ concentration
 - dilution
 - particulate sampling
 - purity
 - quality
 - sampling
 - ∞ saturation
 - solubility

concentrators

- GS **concentrators**
 - .. spirals (concentrators)
- RT accumulators
 - centrifuges
 - classifiers
 - ∞ classifying
 - columns (process engineering)
 - concentrating
 - evaporators
 - filtration
 - fluid filters
 - precipitators
 - radiative heat transfer
 - separators
 - size separation
 - sizing screens
 - solar collectors
 - stills
 - thermal radiation
 - traps
 - washers (cleaners)

concentric cylinders

- RT ∞ cylinders
 - cylindrical shells

concentric spheres

DEF Structures in which the space between the spheres is utilized for experiments involving fluid flow, etc.

- GS symmetrical bodies
 - .. bodies of revolution
 - .. spheres
 - ... **concentric spheres**
- RT concentricity

concentricity

- RT ∞ centers
 - concentric spheres
 - eccentricity

Concorde aircraft

- GS jet aircraft
 - .. turbofan aircraft
 - ... **Concorde aircraft**
 - Sud Aviation aircraft
 - .. **Concorde aircraft**
 - supersonic aircraft
 - .. supersonic transports
 - .. **Concorde aircraft**
 - transport aircraft

- . **Concorde aircraft**
- RT ∞ aircraft
- concrete structures**
- DEF Buildings, dams, stadiums, etc. , constructed entirely of a mixture of aggregates, water, and Portland cement.
- RT aggregates
- breakwaters
- construction
- earthquake resistant structures
- foundations
- ∞ materials
- rigid structures
- ∞ structures
- towers
- concretes**
- DEF Homogeneous mixtures of portland cement, aggregates, and water and which may contain admixtures.
- RT admixtures
- aggregates
- cements
- ∞ construction materials
- grout
- insulation
- masonry
- mortars (material)
- pavements
- structural members
- concurrent engineering**
- (added September 1994)
- DEF Use of multi-disciplinary teams to perform simultaneous design of products and production processes from conception through disposal.
- RT design to cost
- ∞ engineering
- industrial management
- life cycle costs
- multidisciplinary research
- product development
- reliability engineering
- systems engineering
- total quality management
- value engineering
- concurrent processing**
- GS data processing
- . **concurrent processing**
- RT architecture (computers)
- computer systems design
- MIMD (computers)
- multiprocessing (computers)
- parallel processing (computers)
- SIMD (computers)
- condensates**
- GS **condensates**
- . Bose-Einstein condensates
- . hydrometeors
- RT Aitken nuclei
- ∞ condensation
- condensers (liquefiers)
- condensing
- contrails
- drop size
- liquefied gases
- plumes
- vapors
- ∞ **condensation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The physical process by which a vapor becomes a liquid or solid; the opposite of evaporation. Specifically, in meteorology, the transformation from vapor to liquid.
- RT condensates
- condensation nuclei
- condensing
- gas-metal interactions
- liquefaction
- Mayer problem
- rectification
- condensation nuclei**
- DEF Liquid or solid particles upon which condensation of water begins in the atmosphere.
- GS **condensation nuclei**
- . Aitken nuclei
- RT aerosols
- cloud physics
- clouds (meteorology)
- ∞ condensation
- condensing
- drops (liquids)
- ice nuclei
- meteorology
- microparticles
- nucleation
- ∞ nuclei
- rain
- condensation pumps**
- GS pumps
- . vacuum pumps
- . . **condensation pumps**
- vacuum apparatus
- . vacuum pumps
- . . **condensation pumps**
- condensation trails*
- USE **contrails**
- condensed matter physics**
- RT Bose-Einstein condensates
- matter (physics)
- negative matter
- ∞ physics
- ∞ solid state physics
- condenser radiators*
- USE **condensers (liquefiers)**
- heat radiators**
- ∞ **condensers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT capacitors
- condensers (liquefiers)
- jet condensers
- photographic rectifiers
- condensers (liquefiers)**
- UF *condenser radiators*
- GS **condensers (liquefiers)**
- . jet condensers
- RT absorbers (equipment)
- air conditioning
- air conditioning equipment
- cold traps
- columns (process engineering)
- compressors
- condensates
- ∞ condensers
- condensing
- cooling fins
- cooling systems
- distillation equipment
- drying apparatus
- evaporators
- exhaust systems
- film condensation
- heat exchangers
- heat pumps
- liquefied gases
- refrigerating machinery
- separators
- spacecraft radiators
- vaporizers
- condensing**
- UF *gas liquefaction*
- GS **condensing**
- . film condensation
- RT association reactions
- cloud physics
- concentrating
- condensates
- ∞ condensation
- condensation nuclei
- condensers (liquefiers)
- cooling
- dehumidification
- dew point
- distillation
- drop size
- drops (liquids)
- evaporation
- gas-liquid interactions
- gas-metal interactions
- nucleation
- phase change materials
- phase transformations
- refrigerating
- ∞ saturation
- ∞ separation
- sublimation
- supercooling
- supersaturation
- conditioned reflexes**
- GS reflexes
- . **conditioned reflexes**
- RT conditioning (learning)
- reaction time
- conditioned responses*
- USE **conditioning (learning)**
- ∞ **conditioning**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT beneficiation
- conditioning (learning)
- power conditioning
- preconditioning
- conditioning (learning)**
- UF *conditioned responses*
- GS learning
- . **conditioning (learning)**
- RT behavior
- biofeedback
- conditioned reflexes
- ∞ conditioning
- habituation (learning)
- inhibition (psychology)
- conditioning (treating)*
- USE **treatment**
- conditions**
- GS **conditions**
- . adiabatic conditions
- . boundary conditions
- . . perfectly matched layers
- . chronic conditions
- . flight conditions
- . Kutta-Joukowski condition
- . Lipschitz condition
- . nonadiabatic conditions
- . nonequilibrium conditions
- . runway conditions
- RT in vitro methods and tests
- in vivo methods and tests
- Condor missile**
- GS missiles
- . air to surface missiles
- . . **Condor missile**
- conductance*
- USE **resistance**
- conducting*
- USE **conduction**
- conducting fluids**
- SN (EXCLUDES PLASMAS)
- RT conductors
- electrolytes
- ∞ fluids

conducting polymers

magnetohydrodynamics

conducting media

USE **conductors**

conducting polymers

(added January 1990)

GS conductors

. electric conductors

. . . **conducting polymers**

RT dendrimers

electroactive polymers

organic semiconductors

polyacetylene

polymeric films

∞ polymers

polypyrroles

semiconductors (materials)

∞ conduction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The transfer of energy within and through a conductor by means of internal particle of molecular activity and without any net external motion. Used for conducting.

UF *conducting*

RT attenuation

conductive heat transfer

convection

electric conductors

electric power transmission

heat transfer

heating

refraction

sound propagation

sound transmission

thermal conductors

thermal diffusion

transmission

wave propagation

conduction bands

DEF A range of states in the energy spectrum of a solid in which electrons can move freely.

GS energy bands

. **conduction bands**

RT band structure of solids

∞ bands

Brillouin zones

electron transitions

Franck-Condon principle

NDM semiconductor devices

polarons

porous silicon

quantum wells

semiconductors (materials)

trapping

conduction electrons

GS particles

. charged particles

. . energetic particles

. . . electrons

. . . . **conduction electrons**

. corpuscular radiation

. . energetic particles

. . . electrons

. . . . **conduction electrons**

. elementary particles

. . fermions

. . . leptons

. . . . electrons

. **conduction electrons**

RT free electrons

quantum wells

valence

conductive heat transfer

UF *heat conduction*

GS transmission

. heat transmission

. . heat transfer

. . . **conductive heat transfer**

RT ∞ conduction

convective heat transfer

laminar heat transfer

thermal conductivity

thermal conductors

∞ conductivity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The ability to transmit, as electricity, heat, sound, etc. A unit measure of electrical conduction; the facility with which a substance conducts electricity, as represented by the current density per unit electrical-potential gradient in the direction of flow.

RT atmospheric conductivity

electrical properties

electrical resistivity

fluid flow

impedance

ionospheric conductivity

magnetoconductivity

mobility

Ohms law

photoconductivity

plasma conductivity

superconducting power transmission

superconductivity

thermal conduction

transconductance

transport properties

void ratio

conductivity meters

GS measuring instruments

. **conductivity meters**

. . electrical conductivity meters

conductors

DEF Substances or entities which transmit electricity, heat, or sound. Used for conducting media.

UF *conducting media*

GS **conductors**

. bus conductors

. electric conductors

. . beam leads

. . conducting polymers

. . electric wire

. electrolytes

. . anolytes

. . catholytes

. . ion exchange membrane

electrolytes

. . jumpers

. . molten salt electrolytes

. . nonaqueous electrolytes

. . solid electrolytes

. flat conductors

. . beam leads

. photoconductors

. superconductors (materials)

. . high temperature superconductors

. . . BSCCO superconductors

. . . YBCO superconductors

. . heavy fermion superconductors

. . organic superconductors

. thermal conductors

RT antennas

conducting fluids

exploding wires

metals

nonferrous metals

organic semiconductors

semiconductors (materials)

subreflectors

cones

SN (LIMITED TO MATERIAL OBJECTS)

DEF Geometric configurations having a circular bottom and sides tapering off to an apex (as in nose cones). Used for conical flare and fusiform shapes.

UF *conical flare*

fusiform shapes

GS **cones**

. circular cones

. conical bodies

. . slender cones

. half cones

. Mach cones

. nose cones

. . ablative nose cones

. . rocket nose cones

. shatter cones

RT aerodynamic configurations

bodies of revolution

conical shells

conics

frustums

symmetrical bodies

cones (volcanoes)

UF *cinder cones*

GS geology

. **cones (volcanoes)**

landforms

. **cones (volcanoes)**

RT basalt

calderas

craters

effusives

geomorphology

lava

Mars volcanoes

mountains

orography

paleomagnetism

petrology

Rouse belts

volcanoes

volcanology

conferences

UF *congresses*

meetings

proceedings

symposia

RT Committee on Space Research

consulting

conventions

∞ discussion

documentation

documents

papers

reports

Starsite program

teleconferencing

video conferencing

confidence

RT correlation

errors

probability theory

psychological effects

quality control

reliability

risk

statistical analysis

confidence limits

DEF In statistics, the upper and lower extremes of the confidence interval.

RT contingency

estimates

forecasting

maximum likelihood estimates

∞ measurement

null hypothesis

precision

predictions

quality control

range (extremes)

reliability

risk

sampling

significance

standard deviation

statistical analysis

statistical tests

∞ tests

variance (statistics)

Theodorsen transformation

RT wing camber

configuration interaction

DEF In physical chemistry, the interaction between two different possible arrangements of the electrons in an atom or molecule.

- RT computational chemistry
 - electron orbitals
- ∞ interactions
 - intermolecular forces
 - molecular interactions
 - molecular structure
- ∞ structures

configuration management

DEF A discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify conformance with specified requirements.

- GS management
 - . **configuration management**
- RT ∞ configurations

∞ configurations

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aerodynamic configurations
 - aircraft configurations
 - body-wing and tail configurations
 - canard configurations
 - configuration management
 - launch vehicle configurations
 - missile configurations
 - propulsion system configurations
 - spacecraft configurations
 - staggering
 - torpedoes

confinement

- RT astronaut performance
 - containment
 - isolation
 - magnetic compression
 - nuclear reactor control
 - plasma control
 - plasma equilibrium
 - sensory deprivation

confining

- RT astronaut performance
 - deprivation
 - isolation
 - sensory deprivation

confirmation

USE **proving**

confluence

USE **convergence**

conformal mapping

- UF *conformal transformations*
- GS analysis (mathematics)
 - . complex variables
 - . . **conformal mapping**
 - . . . functions (mathematics)
 - . **conformal mapping**
- RT coordinate transformations
 - Euler-Cauchy equations
 - graphs (charts)
 - invariant imbeddings
 - isoparametric finite elements
 - Jacobi integral
 - Lighthill method
 - minimal surfaces
 - Schwarz-Christoffel transformation

conformal transformations

USE **conformal mapping**

confusion

- RT entrapment
 - tangling

congeners

- RT ∞ chemical compounds
 - classifications
 - isomers
 - muscles
 - tautomers

congenital anomalies

- UF *congenital conditions*
- RT chromosomes
 - genetics
 - heredity
 - Rhesus factor

congenital conditions

USE **congenital anomalies**

congestion

- RT circulation
 - ischemia
 - pneumonia
 - respiratory diseases
 - vasodilation

Congo (Brazzaville)

- UF *Brazzaville*
- French Equatorial Congo*
- GS nations
 - . **Congo (Brazzaville)**
- RT Africa

Congo (Kinshasa)

USE **Democratic Republic of Congo**

congresses

USE **conferences**

congressional reports

- UF *proceedings*
- GS documents
 - . **congressional reports**
 - . . reports
 - . . **congressional reports**
- RT Presidential reports

congruences

- GS number theory
 - . **congruences**
- RT ∞ coherence
 - collocation
 - dividing (mathematics)
 - geometry
 - identities
 - integers
 - symmetry

conical bodies

- UF *conoids*
- GS cones
 - . **conical bodies**
 - . . slender cones
 - . . . symmetrical bodies
 - bodies of revolution
 - . . **conical bodies**
 - . . . slender cones
- RT afterbodies
 - axisymmetric bodies

conical camber

- GS camber
 - . **conical camber**

conical flare

USE **cones**

conical flow

- GS fluid flow
 - . **conical flow**
- RT axisymmetric flow
 - baffles
- ∞ diffusers
 - multiphase flow
 - separated flow
 - three dimensional flow
 - wall flow
 - wedge flow

conical inlets

- GS intake systems
 - . **conical inlets**
- RT air intakes
 - conical nozzles
 - funnels

conical nozzles

- RT annular nozzles
 - conical inlets
 - convergent nozzles
 - convergent-divergent nozzles
 - divergent nozzles
 - exhaust diffusers
 - exhaust nozzles
 - hypersonic nozzles
 - inlet nozzles
- ∞ jet nozzles
 - nozzle geometry
 - nozzle inserts
 - nozzle walls
- ∞ nozzles
 - plug nozzles
 - rocket nozzles
 - skirts
 - sonic nozzles
 - spike nozzles
 - spray nozzles
 - supersonic nozzles
 - transonic nozzles
 - turbine exhaust nozzles
 - wind tunnel nozzles

conical scanning

DEF Scanning in which the direction of maximum radiation generates a cone whose vertex angle is of the order of the beam width. Such scanning may be either rotating of nutating, according as the direction of polarization rotates or remains unchanged.

- GS scanning
 - . **conical scanning**
- RT examination
 - field of view
 - monitors
 - panoramic scanning
 - radar scanning
 - readers
 - reading
 - scanners
 - searching
 - surveillance

conical shells

- GS shells (structural forms)
 - . **conical shells**
- RT cones

conics

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . **conics**
 - ellipses
 - hyperbolas
 - parabolas
- RT cones
 - half cones

loci

conifers

- GS plants (botany)
 - . trees (plants)
 - .. **conifers**
- RT deciduous trees
 - forests
 - timber identification
- ∞ trees

coning motion

- (added June 1997)
- RT dynamic stability
 - gyration
- ∞ motion
 - motion stability
 - nutaton
 - precession
 - rotation
 - spin stabilization
 - tumbling motion
 - yaw

conjugate gradient method

- DEF An interactive method for solving a system of linear equations of dimension N which terminates in at most N steps if no rounding errors are encountered. Each iterate will bring one closer to the solution.
- GS analysis (mathematics)
 - . numerical analysis
 - .. iteration
 - ... **conjugate gradient method**
- RT algorithms
 - conjugates
 - gradients
 - iterative solution

conjugate points

- GS analysis (mathematics)
 - . complex variables
 - .. conjugates
 - ... **conjugate points**
- RT lines of force
 - magnetic fields

conjugated circuits

- DEF Branches of an electrical network configured so that a change in the electromotive force in either branch does not result in a current change in the other.
- GS circuits
 - . **conjugated circuits**

conjugates

- GS analysis (mathematics)
 - . complex variables
 - .. **conjugates**
 - ... conjugate points
- RT Cholesky factorization
 - conjugate gradient method
 - conjugation
 - finite element method

conjugation

- GS **conjugation**
 - . phase conjugation
 - .. four-wave mixing
- RT conjugates

∞ **conjunction**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Boolean algebra
 - occultation
 - orbits
 - probability theory
 - set theory

conjunctiva

- GS anatomy
 - . sense organs
 - .. eye (anatomy)
 - ... **conjunctiva**

- membranes
 - . **conjunctiva**
- RT conjunctivitis
 - keratitis
 - vision

conjunctivitis

- GS diseases
 - . eye diseases
 - .. **conjunctivitis**
 - ... infectious diseases
 - ... **conjunctivitis**
- RT bacterial diseases
 - conjunctiva

Connecticut

- GS nations
 - . United States
 - .. **Connecticut**
- RT New Haven (CT)

Connection Machine

- (added September 1992)
- GS data processing equipment
 - . computers
 - .. digital computers
 - ... parallel computers
 - massively parallel processors
 - **Connection Machine**
 - ... supercomputers
 - ... **Connection Machine**
- RT architecture (computers)
 - interprocessor communication
 - multiprocessing (computers)
 - parallel processing (computers)

connections

- USE **joints (junctions)**

connective tissue

- GS tissues (biology)
 - . **connective tissue**
 - .. adipose tissues
 - .. bone marrow
 - .. cartilage
- RT bones
 - collagens
 - exoskeletons
 - joints (anatomy)
 - ligaments
 - musculoskeletal system
 - tendons

connectors

- GS **connectors**
 - . electric connectors
 - . umbilical connectors
 - . unions (connectors)
- RT adapters
 - cordage
 - couplings
 - disconnect devices
 - fasteners
 - fittings
 - flanges
 - flat conductors
 - joints (junctions)
 - jumpers
 - ∞ junctions
 - linkages
 - optical interconnects
 - sleeves
 - ∞ terminals
 - yokes

connectors (electric)

- USE **electric connectors**

conoids

- USE **conical bodies**

consciousness

- GS perception
 - . sensory perception
 - .. **consciousness**
- RT attention

- mental performance
- recognition
- sleep deprivation

consecutive events

- GS events
 - . **consecutive events**
- RT intervals
 - Petri nets
 - probability theory
 - scheduling
 - sequencing
 - sequential control
 - time measurement

conservation

- GS **conservation**
 - . energy conservation
- RT agriculture
 - deforestation
 - drought
 - energy policy
 - environment management
 - firebreaks
 - forest management
 - forests
 - habitats
 - land use
 - Newton second law
 - nonconservative forces
 - parity
 - potable water
 - regional planning
 - rural land use
 - soil science
 - soils
 - water management
 - water reclamation

conservation element and solution element
(added June 2002)

- USE **space-time CE/SE method**

conservation equations

- RT Bernoulli theorem
 - continuity equation
- ∞ equations
 - nonconservative forces
 - space-time CE/SE method
 - vorticity transport hypothesis

conservation laws

- GS laws
 - . **conservation laws**
- RT CP violation
 - momentum theory
 - Newton Theory
 - nonconservative forces
 - space-time CE/SE method

consistency

- DEF A property of a material determined by the complete flow force relation.
- RT accuracy
 - computer systems performance
 - effort
 - errors
 - leveling
 - linearity
 - ∞ measurement
 - ∞ performance
 - precision
 - quality
 - ratings
 - reliability
 - tolerances (mechanics)
 - validity
 - variability

consoles

- DEF Arrays of controls and indicators for the monitoring and control of a particular sequence of actions, as in the checkout of a rocket, a countdown action, or a launch procedure.
- GS **consoles**

. remote consoles
 RT automatic typewriters
 computer components
 control boards
 data processing terminals
 display devices
 ∞ equipment
 flat panel displays
 head-up displays
 man machine systems
 manual control

consolidation
 RT ∞ combination
 densification
 liquid phase sintering
 overconsolidation
 stabilization

consonants (speech)
 RT speech
 vowels
 words (language)

∞ **constant**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT coefficients
 constants
 invariance
 time constant

constant speed propellers
 USE **variable pitch propellers**

constant volume balloons
 USE **superpressure balloons**

constantan
 GS alloys
 . **constantan**
 RT copper
 nickel
 thermocouples

constants
 GS **constants**
 . Bohr magneton
 . gravitational constant
 . Gruneisen constant
 . Hubble constant
 . Plancks constant
 . solar constant
 . time constant
 . . perceptual time constant
 RT coefficients
 ∞ constant

constellations
 DEF Originally conspicuous configurations
 of stars; now regions of the celestial sphere
 marked by arbitrary boundary lines.
 GS **constellations**
 . Andromeda Constellation
 . Aries constellation
 . Auriga constellation
 . Cassiopeia constellation
 . Centaurus constellation
 . Cepheus constellation
 . Corona Borealis constellation
 . Cygnus constellation
 . Lyra constellation
 . Orion constellation
 . Sagittarius constellation
 . Scorpius constellation
 . Scutum constellation
 . Taurus constellation
 RT celestial sphere
 planispheres
 stars
 zodiac

constitution
 RT atomic structure
 governments

law (jurisprudence)

constitutional diagrams
 USE **phase diagrams**

constitutive equations
 RT electric fields
 ∞ equations
 magnetic charge density
 magnetic fields
 magnetic flux

constraints
 UF *hindrance*
limitations
restraints
 GS **constraints**
 . meteorological parameters
 . . Brunt-Vaisala frequency
 RT blocking
 constrictions
 dynamic programming
 ∞ holding
 linear programming
 nonlinear programming
 operations research
 optimization
 penalty function
 range (extremes)
 retaining

constrictions
 UF *restrictions*
 RT ∞ barriers
 blocking
 chokes (restrictions)
 closures
 constraints
 contracts
 impedance
 plugging
 ∞ resistance
 retarders (devices)
 seals (stoppers)
 stopping

constrictors
 GS anatomy
 . musculoskeletal system
 . . muscles
 . . . **constrictors**

construction
 SN (EXCLUDES TYPES OF STRUCTURES)
 UF *erection*
 RT architecture
 assembling
 bridges (structures)
 buildings
 caissons
 concrete structures
 ∞ construction materials
 contractors
 contracts
 ∞ design
 excavation
 fabrication
 highways
 inspection
 installing
 layouts
 maintenance
 masonry
 quality control
 reconstruction
 rigging
 shipyards
 space manufacturing
 Starsite program
 steel structures
 stress analysis
 structural analysis
 structural design
 structural engineering
 structural members
 surveys

tunneling (excavation)
 welding

construction in space
 USE **orbital assembly**

construction industry
 GS industries
 . **construction industry**
 RT bridges (structures)
 buildings
 contractors
 industrial areas
 industrial plants
 towers
 trusses

∞ **construction materials**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 UF *building materials*
structural materials
 RT aggregates
 aircraft construction materials
 aircraft survivability
 airframe materials
 architecture
 bitumens
 boards (paper)
 bricks
 cements
 composite materials
 concretes
 construction
 graphite-epoxy composites
 grout
 insulation
 lathes
 Masonite (trademark)
 masonry
 ∞ materials
 materials selection
 panels
 plastics
 polymer matrix composites
 protective coatings
 reactor materials
 skin (structural member)
 spacecraft construction materials
 structural members

consulting
 RT conferences
 management planning
 personnel
 resources

consumables (spacecraft)
 DEF All supplies for spacecraft and
 spacecrews that will be consumed during a
 mission.
 GS **consumables (spacecraft)**
 . storable propellants
 RT consumables (spacecrew supplies)
 in situ resource utilization
 propellant storage
 space logistics
 working fluids

consumables (spacecrew supplies)
 GS **consumables (spacecrew supplies)**
 . space rations
 RT clothing
 consumables (spacecraft)
 dehydrated food
 ∞ food
 food production (in space)
 hygiene
 potable water
 provisioning
 sanitation
 space flight feeding
 space logistics

consumers

survival equipment

consumers

RT consumption
market research
marketing
product development

consumption

GS **consumption**
. energy consumption
. fuel consumption
. oxygen consumption
. propellant consumption
. water consumption
RT commerce
consumers
demand (economics)
depletion
exhausting
exhaustion
supplying
utilization

contact dermatitis

GS diseases
. infectious diseases
. . dermatitis
. . . **contact dermatitis**
RT allergic diseases
dermatology
epidermis
itching
skin (anatomy)

contact lenses

GS lenses
. **contact lenses**
RT eyepieces
reticles

contact loads

DEF Dynamic loading by contact between two bodies.
GS loads (forces)
. **contact loads**
. . impact loads
. . . rolling contact loads
RT compression loads
dynamic pressure
random loads
shock loads
∞ sliding contact
transient loads

contact potentials

DEF The potential differences at the junctions of two dissimilar substances.
GS potential energy
. electric potential
. . **contact potentials**
RT electric contacts
surface properties

contact resistance

DEF The resistance to current flow between two touching bodies, consisting of constriction resistance and film resistance.
GS electrical properties
. electrical impedance
. . electrical resistance
. . . **contact resistance**
impedance
. electrical impedance
. . electrical resistance
. . . **contact resistance**
RT electric contacts
nonohmic effect
∞ resistance
surface properties

contactors

SN (EXCLUDES ELECTRIC SWITCHES)
RT carburetors
chemical reactors
columns (process engineering)

electric switches
mixers
sprayers

contacts (electric)

USE **electric contacts**

contacts (geology)

GS geology
. **contacts (geology)**
RT formations
metamorphism (geology)
mineral deposits
rock intrusions
rocks

containerless melts

GS melts (crystal growth)
. **containerless melts**
RT crystal growth
crystallization
crystals
directional solidification (crystals)
liquid bridges
low gravity manufacturing
manufacturing
melting
orbital workshops
space processing
weightlessness

∞ containers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF A non-specific term for receptacles capable of closure. Used for receptacles (containers).
UF *receptacles (containers)*
RT ampoules
autoclaves
bags
barrels (containers)
baskets
biopaks
bottles
boxes (containers)
bundles
cans
∞ capsules
cartridges
cases (containers)
crucibles
disposal
drums (containers)
enclosures
fuel tanks
glassware
hoppers
housings
materials handling
micromodules
packages
packaging
preserving
pressure vessels
protectors
reels
spools
sprayers
tanks (containers)
transporter
trays
wing tanks

containment

RT asteroid capture
blocking
burst tests
confinement
retaining
sealing
stopping

contaminants

UF *noxious materials*

GS *pollutants*
contaminants
. radioactive contaminants
. trace contaminants
RT biofilms
biomass burning
chlorofluorocarbons
chlorofluoromethane
contamination
decontamination
diluents
dirt
dust
effluents
environment effects
environmental quality
fuel contamination
hazardous materials
hazardous wastes
heavy metals
impurities
∞ materials
nonpoint sources
particulates
pollution
purity
quality
soil pollution
volatile organic compounds
wastes
water treatment

contamination

GS **contamination**
. fuel contamination
. spacecraft contamination
RT air pollution
antifouling
antiinfectives and antibacterials
biological hazards
contaminants
decontamination
environment effects
fouling
intrusion
molecular shields
nonpoint sources
planetary protection
pollution
purity
radioactive wastes
water pollution

content

GS **content**
. bone mineral content
RT ∞ components
∞ composition
ingredients

content-addressable memory

(added December 1999)
USE **associative memory**

context

DEF The composition, structure, or manner in which something is put together. Also refers to the situation or environment of an event.
RT natural language (computers)
pattern recognition

context free languages

GS languages
. programming languages
. . **context free languages**
RT computer programming
symbolic programming

continental drift

RT continents
Earth crust
Earth planetary structure
geomagnetism
geophysics

paleomagnetism

continental margins
USE **continental shelves**

continental shelves

DEF The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins.

UF *continental margins*
RT geology
ocean bottom
seamounts
∞ shelves

continents

GS **continents**
. Africa
. Asia
. Australia
. Europe
. . Central Europe
. North America
. South America
RT Antarctic regions
Central Europe
continental drift
cratons
geography
mountains
transcontinental systems

contingency

RT confidence limits
correlation
estimates
expectation
materials handling
predictions
reserves
risk

continuity

RT continuity (mathematics)
coordination
scheduling
topology
variability

continuity (mathematics)

GS analysis (mathematics)
. calculus
. . **continuity (mathematics)**
RT continuity
functions (mathematics)
isoperimetric problem
normal density functions
Poisson density functions
probability density functions
regularity
statistical analysis
symmetry
topology

continuity equation

RT conservation equations
continuum mechanics
Crocco-Lee theory
∞ equations
equations of motion
equations of state
fluid dynamics
nonconservative forces
steady flow

continuous flow electrophoresis
USE **electrophoresis**

continuous noise

RT ∞ noise
noise propagation

sound generators

continuous radiation

UF *continuous waves*
GS **continuous radiation**
. modulated continuous radiation
RT absorption spectra
background radiation
coherent radiation
corpuscular radiation
elastic waves
electromagnetic radiation
emission spectra
pulsed radiation
∞ radiation
∞ rays

continuous spectra

DEF Spectra in which wavelengths, wave numbers, and frequencies are represented by the continuum of real numbers or a portion thereof, rather than by a discrete sequence of numbers. For electromagnetic radiation, spectra that exhibit no detailed structure and represent a gradual variation of intensity with wavelength from one end to the other, as the spectra of incandescent solids. For particles, spectra that exhibit a continuous variation of the momentum or energy.

GS spectra
. **continuous spectra**
RT astronomical spectroscopy
solar spectra
spectral emission
stellar spectra

continuous wave lasers

GS stimulated emission devices
. lasers
. . **continuous wave lasers**
RT argon lasers
carbon dioxide lasers
carbon monoxide lasers
chemical oxygen-iodine lasers
laser stability
solid state lasers

continuous wave radar

UF *CW radar*
GS radar
. **continuous wave radar**
RT coherent radar
Doppler radar
pulse radar
radar detection
radar range
search radar
surveillance radar
tracking radar

continuous waves

USE **continuous radiation**

continuum flow

GS fluid flow
. gas flow
. . **continuum flow**
RT free molecular flow
molecular flow
rarefied gas dynamics
slip flow

continuum mechanics

RT Burger equation
classical mechanics
continuity equation
continuum modeling
∞ dynamics
flow theory
fluid mechanics
Maxwell bodies
∞ mechanics (physics)
multipolar fields
solid mechanics
statistical mechanics

stress tensors

continuum modeling

RT continuum mechanics
continua
large space structures
mathematical models
structural analysis

continua

DEF Things that are continuous, which have no discrete parts as the continuum of real numbers as opposed to the sequence of discrete integers, as the background continuum of a spectrogram due to thermal radiation.

RT continuum modeling
probability theory
real variables
relativity
topology

CONTOUR (mission)

(added February 1999)

USE **Comet Nucleus Tour**

contour sensors

DEF The sensing of image coincidences by means of optical processing techniques.

RT boundaries
concavity
contours
convexity
imagery
images
∞ sensors
shapes
topography

contours

UF *curved surfaces*
RT concavity
contour sensors
convexity
curved panels
datum (elevation)
elevation
flatness
geomorphology
hypsography
mapping
roughness
shapes
topography

contract incentives

GS incentives
. **contract incentives**
motivation
. **contract incentives**

contract management

GS management
. **contract management**
RT contracts
decision making
decisions
PERT
project management
schedules
subcontracts
systems engineering

contract negotiation

RT contractors
contracts
decision making
government/industry relations
industries
management
manufacturing
subcontracts

contraction

RT cooling
∞ reduction
shrinkage

contractors

spasms

contractors

RT columns (process engineering)
construction
construction industry
contract negotiation
contracts
government/industry relations
industries
qualifications
subcontracts
transportation

contracts

GS **contracts**
. insurance (contracts)
. subcontracts
RT agreements
cancellation
constrictions
construction
contract management
contract negotiation
contractors
estimates
estimating
extensions
federal budgets
government procurement
government/industry relations
grants
leasing
legal liability
options
procurement
projects
proposals
revisions
supplements

contrails

DEF Condensation trails. Artificial clouds made by the exhaust of jet aircraft.
UF *condensation trails*
vapor trails
RT condensates
wakes

contralateral functions

RT ∞ functions

contrarotating propellers

DEF Two propellers mounted on concentric shafts having a common drive and rotating in opposite directions.
GS propellers
. **contrarotating propellers**
RT propeller drive
propeller efficiency
turbo-prop engines

contrast

DEF In general, the degree of differentiation between different tones in an image.
GS **contrast**
. image contrast
. phase contrast
RT character recognition
color
legibility
perception
printing
resolution
∞ sharpness
visibility
vision

∞ control

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *control systems*
controlled stability
regulation
RT access control
active control

adaptive control
air navigation
air traffic control
aircraft control
altitude control
approach control
astrionics
attitude control
automatic control
automatic control valves
automatic flight control
automatic frequency control
automatic gain control
avionics
biofeedback
boundary layer control
cascade control
chemical reaction control
circulation control airfoils
circulation control rotors
combustion control
command and control
control boards
control configured vehicles
control data (computers)
control equipment
control moment gyroscopes
control rockets
control rods
control simulation
control stability
control sticks
control surfaces
control systems design
control theory
control units (computers)
control valves
controllability
controlled atmospheres
controlled fusion
controllers
critical path method
cybernetics
direct lift controls
directional control
dynamic characteristics
dynamic control
electric control
electronic control
elevators (control surfaces)
engine control
environmental control
feedback control
feedforward control
fire control
fire control circuits
flaps (control surfaces)
flight control
flood control
fluidics
fly by tube control
fly by wire control
frequency control
fuel control
ground based control
harmonic control
helicopter control
hydraulic control
integrated mission control center
interactive control
inventory controls
jet control
lateral control
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
longitudinal control
magnetic control
manual control
MIMO (control systems)
missile control
model reference adaptive control
multivariable control
network control
nuclear reactor control
numerical control
off-on control

optical control
optimal control
payload control
phase control
plasma control
pneumatic control
pointing control systems
pollution control
porous boundary layer control
process control (industry)
proportional control
quality control
radar approach control
radio control
∞ reaction control
regulations
regulators
regulatory mechanisms (biology)
remote control
robot control
rocket engine control
satellite attitude control
satellite control
scheduling
self adaptive control systems
sequential control
servocontrol
servomechanisms
shape control
shock wave control
SISO (control systems)
spacecraft control
spectral shift control
spectral shift control reactor
speed control
stabilization
steering
Submarine Integrated Control project
systems engineering
tabs (control surfaces)
temperature control
thermal control coatings
thrust control
thrust vector control
time optimal control
traffic control
trajectory control
Transit Attitude Control satellite
transponder control group
turbojet engine control
variable stream control engines
visual control
voice control
wave incidence control
weather modification

control boards

UF *control panels*
RT consoles
∞ control
display devices
manual control
remote control

control configured vehicles

RT aircraft configurations
aircraft design
∞ control
flight control
technology utilization
∞ vehicles

control data (computers)

RT computers
∞ control
∞ data
data systems

control devices

USE **control equipment**

control equipment

UF *control devices*
GS **control equipment**
. control sticks
. pressure switches

- . regulators
 - .. automatic control valves
 - ... pressure regulators
 - ... relief valves
 - .. cryostats
 - .. current regulators
 - .. flow regulators
 - ... fuel flow regulators
 - .. oxygen regulators
 - .. speed regulators
 - .. thermostats
 - .. voltage regulators
 - . servoamplifiers
 - . teleoperators
- RT aircraft control
 - automatic control
 - ∞ control
 - ∞ effectors
 - electric control
 - electronic control
 - feedback control
 - manipulators
 - manual control
 - nonlinear systems
 - off-on control
 - optical control
 - pneumatic control
 - proportional control
 - recording instruments
 - speed control
 - transducers
- control moment gyroscopes**
 - GS gyroscopes
 - . **control moment gyroscopes**
 - RT attitude control
 - attitude gyros
 - attitude indicators
 - ∞ control
 - equations of motion
 - gimbals
 - gyrodampers
 - indicating instruments
 - measuring instruments
 - nutating dampers
 - servocontrol
 - servomechanisms
- control panels*
 - USE **control boards**
- control rockets**
 - DEF Vernier engines, retrorockets, or other such rockets, used to change the attitude of, guide, or make small changes in the speed of a rocket, spacecraft, or the like. Used for steering rockets.
 - UF *steering rockets*
 - GS engines
 - . rocket engines
 - .. Vernier engines
 - ... **control rockets**
 - . torpedo engines
 - .. Vernier engines
 - ... **control rockets**
 - RT ∞ control
 - retrorocket engines
 - steering
 - thrust control
 - variable thrust
- control rods**
 - GS rods
 - . **control rods**
 - RT ∞ control
 - neutron absorbers
 - nuclear reactor control
 - nuclear reactors
 - poisoning (reaction inhibition)
 - reactor cores
 - reactor safety
- control simulation**
 - GS simulation
 - . **control simulation**
 - RT aircraft control
 - computerized simulation
 - ∞ control
 - control theory
 - flight simulation
 - flight simulators
 - hardware-in-the-loop simulation
 - motion simulators
 - spacecraft control
 - spacecraft maneuvers
 - training simulators
- control stability**
 - GS dynamic characteristics
 - . dynamic stability
 - .. **control stability**
 - stability
 - . dynamic stability
 - .. **control stability**
 - RT aircraft control
 - aircraft spin
 - aircraft stability
 - ∞ control
 - controllability
 - flight control
 - loop transfer recovery
 - MIMO (control systems)
 - motion stability
 - Nyquist diagram
 - pilot induced oscillation
 - robustness (mathematics)
 - sampled data systems
 - SISO (control systems)
 - spacecraft motion
 - spacecraft stability
 - stability augmentation
 - systems stability
- control sticks**
 - GS control equipment
 - . **control sticks**
 - RT aircraft control
 - ∞ control
 - flight control
 - manual control
- control surfaces**
 - GS **control surfaces**
 - . ailerons
 - .. flaperons
 - .. spoiler slot ailerons
 - . elevators (control surfaces)
 - . elevons
 - . flaps (control surfaces)
 - .. externally blown flaps
 - ... upper surface blown flaps
 - .. flaperons
 - .. jet flaps
 - .. split flaps
 - .. wing flaps
 - ... leading edge flaps
 - ... leading edge slats
 - ... trailing edge flaps
 - ... vortex flaps
 - . guide vanes
 - .. jet vanes
 - . horizontal tail surfaces
 - . rudders
 - .. aerial rudders
 - .. marine rudders
 - . spoilers
 - . tabs (control surfaces)
 - RT
 - aerodynamic brakes
 - aerodynamic configurations
 - aerodynamic interference
 - aerodynamics
 - aircraft parts
 - aircraft structures
 - airfoils
 - airframes
 - blunt trailing edges
 - boundary layer control
 - canard configurations
 - ∞ control
 - drag devices
 - fins
 - fires
 - flight control
- free wing aircraft
 - guidance (motion)
 - nose fins
 - stabilizers (fluid dynamics)
 - ∞ surfaces
 - sweptback tail surfaces
 - T tail surfaces
 - tail assemblies
 - tail surfaces
 - trapezoidal tail surfaces
 - vanes
 - wings
- control systems*
 - USE **control**
- control systems design**
 - GS systems engineering
 - . **control systems design**
 - RT aerospace systems
 - automatic control
 - ∞ automation
 - bionics
 - bond graphs
 - ∞ control
 - control theory
 - controllers
 - cybernetics
 - ∞ design
 - design analysis
 - electric control
 - electronic control
 - feedback control
 - frequency domain analysis
 - genetic algorithms
 - H-2 control
 - H-infinity control
 - linear parameter-varying control
 - linear quadratic Gaussian control
 - linear quadratic regulator
 - loop transfer functions
 - loop transfer recovery
 - mathematical models
 - membership functions
 - MIMO (control systems)
 - numerical control
 - operations research
 - optimal control
 - parameter identification
 - robot control
 - SISO (control systems)
 - system identification
 - systems analysis
 - systems integration
 - time domain analysis
 - uncertain systems
- control theory**
 - RT adaptive control
 - closed cycles
 - ∞ control
 - control simulation
 - control systems design
 - controllability
 - distributed parameter systems
 - dynamic control
 - dynamical systems
 - feedback
 - feedback control
 - feedforward control
 - games
 - H-2 control
 - H-infinity control
 - interactive control
 - linear quadratic Gaussian control
 - linear quadratic regulator
 - loop transfer recovery
 - MIMO (control systems)
 - model reference adaptive control
 - multivariable control
 - observability (systems)
 - off-on control
 - optimal control
 - robot control
 - robustness (mathematics)
 - sampled data systems
 - servocontrol

control units (computers)

shape control
SISO (control systems)
∞ theories
tracking problem
uncertain systems

control units (computers)

DEF Those parts of computers that cause the arithmetic unit, storage, and transfer of a computer to operate in proper sequence.

RT central processing units
computer components
computers
∞ control
data processing equipment

control valves

GS valves
. **control valves**
RT actuators
∞ control
pneumatic control

controllability

DEF The capability of an aircraft, rocket, or other vehicle to respond to control, especially in direction or attitude. Used for handling qualities.

UF *handling qualities*
RT aircraft control
aircraft performance
aircraft specifications
aircraft spin
aircraft stability
∞ control
control stability
control theory
directional stability
flight characteristics
helicopter control
helicopter performance
liquid sloshing
low speed stability
maneuverability
pilot ratings
quality
spacecraft reliability
stability
steering
wheel brakes

controlled atmospheres

GS **controlled atmospheres**
. argon-oxygen atmospheres
. cabin atmospheres
. . . spacecraft cabin atmospheres
. helium-oxygen atmospheres
. inert atmosphere
RT air conditioning
∞ atmospheres
∞ blankets
clean rooms
∞ control
environments
furnaces
gas mixtures
gnotobiotics
oxygen supply equipment
spacecraft environments

controlled avalanche transit time devices

USE **CATT devices**

controlled fusion

SN (CONTROLLED NUCLEAR FUSION)
GS nuclear reactions
. thermonuclear reactions
. . . nuclear fusion
. . . **controlled fusion**
RT ∞ control
Joint European Torus
limiters (fusion reactors)
plasma compression
plasma cooling
plasma currents
plasma physics
relativistic electron beams

strongly coupled plasmas
thermonuclear power generation
zeta pinch

controlled stability

USE **control**

controllers

SN (LIMITED TO DEVICES AND CONTROL THEORY)
GS **controllers**
. power factor controllers
. servomechanisms
. . . servoamplifiers
. . . servomotors
RT actuators
analyzers
automatic control
∞ automation
∞ control
control systems design
cryostats
current regulators
cybernetics
electronic control
H-2 control
H-infinity control
instrument receivers
instrument transmitters
∞ instruments
linear quadratic regulator
measuring instruments
optical control
pneumatic control
pressure regulators
programmable logic devices
propellant actuated instruments
regulators
remote control
rocket-borne instruments
speed control
speed regulators
temperature control
thermostats
voltage regulators

Convair 340 aircraft

USE **CV-340 aircraft**

Convair 440 aircraft

USE **CV-440 aircraft**

Convair 880 aircraft

USE **CV-880 aircraft**

Convair 990 aircraft

USE **CV-990 aircraft**

convection

DEF In general, mass motion within a fluid resulting in transport and mixing of the properties of that fluid. Specifically, in meteorology, atmospheric motions that are predominately vertical.

GS **convection**
. forced convection
. free convection
. . . Rayleigh-Benard convection
. . . Benard cells
. stellar convection
. . . solar convection (astronomy)
. surface tension driven convection
. . . Marangoni convection

RT advection
base heating
Boussinesq approximation
buoyancy-driven flow
∞ conduction
convection cells
convection-diffusion equation
fluid dynamics
Grashof number
heat transmission
heating
meteorology
mixing height

mixing layers (fluids)
stellar interiors

convection cells

(added June 1990)

RT atmospheric circulation
convection
convection currents
convective flow
convective heat transfer

convection clouds

GS clouds (meteorology)
. **convection clouds**
. . . arc clouds
. . . cumulonimbus clouds
. . . anvil clouds
. . . cumulus clouds
. . . anvil clouds
RT air currents
cloud physics
meteorology
nephelanalysis
supercooling
vertical air currents

convection currents

RT air currents
Benard cells
convection cells
convection-diffusion equation
electron bunching
fluid flow
free convection
mixing height
Rayleigh-Benard convection
solar convection (astronomy)
solar granulation
stellar convection
vertical air currents

convection-diffusion equation

(added August 1991)

DEF An equation for convection and diffusion, in which the rate of change with respect to time of the density (concentration) of the convecting/diffusing substance at a fixed point in space plus the product of the divergence of the velocity field and the density of the convecting/diffusing substance equals the product of the diffusion coefficient and the differential of the density of the convecting/diffusing substance.

UF *diffusion-convection equation*

RT Benard cells
computational fluid dynamics
convection
convection currents
convective flow
diffusion
diffusion coefficient
∞ equations
flow equations
flow theory
Rayleigh-Benard convection
reaction-diffusion equations

convective flow

UF *thermal currents*
GS fluid flow
. **convective flow**
. . . Rayleigh-Benard convection
. . . Benard cells
. . . buoyancy-driven flow
RT convection cells
convection-diffusion equation
free convection
gas density
geophysical fluid flow cells
heat transmission
Marangoni convection
mass flow rate
mass transfer
porous boundary layer control
solar convection (astronomy)
stellar convection
surface tension driven convection

- temperature
thermal diffusion
- convective heat transfer**
GS transmission
. heat transmission
. . heat transfer
. . . **convective heat transfer**
- RT aerodynamic heating
boundary layer combustion
boundary layer flow
Brinkman number
conductive heat transfer
convection cells
cooling fins
forced convection
free convection
laminar heat transfer
mass transfer
Nusselt number
radiative heat transfer
Rayleigh-Benard convection
surface cooling
temperature gradients
thermohydraulics
thermosiphons
turbulent heat transfer
- conventions**
RT agreements
air law
compatibility
conferences
∞ cooperation
international cooperation
international law
outer space treaty
standards
- convergence**
DEF Approach to a limit, e. g. , by an infinite sequence. Used for confluence.
UF *confluence*
RT divergence
patch tests
regularity
tapering
variability
- convergent nozzles**
RT conical nozzles
fluid amplifiers
nozzle geometry
nozzle walls
∞ nozzles
turbine engines
turbojet engines
- convergent-divergent nozzles**
UF *de Laval nozzles*
GS exhaust nozzles
. **convergent-divergent nozzles**
- RT conical nozzles
nozzle geometry
nozzle inserts
∞ nozzles
rocket nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles
- conversation**
GS communicating
. verbal communication
. . **conversation**
speech
. **conversation**
- RT voice communication
words (language)
- ∞ **conversion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bioconversion
conversion tables
- data conversion routines
electric generators
energy conversion
energy conversion efficiency
exchanging
frequency converters
geothermal energy conversion
internal conversion
isomerization
liquefaction
metrication
ocean thermal energy conversion
organic wastes (fuel conversion)
ortho para conversion
photothermal conversion
photovoltaic conversion
refining
satellite solar energy conversion
solar energy conversion
solar total energy systems
thermionic power generation
thermoelectric power generation
turbogenerators
waterwave energy conversion
- conversion tables**
GS tables (data)
. **conversion tables**
- RT ∞ conversion
data converters
International System of Units
units of measurement
- convertiplanes*
USE **V/STOL aircraft**
- ∞ **converters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Rotary devices for changing alternating current to direct current. Transducers whose output is a different frequency from its input.
RT analog to digital converters
binary to decimal converters
current converters (AC to DC)
data converters
digital to analog converters
direct power generators
down-converters
electric generators
frequency converters
image converters
instrument transformers
inverted converters (DC to AC)
parametric frequency converters
power converters
pulse width amplitude converters
pyrometallurgy
solar blankets
thermionic converters
torque converters
transducers
transformers
up-converters
voltage converters (AC to AC)
voltage converters (DC to DC)
- convertible fan-shaft engines**
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
. aircraft engines
. . **convertible fan-shaft engines**
. . internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
. turbine engines
- . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
- RT helicopter engines
jet thrust
propulsion system configurations
rotary wings
TF-34 engine
turboshafts
V/STOL aircraft
variable cycle engines
vertical takeoff aircraft
- convexity**
GS shapes
. **convexity**
- RT concavity
contour sensors
contours
flatness
lenticular bodies
∞ surface geometry
- conveyors**
RT automated guideway transit vehicles
automated transit vehicles
chutes
cranes
elevators (lifts)
feeders
forks
∞ lifts
materials handling
ribbons
rollers
scoops
∞ tracks
transportation
- convolution integrals**
UF *convolutions (mathematics)*
GS analysis (mathematics)
. functional analysis
. . **convolution integrals**
integrals
. **convolution integrals**
- RT integral transformations
trellis coding
- convolutions (mathematics)*
USE **convolution integrals**
- convulsions**
RT human pathology
muscles
psychotherapy
seizures
∞ shock
- Cook Inlet (AK)**
GS landforms
. inlets (topography)
. . **Cook Inlet (AK)**
- RT Alaska
- Cookpot aircraft*
USE **TU-124 aircraft**
- cool stars**
GS celestial bodies
. stars
. . late stars
. . . **cool stars**
. . . . carbon stars
. . . . flare stars
. . . . K stars
. . . . M stars
. Van Biesbroeck star
. Mira variables
. Omicron Ceti star
. S stars
- RT brown dwarf stars
giant stars

coolants

R Coronae Borealis stars
stellar atmospheres
stellar envelopes
stellar spectra
stellar temperature

coolant loss

USE **loss of coolant**

coolants

DEF Liquids or gases used to cool something, as a rocket combustion chamber.

GS **coolants**

. engine coolants
. organic coolants

RT

air conditioning
air cooling
brines
coolers
cooling
cooling systems
freon
gas cooling
heat exchangers
liquid cooling
loss of coolant
nuclear reactors
reactor materials
refrigerants
sodium cooling

coolers

RT

air conditioning
air conditioning equipment
air cooling
compressors
coolants
cooling
cooling systems
cryogenic cooling
refrigerating
refrigerating machinery
refrigerators

cooling

UF

chilling
heat dissipation
heat dissipation chilling

GS

cooling
. absorption cooling
. air cooling
. evaporative cooling
. . . film cooling
. . . sweat cooling
. gas cooling
. laser cooling
. liquid cooling
. . . film cooling
. magnetic cooling
. plasma cooling
. precooling
. quenching (cooling)
. . . rapid quenching (metallurgy)
. cryogenic cooling
. radiant cooling
. regenerative cooling
. sodium cooling
. solar cooling
. solid cryogen cooling
. space cooling (buildings)
. supercooling
. surface cooling
. thermoelectric cooling
. thermomagnetic cooling

RT

ablation
ablative materials
air conditioning
bathing
condensing
contraction
coolants
coolers
cooling flows (astrophysics)
cryogenics
engine coolants
film condensation

freezing
freon
geothermal energy utilization
heat exchangers
heat radiators
heat shielding
heat transfer
heating
Hilsch tubes
jackets
low temperature
melting
mushy zones
refrigerating
reusable heat shielding
spacecraft radiators
temperature control
temperature distribution
thermal cycling tests
thermal shock
thermal stresses
transpiration
ventilation
ventilation fans
venting
wetting

cooling fins

GS

fins
. **cooling fins**
RT condensers (liquefiers)
convective heat transfer
finned bodies
heat exchangers
heat radiators
radiative heat transfer

cooling flows (astrophysics)

GS

fluid flow
. gas flow
. . . **cooling flows (astrophysics)**

RT

accretion disks
cooling
cosmic gases
dark matter
galactic clusters
galactic evolution
intergalactic media
interstellar gas
star formation
x ray sources

cooling systems

RT

absorbers (equipment)
air conditioning
air conditioning equipment
air cooling
air filters
blowers
capillary pumped loops
closed cycles
condensers (liquefiers)
coolants
coolers
dehumidification
engine coolants
Ettingshausen effect
evaporative cooling
evaporators
exhaust systems
freon
heat exchangers
heat pumps
heat radiators
heat sinks
infrared suppression
intake systems
liquid cooling
lubrication systems
refrigerants
refrigerating
refrigerating machinery
registers (air circulation)
solar cooling
solid cryogenics
space cooling (buildings)
spacecraft radiators

∞ systems
temperature control
temperature distribution
thermoacoustic refrigerators
transpiration
ventilation
ventilation fans
vents

∞ cooperation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

conventions
employee relations
international cooperation
public relations
sea law

Cooper-Harper ratings

(added August 1999)

GS

flight characteristics
. pilot ratings
. . . **Cooper-Harper ratings**
ratings
. pilot ratings
. . . **Cooper-Harper ratings**

RT

aircraft performance
helicopter performance

coordinate geometry language

USE **COGO (programming language)**

coordinate systems

USE **coordinates**

coordinate transformations

GS

functions (mathematics)
. **coordinate transformations**
transformations (mathematics)
. **coordinate transformations**

RT

conformal mapping
invariant imbeddings
isoparametric finite elements
isotropic turbulence
Joukowski transformation
Schwarzschild metric
Theodorsen transformation

coordinates

DEF Sets of measures defining points in space. Used for axes (coordinates) and coordinate systems.

UF

axes (coordinates)
coordinate systems

GS

coordinates
. astronomical coordinates
. Cartesian coordinates
. computational grids
. . . structured grids (mathematics)
. . . . multiblock grids
. . . unstructured grids (mathematics)
. cylindrical coordinates
. geodetic coordinates
. Hylleraas coordinates
. hyperbolic coordinates
. inertial coordinates
. Lagrange coordinates
. oblique coordinates
. planetocentric coordinates
. . . geocentric coordinates
. polar coordinates
. spherical coordinates

RT

algebra
analytic geometry
axes (reference lines)
celestial reference systems
Earth axis
equators
Euclidean geometry
fractals
Fujita method
geomagnetic latitude
geometry
grid generation (mathematics)
∞ grids
half planes

- half spaces
 - latitude
 - line of sight
 - longitude
 - manifolds (mathematics)
 - maps
 - ∞ nets
 - ∞ origins
 - position (location)
 - ∞ reference systems
- coordination**
- RT continuity
 - correlation
 - interfaces
 - sequencing
 - time sharing
- coordination number**
(added June 2002)
- DEF In any system with a lattice structure, the number of neighboring units for any given unit.
 - RT crystal lattices
 - crystal structure
 - ligands
 - molecular structure
 - ∞ numbers
 - x ray spectroscopy
- coordination polymers**
- RT ∞ polymers
- Copernicus spacecraft*
- USE **OA0 3**
- copilots*
- USE **aircraft pilots**
- coplanarity**
- GS analysis (mathematics)
 - . calculus
 - . . vector analysis
 - . . . **coplanarity**
 - . real variables
 - . . vector analysis
 - . . . **coplanarity**
 - geometry
 - . vector analysis
 - . . **coplanarity**
- copolymerization**
- GS chemical reactions
 - . **copolymerization**
 - synthesis (chemistry)
 - . polymerization
 - . . **copolymerization**
 - RT block copolymers
 - dimerization
 - ∞ polymers
 - vinyl copolymers
- copolymers**
- DEF Polymers formed from two or more types of monomers.
 - GS **copolymers**
 - . block copolymers
 - . vinyl copolymers
 - . Viton rubber (trademark)
 - RT KEL-F
 - polymer blends
 - ∞ polymers
- copper**
- GS chemical elements
 - . **copper**
 - . . copper isotopes
 - metals
 - . transition metals
 - . . **copper**
 - . . . copper isotopes
 - RT ammines
 - constantan
 - heavy metals
- selenium alloys
- copper alloys**
- GS alloys
 - . **copper alloys**
 - . . babbitt metal
 - . . brasses
 - . . bronzes
 - . . Manganin (trademark)
 - RT aluminum-lithium alloys
 - bearing alloys
 - gold alloys
 - lamella (metallurgy)
 - lithium alloys
- copper chlorides**
- GS copper compounds
 - . **copper chlorides**
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **copper chlorides**
 - . halides
 - . . chlorides
 - . . . **copper chlorides**
 - . metal halides
 - . . . **copper chlorides**
- copper compounds**
- GS **copper compounds**
 - . copper chlorides
 - . copper fluorides
 - . copper oxides
 - . copper selenides
 - . . copper indium selenides
 - . copper sulfides
 - . cuprates
 - RT ∞ chemical compounds
 - ∞ Group 1B compounds
 - ∞ metal compounds
- copper fluorides**
- GS copper compounds
 - . **copper fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **copper fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **copper fluorides**
 - . metal halides
 - . . . metal fluorides
 - **copper fluorides**
- copper indium selenides**
(added June 1995)
- GS chalcogenides
 - . selenides
 - . . copper selenides
 - . . . **copper indium selenides**
 - . indium selenides
 - . . . **copper indium selenides**
 - copper compounds
 - . copper selenides
 - . . **copper indium selenides**
 - indium compounds
 - . indium selenides
 - . . **copper indium selenides**
 - selenium compounds
 - . selenides
 - . . copper selenides
 - . . . **copper indium selenides**
 - . indium selenides
 - . . . **copper indium selenides**
 - RT semiconductors (materials)
 - solar cells
 - thin films
- copper isotopes**
- GS chemical elements
 - . copper
 - . . **copper isotopes**
 - . nuclides
- . . isotopes
 - . . . radioactive isotopes
 - **copper isotopes**
 - metals
 - . transition metals
 - . . copper
 - . . . **copper isotopes**
- copper oxides**
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **copper oxides**
 - copper compounds
 - . **copper oxides**
 - RT BSCCO superconductors
 - cuprates
 - thermites
 - YBCO superconductors
- copper selenides**
- GS chalcogenides
 - . selenides
 - . . **copper selenides**
 - . . . copper indium selenides
 - copper compounds
 - . **copper selenides**
 - . . copper indium selenides
 - selenium compounds
 - . selenides
 - . . **copper selenides**
 - . . . copper indium selenides
- copper sulfides**
- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **copper sulfides**
 - copper compounds
 - . **copper sulfides**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **copper sulfides**
- copyrights**
- GS intellectual property
 - . **copyrights**
 - RT documents
 - licensing
 - patent applications
 - policies
 - regulations
- coral heads*
- USE **coral reefs**
- coral reefs**
- UF *atoll reefs*
 - coral heads*
 - RT atolls
 - coasts
 - islands
 - keys (islands)
 - reefs
- cordage**
- RT cables (ropes)
 - ceramic fibers
 - connectors
 - cotton
 - fibers
 - ∞ filaments
 - strands
 - strings
 - wire
 - yarns
- Cordelia**
(added January 1996)
- DEF A natural satellite of Uranus orbiting at a mean distance of 49,750 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Cordelia**

cordierite

RT Uranus (planet)

cordierite

GS aluminum compounds
. **cordierite**
iron compounds
. **cordierite**
magnesium compounds
. **cordierite**
minerals
. **cordierite**
silicon compounds
. silicates
. . **cordierite**

cordite

USE **colloidal propellants**
double base propellants

core flow

GS fluid flow
. **core flow**
RT flow geometry
magnetohydrodynamic flow
one dimensional flow
plasmas (physics)
shear flow

core sampling

GS sampling
. **core sampling**
RT cores
depth measurement
drilling
Earth crust
hydrogeology
mines (excavations)
ocean bottom
ocean currents
oceanography
particle tracks
salinity
samplers

core storage

UF *machine storage*
GS computer components
. computer storage devices
. . random access memory
. . . **core storage**
magnetic storage
. **core storage**
memory (computers)
. random access memory
. . **core storage**
RT bubble memory devices
buffer storage
data storage
magnetic disks
magnetic drums
∞ storage

core-mantle boundary

(*added August 1994*)
GS boundaries
. **core-mantle boundary**
RT boundary layers
Earth core
Earth mantle
lunar mantle
planetary boundary layer
planetary cores
planetary mantles
regolith
tectonics

cores

GS **cores**
. honeycomb cores
. lunar core
. magnetic cores
. planetary cores
. . Earth core
. reactor cores
. stellar cores
RT ∞ cells

core sampling
mandrels
molding materials

Coriolis effect

DEF The physiological effect felt by a person moving radially in a rotating system, as a rotating space station resulting in nausea, vertigo, dizziness, etc. Named after Gaspard G. Coriolis (d 1843), French civil engineer.

RT disorientation
∞ effects
gyres
Kelvin waves
meteorology
planetary waves
rotating environments
rotation
vestibular tests

cork (materials)

GS wood
. **cork (materials)**
RT ∞ materials
organic materials
thermal insulation

corn

GS farm crops
. grains (food)
. . **corn**
plants (botany)
. **corn**
RT agriculture
blight
bollworms
botany
crop growth
∞ crops
curing
Earth resources
∞ food
irrigation
seeds

cornea

GS anatomy
. sense organs
. . eye (anatomy)
. . . **cornea**
RT keratitis
vision

corner flow

GS fluid flow
. **corner flow**
RT cavity flow
channel flow
ducted flow
∞ flow
nozzle flow
secondary flow

corners

RT angles (geometry)
antennas
joints (junctions)
shapes

Corona Borealis constellation

GS constellations
. **Corona Borealis constellation**
RT celestial bodies
celestial sphere
stars

corona discharges

USE **electric corona**

coronagraphs

RT astronomical photography
solar observatories
spectroheliographs
Starsat telescope

telescopes

coronal holes

DEF Solar areas where extreme UV and x ray coronal emission is abnormally low or absent. These are coronal regions apparently associated with diverging magnetic fields.

GS coronas
. stellar coronas
. . solar corona
. . . **coronal holes**
RT decametric waves
∞ holes
radio astronomy
solar radio emission
solar wind
solar x-rays
stellar structure
ultraviolet radiation

coronal loops

DEF Loop like structures revealed in soft x ray images of the solar limb and believed to evolve from the introduction of energy and density perturbations at the top of an arched, cylindrical magnetic flux tube initially in equilibrium in the coronal plasma.

GS coronas
. stellar coronas
. . solar corona
. . . **coronal loops**
RT chromosphere
coronal mass ejection
solar flares
solar limb

coronal mass ejection

(*added June 1997*)
GS ejection
. stellar mass ejection
. . **coronal mass ejection**
RT coronal loops
solar corona
solar flares
solar wind
stellar coronas

coronary artery disease

GS diseases
. heart diseases
. . **coronary artery disease**
RT angina pectoris
arteriosclerosis
myocardial infarction

coronary circulation

GS circulation
. blood circulation
. . **coronary circulation**
RT heart
heart valves

coronas

GS **coronas**
. electric corona
. stellar coronas
. . solar corona
. . . coronal holes
. . . coronal loops
RT electric arcs
electric discharges
halos
ionization
solar spectra

corotation

GS gyration
. rotation
. . **corotation**
RT astronomical models
Earth magnetosphere
galactic rotation
galactic structure
spiral galaxies
stellar motions

- stellar rotation
- Corporal missile**
- GS missiles
- . surface to surface missiles
 - . . **Corporal missile**
- RT liquid propellant rocket engines
- corpuscles (blood)*
- USE **blood cells**
- corpuscular radiation**
- SN (LIMITED TO NONELECTROMAGNETIC RADIATION CONSISTING OF ENERGETIC CHARGED OR NEUTRAL PARTICLES)
- DEF Nonelectromagnetic radiation consisting of energetic charged or neutral particles. Used for penetrating particles.
- UF *penetrating particles*
- GS particles
- . **corpuscular radiation**
 - . . electron precipitation
 - . . electron radiation
 - . . . beta particles
 - . . . electron beams
 - relativistic electron beams
 - . . . energetic particles
 - . . . electrons
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - . . . nuclei (nuclear physics)
 - alpha particles
 - deuterons
 - even-even nuclei
 - heavy nuclei
 - hypernuclei
 - odd-even nuclei
 - odd-odd nuclei
 - tritons
 - . . . plasmas (physics)
 - argon plasma
 - beta particles
 - boundary layer plasmas
 - cold plasmas
 - collisional plasmas
 - strongly coupled plasmas
 - collisionless plasmas
 - cosmic plasma
 - cylindrical plasmas
 - dense plasmas
 - plasma focus
 - strongly coupled plasmas
 - electron plasma
 - electron-positron plasmas
 - elliptical plasmas
 - helium plasma
 - high temperature plasmas
 - hydrogen plasma
 - deuterium plasma
 - laser plasmas
 - metallic plasmas
 - cesium plasma
 - uranium plasmas
 - microplasmas
 - nitrogen plasma
 - nonequilibrium plasmas
 - nonuniform plasmas
 - oxygen plasma
 - rarefied plasmas
 - relativistic plasmas
 - rotating plasmas
 - semiconductor plasmas
 - space plasmas
 - solar wind
 - stellar winds
 - dusty plasmas
 - spherical plasmas
 - thermal plasmas
- toroidal plasmas
- . . . primary cosmic rays
- . . . solar cosmic rays
- . . radiation belts
- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts
- . . solar corpuscular radiation
- . . . solar electrons
- . . . solar neutrinos
- . . . solar neutrons
- . . . solar protons
- RT alpha particles
- atmospheric radiation
- background radiation
- beams (radiation)
- Cerenkov radiation
- charged particles
- coherent radiation
- continuous radiation
- cosmic rays
- electromagnetic radiation
- extraterrestrial radiation
- flux (rate)
- galactic radiation
- incident radiation
- interstellar radiation
- ionizing radiation
- ions
- mesons
- neutrons
- nuclear particles
- nuclear radiation
- nuclei (nuclear physics)
- particle production
- phonon beams
- pulsed radiation
- ∞ radiation
- radiation distribution
- radiation pressure
- radiation sources
- ∞ rays
- reflected waves
- refracted waves
- solar radiation
- solar terrestrial interactions
- stratosphere radiation
- collating
- confidence
- contingency
- coordination
- covariance
- ∞ estimators
- evaluation
- factor analysis
- forecasting
- information theory
- least squares method
- multivariate statistical analysis
- optimization
- probability theory
- quality control
- regression analysis
- regression coefficients
- significance
- statistical analysis
- teleconnections (meteorology)
- time series analysis
- validity
- variability
- variance (statistics)
- correlation coefficients**
- GS coefficients
- . **correlation coefficients**
 - correlation
 - . **correlation coefficients**
 - statistical analysis
 - . **correlation coefficients**
- RT quality control
- statistical correlation
- correlation detection**
- DEF A method of detection in which a signal is compared, point-to-point, with an internally generated reference.
- GS correlation
- . **correlation detection**
 - detection
 - . signal detection
 - . . **correlation detection**
- RT ∞ detectors
- electromagnetic wave filters
 - phase lock demodulators
 - signal to noise ratios
- correlation functions*
- USE **correlation**
- correlators**
- SN (LIMITED TO DEVICES THAT DETECT WEAK SIGNALS IN NOISE BY PERFORMING AN ELECTRONIC OPERATION)
- DEF Devices that detect weak signals in noise by performing an electronic operation. Used for synchronous detectors.
- UF *synchronous detectors*
- GS **correlators**
- . image correlators
 - . optical correlators
- RT synchroscopes
- corridors**
- GS **corridors**
- . Great Plains Corridor (North America)
 - . St Louis-Kansas City Corridor (MO)
- RT passageways
- corrosion**
- DEF The deterioration of a metal by chemical or electrochemical reaction with its environment. Used for metal corrosion.
- UF *metal corrosion*
- GS **corrosion**
- . cavitation corrosion
 - . electrochemical corrosion
 - . fretting corrosion
 - . fuel corrosion
 - . hot corrosion
 - . intergranular corrosion
 - . rusting
 - . scale (corrosion)
- correction**
- DEF A quantity, equal in absolute magnitude to the error, added to a calculated or observed value to obtain a true value.
- GS **correction**
- . atmospheric correction
 - . optical correction procedure
- RT accommodation
- accuracy
- adaptation
- adjusting
- alignment
- error correcting devices
- errors
- improvement
- information theory
- intercalibration
- parity
- redundancy
- revisions
- vegetative index
- correlation**
- DEF In statistics, a relationship between two occurrences which is expressed as a number between minus one (-1) and plus one (+1). Used for correlation functions.
- UF *correlation functions*
- GS **correlation**
- . angular correlation
 - . autocorrelation
 - . correlation coefficients
 - . correlation detection
 - . cross correlation
 - . data correlation
 - . spectral correlation
 - . statistical correlation
- RT bivariate analysis

corrosion prevention

. stress corrosion
. . stress corrosion cracking
. transgranular corrosion
RT chemical attack
chemical reactions
coatings
damage
degradation
deposits
deterioration
dissolving
durability
electrochemistry
electrolysis
erosion
etchants
etching
failure
finishes
fouling
gas-metal interactions
humidity
impingement
incompatibility
metal coatings
∞ metallurgy
metal-water reactions
oxidation
passivity
pitting
protective coatings
salt spray tests
sterilization effects
surface properties
tribology
wear
weathering

corrosion prevention

GS prevention
. **corrosion prevention**
protection
. **corrosion prevention**
RT aeration
antifouling
antioxidants
cavitation corrosion
chemical attack
cleaning
coating
coatings
desensitizing
∞ films
fuel tanks
∞ inhibition
inhibitors
metal coatings
nickel coatings
packaging
passivity
preserving
propellant additives
sensitizing
siliconizing
surface finishing
surface treatment
water treatment
weatherproofing

corrosion resistance

GS **corrosion resistance**
. oxidation resistance
RT antioxidants
cavitation corrosion
chemical attack
chemical tests
passivity
pitting
∞ resistance
rusting
salt spray tests
siliconizing
sulfidation
surface finishing

corrosion test loops

GS environmental tests

. corrosion tests
. . **corrosion test loops**
loops
. **corrosion test loops**
RT ∞ tests

corrosion tests

GS environmental tests
. **corrosion tests**
. . corrosion test loops
. . salt spray tests
RT cavitation corrosion
chemical attack
destructive tests
fuel tests
∞ materials tests
pitting
propellant tests
stability tests
stress corrosion cracking
∞ tests
transgranular corrosion
underwater tests
weathering

corrugated plates

GS structural members
. plates (structural members)
. . **corrugated plates**
RT corrugating
reinforced plates

corrugated shells

GS shells (structural forms)
. **corrugated shells**
RT anisotropic shells
corrugating
reinforced shells

corrugated waveguides

(added February 1998)
GS waveguides
. **corrugated waveguides**
RT gratings (spectra)
optical waveguides
waveguide antennas

corrugating

RT corrugated plates
corrugated shells
deformation
grooves
∞ plates
∞ ridges
∞ waves

Corsair aircraft

USE **A-7 aircraft**

∞ cortexes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cerebral cortex
cortexes (botany)

cortexes (botany)

RT ∞ cortexes
plants (botany)

Corti organ

GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . cochlea
. . . . **Corti organ**

corticosteroids

GS organic compounds
. lipids
. . steroids
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . cortisone

. . . . glucocorticoids
secretions
. endocrine secretions
. . hormones
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . cortisone
. . . . glucocorticoids
RT adrenal metabolism

cortisone

GS drugs
. **cortisone**
organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . hydroxycorticosteroid
. . . . **cortisone**
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . hydroxycorticosteroid
. . . . **cortisone**
RT adrenal metabolism
carbohydrate metabolism

corundum

USE **aluminum oxides**

Corvus missile

GS missiles
. **Corvus missile**
RT liquid propellant rocket engines

COS-B satellite

GS artificial satellites
. ESA satellites
. . **COS-B satellite**
ESA spacecraft
. ESA satellites
. . **COS-B satellite**
RT Europa 2 launch vehicle
European space programs
gamma ray sources (astronomy)

cosine series

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **cosine series**
. . real variables
. . differential equations
. . . **cosine series**
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**
. . series (mathematics)
. . . **cosine series**
functions (mathematics)
. transcendental functions
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**
RT wavelet analysis

Cosmic Background Explorer satellite

DEF A NASA satellite launched on November 18, 1989 on a Delta I expendable launch vehicle. It is designed to measure background radiation in order to confirm or deny the big bang theory. Used for COBE.

UF **COBE**

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Cosmic Background Explorer satellite**

RT background radiation
radiation spectra
spaceborne astronomy

cosmic dust

DEF Finely divided solid matter with particle

sizes smaller than a micrometeorite, thus with diameters much smaller than a millimeter, moving in interplanetary space.

GS extraterrestrial matter
 . interstellar matter
 . . **cosmic dust**
 . . . interplanetary dust
 meteoroid dust clouds
 zodiacal dust
 particles
 . dust
 . . **cosmic dust**
 . . . interplanetary dust
 meteoroid dust clouds
 zodiacal dust
 RT infrared cirrus (astronomy)
 intergalactic media
 meteoroids
 micrometeorites
 micrometeoroids
 molecular clouds
 organic solids
 polycyclic aromatic hydrocarbons
 reflection nebulae
 space debris
 terrestrial dust belt
 Venus fly trap rocket vehicle

cosmic gamma ray bursts
 USE **gamma ray bursts**

cosmic gases

GS extraterrestrial matter
 . **cosmic gases**
 . . interplanetary gas
 . . interstellar gas
 gases
 . rarefied gases
 . . **cosmic gases**
 . . . interplanetary gas
 . . . interstellar gas
 RT cooling flows (astrophysics)
 degenerate matter
 electron gas
 intergalactic media
 ionized gases
 neutral gases
 Sunyaev-Zeldovich effect

cosmic microwave background radiation

(added July 2000)
 UF *CMBR (astronomy)*
 GS electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . **cosmic microwave background radiation**
 . . short wave radiation
 . . . microwaves
 **cosmic microwave background radiation**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . **cosmic microwave background radiation**
 RT cosmology
 Microwave Anisotropy Probe
 radio astronomy
 relic radiation
 Sunyaev-Zeldovich effect

cosmic noise

DEF Interference caused by cosmic radio waves.
 GS electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . **cosmic noise**
 RT Alouette project
 background noise
 background radiation
 centimeter waves
 electromagnetic noise measurement
 galactic radiation
 galactic radio waves
 interstellar radiation

microwave emission
 microwaves
 noise storms
 solar radiation
 solar radio emission

cosmic plasma

GS extraterrestrial matter
 . **cosmic plasma**
 particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **cosmic plasma**
 corpuscular radiation
 energetic particles
 plasmas (physics)
 **cosmic plasma**
 RT intergalactic media
 interplanetary gas
 plasma clouds
 plasmopause
 relativistic plasmas
 solar wind
 stellar winds
 strongly coupled plasmas

cosmic radiation

USE **cosmic rays**

cosmic radio waves

USE **extraterrestrial radio waves**

cosmic ray albedo

GS albedo
 . **cosmic ray albedo**
 RT absorptance
 ∞ absorption
 atmospheric attenuation
 Earth albedo
 lunar albedo
 primary cosmic rays
 reflectance
 secondary cosmic rays

cosmic ray showers

UF *air showers*
Auger showers
Moliere formula
 GS ionizing radiation
 . cosmic rays
 . . **cosmic ray showers**
 RT Auger effect
 ∞ cascades
 electron photon cascades
 secondary cosmic rays
 ∞ showers

cosmic rays

DEF The aggregate of extremely high energy subatomic particles which travel the solar system and bombard the earth from all directions. Cosmic ray primaries seem to be mostly protons, hydrogen nuclei, but also contain heavier nuclei. On colliding with atmospheric particles they produce many different kinds of lower energy secondary cosmic radiation. Used for cosmic radiation.

UF *cosmic radiation*
 GS ionizing radiation
 . **cosmic rays**
 . . cosmic ray showers
 . . galactic cosmic rays
 . . gamma ray bursts
 . . primary cosmic rays
 . . . solar cosmic rays
 . . . secondary cosmic rays
 RT aerospace environments
 albedo
 Alpha Magnetic Spectrometer
 alpha particles
 big bang cosmology
 Cerenkov radiation
 corpuscular radiation
 deuterons
 electromagnetic radiation

electron acceleration
 electrons
 extraterrestrial radiation
 Forbush decreases
 galactic radiation
 gamma ray telescopes
 gamma rays
 heliosphere
 interstellar radiation
 ion density (concentration)
 mesons
 neutrons
 nuclear particles
 nuclei (nuclear physics)
 particle tracks
 photons
 protons
 ∞ radiation
 radiation belts
 radiative transfer
 scintillating fibers
 single event upsets
 solar radiation
 stellar radiation
 VLF emission recorders
 x rays

cosmic x rays

GS electromagnetic radiation
 . x rays
 . . **cosmic x rays**
 ionizing radiation
 . x rays
 . . **cosmic x rays**
 RT extraterrestrial radiation
 galactic radiation
 gamma ray astronomy
 gamma ray bursts
 gamma rays
 x ray astronomy
 x ray binaries
 x ray sources

cosmions

(added November 1999)

USE **weakly interacting massive particles**

cosmochemistry

DEF The branch of chemistry that deals with the chemical composition and changes in the universe.

RT ∞ chemistry
 cosmology
 extraterrestrial matter
 geochemistry
 interstellar chemistry
 isotope ratios
 meteoritic composition

cosmogony

USE **cosmology**

cosmology

UF *cosmogony*
 GS **cosmology**
 . big bang cosmology
 . Hubble diagram
 . missing mass (astrophysics)
 RT astronomical models
 astrophysics
 cosmic microwave background radiation
 cosmochemistry
 dark matter
 event horizon
 existence
 galactic evolution
 grand unified theory
 gravitinos
 Hubble constant
 large-scale structure of the universe
 local group (astronomy)
 mass distribution
 naked singularities
 nuclear astrophysics

cosmonauts

planetary evolution
 Population III stars
 protoplanets
 red shift
 star distribution
 star formation
 stellar evolution
 stellar mass accretion
 string theory
 supergravity
 supersymmetry
 universe
 white holes (astronomy)

cosmonauts

GS personnel
 . flying personnel
 . . **cosmonauts**
 RT ∞ astronautics
 astronaut
 crew experiment stations
 crew observation stations
 crew workstations
 crews
 pilots (personnel)
 Russian Space Program
 spacecrews

∞ **cosmos**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Cosmos satellites
 universe

Cosmos 2 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 2 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 2 satellite**

Cosmos 3 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 3 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 3 satellite**

Cosmos 5 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 5 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 5 satellite**

Cosmos 6 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 6 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 6 satellite**

Cosmos 14 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 14 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 14 satellite**

Cosmos 44 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 44 satellite**
 . Soviet satellites
 . . Cosmos satellites

. . . **Cosmos 44 satellite**

Cosmos 54 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 54 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 54 satellite**

Cosmos 71 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 71 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 71 satellite**

Cosmos 110 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 110 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 110 satellite**

Cosmos 137 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 137 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 137 satellite**

Cosmos 144 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 144 satellite**
 . meteorological satellites
 . . **Cosmos 144 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 144 satellite**

Cosmos 149 satellite

UF *Space Arrow satellite*
 GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 149 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 149 satellite**

Cosmos 166 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 166 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 166 satellite**

Cosmos 186 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 186 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 186 satellite**

Cosmos 188 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 188 satellite**
 . Soviet satellites
 . . Cosmos satellites

. . . **Cosmos 188 satellite**

Cosmos 206 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 206 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 206 satellite**

Cosmos 213 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 213 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 213 satellite**

Cosmos 224 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 224 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 224 satellite**

Cosmos 225 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 225 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 225 satellite**

Cosmos 381 satellite

GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 381 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 381 satellite**

Cosmos 782 satellite

DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
 GS artificial satellites
 . Soviet satellites
 . . **Cosmos 782 satellite**
 RT international cooperation

Cosmos 936 satellite

DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
 GS artificial satellites
 . Soviet satellites
 . . **Cosmos 936 satellite**
 RT international cooperation

Cosmos 954 satellite

DEF A Russian ocean surveillance satellite which reentered over Canada spreading radioactive debris.
 GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites
 . . . **Cosmos 954 satellite**
 . Soviet satellites
 . . Cosmos satellites
 . . . **Cosmos 954 satellite**
 RT uncontrolled reentry (spacecraft)

Cosmos 1129 satellite

DEF Soviet VOSTOK biological spacecraft launched on September 25, 1979 carrying experiments from several nations. NASA contributed 13 experiments.
 GS artificial satellites
 . geophysical satellites
 . . Cosmos satellites

- . . . **Cosmos 1129 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 1129 satellite**
 - RT international cooperation
- Cosmos satellites**
- GS artificial satellites
 - . geophysical satellites
 - . . . **Cosmos satellites**
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
 - . Soviet satellites
 - . . **Cosmos satellites**
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
 - RT ∞ cosmos
- COSPAR (committee)**
- USE **Committee on Space Research**
- COSPAS**
- DEF The USSR satellite of the COSPAS-SarSat project which is a satellite-aided project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies.
 - GS artificial satellites
 - . **COSPAS**
 - RT reconnaissance
 - rescue operations
 - SarSat
 - searching
- Cosserat surfaces**
- RT flat surfaces
 - ∞ surface geometry
 - surface properties
 - ∞ surfaces
- cost analysis**
- UF *cost benefit analysis*
 - RT ∞ analyzing
 - budgeting
- comparison
 - costs
 - design to cost
 - economic analysis
 - feasibility
 - feasibility analysis
 - financial management
 - life cycle costs
 - management
 - management analysis
 - management planning
 - optical transfer function
 - production costs
 - proposals
 - value engineering
 - wage surveys
- cost benefit analysis*
(added April 2000)
- USE **cost analysis**
 - cost effectiveness**
- cost effectiveness**
- UF *cost benefit analysis*
 - GS effectiveness
 - . **cost effectiveness**
 - RT allocations
 - budgeting
 - commercial off-the-shelf products
 - life cycle costs
- cost estimates**
- GS estimates
 - . **cost estimates**
 - RT aircraft production costs
 - appropriations
 - budgeting
 - costs
 - economic analysis
 - economy
 - ∞ estimators
 - federal budgets
 - financial management
 - management
 - production costs
 - value engineering
 - wage surveys
- cost incentives**
- RT efficiency
 - incentive techniques
 - management
 - value engineering
- cost reduction**
- RT commonality
 - efficiency
 - incentive techniques
 - launch costs
 - management
 - management methods
 - management planning
 - rapid prototyping
 - small satellite technology
 - value engineering
 - wage surveys
- Costa Rica**
- GS nations
 - . **Costa Rica**
 - RT Central America
- costs**
- GS **costs**
 - . freight costs
 - . launch costs
 - . life cycle costs
 - . low cost
 - . operating costs
 - . production costs
 - . . aircraft production costs
 - RT accounting
 - aircraft production
 - commerce
 - cost analysis
 - cost estimates
- damage assessment
 - design to cost
 - economic analysis
 - economic factors
 - economic impact
 - economics
 - efficiency
 - estimating
 - evaluation
 - feasibility
 - financial management
 - gross national product
 - revenue
 - task complexity
 - tasks
 - value
- Cote d'Ivoire**
(added September 1993)
- UF *Ivory Coast*
 - GS nations
 - . **Cote d'Ivoire**
 - RT Africa
- COTS products**
(added March 2001)
- USE **commercial off-the-shelf products**
- cotton**
- GS farm crops
 - . **cotton**
 - plants (botany)
 - . **cotton**
 - RT boll weevils
 - bollworms
 - clothing
 - cordage
 - cotton fibers
 - Earth resources
 - fabrics
 - fibers
 - textiles
 - yarns
- cotton fibers**
- GS clothing
 - . **cotton fibers**
 - fibers
 - . **cotton fibers**
 - textiles
 - . **cotton fibers**
 - RT cotton
 - crepe
 - organic materials
- couches**
- RT beds
 - cushions
 - harnesses
 - seats
- Couette flow**
- GS fluid flow
 - . steady flow
 - . . **Couette flow**
 - . two dimensional flow
 - . . **Couette flow**
 - . viscous flow
 - . . **Couette flow**
 - RT annular flow
 - axisymmetric flow
 - Brinkman number
 - Hartmann flow
 - internal flow
 - rotating cylinders
- Cougar aircraft*
- USE **F-9 aircraft**
- cough**
- GS reflexes
 - . respiratory reflexes
 - . . **cough**
 - signs and symptoms
 - . **cough**

Coulomb collisions

RT expellants

coulees

USE **canyons**

Coulomb collisions

DEF The collisions of sets of two particles both of which are charged.

GS collisions

. **Coulomb collisions**

RT charged particles

Coulomb potential

GS potential energy

. electric potential

. . **Coulomb potential**

RT charged particles

coulometry

electric field strength

electric fields

∞ potential

coulometers

DEF Electrolytic cells or electronic devices arranged to measure the quantity of electricity by the chemical action produced in accordance with Faraday's law.

GS measuring instruments

. **coulometers**

RT ammeters

chemical analysis

coulometry

electrical measurement

electrochemistry

electrodeposition

electrolysis

titration

voltmeters

coulometry

GS electrical measurement

. **coulometry**

electrochemistry

. electrolysis

. . **coulometry**

RT Coulomb potential

coulometers

countdown

DEF A step-by-step process that culminates in a climactic event, each step being performed in accordance with a schedule marked by a count in inverse numerical order; specifically, this process is used in leading up to the launch of a large of complicated rocket vehicle, or in leading up to a captive test, a readiness firing, a mock firing or other firing test.

GS preflight operations

. **countdown**

schedules

. **countdown**

RT checkout

crew procedures (preflight)

launching

liftoff (launching)

prelaunch problems

prelaunch tests

space vehicle checkout program

spacecraft launching

windows (intervals)

counter rotation

DEF Movement of sets of bodies or fluids around a common axis where movement in own rotational direction is opposed by movement in the opposite direction.

GS gyration

. rotation

. . **counter rotation**

RT boundary value problems

counterflow

counter-rotating wheels

rotating disks

rotating fluids

counterbalances

RT aircraft stability

ballast (mass)

dynamic stability

mass distribution

spacecraft stability

static stability

counterflow

GS fluid flow

. **counterflow**

RT axial flow

counter rotation

heat exchangers

heat transfer

trapped vortices

turbulent diffusion

turbulent flow

vortices

counterinsurgency aircraft

USE **COIN aircraft**

countermeasures

GS **countermeasures**

. ballistic missile decoys

. electronic countermeasures

. . antiradar coatings

. . chaff

. jamming

. optical countermeasures

. reentry decoys

. stealth technology

RT antiradiation missiles

Blue Goose missile

decoys

protection

quail missile

radar absorbers

target masking

torpedoes

counter-rotating wheels

UF *inertia wheels*

GS wheels

. **counter-rotating wheels**

RT counter rotation

flywheels

gears

mechanical drives

reaction wheels

counters

UF *dekatrions*

gas discharge counters

pulse recorders

quantizer

GS measuring instruments

. **counters**

. . radiation counters

. . . Cerenkov counters

. . . electron counters

. . . Geiger counters

. . . neutron counters

. . . neutron spectrometers

. . . particle telescopes

. . . proportional counters

. . . quantum counters

. . . scintillation counters

. . . spark chambers

RT accumulators (computers)

computer components

counting

counting circuits

data recorders

ionization chambers

monitors

recording instruments

countersinking

RT grinding (material removal)

metal cutting

counting

RT counters

data acquisition

enumeration

estimating

∞ measurement

∞ numbers

observation

repetition

sampling

counting circuits

GS circuits

. **counting circuits**

. . scalars

RT anticoincidence detectors

counters

logic circuits

counting rate computers

GS data processing equipment

. computers

. . **counting rate computers**

coupled modes

DEF Modes of vibration that are not independent, but which influence one mode to the other. Used for mode coupling.

UF *mode coupling*

GS modes

. **coupled modes**

RT chemical bonds

couples

couplings

crosslinking

laser arrays

magnetosphere-ionosphere coupling

polymerization

strongly coupled plasmas

uncoupled modes

couplers

SN (EXCLUDES MECHANICAL DEVICE)

GS **couplers**

. antenna couplers

. . diplexers

. . directional couplers

. coupling circuits

RT antenna components

coupling

couplings

impedance matching

yokes

couples

RT antenna couplers

coupled modes

coupling circuits

cross coupling

diplexers

optical coupling

spin-spin coupling

uncoupled modes

yokes

coupling

SN (FOR MECHANICAL DEVICES, USE

COUPLINGS)

GS **coupling**

. acoustic coupling

. cross coupling

. electromagnetic coupling

. . microwave coupling

. . optical coupling

. gyroscopic coupling

. magnetosphere-ionosphere coupling

. spin-spin coupling

. thermodynamic coupling

RT antenna couplers

Clebsch-Gordan coefficients

couplers

couplings

decoupling

directional couplers

linkages

mechanical drives
Racah coefficient
velocity coupling
wave interaction

coupling circuits

GS circuits
 . **coupling circuits**
 couplers
 . **coupling circuits**
RT antenna couplers
 couples
 cross coupling
 energy transfer
 impedance matching
 microwave coupling
 RC circuits
 RL circuits
 transformers

coupling coefficients

GS coefficients
 . **coupling coefficients**
RT form factors
 magnetic induction
 transfer functions

couplings

DEF Devices or contrivances for joining adjacent ends or parts of anything. Devices permitting transfer of energy from one electrical circuit to another, or from one mechanical device to another.

RT anchors (fasteners)
 bolts
 clips
 closures
 connectors
 coupled modes
 couplers
 coupling
 directional couplers
 fasteners
 fittings
 ∞ joining
 joints (junctions)
 linkages
 mechanical drives
 pins
 rivets
 screws
 sleeves
 splines
 trailers
 unions (connectors)

Courier aircraft

USE **U-10 aircraft**

Courier satellite

GS artificial satellites
 . **Courier satellite**
RT Advent Project

courses

USE **paths**

covalence

RT chemical bonds
 covalent bonds

covalent bonds

GS chemical bonds
 . **covalent bonds**
RT covalence

covariance

GS statistical analysis
 . variance (statistics)
 . . multivariate statistical analysis
 . . . **covariance**
RT correlation
 experiment design
 factor analysis
 orthogonality
 quality control

regression analysis
significance
variability

coveralls

GS clothing
 . **coveralls**
RT flight clothing
 protective clothing

coverings

RT camouflage
 ∞ caps
 ∞ casing
 closures
 coatings
 electrostatic bonding
 enclosures
 ∞ envelopes
 guards (shields)
 housings
 jackets
 masking
 netting (materials/structures)
 preserving
 sealing
 shells (structural forms)
 shrouds
 spherical caps

coves

USE **bays (topographic features)**

Cowell method

USE **numerical integration**

cowlings

GS housings
 . **cowlings**
RT air intakes
 fairings
 nacelles
 pods (external stores)
 protuberances
 shells (structural forms)

CP violation

(added April 2002)

DEF Violation of the combined conservation laws associated with charge conjugation (C) and space inversion (P, parity) by the weak nuclear force. A symmetry violation thought to be responsible for the excess of matter over antimatter in the Universe.

GS symmetry
 . broken symmetry
 . . **CP violation**
RT conservation laws
 parity
 particle decay
 standard model (particle physics)
 weak interactions (field theory)

CPL (heat transfer)

(added September 2003)

USE **capillary pumped loops**

Crab nebula

GS celestial bodies
 . nebulae
 . . **Crab nebula**
RT Orion nebula
 supernovae
 Taurus constellation

crabs

GS animals
 . invertebrates
 . . arthropods
 . . . **crabs**

crack arrest

RT crack initiation
 crack propagation
 crack tips

cracking (fracturing)

crack bridging

(added March 1995)

DEF The occurrence of unbroken material grains or reinforcing elements extending across the surfaces of a crack. A common occurrence in fiber composites and some ceramic materials, it contributes to improved crack growth resistance.

UF *fiber bridging*
 grain bridging
RT ceramic matrix composites
 crack opening displacement
 crack propagation
 fiber composites
 fracture mechanics
 metal matrix composites

crack closure

DEF Phenomenon which occurs when the cyclic plasticity of a material gives rise to the development of residual plastic deformations in the vicinity of a crack tip, causing the fatigue crack to close at positive load.

RT brittleness
 cracking (fracturing)
 cracks
 Eiber equation
 fatigue (materials)
 fractography
 fracture mechanics
 fracture strength
 fracturing
 Griffith crack
 metal fatigue
 microcracks
 stress corrosion cracking
 surface cracks

crack formation

USE **crack initiation**

crack geometry

DEF The shape and size of partial fractures or flaws in materials.

GS geometry
 . **crack geometry**
RT cavities
 crack tips
 cracks
 fatigue (materials)
 fractography
 microcracks
 short cracks
 surface cracks
 voids

crack initiation

UF *crack formation*
RT brittleness
 crack arrest
 crack tips
 cracks
 critical loading
 fracture mechanics
 fracture strength
 J integral
 metal fatigue
 metal surfaces
 microcracks
 short cracks
 stress concentration
 stress corrosion cracking
 stress intensity factors
 surface cracks
 surface defects
 toughness

crack opening displacement

(added September 1988)

DEF The displacement at the mouth of a crack in a material. Used for COD (cracks).

UF *COD (cracks)*
GS displacement
 . **crack opening displacement**

crack propagation

RT crack bridging
crack propagation
cracking (fracturing)
cracks
fracture mechanics
fracture strength
fractures (materials)
fracturing
gaps
notch tests
notches
voids

crack propagation

GS propagation (extension)
. **crack propagation**
RT acoustic emission
bend tests
brittleness
Coffin-Manson law
crack arrest
crack bridging
crack opening displacement
crack tips
cracking (fracturing)
cracks
fatigue (materials)
fractography
fracture mechanics
fracture strength
fracturing
Griffith crack
J integral
metal fatigue
micromechanics
plane strain
∞ propagation
residual strength
∞ resistance
Segre characteristic
short cracks
strain distribution
stress corrosion cracking
stress distribution
stress intensity factors
surface cracks

crack tips

DEF The boundaries between cracked and uncracked material.
GS fractures (materials)
. cracks
. . **crack tips**
tips
. **crack tips**
RT crack arrest
crack geometry
crack initiation
crack propagation

cracking (chemical engineering)

DEF A process used to reduce the molecular weight of hydrocarbons by breaking molecular bonds by thermal, catalytic, or hydrocracking methods.
GS chemical reactions
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
decomposition
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
RT ammonolysis
catalysis
catalytic activity
chemical engineering
coal gasification
electrolysis
hydrocarbons
hydrogenolysis
hydrolysis
nitrolysis
organic chemistry
photolysis

thermal dissociation

cracking (fracturing)

GS fracturing
. **cracking (fracturing)**
. . stress corrosion cracking
RT brittle materials
brittleness
crack arrest
crack closure
crack opening displacement
crack propagation
cracks
destruction
edge cracks
failure
fatigue (materials)
J integral
kinking
rupturing
stress concentration
stress corrosion
stress intensity factors
structural failure
structural strain
temperature inversions

cracks

UF *crevices*
GS fractures (materials)
. **cracks**
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks
RT cavities
crack closure
crack geometry
crack initiation
crack opening displacement
crack propagation
cracking (fracturing)
defects
Elber equation
failure modes
fatigue (materials)
interstices
leakage
openings
stresses
temperature inversions
ultrasonic spectroscopy

CRAF mission

USE **Comet Rendezvous Asteroid Flyby Mission**

craft

USE **vehicles**

Cramer-Rao bounds

(added June 1997)
GS analysis (mathematics)
. real variables
. . extremum values
. . . minima
. . . . **Cramer-Rao bounds**
RT maximum likelihood estimates
variance (statistics)

cramps

RT epilepsy
muscular function
seizures

cranes

SN (EXCLUDES BIRDS)
GS handling equipment
. **cranes**
. . gantry cranes
RT booms (equipment)
conveyors
∞ lifts
logistics
materials handling

towers
winches

cranium

GS anatomy
. head (anatomy)
. . skull
. . . **cranium**
. . . . intracranial cavity
. . . . musculoskeletal system
. . . . bones
. . . . skull
. **cranium**
. intracranial cavity
RT intercranial circulation
mastoids

cranked wings

USE **swept wings**

Crank-Nicholson method

DEF A method for solving parabolic partial differential equations, whose main feature is an implicit method which avoids the need for using very small time steps.

RT boundary value problems
differential equations
finite difference theory
finite element method
numerical analysis
problem solving

cranks

USE **eccentrics**

crash injuries

GS injuries
. **crash injuries**
RT accidents
burns (injuries)
hazards
whiplash injuries

crash landing

GS crashes
. **crash landing**
. . ditching (landing)
RT aircraft accidents
aircraft hazards
aircraft safety
aircraft spin
arresting gear
crashworthiness
emergency landing
flight hazards
glide landings
hard landing
horizontal spacecraft landing
lunar landing
pilot error
planetary landing
skid landings
soft landing
spacecraft landing
water landing

crashes

GS **crashes**
. crash landing
. . ditching (landing)
RT accidents
air bag restraint devices
aircraft accidents
aircraft hazards
aircraft safety
collisions
crashworthiness
encounters
flight hazards
flight safety
highways
midair collisions
pilot error
safety

- wreckage
- crashworthiness**
DEF The ability of a vehicle to withstand a crash.
RT aircraft accidents
aircraft landing
aircraft safety
crash landing
crashes
flight safety
impact resistance
- cratering**
GS **cratering**
. projectile cratering
RT craters
ejecta
impact damage
Mars craters
meteorite craters
meteoritic damage
nuclear explosions
- craters**
UF *maars*
GS **craters**
. lunar craters
. . . Ptolemaeus Crater
. . . Tycho crater
. meteorite craters
. planetary craters
. . . Mars craters
RT asteroid collisions
calderas
cometary collisions
cones (volcanoes)
cratering
ejecta
impact damage
satellite surfaces
- cratons**
RT continents
Earth crust
Earth surface
ocean bottom
- crawler tractors**
GS surface vehicles
. motor vehicles
. . . tractors
. . . **crawler tractors**
RT electric motor vehicles
ground support equipment
handling equipment
lunar surface vehicles
manned lunar surface vehicles
tracked vehicles
∞ transport vehicles
∞ vehicles
- Cray computers**
DEF Supercomputers built by Cray Research Inc. that require the supporting services of another front-end general purpose computer for operation. They incorporate very fast scalar and vector hardware, are used primarily for the simulation of physical phenomena, and are programmed in FORTRAN.
GS data processing equipment
. computers
. . . supercomputers
. . . **Cray computers**
- crayons**
RT ∞ markers
temperature measurement
- crazing*
USE **surface cracks**
- creatinine**
GS crystals
. **creatinine**
- RT juices
- creatinine**
RT diseases
urine
- creation*
USE **creativity**
- creativity**
UF *creation*
RT arts
education
morale
- creep analysis**
RT ∞ analyzing
stress analysis
stress relaxation
structural analysis
- creep buckling**
GS buckling
. **creep buckling**
- creep diagrams**
GS diagrams
. **creep diagrams**
RT stress relaxation
stress-strain-time relations
- creep properties**
GS mechanical properties
. **creep properties**
. . . creep rupture strength
. . . shear creep
. . . steady state creep
. . . tensile creep
RT anelasticity
deformation
dimensional stability
ductility
fatigue (materials)
∞ flow
plastic deformation
plastic flow
∞ properties
residual stress
shear flow
shear properties
static deformation
stress relaxation
stresses
structural failure
superplasticity
temperature inversions
- creep resistance*
USE **creep strength**
- creep rupture strength**
UF *stress rupture strength*
GS mechanical properties
. creep properties
. . . **creep rupture strength**
RT fracture strength
J integral
∞ strength
- creep strength**
DEF The constant nominal stress that will cause a specified quantity of creep in a given time at constant temperature. Used for creep resistance.
UF *creep resistance*
GS mechanical properties
. **creep strength**
RT load carrying capacity
∞ resistance
∞ strength
- creep tests**
RT compression tests
fatigue tests
load tests
plastic deformation
- static tests
∞ tests
- crepe**
GS fabrics
. **crepe**
RT cotton fibers
silk
- cresols**
GS hydroxyl compounds
. alcohols
. . . phenols
. . . **cresols**
- crestatrons*
USE **traveling wave tubes**
- crests*
USE **waves**
- Cretaceous Period**
(added June 1989)
GS Mesozoic Era
. **Cretaceous Period**
RT Cretaceous-Tertiary boundary
geochronology
paleontology
Tertiary Period
- Cretaceous-Tertiary boundary**
(added June 1989)
UF *K-T boundary*
RT Cenozoic Era
cometary collisions
Cretaceous Period
extinction
geochronology
Mesozoic Era
paleobiology
paleontology
Tertiary Period
- crevasses**
GS **crevasses**
. glaciers
RT Earth movements
geological faults
recesses
seamounts
- crevices*
USE **cracks**
- Crew Equipment Translation Aid (ISS)**
(added December 2002)
DEF A human powered cart used by astronauts to conduct extravehicular-activity (EVA) maintenance on the International Space Station (ISS).
UF *CETA cart (ISS)*
GS carts
. **Crew Equipment Translation Aid (ISS)**
RT astronaut maneuvering equipment
extravehicular activity
extravehicular mobility units
International Space Station
orbital assembly
- crew experiment stations**
GS stations
. workstations
. . . crew workstations
. . . **crew experiment stations**
RT astronauts
compartments
cosmonauts
crews
personnel
spacecraft cabins
spacecrews
- crew observation stations**
GS stations
. workstations

crew procedures (inflight)

.. crew workstations
... **crew observation stations**

RT astronauts
compartments
cosmonauts
crews
personnel
spacecraft cabins
spacecrews

crew procedures (inflight)
DEF Operations performed by crews aboard aircraft or spacecraft during flight. Includes flight operations as well as spaceborne experiment procedures.
GS flight operations
. **crew procedures (inflight)** procedures
. **crew procedures (inflight)**

RT display devices
flight crews
in-flight monitoring
spacecrews
tasks
∞ tests

crew procedures (preflight)
DEF Operations performed by crews aboard aircraft or spacecraft and by ground support crews before flight or launching.
GS procedures
. **crew procedures (preflight)**

RT countdown
display devices
flight crews
flight operations
ground handling
ground tests
in-flight monitoring
onboard equipment
preflight operations
prelaunch tests
spacecraft control
spacecrews
tasks
∞ tests

crew size
DEF The number of people in a crew.
RT flight crews

crew stations
USE **crew workstations**

crew workstations
UF *crew stations*
GS stations
. workstations
... **crew workstations**
... crew experiment stations
... crew observation stations

RT astronauts
compartments
cosmonauts
crews
helmet mounted displays
personnel
spacecraft cabins
spacecrews

crews
GS personnel
. **crews**
.. flight crews
... spacecrews

RT astronauts
cosmonauts
crew experiment stations
crew observation stations
crew workstations
flight nurses
pilots (personnel)

crickets
GS animals
. invertebrates

.. arthropods
... insects
... **crickets**

crime
GS **crime**
. air piracy
. terrorism

RT law (jurisprudence)
police
regulations
security
social factors
surveillance
violence

crimping
USE **folding**

criteria
DEF The minimum standards or limits on which judgments may be based.
GS **criteria**
. structural design criteria

RT evaluation
figure of merit
∞ measures
standards

critical current
(added December 1999)
DEF A current value in a superconductive material, at a particular constant temperature and in the absence of a magnetic field, below which the material is superconducting and above which the material behaves normally.
GS electric current
. **critical current**

RT critical temperature
current density
superconductivity
superconductors (materials)

critical experiments
RT experimentation
nuclear fission
nuclear reactions

critical flicker fusion
UF *flicker fusion frequency*
GS perception
. sensory perception
.. visual perception
... **critical flicker fusion**

RT afterimages
flicker

critical flow
GS fluid flow
. **critical flow**

RT flow characteristics
gas flow
laminar flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
Ringleb flow
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
unsteady flow

critical frequencies
DEF The limiting frequencies below which magnetoionic wave components are reflected and above which they penetrate through, an ionized medium (plasma) at vertical incidence.
GS frequencies
. **critical frequencies**

RT light (visible radiation)

resonant frequencies

critical loading
SN (LIMITED TO FORCE LOADS)
UF *critical stress*
GS loads (forces)
. **critical loading** stresses
. **critical loading**

RT aerodynamic loads
crack initiation
dynamic loads
load carrying capacity
proportional limit
shallow shells
static loads

critical Mach number
USE **critical velocity**
Mach number

critical mass
DEF The amount of concentrated fissionable material that can just support a self-sustaining fission reaction.
GS mass
. **critical mass**

RT nuclear fission
nuclear fuel burnup
nuclear reactions
plasma core reactors
subcritical mass

critical path method
GS network analysis
. **critical path method**

RT ∞ control
dynamic programming
estimating
GERT
management methods
∞ methodology
mission planning
operations research
∞ paths
PERT
planning
program trend line analysis
programming (scheduling)
project management
research
sequencing
sneak circuit analysis
systems engineering

critical point
DEF The thermodynamic state in which liquid and gas phases of a substance coexist in equilibrium at the highest possible temperature. At higher temperature than the critical no liquid phase can exist.
GS thermodynamic properties
. thermophysical properties
... **critical point**

RT Mayer problem

critical pressure
DEF In rocketry, the pressure in the nozzle throat for which the isentropic weight flow rate is maximum. The pressure of a gas at the critical point, which is the highest pressure under which a liquid can exist in equilibrium with its vapor.
GS pressure
. **critical pressure**
thermodynamic properties
. thermophysical properties
... **critical pressure**

RT degenerate matter
high pressure
liquid phases
supercritical pressures

vapor phases

critical Reynolds number
USE **Reynolds number**

critical speed
USE **critical velocity**

critical stress
USE **critical loading**

critical temperature
DEF The temperature above which a substance cannot exist in the liquid state regardless of the pressure. As applied to reactor overheat or afterheat, the temperature at which the least resistant component of the reactor core begins to melt down. As applied to materials, the temperature at which a change in phase takes place causing an appreciable change in the properties of the material.

GS temperature
. **critical temperature**
thermodynamic properties
. thermophysical properties
. . **critical temperature**

RT critical current
cryogenic temperature
heat treatment
high temperature superconductors
metallic hydrogen
noncondensable gases
phase diagrams
phase transformations

critical velocity
DEF In rocketry, the speed of sound at the conditions prevailing at the nozzle throat. Used for critical Mach number, critical Reynolds number, and critical speed.

UF *critical Mach number*
critical speed

GS rates (per time)
. **critical velocity**
velocity

RT **critical velocity**
exhaust velocity
resonant frequencies
Reynolds number
tip speed

Croatia
(added October 1994)

GS nations
. **Croatia**
RT Bosnia and Herzegovina
Europe
Yugoslavia

Crocco method

RT axisymmetric flow
boundary layers
compressible flow
compressible fluids
entropy
inviscid flow
∞ methodology
shock wave propagation
steady flow
vorticity

Crocco-Lee theory

RT boundary layer separation
continuity equation
gas flow
inviscid flow
mass flow
multiphase flow
reattached flow
separated flow
∞ theories

Croloy

GS alloys
. iron alloys
. . steels

. . . **Croloy**

crop calendars

DEF Schedules for the maturation and harvesting of seasonal crops.

GS calendars
. **crop calendars**
RT ∞ crops
farm crops
growth
scheduling
seasons

crop dusting

DEF The application of fungicides or insecticides in powder form to a crop, usually from a low flying aircraft.

GS spraying
. **crop dusting**
RT aerosols
agricultural aircraft
agriculture
dispersions
farm crops
pesticides
powder (particles)

crop growth

GS growth
. vegetation growth
. . **crop growth**
RT agriculture
alfalfa
barley
blight
citrus trees
corn
∞ crops
Earth resources
farm crops
farmlands
germination
grasslands
Large Area Crop Inventory
Experiment

oats
orchards
photosynthesis
photosynthetically active radiation
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vineyards
wheat

crop identification

GS identifying
. **crop identification**
RT agriculture
∞ crops
Earth resources
evaluation
farmlands
ground truth
imaging techniques
leaf area index
multispectral photography
plant diseases
recognition
remote sensors
∞ sensors
sorghum
spectral signatures
SPOT (French satellite)
sunflowers
timber identification
vegetative index

crop inventories

DEF Numerical estimates of vegetable, fruit, and other commercial farm products based on the analysis of photography or imagery from aircraft or satellites made during periodic passes

during the growth cycle.

GS inventories
. **crop inventories**
RT agriculture
AgRISTARS project
farm crops
farmlands
Large Area Crop Inventory
Experiment
leaf area index
remote sensors
vegetative index

Crop Inventories by Remote Sensing

USE **AgRISTARS project**

crop vigor

RT agriculture
alfalfa
barley
blight
citrus trees
farm crops
farmlands
irrigation
normalized difference vegetation
index
oats
orchards
phototropism
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vegetation growth
viability
vineyards
wheat

croplands

USE **farmlands**

∞ **crops**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT agriculture
alfalfa
barley
biomass energy production
citrus trees
corn
crop calendars
crop growth
crop identification
farm crops
farmlands
frost damage
Large Area Crop Inventory
Experiment
orchards
planting
sorghum
sunflowers
tomatoes
vineyards
wheat

cross correlation

GS correlation
. **cross correlation**
RT autocorrelation
data correlation

cross coupling

GS coupling
. **cross coupling**
RT communication theory
couples
coupling circuits
microwave coupling
optical coupling

cross flow

radio frequency interference

cross faults

USE **geological faults**

cross flow

DEF A flow going across another flow, as a spanwise flow over a wing.

GS fluid flow

. **cross flow**

RT aerodynamic characteristics

∞ flow

flow characteristics

flow geometry

spanwise blowing

water tunnel tests

cross polarization

DEF The component of the electric field vector normal to the desired polarization component.

GS polarization (waves)

. **cross polarization**

RT optical coupling

optical properties

polarized electromagnetic radiation

polarons

rotation

cross relaxation

RT masers

∞ relaxation

rutile

spin-spin coupling

∞ cross sections

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Measures of the effectiveness of particular processes expressed either as areas (geometric cross sections) which would produce the observed results, or as ratios.

RT absorption cross sections

airfoil profiles

area

atomic collisions

collision parameters

distribution (property)

drawings

geometry

gradients

ionization cross sections

mean free path

neutron cross sections

planforms

radar cross sections

scattering cross sections

shapes

stopping power

surveys

two dimensional bodies

crossbedding (geology)

GS geology

. **crossbedding (geology)**

RT landforms

rocks

strata

stratification

stratigraphy

crossed field amplifiers

GS amplifiers

. microwave amplifiers

. . **crossed field amplifiers**

microwave equipment

. microwave amplifiers

. . **crossed field amplifiers**

RT electron tubes

magnetrons

traveling wave tubes

crossed field guns

RT electron guns

∞ guns

plasma control

plasma guns

plasma jets

crossed fields

RT electric fields

field theory (physics)

magnetic fields

magnetrons

plasma control

waveguides

crossings

GS **crossings**

. chiasms

RT bridges (structures)

crossovers

intersections

pipelines

ramps (structures)

crosslinking

GS **crosslinking**

. vulcanizing

RT addition resins

coupled modes

curing

∞ joining

netting (materials/structures)

phenolic epoxy resins

crossovers

RT bridges (structures)

crossings

intersections

crosstalk

DEF Electrical disturbances in a communication channel as a result of coupling with other communication channels.

GS electromagnetic interference

. **crosstalk**

. . ionospheric cross modulation

RT communicating

electromagnetic compatibility

∞ interference

telephony

wave diffraction

crowding

RT ∞ concentration

∞ saturation

CRRES (satellite)

(added April 1993)

UF *Combined Release and Radiation Effects Sat*

GS artificial satellites

. scientific satellites

. . **CRRES (satellite)**

RT chemical clouds

chemical release modules

Earth ionosphere

Earth magnetosphere

extraterrestrial radiation

orbital space tests

radiation effects

space plasmas

spaceborne experiments

crucibles

RT ∞ containers

heating equipment

cruciform wings

GS airfoils

. wings

. . **cruciform wings**

RT fixed wings

low aspect ratio wings

crude oil

UF *petroleum*

GS fuels

. chemical fuels

. . hydrocarbon fuels

. . . fossil fuels

. . . **crude oil**

geophysical fluids

. **crude oil**

oils

. **crude oil**

resources

. Earth resources

. . fossil fuels

. . . **crude oil**

RT carbonaceous materials

deposits

energy policy

fuel production

offshore energy sources

oil exploration

oil fields

petroleum products

reserves

underwater resources

waxes

cruise missiles

DEF Guided missiles, the major portion of whose flight path to its target is conducted at approximately constant velocity - depends on the dynamic reaction of air for lift, and upon propulsive forces to balance drag.

GS missiles

. surface to surface missiles

. . **cruise missiles**

. . . Navaho missile

. . . Tomahawk missiles

RT antiship missiles

terrain following

cruising flight

RT coasting flight

∞ flight

horizontal flight

Crusader aircraft

USE **F-8 aircraft**

crushers

RT comminution

crushing

disintegration

grinding mills

impactors

crushing

GS comminution

. **crushing**

RT crushers

disintegration

grinding (comminution)

crustal dynamics

USE **Earth crust**

geodynamics

crustal fractures

GS fracturing

. **crustal fractures**

RT Earth crust

Earth movements

Earth surface

earthquake resistance

earthquakes

geodynamics

geological faults

microseisms

P waves

S waves

San Andreas Fault

seismic waves

seismology

shatter cones

shock loads

shock waves

soil mechanics

surface waves

crusts

GS **crusts**

. lunar crust

- . planetary crusts
 - . . Earth crust
 - RT lunar mantle
 - planetary mantles
- cryochemistry**
- DEF The study of chemical phenomena in very low temperature environment.
 - GS physical chemistry
 - . **cryochemistry**
 - RT ∞ chemistry
 - cryogenic equipment
 - cryogenics
 - low temperature physics
- cryocycle principle**
- RT cryopumping
 - spacecraft power supplies
- cryodeposits**
- GS deposits
 - . **cryodeposits**
 - RT coatings
 - ∞ cryogenic storage
 - cryogenics
- cryogenic computer storage**
- GS computer components
 - . computer storage devices
 - . . **cryogenic computer storage**
 - RT ∞ cryogenic storage
 - cryotrons
 - ∞ equipment
 - superconductors (materials)
- cryogenic cooling**
- DEF Use of cryogenic fluids to reach temperatures near absolute zero.
 - GS cooling
 - . **cryogenic cooling**
 - RT capillary pumped loops
 - coolers
 - cryogenics
 - freezing
 - heat transfer
 - refrigerating
- cryogenic equipment**
- UF *Dewar systems*
 - RT cryochemistry
 - cryogenics
 - ∞ equipment
 - gravitational wave antennas
 - refrigerating
 - refrigerating machinery
 - solid cryogens
- cryogenic fluid storage**
- RT cold surfaces
 - ∞ cryogenic storage
 - cryogenic tanks
 - evaporative cooling
 - fluid management
 - fuel tanks
 - multilayer insulation
 - space storage
 - ∞ storage
 - storage tanks
 - thermal insulation
- cryogenic fluids**
- GS liquids
 - . **cryogenic fluids**
 - . . Fermi liquids
 - . . FLOX
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid nitrogen
 - . . liquid oxygen
 - RT cryogenic tanks
 - cryogenic temperature
 - cryogenics
 - cryopumping
 - fluid management
 - ∞ fluids
- rocket oxidizers
 - solid cryogen cooling
 - solidified gases
- cryogeo gyroscopes**
- GS gyroscopes
 - . **cryogenic gyroscopes**
 - RT high temperature superconductors
- cryogenic magnets**
- GS magnets
 - . **cryogenic magnets**
 - RT high temperature superconductors
 - superconducting magnets
- cryogenic rocket propellants**
- DEF Rocket fuels, oxidizers, or propulsion fluids which are liquid only at very low temperatures.
 - GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **cryogenic rocket propellants**
 - RT cryogenics
 - endothermic fuels
 - fluid management
 - gaseous rocket propellants
 - gelled rocket propellants
 - high energy fuels
 - high energy propellants
 - hybrid propellants
 - hydrogen fuels
 - hypergolic rocket propellants
 - liquefied gases
 - liquid hydrogen
 - liquid oxygen
 - RL-10 engines
 - slush
 - space storage
 - storable propellants
- ∞ **cryogenic storage**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT cryodeposits
 - cryogenic computer storage
 - cryogenic fluid storage
- cryogenic tanks**
- (added August 2003)
 - DEF Containers or other structures designed to hold cryogenic materials.
 - UF *cryotanks*
 - GS tanks (containers)
 - . **cryogenic tanks**
 - RT cryogenic fluid storage
 - cryogenic fluids
 - space storage
 - storage tanks
- cryogenic temperature**
- UF *ultralow temperature*
 - GS temperature
 - . low temperature
 - . . **cryogenic temperature**
 - RT absolute zero
 - cold traps
 - critical temperature
 - cryogenic fluids
 - cryogenics
 - Curie temperature
 - solidified gases
 - space temperature
- cryogenic wind tunnels**
- DEF Wind tunnels employing a cryogenic environment and utilizing independent control over Mach number, Reynolds number, aeroelastic effects, and model-tunnel interactions.
 - GS test facilities
 - . wind tunnels
 - . . **cryogenic wind tunnels**
 - RT flight simulators
- test chambers
- cryogenics**
- DEF The study of the methods of producing very low temperatures. The study of the behavior of materials and processes at cryogenic temperatures.
 - RT absolute zero
 - cold traps
 - cooling
 - cryochemistry
 - cryodeposits
 - cryogenic cooling
 - cryogenic equipment
 - cryogenic fluids
 - cryogenic rocket propellants
 - cryogenic temperature
 - cryopumping
 - cryosar
 - cryostats
 - cryotrons
 - Fermi liquids
 - high temperature superconductors
 - Joule-Thomson effect
 - liquefied gases
 - low temperature
 - low temperature physics
 - refrigerating
 - solid cryogen cooling
 - solid cryogens
 - solid nitrogen
 - solidified gases
 - superconducting power transmission
 - superconductivity
 - thermoelectric cooling
 - thermomagnetic cooling
- cryolite**
- GS aluminum compounds
 - . **cryolite**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **cryolite**
 - . . fluoro compounds
 - . . . **cryolite**
 - . halides
 - . . fluorides
 - . . . **cryolite**
 - minerals
 - . **cryolite**
 - sodium compounds
 - . **cryolite**
 - RT aluminum
- cryopumping**
- DEF The process of removing gas from a system by condensing it on a surface maintained at very low temperatures.
 - RT cryocycle principle
 - cryogenic fluids
 - cryogenics
 - ∞ pumping
 - vacuum pumps
- cryosar**
- GS electronic equipment
 - . diodes
 - . . semiconductor diodes
 - . . . avalanche diodes
 - **cryosar**
 - . solid state devices
 - . . semiconductor devices
 - . . . avalanche diodes
 - **cryosar**
 - rectifiers
 - . avalanche diodes
 - . . **cryosar**
 - RT Barritt diodes
 - computer storage devices
 - cryogenics
- cryosorption*
- USE **sorption**
- ∞ **cryospheres**
- (added June 1996)
 - SN ((USE OF A MORE SPECIFIC TERM IS

cryostats

RECOMMENDED -- CONSULT THE TERMS LISTED BELOW))

RT Earth cryosphere
planetary cryospheres
planetary environments

cryostats

GS control equipment
. regulators
. . . **cryostats**

RT controllers
cryogenics
electric switches
high temperature tests
liquid helium
liquid helium 2
low temperature tests
temperature control
thermostats

cryotanks
(added August 2003)

USE **cryogenic tanks**

cryotrapping

GS trapping
. **cryotrapping**

RT cold traps

cryotrons

DEF Devices based upon the principle that superconductivity established at temperatures near absolute zero is destroyed by the application of a magnetic field.

GS electronic equipment
. solid state devices
. . . **cryotrons**
switches
. electric switches
. . . **cryotrons**

RT cryogenic computer storage
cryogenics
superconductivity
superconductors (materials)

cryptography

DEF The science of preparing messages in a form which cannot be read by those not privy to the secrets of the form.

GS **cryptography**
. quantum cryptography

RT ∞ codes
coding
computer information security
decoding
information theory
message processing
steganography

crystal defects

DEF Departure from the regular arrangement of atoms in the ideal crystal lattice.

UF *lattice imperfections*
stacking faults

GS defects
. **crystal defects**
. . . crystal dislocations
. . . edge dislocations
. . . screw dislocations
. . . point defects
. . . vacancies (crystal defects)
. . . Frenkel defects
. . . antisite defects

RT crystallography
embedded atom method
holes (electron deficiencies)
impurities
interstitials
lattice vibrations
mechanical twinning
order-disorder transformations
pinning
polygonization
stacking fault energy
stacks
surface defects
trapping

twinning

crystal dislocations

DEF Types of lattice imperfections whose existence in metals is postulated in order to account for the phenomenon of crystal growth and of slip, particularly for the low value of shear stress required to initiate slip.

GS defects
. crystal defects
. . . **crystal dislocations**
. . . edge dislocations
. . . screw dislocations
dislocations (materials)
. **crystal dislocations**
. . . edge dislocations
. . . screw dislocations

RT antiphase boundaries
fatigue (materials)
grain boundaries
pinning
point defects
Portevin-le Chatelier effect
superlattices
superplasticity
surface defects

crystal field splitting

USE **crystal field theory**

crystal field theory

(added January 1993)

UF *crystal field splitting*
crystal fields

GS field theory (physics)
. **crystal field theory**

RT crystal lattices
electric fields
metal ions

crystal fields

USE **crystal field theory**

crystal filters

GS electromagnetic wave filters
. bandpass filters
. . . **crystal filters**
. electric filters
. . . **crystal filters**

RT bandstop filters

∞ filters
intermediate frequency amplifiers
radio equipment
radio filters
tunable filters

crystal growth

GS growth
. **crystal growth**
. . . Czochralski method
. . . directional solidification (crystals)
. . . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
. . . hydrothermal crystal growth
. . . protein crystal growth
. . . traveling solvent method
. . . Verneuil process

RT Aitken nuclei
Bravais crystals
Bridgman method
buoyancy-driven flow
containerless melts
crystal morphology
crystallization
crystallography
crystals
doped crystals
float zones
inoculation
laser deposition
mechanical twinning
melts (crystal growth)

metalorganic chemical vapor
deposition

∞ microgravity applications
nanostructure growth
netting (materials/structures)
nucleation
polygonization
pulsed laser deposition
rapid quenching (metallurgy)
space processing
twinning
vapor deposition

crystal lattices

DEF Three-dimensional, recurring patterns in which the atoms of crystals are arranged.

GS **crystal lattices**
. close packed lattices
. cubic lattices
. . . body centered cubic lattices
. . . face centered cubic lattices
. superlattices

RT antiphase boundaries
atomic structure
Bravais crystals
Brillouin zones
chemical bonds
coordination number
crystal field theory
crystal morphology
crystallography
crystals
doping (materials)
epitaxy
geometry
graphoepitaxy
hexagonal cells
ionic crystals
Ising model
isomorphism
Kossel pattern
lattice energy
lattice parameters
lattice vibrations

∞ lattices
Laue method
Laves phases
metal crystals
metallography
molecular chains
molecular structure
Mossbauer effect
order-disorder transformations
particle in cell technique
Patterson map
polymorphism
rapid quenching (metallurgy)
single crystals
synthetic metals
ultrapure metals

crystal morphology

(added October 2002)

DEF Characterization of a crystal by the shape and relative angular position of its faces.

GS morphology
. **crystal morphology**

RT crystal growth
crystal lattices
crystal structure
crystal surfaces
crystallography
crystals
shapes

crystal optics

RT aberration
acousto-optics
Bragg cells
diffraction
doped crystals
fiber optics
geometrical optics

∞ optics
phase matching
photorefractivity

- physical optics
- crystal oscillators**
- GS crystals
 - . **crystal oscillators**
 - . . piezoelectric crystals
 - oscillators
 - . **crystal oscillators**
 - . . piezoelectric crystals
 - RT electrical properties
 - frequency control
 - frequency stability
 - oscillations
 - piezoelectricity
- crystal rectifiers**
- UF *silicon rectifiers*
 - GS electronic equipment
 - . diodes
 - . . **crystal rectifiers**
 - . solid state devices
 - . . **crystal rectifiers**
 - rectifiers
 - . **crystal rectifiers**
 - RT current converters (AC to DC)
 - semiconductor devices
- crystal structure**
- SN (AGGLOMERATIONS OF CRYSTALS--EXCLUDES CRYSTAL LATTICES)
 - GS **crystal structure**
 - . Widmanstätten structure
 - RT Abrikosov theory
 - allotropy
 - anisotropy
 - antiphase boundaries
 - Bravais crystals
 - clathrates
 - coordination number
 - crystal morphology
 - crystallinity
 - crystallites
 - crystals
 - doped crystals
 - enantiomers
 - epitaxy
 - ferroelasticity
 - graphoepitaxy
 - interstitials
 - isomorphism
 - isotropy
 - Laves phases
 - liquid phase epitaxy
 - mechanical twinning
 - metal crystals
 - microstructure
 - molecular dynamics
 - nanocrystals
 - nanostucture (characteristics)
 - order-disorder transformations
 - packing density
 - Patterson map
 - phonons
 - polycrystals
 - polymorphism
 - rapid quenching (metallurgy)
 - spherulites
 - ∞ structures
 - superlattices
 - twinning
 - vapor phase epitaxy
- crystal surfaces**
- GS solid surfaces
 - . **crystal surfaces**
 - RT atomic force microscopy
 - crystal morphology
 - metal surfaces
 - surface layers
 - ∞ surfaces
- crystallinity**
- RT amorphous materials
 - crystal structure
- crystallites**
- GS crystals
- . **crystallites**
- . . spherulites
- RT crystal structure
 - microcrystals
 - minerals
 - rosette shapes
- crystallization**
- UF *devitrification*
 - GS **crystallization**
 - . directional solidification (crystals)
 - . melt spinning
 - . recrystallization
 - RT agglomeration
 - concentrating
 - containerless melts
 - crystal growth
 - demineralizing
 - freezing
 - inoculation
 - liquidus
 - materials recovery
 - melts (crystal growth)
 - modulation
 - nucleation
 - Ostwald ripening
 - phase stability (materials)
 - phase transformations
 - precipitation (chemistry)
 - purification
 - refining
 - ∞ separation
 - settling
 - solid state
 - solidification
 - sublimation
 - supercooling
 - supersaturation
 - zone melting
- crystallography**
- RT Bragg angle
 - crystal defects
 - crystal growth
 - crystal lattices
 - crystal morphology
 - crystals
 - Debye-Scherrer method
 - directivity
 - isotropy
 - lamella (metallurgy)
 - lattice parameters
 - Laue method
 - metallography
 - ∞ metallurgy
 - microbeams
 - microstructure
 - mineralogy
 - neutron diffraction
 - order-disorder transformations
 - ∞ orientation
 - radiography
 - ∞ solid state physics
 - x ray analysis
 - x ray diffraction
- crystals**
- GS **crystals**
 - . bicrystals
 - . boules
 - . Bravais crystals
 - . creatine
 - . crystal oscillators
 - . . piezoelectric crystals
 - . crystallites
 - . . spherulites
 - . dendritic crystals
 - . doped crystals
 - . ionic crystals
 - . liquid crystals
 - . metal crystals
 - . microcrystals
 - . mixed crystals
 - . nanocrystals
 - . polycrystals
 - . quartz crystals
 - . single crystals
- . whiskers (crystals)
- RT anisotropy
 - body centered cubic lattices
 - clathrates
 - containerless melts
 - crystal growth
 - crystal lattices
 - crystal morphology
 - crystal structure
 - crystallography
 - electroepitaxy
 - face centered cubic lattices
 - ∞ grains
 - isotropy
 - packing density
 - phase matching
 - ruby
 - spherules
- CSM
- USE **command service modules**
- CT-114 aircraft
- USE **CL-41 aircraft**
- CTD
- USE **charge transfer devices**
- Cuba**
- GS landforms
 - . islands
 - . . West Indies
 - . . . **Cuba**
 - nations
 - . **Cuba**
 - RT Caribbean region
 - Caribbean Sea
- cubane**
- GS organic compounds
 - . hydrocarbons
 - . . **cubane**
- cubes (mathematics)**
- GS geometry
 - . Euclidean geometry
 - . . polyhedrons
 - . . . **cubes (mathematics)**
 - RT blocks
- cubic equations**
- GS algebra
 - . nonlinear equations
 - . . **cubic equations**
 - analysis (mathematics)
 - . real variables
 - . . nonlinear equations
 - . . . **cubic equations**
 - field theory (algebra)
 - . **cubic equations**
 - RT ∞ equations
 - polynomials
- cubic lattices**
- GS crystal lattices
 - . **cubic lattices**
 - . . body centered cubic lattices
 - . . face centered cubic lattices
 - RT Laves phases
- cues**
- GS **cues**
 - . zeitgebers
 - RT auditory signals
 - visual signals
- cuestas*
- USE **ridges**
- cuffs**
- RT clothing
 - seals (stoppers)
- cultivation**
- GS **cultivation**

- textures
- curl (vectors)**
 DEF A vector operation upon a vector field which represents the rotation of the field, related to the circulation of the field at each point.
 GS analysis (mathematics)
 . calculus
 . . vector analysis
 . . . **curl (vectors)**
 vorticity
 . real variables
 . . vector analysis
 . . . **curl (vectors)**
 vorticity
 geometry
 . vector analysis
 . . **curl (vectors)**
 . . . vorticity
- current algebra**
 GS algebra
 . **current algebra**
 RT ∞ mathematics
 nuclear physics
 vector currents
- current amplifiers**
 GS amplifiers
 . **current amplifiers**
 . . photomultiplier tubes
 . . . frequency modulation
 photomultipliers
 RT transistor amplifiers
 voltage amplifiers
- current converters (AC to DC)**
 RT alternating current
 ∞ converters
 crystal rectifiers
 direct current
 electric current
 inverted converters (DC to AC)
 rectifiers
 silicon controlled rectifiers
 thyratrons
- current density**
 GS rates (per time)
 . flux density
 . . **current density**
 RT critical current
 electric current
 electrolysis
 electroplating
 pinning
- current distribution**
 GS distribution (property)
 . **current distribution**
 RT charge distribution
 electron distribution
 ∞ hole distribution
 hole distribution (electronics)
 ion distribution
 magnetic annular arc
 neutral currents
- current regulators**
 UF *current stabilizers*
 GS control equipment
 . regulators
 . . **current regulators**
 RT circuit protection
 controllers
 electric current
 ∞ electric equipment
 electric switches
 electronic control
 limiter circuits
 power factor controllers
 power supply circuits
 switching circuits
 transmission loss
- voltage regulators
- current sheets**
 RT antennas
 electric current
 magnetic flux
 magnetic islands
 ∞ sheets
- current stabilizers*
 USE **current regulators**
- ∞ **currents**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT air currents
 air flow
 beam currents
 circulation
 coastal currents
 electric current
 external surface currents
 fluid flow
 ocean currents
 water currents
- currents (oceanography)*
 USE **water currents**
- curtains**
 RT ∞ barriers
 dividers
 doors
 entrances
 openings
 ∞ partitions
 partitions (structures)
 ∞ screens
 separators
 walls
 windows (apertures)
- Curtiss C-46 aircraft*
 USE **C-46 aircraft**
- Curtiss-Wright aircraft**
 GS **Curtiss-Wright aircraft**
 . C-46 aircraft
 . X-19 aircraft
 RT ∞ aircraft
- curvature**
 GS geometry
 . **curvature**
 RT camber
 ∞ curves
 curves (geometry)
 differential geometry
 flexing
 ∞ profiles
 shapes
 zero force curves
- curve fitting**
 RT data compression
 data smoothing
 forecasting
 least squares method
 minimax technique
 saddle points
 statistical distributions
 statistical tests
 time series analysis
- curved beams**
 GS structural members
 . beams (supports)
 . . **curved beams**
 RT camber
 l beams
- curved panels**
 GS panels
 . **curved panels**
 RT contours
- shapes
 wing panels
- curved surfaces*
 USE **contours**
shapes
surfaces
- ∞ **curves**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT curvature
 graphs (charts)
 learning curves
 light curve
 toroids
 trajectories
 zero force curves
- curves (geometry)**
 GS geometry
 . **curves (geometry)**
 . . catenaries
 . . cycloids
 . . epicycloids
 . . S curves
 . . . Gompertz curves
 RT analytic geometry
 ∞ arcs
 chords (geometry)
 circles (geometry)
 curvature
 cusps (mathematics)
 differential geometry
 Euclidean geometry
 geodesic lines
 ∞ helices
 homotopy theory
 inflection points
 line shape
 manifolds (mathematics)
 menisci
 segments
 ∞ spirals
- curvilinear coordinates*
 USE **spherical coordinates**
- Cushioncraft ground effect machine**
 GS ground effect machines
 . **Cushioncraft ground effect machine**
 RT hovering
 vertical takeoff aircraft
- cushions**
 RT air cushion landing systems
 bumpers
 couches
 ground effect (aerodynamics)
 hydraulic equipment
 ∞ pad
 pneumatic equipment
 seats
 shock absorbers
 vibration isolators
- ∞ **cusps**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cusps (landforms)
 cusps (mathematics)
 double cusps
 polar cusps
- cusps (landforms)**
 GS landforms
 . **cusps (landforms)**
 RT beaches
 coasts
 ∞ cusps
 topography
- cusps (mathematics)**
 GS geometry

cut-off

. **cusps (mathematics)**
. . . double cusps
RT curves (geometry)
∞ cusps
epicycloids
maxima
minima

custom integrated circuits
USE **application specific integrated circuits**

cutaneous perception
USE **touch**

∞ **cut-off**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF An act or instance of shutting something off; specifically, in rocketry, an act or instance of shutting off the propellant flow in a rocket, or stopping the combustion of the propellant.
RT burnout
engine failure
machining

cut-outs
USE **openings**

cutters
SN (EXCLUDES SHIPS)
GS **cutters**
. blades (cutters)
. . . razor blades
. drill bits
. drills
. saws
. shears
RT cutting
dies
laser cutting
machine tools
scrapers
taps
tools

cutting
GS **cutting**
. blanking (cutting)
. laser cutting
. metal cutting
. milling (machining)
. planing
. scarfing
. shearing
. slicing
. spark machining
RT abrasion
chipping
comminution
cutters
drilling
flaking
forming techniques
fracturing
grinding (material removal)
grooving
machining
micromachining
peeling
perforating
piercing
∞ separation
shredding
splitting
torches

CV-2 aircraft
USE **DHC 4 aircraft**

CV-7 aircraft
USE **DHC 5 aircraft**

CV-340 aircraft
UF *Convair 340 aircraft*

GS commercial aircraft
. **CV-340 aircraft**
General Dynamics aircraft
. **CV-340 aircraft**
monoplanes
. **CV-340 aircraft**
passenger aircraft
. **CV-340 aircraft**
RT ∞ aircraft

CV-440 aircraft
UF *Convair 440 aircraft*
Metropolitan aircraft
GS commercial aircraft
. **CV-440 aircraft**
General Dynamics aircraft
. **CV-440 aircraft**
monoplanes
. **CV-440 aircraft**
passenger aircraft
. **CV-440 aircraft**
RT ∞ aircraft

CV-880 aircraft
UF *Convair 880 aircraft*
GS commercial aircraft
. **CV-880 aircraft**
General Dynamics aircraft
jet aircraft
. **CV-880 aircraft**
monoplanes
. **CV-880 aircraft**
passenger aircraft
. **CV-880 aircraft**
transport aircraft
. **CV-880 aircraft**
RT ∞ aircraft

CV-990 aircraft
UF *Convair 990 aircraft*
GS commercial aircraft
. **CV-990 aircraft**
General Dynamics aircraft
. **CV-990 aircraft**
jet aircraft
. turbofan aircraft
. . . **CV-990 aircraft**
monoplanes
. **CV-990 aircraft**
passenger aircraft
. **CV-990 aircraft**
RT ∞ aircraft

CVD (deposition)
USE **vapor deposition**

CVI (fabrication)
USE **chemical vapor infiltration**

CVM (solid state)
(added July 1997)
USE **cluster variation method**

CW radar
USE **continuous wave radar**

cyanamides
GS nitrogen compounds
. amides
. . . **cyanamides**
. cyano compounds
. . . **cyanamides**

cyanates
RT esters
urethanes

cyanide emission
USE **CN emission**

cyanides
GS **cyanides**
. acetonitrile
. cyanogen
. iron cyanides

. malononitrile
RT cyano compounds
cyanoacetylene
nitrogen compounds

cyano compounds
GS nitrogen compounds
. **cyano compounds**
. . . cyanamides
. . . cyanoacetylene
. . . isocyanates
. . . diisocyanates
. . . fulminates
RT ∞ chemical compounds
cyanides
nitriles

cyanoacetylene
GS nitrogen compounds
. cyano compounds
. . . **cyanoacetylene**
organic compounds
. hydrocarbons
. . . **cyanoacetylene**
RT acetylene
cyanides

cyanocobalamin
UF *vitamin B 12*
GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **cyanocobalamin**
vitamins
. **cyanocobalamin**

cyanogen
GS cyanides
. **cyanogen**

Cyanophyta
USE **blue green algae**

cyanosis
GS diseases
. **cyanosis**
RT blood circulation
heart function

cyanurates
GS esters
. **cyanurates**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . azines
. . . . **cyanurates**
pyrazines
. azines
. . . **cyanurates**

cyanuric acid
GS acids
. **cyanuric acid**
hydroxyl compounds
. alcohols
. . . triols
. . . **cyanuric acid**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . azines
. . . . **cyanuric acid**
pyrazines
. azines
. . . **cyanuric acid**

Cyber 74 computer
USE **CDC Cyber 74 computer**

cybernetics
DEF The study of methods of control and communication which are common to living organisms and machines.
RT adaptive control
automata theory

- ∞ automation
- biomimetics
- bionics
- communication theory
- computers
- ∞ control
- control systems design
- controllers
- depersonalization
- feedback
- human factors engineering
- information theory
- machine learning
- man machine systems
- management
- model reference adaptive control
- neural nets
- psychology
- ∞ systems
- systems engineering

cycles

DEF The complete sequences of values of a periodic quantity that occur during a period. Used for cycling and periodic processes.

UF *cycling*
periodic processes

GS **cycles**

- . activity cycles (biology)
- . carbon cycle
- . hydrological cycle
- . solar cycles
- . . sunspot cycle
- . stress cycles
- . thermodynamic cycles
- . . Brayton cycle
- . . Carnot cycle
- . . Otto cycle
- . . Rankine cycle
- . . Stirling cycle
- . work-rest cycle

RT alternations

- amplitudes
- annual variations
- cyclic loads
- diurnal variations
- fatigue (materials)
- frequency distribution
- harmonics
- intermittency
- long term effects
- periodic variations
- ∞ phases
- reciprocation
- rhythm (biology)
- starting
- superharmonics

cyclic accelerators

GS particle accelerators

- . **cyclic accelerators**
- . . betatrons
- . . synchrocyclotrons
- . . synchrotrons
- . . . bevatron
- . . . storage rings (particle accelerators)

RT ∞ accelerators

cyclic adenosine monophosphate

USE **cyclic AMP**

cyclic AMP

DEF A nucleotide which is implicated as an intracellular messenger in a wide variety of cellular processes. Prototypically it acts as a molecular transducer of nonsteroid signals from outside the cell to relevant cellular enzymes by a series of reactions. Used for cyclic adenosine monophosphate.

UF *cyclic adenosine monophosphate*

GS organic compounds

- . coenzymes
- . . **cyclic AMP**
- . cyclic compounds
- . . heterocyclic compounds

- . . . adenosines
- **cyclic AMP**
- . nucleotides
- . . adenosines
- . . . **cyclic AMP**
- phosphorus compounds
- . phosphates
- . . **cyclic AMP**
- RT adrenergics
- alkynes
- amino acids
- cholinergics
- guanines
- pharmacology

cyclic compounds

DEF In organic chemistry, compounds containing a ring of atoms.

GS organic compounds

- . **cyclic compounds**
- . . cyclic hydrocarbons
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- . . heterocyclic compounds
- . . . acriflavine
- . . . adenosines
- adenosine diphosphate
- adenosine triphosphate
- cyclic AMP
- . . . alkaloids
- . . . atropine
- betaines
- caffeine
- colchicine
- ergotamine
- hyoscine
- lysergine
- morphine
- nicotinamide
- nicotine
- pilocarpine
- reserpine
- strychnine
- tropyli compounds
- . . . anisole
- . . . ascorbic acid
- . . . azines
- cyanurates
- cyanuric acid
- meclizine
- methylene blue
- phenothiazines
- . . . azoles
- acetazolamide
- oxazole
- pyrroles
- carbazoles
- indoles
- tryptophan
- . . . azulene
- . . . bioflavonoids
- . . . biotin
- . . . carnitine
- . . . cyanocobalamin
- . . . cytidylic acid
- . . . dimenhydrinate
- . . . endrin
- . . . ethylene oxide
- . . . folic acid
- . . . furans
- tetrahydrofuran
- . . . guanethidine
- . . . HMX
- nicotinic acid
- phthalocyanin
- phylloquinone

- . . . piperidine
- . . . promethazine
- . . . purines
- adenines
- xanthines
- caffeine
- guanines
- uric acid
- . . . pyridines
- . . . pyridoxine
- . . . pyrimidines
- alloxan
- thymidine
- thymine
- uracil
- . . . RDX
- retinene
- riboflavin
- tetracyclines
- tetrazoles
- thiamine
- thiazine (trademark)
- thiophenes
- tocopherol
- trimethadione
- . . . rhodamine
- RT ∞ chemical compounds
- cycloaddition
- organic chemistry

cyclic hydrocarbons

GS organic compounds

- . cyclic compounds
- . . **cyclic hydrocarbons**
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- . hydrocarbons
- . . **cyclic hydrocarbons**
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- RT alkynes

cyclic loads

SN (LIMITED TO FORCE LOADS)

GS loads (forces)

- . dynamic loads
- . . **cyclic loads**

RT cycles

- Elber equation
- inelastic stress
- S-N diagrams
- stress cycles
- structural design criteria
- transient loads
- variable amplitude loading
- vibration
- vibratory loads

cycling

USE **cycles**

cycloaddition

(added June 1998)

DEF Pericyclic chemical reaction in which unsaturated molecules combine to form a cyclic

cyclobutane

compound under the influence of heat or light.

- GS chemical reactions
 - . cycloaddition
 - .. Diels-Alder reactions
- RT cyclic compounds
- photochemical reactions
- polymerization
- synthesis (chemistry)

cyclobutane

- GS organic compounds
 - . cyclic compounds
 - .. cyclic hydrocarbons
 - ... **cyclobutane**
 - . hydrocarbons
 - .. cyclic hydrocarbons
 - ... **cyclobutane**

cyclogenesis

- RT arc clouds
- atmospheric circulation
- atmospheric pressure
- cyclones
- hurricanes
- low pressure
- storms (meteorology)

cyclohexane

- GS organic compounds
 - . cyclic compounds
 - .. cyclic hydrocarbons
 - ... **cyclohexane**
 - . hydrocarbons
 - .. cyclic hydrocarbons
 - ... **cyclohexane**
- RT benzene
- hexenes
- hydrogenation

cycloids

- GS geometry
 - . curves (geometry)
 - .. **cycloids**
 - . Euclidean geometry
 - .. analytic geometry
 - ... **cycloids**

cyclones

- SN (METEOROLOGICAL--EXCLUDES EQUIPMENT)
- DEF Areas of low pressure with a closed circulation that rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
- GS storms
 - . storms (meteorology)
 - .. **cyclones**
 - ... hurricanes
 - ... Anna hurricane
 - ... typhoons
- RT anticyclones
- atmospheric pressure
- baroclinic waves
- cyclogenesis
- ground wind
- low pressure
- meteorology
- precipitation (meteorology)
- storm damage
- synoptic meteorology
- tornadoes
- tropical storms
- wind (meteorology)

cyclones (equipment)

USE **centrifuges**

cyclopropane

- GS drugs
 - . anesthetics
 - .. **cyclopropane**
 - organic compounds
 - . cyclic compounds
 - .. cyclic hydrocarbons
 - ... **cyclopropane**
 - . hydrocarbons

.. cyclic hydrocarbons

... **cyclopropane**

RT propane

Cyclops plasma accelerator

- GS plasma accelerators
 - . **Cyclops plasma accelerator**
- RT ∞ accelerators
- plasmas (physics)

cyclotetramethylene tetranitramine

USE **HMX**

cyclotrimethylene trinitramine

USE **RDX**

cyclotron frequency

DEF Frequency at which a charged particle orbits in a uniform magnetic field. It depends on the charge to mass ratio of the particle times the magnetic field. While the frequency is independent of the particle energy, Larmor orbit increases with energy.

- GS frequencies
 - . **cyclotron frequency**
- RT charged particles
- Larmor precession

cyclotron radiation

DEF The electromagnetic radiation emitted by charged particles as they orbit in a magnetic field. The radiation arises from the centripetal acceleration of the particle as it moves in a circular orbit.

- GS electromagnetic radiation
 - . nonthermal radiation
 - .. **cyclotron radiation**
 - ... ion cyclotron radiation

- RT charged particles
- Larmor precession
- Larmor radius
- ∞ radiation

cyclotron resonance

DEF Energy transfer to charged particles in a magnetic field from an alternating-current electric field whose frequency is equal to the cyclotron frequency.

- GS resonance
 - . **cyclotron resonance**
 - .. electron cyclotron resonance
- RT charged particles
- diamagnetism
- energy transfer
- Fermi surfaces
- ion cyclotron radiation
- plasma resonance

cyclotron resonance devices

DEF Microwave amplifiers based on the interaction between electromagnetic waves and transverse electron streams moving along helical trajectories. Used for gyrotrons.

- UF *gyrotrons*
- GS amplifiers
 - . microwave amplifiers
 - .. **cyclotron resonance devices**
 - electron tubes
 - . vacuum tubes
 - .. microwave tubes
 - ... **cyclotron resonance devices**
 - microwave equipment
 - . microwave amplifiers
 - .. **cyclotron resonance devices**
 - . microwave tubes
 - .. **cyclotron resonance devices**
- RT cavity resonators
- ∞ devices
- diffraction radiation
- electron cyclotron resonance
- klystrons
- millimeter waves
- power amplifiers

traveling wave tubes

cyclotrons

- UF *calutrons*
- GS particle accelerators
 - . **cyclotrons**
 - .. geocyclotrons
 - .. microtrons
 - .. Oak Ridge isochronous cyclotron
 - .. omegatrons
 - .. synchrocyclotrons
- RT synchrotrons

Cygnus constellation

- GS constellations
 - . **Cygnus constellation**
- RT celestial bodies
- celestial sphere
- stars

∞ cylinders

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT analytic geometry
- circular cylinders
- concentric cylinders
- cylindrical bodies
- cylindrical chambers
- cylindrical shells
- ∞ drums
- drums (containers)
- elastic cylinders
- elliptical cylinders
- hemisphere cylinder bodies
- monocoque structures
- orthotropic cylinders
- oscillating cylinders
- plasma cylinders
- rotating cylinders
- viscoelastic cylinders

cylindrical afterbodies

USE **afterbodies**
cylindrical bodies

cylindrical antennas

- GS antennas
 - . **cylindrical antennas**
- RT antenna radiation patterns
- radio equipment

cylindrical bodies

- UF *cylindrical afterbodies*
- cylindroids*
- GS symmetrical bodies
 - . bodies of revolution
 - .. **cylindrical bodies**
 - ... rotating cylinders
- RT afterbodies
- Airy function
- centerbodies
- circular cylinders
- ∞ cylinders
- cylindrical coordinates
- elastic cylinders
- elliptical cylinders
- forebodies
- fuselages
- hemisphere cylinder bodies
- orthotropic cylinders
- oscillating cylinders
- plasma cylinders
- plastic bodies
- rollers
- viscoelastic cylinders

cylindrical chambers

- RT brakes (for arresting motion)
- ∞ chambers
- ∞ cylinders

cylindrical coordinates

- GS coordinates
 - . **cylindrical coordinates**
- RT astronomical coordinates
- Cartesian coordinates

- cylindrical bodies
- cylindrical plasmas**
 DEF Magnetic self-attraction of parallel electric currents causing constriction of a conducting plasma through which a large current is flowing.
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **cylindrical plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **cylindrical plasmas**
 plasma cylinders
 . **cylindrical plasmas**
 RT pinch effect
- cylindrical shells**
 GS shells (structural forms)
 . **cylindrical shells**
 RT circular cylinders
 circular shells
 circular tubes
 concentric cylinders
 ∞ cylinders
 elastic cylinders
 elliptical cylinders
 metal shells
 orthotropic cylinders
 orthotropic shells
 oscillating cylinders
 plasma cylinders
 plastic shells
 reinforced shells
 rotating cylinders
 thin walled shells
 viscoelastic cylinders
- cylindrical tanks**
 GS tanks (containers)
 . **cylindrical tanks**
 RT fuel tanks
 propellant tanks
 storage tanks
- cylindrical waves**
 DEF Waves in which the wave fronts are coaxial cylinders.
 RT axisymmetric flow
 elastic waves
 electromagnetic radiation
 plane waves
 spherical waves
 ∞ waves
- cylindroids*
 USE **cylindrical bodies**
- Cyprus**
 GS landforms
 . islands
 . . **Cyprus**
 nations
 . **Cyprus**
 RT Greece
 Mediterranean Sea
- Cyrrillid meteoroids**
 GS celestial bodies
 . meteoroid showers
 . . **Cyrrillid meteoroids**
 . meteoroids
 . . bolides
 . . . **Cyrrillid meteoroids**
 RT natural satellites
- tektites
- cysteamine**
 GS amines
 . **cysteamine**
 drugs
 . antiradiation drugs
 . . **cysteamine**
 RT amino acids
 proteins
 radiation protection
- cysteine**
 GS acids
 . amino acids
 . . **cysteine**
 drugs
 . **cysteine**
 organic compounds
 . amino acids
 . . **cysteine**
 sulfur compounds
 . thiols
 . . **cysteine**
 RT proteins
- cystic fibrosis**
 GS diseases
 . fibrosis
 . . **cystic fibrosis**
 RT tissues (biology)
- cysts**
 GS **cysts**
 . mucocoeles
 RT neoplasms
 tissues (biology)
 tumors
- cytidylic acid**
 GS acids
 . **cytidylic acid**
 organic compounds
 . cylic compounds
 . . heterocyclic compounds
 . . . **cytidylic acid**
- cytochromes**
 GS biopolymers
 . proteins
 . . enzymes
 . . . **cytochromes**
 organic compounds
 . proteins
 . . enzymes
 . . . **cytochromes**
 pigments
 . **cytochromes**
 RT cytochromes
 skin (anatomy)
- cytogenesis**
 GS **cytogenesis**
 . cell division
 . differentiation (biology)
 . hematopoiesis
 . mitosis
 RT ∞ biology
 cells (biology)
 cytochromes
 cytology
 cytoplasm
 ∞ differentiation
 genetics
 heredity
 osteoblasts
 physiology
- cytology**
 RT apoptosis
- biochemistry
 biological diversity
 ∞ biology
 cell membranes (biology)
 cells (biology)
 chromosomes
 cytogenesis
 cytometry
 eukaryotes
 in vitro methods and tests
 in vivo methods and tests
 lysosomes
 mitochondria
 mitosis
 necrosis
 nuclei (cytology)
 organelles
 plasmolysis
 prokaryotes
 sarcoplasmic reticulum
 tissue engineering
- cytometry**
 (added February 1990)
 UF *cytophotometry*
 RT cells (biology)
 cytology
 microscopy
- cytophotometry*
 USE **cytometry**
- cytoplasm**
 RT calmodulin
 cells (biology)
 chloroplasts
 cytochromes
 endoplasmic reticulum
 eosinophils
 fibroblasts
 mitosis
 nuclei (cytology)
 organelles
 sarcoplasmic reticulum
- Czech Republic**
 (added December 1995)
 GS nations
 . **Czech Republic**
 RT Czechoslovakia
 Europe
 Slovakia
- Czechoslovakia**
 GS nations
 . **Czechoslovakia**
 RT Central Europe
 Czech Republic
 Czechoslovakian space program
 Czechoslovakian spacecraft
 Europe
 Slovakia
- Czechoslovakian space program**
 (added March 1989)
 GS programs
 . space programs
 . . European space programs
 . . . **Czechoslovakian space program**
 RT Czechoslovakia
- Czechoslovakian spacecraft**
 DEF Spacecraft of Czechoslovakia.
 RT Czechoslovakia
 ∞ spacecraft
- Czochralski method**
 GS growth
 . crystal growth
 . . **Czochralski method**
 RT ∞ methodology
 Verneuil process

D

D layer

USE **D region**

D lines

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - **D lines**
- RT absorption spectra
 - emission spectra
 - H lines
 - solar spectra

D region

- SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 50 AND 90 KM)
 - D layer*
- GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . lower ionosphere
 - **D region**
 - regions
 - . **D region**
- RT Earth-ionosphere waveguide

D-1 satellite

- GS artificial satellites
 - . French satellites
 - . . **D-1 satellite**

D-2 satellites

- UF *D-2B satellite*
 - Polaire satellite*
 - Tourmesole satellite*
- GS artificial satellites
 - . French satellites
 - . . **D-2 satellites**
 - . meteorological satellites
 - . . **D-2 satellites**

D-2B satellite

USE **D-2 satellites**

D-558 aircraft

- UF *Douglas D-558 aircraft*
 - Skyrocket aircraft*
 - Skystreak aircraft*
- GS jet aircraft
 - . **D-558 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **D-558 aircraft**
 - monoplanes
 - . **D-558 aircraft**
 - research vehicles
 - . research aircraft
 - . . **D-558 aircraft**
 - supersonic aircraft
 - . **D-558 aircraft**
- RT ∞ aircraft

Dacron (trademark)

- GS fabrics
 - . **Dacron (trademark)**
 - fibers
 - . synthetic fibers
 - . . **Dacron (trademark)**
- RT polyester resins

reinforcing fibers

Dactyl

USE **natural satellites**

DAD Explorer

USE **Dual Air Density Explorer**

DAEMO (data analysis)

USE **data processing**
data reduction
data transmission

Dahomey

USE **Benin**

Dakota aircraft

USE **C-47 aircraft**

Dalton law

DEF The empirical generalization that for many so-called perfect gases, a mixture of these gases will have a pressure equal to the sum of the partial pressures that each of the gases would have as a sole component with the same volume and temperature, provided there is no chemical interaction.

- RT gas composition
- gas dynamics
- gas-gas interactions
- ideal gas
- partial pressure
- vapor pressure

DAMA

USE **demand assignment multiple access**

damage

- GS **damage**
 - . cumulative damage
 - . earthquake damage
 - . fire damage
 - . flood damage
 - . frost damage
 - . impact damage
 - . . meteoritic damage
 - . . rain impact damage
 - . proton damage
 - . radiation damage
 - . . laser damage
 - . storm damage

- RT burnthrough (failure)
- corrosion
- damage assessment
- decay
- decomposition
- defects
- deformation
- degradation
- destruction
- deterioration
- discoloration
- disintegration
- durability
- fatigue (biology)
- fatigue (materials)
- fractures (materials)
- hot corrosion
- immobilization
- impairment
- injuries
- lethality
- losses
- radiation effects
- sabotage
- space weathering
- warpage
- wear

weathering

damage assessment

DEF Estimate of injury or loss to components, subsystems, or entire systems, as well as the cost of repairs or replacement to restore serviceability.

- GS assessments
 - . **damage assessment**
- RT casts
 - costs
 - damage
 - estimates
 - maintenance
 - recoverability
 - replacing
 - spare parts
 - value

damage threshold

USE **yield point**

Damkohler number

- RT activation energy
- combustion physics
- diffusion flames
- flame propagation
- ∞ numbers
- reaction kinetics

DAMP program

USE **Downrange Antimissile Measurement Program**

∞ **dampers**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT blankets (fission reactors)
 - dampers (valves)
 - nutaton dampers
 - oscillation dampers
 - vibration isolators

dampers (valves)

- GS valves
 - . butterfly valves
 - . . **dampers (valves)**
- RT automatic control valves
- ∞ dampers
 - gas valves
 - vibration isolators

damping

DEF The suppression of oscillations or disturbances; the dissipation of energy with time. Used for damping factor, damping in pitch, damping in roll, damping in yaw, elastic stability, and jet damping.

- UF *damping factor*
 - damping in pitch*
 - damping in roll*
 - damping in yaw*
 - elastic stability*
 - jet damping*
- GS **damping**
 - . elastic damping
 - . . viscoelastic damping
 - . Landau damping
 - . vibration damping
 - . viscous damping
 - . . viscoelastic damping
- RT ∞ absorption
 - attenuation
 - baffles
 - deceleration
 - dissipation
 - dynamic characteristics
 - dynamic response
 - dynamic stability
 - energy absorption

gyroscope fluids
 gyroscopic pendulums
 gyroscopic stability
 hysteresis
 impedance
 insulation
 internal friction
 mechanical impedance
 mufflers
 negative feedback
 oscillations
 ∞ reduction
 ∞ resistance
 resonant frequencies
 resonant vibration
 retarding
 roll
 sea keeping
 shock absorbers
 silencers
 stability derivatives
 stopping
 subharmonic generators
 suppressors
 time constant
 transfer functions
 transient oscillations
 transient response
 vibration isolators
 wave interaction

damping factor
 USE **damping**

damping in pitch
 USE **damping pitch (inclination)**

damping in roll
 USE **damping**

damping in yaw
 USE **damping yaw**

damping tests
 GS vibration tests
 . **damping tests**
 . . stroking tests
 RT resonance testing
 stability tests
 ∞ tests
 vibration measurement

dampness
 USE **moisture content**

dams
 RT ∞ barrages
 ∞ barriers
 flood control
 hydroelectricity
 reservoirs
 wharves

danger
 USE **hazards**

Danish space program
(added August 1990)
 GS programs
 . space programs
 . . European space programs
 . . . **Danish space program**
 RT Denmark

dark adaptation
 DEF The process by which the iris and retina of the eye adjust to allow maximum vision in dim illumination, following exposure of the eye to a relatively brighter illumination.
 GS adaptation
 . retinal adaptation
 . . **dark adaptation**
 RT darkness
 night vision

pupillometry
 vision
 visual pigments

dark current
(added October 1997)
 UF *electrode dark current*
 GS electric current
 . **dark current**
 RT low currents
 photocathodes
 photodiodes
 photoelectric cells
 phototubes
 signal to noise ratios

dark matter
 GS extraterrestrial matter
 . interstellar matter
 . . **dark matter**
 matter (physics)
 . **dark matter**
 RT Alpha Magnetic Spectrometer
 baryons
 cooling flows (astrophysics)
 cosmology
 galactic evolution
 galactic halos
 intergalactic media
 large-scale structure of the universe
 massive compact halo objects
 missing mass (astrophysics)
 neutrinos
 Population III stars
 universe
 weakly interacting massive particles

darkening
 GS **darkening**
 . limb darkening
 RT darkness
 ∞ illumination
 night
 visibility

darkness
 RT color
 dark adaptation
 darkening
 diurnal variations
 illuminating
 ∞ illumination
 light (visible radiation)
 night
 night flights (aircraft)
 optical properties
 shadows
 zeitgebers

darkrooms
 GS rooms
 . **darkrooms**
 RT photographic processing
 photographic processing equipment
 photography

Darkstar unmanned aerial vehicle
(added August 1998)
 USE **pilotless aircraft**
reconnaissance aircraft

Dart turboprop engines
 USE **turboprop engines**

Dash helicopter
 USE **QH-50 helicopter**

Dassault aircraft
 GS **Dassault aircraft**
 . Mirage aircraft
 . . Mirage 3 aircraft
 . . . Mystere 20 aircraft
 Mystere 50 aircraft

RT ∞ aircraft

Dassault Mirage 3 aircraft
 USE **Mirage 3 aircraft**

Dassault Mystere 20 aircraft
 USE **Mystere 20 aircraft**

Dassault Mystere 50 aircraft
 USE **Mystere 50 aircraft**

DAST program
 SN (DRONES FOR AERODYNAMIC AND STRUCTURAL TESTING)
 DEF A NASA program which uses the Firebee 2 target drone aircraft as a test bed for getting flight data on research wings. The drone is launched from the wing of a B52 and recovered by parachute. The program's purpose is the study of flight loads and load control. Used for drones for aerodynamic and struct test.
 UF *Drones for Aerodynamic and Struct Test*
 GS programs
 . NASA programs
 . . **DAST program**
 RT aeroelasticity
 aircraft control
 aircraft design
 drone aircraft
 flight tests
 flutter
 remotely piloted vehicles
 vibration damping

∞ **data**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT analog data
 audio data
 binary data
 biomedical data
 censored data (mathematics)
 channels (data transmission)
 control data (computers)
 data acquisition
 data base management systems
 data bases
 data collection platforms
 data compression
 data conversion routines
 data converters
 data correlation
 data links
 data management
 data processing
 data processing equipment
 data processing terminals
 data recorders
 data recording
 data reduction
 data retrieval
 data sampling
 data smoothing
 data storage
 data systems
 data transmission
 datum (elevation)
 digital data
 end-to-end data systems
 information
 interservice data exchange program
 ∞ measurement
 ocean data acquisitions systems
 onboard data processing
 optical data processing
 optical data storage materials
 optical memory (data storage)
 printers (data processing)
 radar data
 records
 site data processors
 Space Flight Tracking and Data Network
 statistical analysis
 statistical tests

data acquisition

- ∞ statistics
- tables (data)
- video data
- voice data processing
- weather data recorders
- world data centers

data acquisition

- GS acquisition
 - . **data acquisition**
- RT Advanced Range Instrumentation
 - Aircraft
 - Alouette project
 - analog to digital converters
 - automatic weather stations
 - counting
- ∞ data
 - Deep Space Instrumentation Facility
 - detection
 - Earth observations (from space)
 - end-to-end data systems
 - forms (paper)
 - Global Tracking Network
 - ground stations
 - infrared radiometers
 - meteorological research aircraft
 - needs (data system)
 - news media
 - observation
 - ocean data acquisitions systems
 - optical data processing
 - optical scanners
 - remote sensors
- ∞ sensors
 - Space Flight Tracking and Data Network
 - STDN (network)
 - surveys
 - tables (data)
 - tracking networks

data adaptive evaluator/monitor

- USE **data processing**
- data reduction**
- data transmission**

data analysis

- USE **data processing**
- data reduction**

data base management systems

DEF Software products that control data structures containing interrelated data stored so as to optimize accessibility and control, minimize redundancy, and offer multiple views of the data to various applications programs.

- RT ∞ data
 - data bases
 - data management
 - information management
 - management information systems
 - relational data bases
- ∞ systems

data bases

- GS **data bases**
 - . knowledge bases (artificial intelligence)
 - . numerical data bases
 - . relational data bases
- RT ∞ bases
 - CD-ROM
- ∞ data
 - data base management systems
 - data structures
 - software engineering

data busses

- USE **channels (data transmission)**

data collection platforms

- RT Argos system
 - automatic weather stations
- ∞ data
 - ground stations
 - instrument packages

integrated global ocean station

- systems
- ∞ platforms
- remote sensors

data compaction

- USE **data compression**

data compression

DEF Any technique used to reduce the amount of storage required to store data.

- UF **data compaction**
- GS **data compression**
 - . video compression
- RT curve fitting
 - ∞ data
 - decoding
 - discrete cosine transform
 - Fourier analysis
 - telecommunication
 - telemetry
 - vector quantization

data conversion routines

- GS **data conversion routines**
 - . subroutines
- RT algorithms
 - compilers
 - computer programs
- ∞ conversion
- ∞ data
- ∞ routines

data converters

- GS **data converters**
 - . analog to digital converters
 - . binary to decimal converters
 - . decimal to binary converters
 - . digital to analog converters
- RT analog circuits
 - analog data
 - computers
 - conversion tables
- ∞ converters
- ∞ data
 - decoders
 - digital data
 - transducers
 - video data

data correlation

- GS correlation
 - . **data correlation**
 - data processing
 - . **data correlation**
- RT angular correlation
 - autocorrelation
 - cross correlation
- ∞ data
 - statistical analysis
 - statistical correlation
 - teleconnections (meteorology)
 - temperature ratio

data flow analysis

- RT computer programs
 - computer systems programs
 - data simulation
 - data transfer (computers)
 - flow charts
 - network analysis
 - sequential control

data fusion

- USE **multisensor fusion**

data handling systems

- USE **data systems**

data integration

DEF Taking data from multiple sources and merging the data into a single data file.

- RT data management
 - data simulation

multisensor fusion

data links

DEF Communications channels or circuits used to transmit data from a sensor to a computer; a readout device or a storage device.

- GS telecommunication
 - . **data links**
- RT channels (data transmission)
 - communication networks
- ∞ data
 - decommutators
 - discrete address beacon system
 - frequency reuse
- ∞ links
 - networks
 - protocol (computers)
 - radio receivers
 - radio relay systems
 - remote consoles
 - site data processors
 - telemetry
 - VSAT (network)
 - wireless communication

data management

- GS management
 - . **data management**
- RT ∞ data
 - data base management systems
 - data integration
 - data simulation
 - frames (data processing)
 - information resources management
 - on-line systems
 - records management
 - relational data bases
 - surveys
 - tables (data)
 - virtual memory systems

data mining

(added April 2000)

DEF The extraction of patterns from large data sets in order to discover previously unknown and potentially useful information.

- UF **knowledge discovery**
- knowledge extraction**
- GS data processing
 - . **data mining**
 - information analysis
 - . **data mining**
- RT cluster analysis
 - data retrieval
 - machine learning
 - trend analysis

data processing

SN (LIMITED TO MECHANICAL OR ELECTRONIC MANIPULATION OF DATA)

DEF Application of procedures, mechanical, electrical, computational, or other whereby data are changed from one form to another. Used for automatic data processing, DAEMO (data analysis), data adaptive evaluator/monitor, and data analysis.

- UF **automatic data processing**
- DAEMO (data analysis)**
- data adaptive evaluator/monitor**
- data analysis**
- GS **data processing**
 - . associative processing (computers)
 - . batch processing
 - . censored data (mathematics)
 - . Central Electronic Management System
 - . concurrent processing
 - . data correlation
 - . data reduction
 - . . data smoothing
 - . data retrieval
 - . data storage
 - . data transfer (computers)
 - . distributed processing
 - . . grid computing (computer networks)
 - . Karhunen-Loeve expansion

- . multiprocessing (computers)
- . onboard data processing
- . optical data processing
- . parallel processing (computers)
- . pipelining (computers)
- . scene analysis
- . signal analysis
 - . . cepstral analysis
- . signal processing
- . . space-time adaptive processing
- . vector processing (computers)
- . voice data processing
 - . . cepstral analysis
- . data mining
- RT access time
- adjoints
- airborne/spaceborne computers
- analog data
- Atmospheric & Oceanographic Inform Sys
- ∞ automation
- binary data
- binary to decimal converters
- bubble memory devices
- channels (data transmission)
- computation
- computer information security
- computer programs
- computer systems programs
- computers
- ∞ data
- data structures
- decimal to binary converters
- digital computers
- digital data
- editing
- editing routines (computers)
- end-to-end data systems
- fixed point arithmetic
- floating point arithmetic
- frames (data processing)
- image processing
- information resources management
- information retrieval
- information theory
- interrogation
- language programming
- mechanization
- microprocessors
- natural language (computers)
- needs (data system)
- on-line systems
- peripheral equipment (computers)
- preprocessing
- ∞ processing
- protocol (computers)
- RCA computers
- records
- response time (computers)
- site data processors
- symbols
- systems engineering
- tables (data)
- tabulation processes
- telecommunication
- word processing

data processing equipment

DEF Machines for handling information in a sequence of reasonable operations. Used for data processors.

UF *data processors*

GS data processing equipment

- . computers
 - . . analog computers
 - . . . EAI 680 computer
 - . . . Honeywell 600/6000 computer
 - . . . SIGMA 5 computer
 - . . . Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - . . CDC computers
 - . . . CDC 160-A computer
 - . . . CDC 1604 computer

- . . . CDC 3100 computer
- . . . CDC 3200 computer
- . . . CDC 3600 computer
- . . . CDC 3800 computer
- . . . CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
- . . . CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
- . . . CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer
 - CDC Cyber 205 computer
 - CDC Star 100 computer
- . . . counting rate computers
- . . . DDP computers
 - DDP 516 computer
- . . . digital computers
 - CDC 160-A computer
 - CDC 1604 computer
 - CDC 3100 computer
 - CDC 3200 computer
 - CDC 3600 computer
 - CDC 3800 computer
 - CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
 - CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer
 - CDC Cyber 205 computer
 - CDC Star 100 computer
 - EAI 680 computer
 - EAI 8400 computer
 - EAI 8900 computer
 - EMR 6050 computer
 - Ferranti Mercury computer
 - GE computers
 - GE 625 computer
 - GE 635 computer
 - Hewlett-Packard computers
 - Honeywell computers
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
 - IBM 360 computer
 - IBM 370 computer
 - IBM 650 computer
 - IBM 704 computer
 - IBM 709 computer
 - IBM 1130 computer
 - IBM 1401 computer
 - IBM 1410 computer
 - IBM 1620 computer
 - IBM 2250 computer
 - IBM 7030 computer
 - IBM 7040 computer
 - IBM 7044 computer
 - IBM 7070 computer
 - IBM 7074 computer
 - IBM 7090 computer
 - IBM 7094 computer
 - IBM 7099 computer
 - IBM 7099 computer
 - IBM personal computers
 - MINOS computer
 - optical computers
 - Pegasus computer
 - RCA computers
 - RCA spectra 70 computer
 - RCA-110 computers
 - Siemens 2002 computer
 - site data processors
 - supercomputers
 - Connection Machine
 - Cray computers
 - transputers
 - Univac computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer

- Connection Machine
- MIMD (computers)
- SIMD (computers)
- PDP 15 computer
- PDP computers
 - PDP 7 computer
 - PDP 8 computer
 - PDP 9 computer
 - PDP 10 computer
 - PDP 11 computer
 - PDP 11/20 computer
 - PDP 11/40 computer
 - PDP 11/45 computer
 - PDP 11/50 computer
 - PDP 11/70 computer
 - PDP 12 computer
- Philco 2000 computer
- Raytheon computers
 - RCA spectra 70 computer
- SDS 900 series computers
 - SDS 930 computer
 - SDS 9300 computer
- SEL computers
- sequential computers
 - SIGMA 5 computer
 - SIGMA computers
 - SIGMA 9 computer
- Solomon computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer
 - Univac 490 computer
 - Univac 494 computer
 - Univac 1230 computer
 - Univac Larc computer
- VAX computers
 - VAX-11 series computers
 - VAX-11/780 computer
- embedded computer systems
 - airborne/spaceborne computers
- hybrid computers
 - hypercube multiprocessors
- IBM computers
 - IBM 360 computer
 - IBM 370 computer
 - IBM 650 computer
 - IBM 704 computer
 - IBM 709 computer
 - IBM 1130 computer
 - IBM 1401 computer
 - IBM 1410 computer
 - IBM 1620 computer
 - IBM 2250 computer
 - IBM 7030 computer
 - IBM 7040 computer
 - IBM 7044 computer
 - IBM 7070 computer
 - IBM 7074 computer
 - IBM 7090 computer
 - IBM 7094 computer
 - IBM personal computers
 - MINOS computer
 - optical computers
 - Pegasus computer
 - RCA computers
 - RCA spectra 70 computer
 - RCA-110 computers
 - Siemens 2002 computer
 - site data processors
 - supercomputers
 - Connection Machine
 - Cray computers
 - transputers
 - Univac computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer

data processing terminals

- . . . Univac 490 computer
- . . . Univac 494 computer
- . . . Univac 1230 computer
- . . . Univac Larc computer
- . . quantum computers
- . data processing terminals
- . . VSAT (network)
- . microprocessors
- . . Intel 8080 microprocessor
- . peripheral equipment (computers)
- . . printers (data processing)
- . . remote consoles

RT batch processing
computer compatible tapes
computer systems simulation
control units (computers)

∞ data
digital radar systems

∞ equipment
interfaces
multiprocessing (computers)
optical data processing
pipelining (computers)
printers
simulation

data processing terminals

GS data processing equipment
. **data processing terminals**
. . VSAT (network)

RT computer graphics
consoles

∞ data
human-computer interface
man machine systems
remote consoles

∞ terminals

data processors

USE **data processing equipment**

data readout systems

USE **data systems**
display devices

data recorders

GS **data recorders**
. flight recorders
. . flight load recorders
. weather data recorders

RT bubble memory devices
bubble technique
counters

∞ data
display devices
monitors
punched cards

∞ recorders
recording instruments
tape recorders
video disks

data recording

GS recording
. **data recording**

RT bubble memory devices

∞ data
magnetic recording
magnetic storage
optical data storage materials
photographic recording
punched cards
punched tapes
recording heads
records
tables (data)
tabulation processes
video disks

data reduction

DEF Transformation of observed values into useful, ordered, or simplified information. Used for DAEMO (data analysis), data adaptive evaluator/monitor, data analysis, and TARE (data reduction).

UF *DAEMO (data analysis)*

data adaptive evaluator/monitor
data analysis
TARE (data reduction)

GS data processing
. **data reduction**
. . data smoothing

RT computation

∞ data
editing
preprocessing

∞ reduction
tables (data)

data retrieval

GS data processing
. **data retrieval**
retrieval

RT ∞ data
data mining
data transfer (computers)
documentation
information management
information retrieval
interservice data exchange program
libraries
management information systems
microfilms
relational data bases
search profiles
tables (data)
telemetry
world data centers

data sampling

GS sampling
. **data sampling**

RT computer systems performance

∞ data
quality control
sampled data systems
telecommunication
time series analysis

data simulation

DEF The use of statistical or physical models to produce synthetic data for testing purposes.

GS simulation
. **data simulation**

RT data flow analysis
data integration
data management

data smoothing

DEF The mathematical process of fitting a smooth curve to dispersed data points.

GS data processing
. data reduction
. . **data smoothing**
recording
. **data smoothing**
smoothing
. **data smoothing**

RT curve fitting

∞ data

data storage

GS data processing
. **data storage**

RT bubble memory devices
buffer storage
cards
core storage

∞ data
data transfer (computers)
document storage
flip-flops
holography
information management
interservice data exchange program
magnetic storage
management information systems
microfilms
microphotographs
optical data storage materials

optical disks
punched cards
selective dissemination of information

∞ storage
video disks
virtual memory systems
white light holography
world data centers

data structures

DEF The organization of computer memory used to represent information in a computer program or database.

RT computer programming
data bases
data processing
knowledge based systems
structured programming

data systems

UF *data handling systems*
data readout systems

GS **data systems**
. air data systems
. needs (data system)

RT Atmospheric & Oceanographic Inform
Sys
control data (computers)

∞ data
data transfer (computers)
digital systems
Earth Resources Information System
end-to-end data systems
geographic information systems
management information systems

∞ systems

data transfer (computers)

DEF The technique used by the hardware manufacturer to transmit data from computer to storage device or from storage device to computer, usually under specialized program control.

GS data processing
. **data transfer (computers)**

RT asynchronous transfer mode
computer programs
data flow analysis
data retrieval
data storage
data systems
data transmission
input/output routines
interoperability

data transmission

UF *DAEMO (data analysis)*
data adaptive evaluator/monitor
information transmission

GS transmission
. signal transmission
. . **data transmission**
. . . automatic picture transmission
. . . multiple access
. . . . Aloha system
. . . . carrier sense multiple access
. . . . code division multiple access
. . . . demand assignment multiple
access
. . . . frequency division multiple
access
. . . . time division multiple access
. . . packet transmission
. . . Aloha system
. . . single channel per carrier
transmission

RT access control
Argos system
asynchronous transfer mode
audio data
automatic repeat request
carrier to noise ratios
channels (data transmission)
code division multiplexing
coding
communication theory

concatenated codes
 ∞ data
 data transfer (computers)
 Deep Space Instrumentation Facility
 electronic mail
 FM/PM (modulation)
 frequency division multiplexing
 information theory
 intersymbolic interference
 laser applications
 local area networks
 modems
 multiplexing
 packet switching
 packets (communication)
 protocol (computers)
 pulse communication
 radio telemetry
 radio transmission
 reading
 redundancy encoding
 satellite transmission
 ship to shore communication
 TDR satellites
 telecommunication
 telemetry
 transmission efficiency
 transmission rate (communications)
 video data
 VSAT (network)
 wireless communication

data visualization
 USE **scientific visualization**

dating
 USE **chronology**
time measurement

datum (elevation)

RT clearances
 contours
 ∞ data
 elevation angle
 hypsography
 leveling
 maps
 surveys

dawn chorus

UF *chorus (dawn phenomenon)*
chorus phenomenon
 GS atmospheric radiation
 . **dawn chorus**
 electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . atmospherics
 ionospherics
 **dawn chorus**
 RT auroras
 magnetic storms
 whistlers

dawsonite

DEF A mineral consisting of aluminum sodium carbonate.
 GS minerals
 . **dawsonite**
 RT aluminum
 sodium
 sodium carbonates

dayglow

GS atmospheric radiation
 . sky radiation
 . . **dayglow**
 electromagnetic radiation
 . light (visible radiation)
 . . sky radiation
 . . . **dayglow**
 RT glare
 light sources
 sky
 solar radiation
 twilight glow

ultraviolet radiation

daytime

RT diurnal variations
 evening
 morning
 night
 noon
 sky brightness

DBR lasers

(added November 1991)
 UF *distributed Bragg reflector lasers*
 GS electronic equipment
 . solid state devices
 . . solid state lasers
 . . . **DBR lasers**
 stimulated emission devices
 . lasers
 . . solid state lasers
 . . . **DBR lasers**
 RT Bragg angle
 Bragg reflectors
 distributed feedback lasers
 semiconductor lasers
 tunable lasers

DBS (satellites)

USE **direct broadcast satellites**

DC 3 aircraft

UF *Douglas DC-3 aircraft*
 GS commercial aircraft
 . **DC 3 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **DC 3 aircraft**
 monoplanes
 . **DC 3 aircraft**
 transport aircraft
 . cargo aircraft
 . . **DC 3 aircraft**
 RT ∞ aircraft

DC 7 aircraft

UF *Douglas DC-7 aircraft*
 GS commercial aircraft
 . **DC 7 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **DC 7 aircraft**
 monoplanes
 . **DC 7 aircraft**
 transport aircraft
 . cargo aircraft
 . . **DC 7 aircraft**
 RT ∞ aircraft
 passenger aircraft

DC 8 aircraft

UF *Douglas DC-8 aircraft*
 GS commercial aircraft
 . **DC 8 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **DC 8 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **DC 8 aircraft**
 monoplanes
 . **DC 8 aircraft**
 passenger aircraft
 . **DC 8 aircraft**
 transport aircraft
 . **DC 8 aircraft**
 RT ∞ aircraft

DC 9 aircraft

UF *Douglas DC-9 aircraft*
 GS commercial aircraft
 . **DC 9 aircraft**
 jet aircraft
 . **DC 9 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **DC 9 aircraft**

transport aircraft
 . **DC 9 aircraft**
 RT ∞ aircraft
 MD 80 aircraft

DC 10 aircraft

GS commercial aircraft
 . **DC 10 aircraft**
 jet aircraft
 . **DC 10 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **DC 10 aircraft**
 McDonnell aircraft
 . . **DC 10 aircraft**
 passenger aircraft
 . **DC 10 aircraft**
 transport aircraft
 . **DC 10 aircraft**
 RT ∞ aircraft
 turbofan engines

DC 11 aircraft

USE **MD 11 aircraft**

DC (current)

USE **direct current**

DC generators

(added July 1991)
 UF *direct current generators*
 GS electric generators
 . direct power generators
 . . **DC generators**
 . . . homopolar generators
 RT ∞ generators
 rotating generators

DCT (mathematics)

USE **discrete cosine transform**

DDP 516 computer

GS data processing equipment
 . computers
 . . DDP computers
 . . . **DDP 516 computer**
 . . digital computers
 . . . Honeywell computers
 **DDP 516 computer**

DDP computers

GS data processing equipment
 . computers
 . . **DDP computers**
 . . . DDP 516 computer
 RT digital computers

DDT

UF *dichlorodiphenyltrichloroethane*
 GS halogen compounds
 . chlorine compounds
 . . **DDT**
 poisons
 . pesticides
 . . insecticides
 . . . **DDT**

de Broglie wavelengths

GS wavelengths
 . **de Broglie wavelengths**
 RT elementary particles
 mass
 momentum
 Plancks constant
 quantum theory
 velocity
 Wentzel-Kramer-Brillouin method

de Havilland aircraft

GS **de Havilland aircraft**
 . Comet 4 aircraft
 . DH 112 aircraft
 . DH 115 aircraft
 . DH 121 aircraft
 . DH 125 aircraft
 . DHC 2 aircraft

deactivation

- . DHC 4 aircraft
- . DHC 5 aircraft
- RT ∞ aircraft

de Havilland DH 106 aircraft
USE **Comet 4 aircraft**

de Havilland DH 112 aircraft
USE **DH 112 aircraft**

de Havilland DH 115 aircraft
USE **DH 115 aircraft**

de Havilland DH 121 aircraft
USE **DH 121 aircraft**

de Havilland DH 125 aircraft
USE **DH 125 aircraft**

de Havilland DHC 4 aircraft
USE **DHC 4 aircraft**

de Havilland DHC 5 aircraft
USE **DHC 5 aircraft**

de Havilland Venom aircraft
USE **DH 112 aircraft**

de Laval nozzles
USE **convergent-divergent nozzles**

deacclimatization
USE **acclimatization**

deactivation

- UF *inactivation*
- RT activation
- passivity
- polarization (charge separation)
- polarization (spin alignment)
- sabotage
- shutdowns

dead reckoning

DEF In navigation, determination of position by advancing a previous known position for courses and distances.

- GS navigation
- . **dead reckoning**
- RT air navigation
- digital navigation
- Doppler navigation
- inertial navigation
- polar navigation
- radar navigation
- radio navigation
- surface navigation

deadweight
USE **static loads**

deafness
USE **auditory defects**

death

- RT apoptosis
- casualties
- expiration
- injuries
- life span
- mortality
- necrosis

Death Valley (CA)

- GS landforms
- . **Death Valley (CA)**
- valleys
- . **Death Valley (CA)**
- RT arid lands
- California
- desertification
- deserts

river basins

Debonair aircraft
USE **C-33 aircraft**

debonding (materials)

(added July 1992)

SN (LIMITED TO THE SEPARATION OF BONDED MATERIALS; NOT TO BE USED FOR THE BREAKUP OF ATOMIC/MOLECULAR BONDS)

- RT anodic stripping
- bonding
- delaminating
- fiber composites
- fiber pushout
- laminates
- matrix materials
- peeling
- reinforcing fibers
- ∞ separation

debris

- GS **debris**
- . space debris
- RT ejecta
- environment effects
- fragments
- glacial drift
- pollution
- ∞ radioactive debris
- scrap
- wastes

debugging

USE **checkout**

Debye length

DEF A theoretical length which describes the maximum separation at which a given electron will be influenced by the electric field of a given positive ion.

- GS distance
- . **Debye length**
- RT plasmas (physics)

Debye temperature

USE **specific heat**

Debye-Huckel theory

- RT dissociation
- electrolytes
- plasma potentials
- ∞ theories

Debye-Scherrer method

- RT crystallography
- diffraction
- ∞ methodology

decametric waves

- GS electromagnetic radiation
- . radio waves
- . . **decametric waves**
- RT coronal holes
- high frequencies
- very high frequencies

decarbonation

- GS chemical reactions
- . **decarbonation**
- RT carbonization

decarboxylation

- GS chemical reactions
- . **decarboxylation**
- RT carboxylation

decarburation

- RT carbon
- carburiizing
- heating
- metal working

decay

DEF Decrease of a radioactive substance

because of nuclear emission of alpha or beta particles, positrons, or gamma rays.

GS **decay**

- . particle decay
- . . neutron decay
- . plasma decay
- . radioactive decay
- . . alpha decay
- . . neutron emission
- . spacecraft glow
- . weak energy interactions
- . . weak interactions (field theory)
- RT beta particles
- biodegradability
- biodegradation
- damage
- degradation
- deterioration
- disintegration
- emission
- gamma rays
- half life
- hot atoms
- nuclear fission
- radiative lifetime

decay rates

- GS rates (per time)
- . **decay rates**
- . . electron decay rate

Decca navigation

DEF A long range, ambiguous, two dimensional navigation system using continuous wave transmission to provide hyperbolic lines of position through the radio frequency phase comparison techniques from four transmitters.

- GS navigation
- . radio navigation
- . . hyperbolic navigation
- . . . **Decca navigation**
- RT distance measuring equipment
- loran
- loran C
- loran D
- navigation aids
- Shoran
- solar compasses
- surface navigation

deceleration

DEF The act or process of moving, or cause to move, with decreasing speed.

- GS rates (per time)
- . acceleration (physics)
- . . **deceleration**
- . . . spin reduction
- RT angular acceleration
- braking
- damping
- impact
- impact acceleration
- landing loads
- physiological acceleration
- ∞ reduction
- retarding
- retrofiring
- retrothrust
- stopping
- tapering
- thrust reversal

decelerators

USE **brakes (for arresting motion)**

deception

- RT air defense
- chaff
- electronic countermeasures
- electronic warfare
- optical countermeasures
- simulation

deciduous trees

- GS plants (botany)
- . trees (plants)

- . . **deciduous trees**
 RT conifers
 Earth resources
 foliage
 forests
 leaves
 timber identification
- decimal to binary converters**
 GS data converters
 . **decimal to binary converters**
 RT binary data
 binary to decimal converters
 computer components
 data processing
- decimals**
 RT digits
 number theory
 ∞ numbers
- decimeter waves**
 GS electromagnetic radiation
 . radio waves
 . . short wave radiation
 . . . microwaves
 **decimeter waves**
 RT millimeter waves
 planetary radiation
 solar radio emission
 ultrahigh frequencies
- decision aids*
 (added October 1997)
 USE **decision support systems**
- decision elements*
 USE **logical elements**
- decision making**
 RT cognition
 command and control
 contract management
 contract negotiation
 decision support systems
 decisions
 economy
 judgments
 management
 management methods
 management planning
 problem solving
 Starsite program
 systems engineering
 tradeoffs
- decision support systems**
 (added October 1997)
 UF *decision aids*
 GS information systems
 . **decision support systems**
 support systems
 . **decision support systems**
 RT artificial intelligence
 computer techniques
 decision making
 expert systems
 knowledge based systems
 pilot support systems
 problem solving
 situational awareness
- decision theory**
 GS **decision theory**
 . statistical decision theory
 RT dynamic programming
 expectation
 game theory
 information theory
 martingales
 mathematical models
 operations research
 probability theory
 recommendations
 risk
 scheduling
- statistical analysis
 stochastic processes
 strategy
 ∞ synthesis
 systems engineering
 ∞ theories
- decisions**
 RT ∞ commands
 contract management
 decision making
 judgments
 logic circuits
 management
 procurement policy
 project planning
 selection
- decks (floors)*
 USE **floors**
- declination**
 DEF Angular distance north or south of the celestial equator; the arc of an hour circle between the celestial equator and a point on the celestial sphere, measured northward or southward from the celestial equator through 90 degrees, and labeled N or S to indicate the direction of measurement.
 RT mapping
 navigation
- decoders**
 DEF Devices for translating electrical signals into predetermined functions. In computer operations, networks or devices in which one of two or more possible outputs results from a prescribed combination of inputs.
 GS **decoders**
 . Viterbi decoders
 RT BCH codes
 coders
 data converters
 decoding
 demodulators
 Reed-Solomon codes
 ∞ translators
- decoding**
 GS coding
 . **decoding**
 RT BCH codes
 concatenated codes
 cryptography
 data compression
 decoders
 demodulation
 dictionaries
 ∞ interpretation
 translating
 Viterbi decoders
- decommissioning**
 DEF Disposal or deactivation of equipment or sites whose usefulness has diminished to a point where it is no longer required for its original purpose.
 RT radioactive wastes
 underground storage
- decommutators**
 DEF Equipment for separation, demodulation, or demultiplexing commutated signals.
 GS commutators
 . **decommutators**
 RT data links
 demodulators
 differential pulse code modulation
 electric motors
 ∞ generators
 pulse code modulation
 telemetry
- decomposition**
 GS **decomposition**
 . ammonolysis
 . cracking (chemical engineering)
 . . hydrocracking
 . . pyrolysis
 . glycolysis
 . hydrogenolysis
 . . hydrocracking
 . nitrolysis
 . photodecomposition
 . photodissociation
 . photolysis
 . propellant decomposition
 . radiolysis
 . thermal decomposition
 . . pyrolysis
 RT ablation
 biodegradability
 biodegradation
 charring
 damage
 degradation
 deterioration
 disintegration
 dissociation
 electrolysis
 laterites
 overvoltage
 storage stability
 thermal dissociation
- decompression*
 USE **pressure reduction**
- decompression sickness**
 DEF A disorder experienced by deep sea divers and aviators caused by reduced atmospheric pressure and evolved gas bubbles in the body, marked by pain in the extremities, pain in the chest (chokes), occasionally leading to severe central nervous system symptoms and neurocirculatory collapse. Used for bends (physiology).
 UF *bends (physiology)*
 GS sicknesses
 . **decompression sickness**
 RT aeroembolism
 altitude sickness
 barotrauma
 diving (underwater)
- deconditioning**
 GS behavior
 . **deconditioning**
 RT learning
 reflexes
- decongestants**
 GS drugs
 . **decongestants**
 RT antihistaminics
- decontamination**
 GS **decontamination**
 . spacecraft sterilization
 RT air purification
 antiseptics
 carbon dioxide concentration
 carbon dioxide removal
 cleaning
 contaminants
 contamination
 dewaxing
 disposal
 dissipation
 elimination
 environmental cleanup
 ethylene oxide
 exhausting
 extensions
 ∞ food
 planetary protection
 pollution
 purging
 purification
 purity
 ∞ reduction
 ∞ separation

decoupling

spacecraft contamination
sterilization
sterilization effects
washing

decoupling

GS **decoupling**
. spin decoupling
RT coupling
disconnect devices
gravitinos
releasing

decoys

GS **decoys**
. ballistic missile decoys
. Blue Goose missile
. quail missile
. reentry decoys
RT countermeasures
dummies

decrementing

USE **reduction**

deduction

RT derivation
inference

deep drawing

RT bulging
cold drawing
cold working
explosive forming
magnetic forming
metal working
stretching

deep scattering layers

RT acoustic scattering
echo sounding
∞ layers
oceanography
organisms
scattering
sound waves
underwater acoustics

deep space

GS environments
. aerospace environments
. . . **deep space**
. . . . interplanetary space
. . . . interstellar space
. extraterrestrial environments
. . . **deep space**
. . . . interplanetary space
. . . . interstellar space
RT cislunar space
frictionless environments
long duration space flight
∞ space

Deep Space 1 Mission

(added October 1998)

DEF First of several technology demonstration missions supporting the NASA New Millennium Program. Advanced technologies include an ion propulsion system, solar concentrator arrays, autonomous navigation and control systems, an integrated camera and imaging spectrometer, and several telecommunications and microelectronics devices. The mission plan includes a flyby of Asteroid 1992 KD.

UF *DS1 (space mission)*
GS space missions
. **Deep Space 1 Mission**
RT asteroid missions
autonomous navigation
flyby missions
interplanetary spacecraft
ion propulsion
NASA space programs

solar electric propulsion

Deep Space Instrumentation Facility

UF *DSIF (instrumentation facility)*
GS stations
. ground stations
. . . **Deep Space Instrumentation Facility**
. tracking stations
. . . **Deep Space Instrumentation Facility**
RT data acquisition
data transmission
radio control

Deep Space Network

DEF A communications network managed by the Jet Propulsion Laboratory for command and control of all planetary flights.

UF *DSN (space network)*
GS networks
. communication networks
. . . **Deep Space Network**
. tracking networks
. . . **Deep Space Network**
RT spacecraft tracking

deep water

GS water
. **deep water**
RT ocean bottom
oceanography
oceans
seas

deep well injection (wastes)

DEF Storage of liquid wastes, particularly chlorohydrocarbons, by injection into subsurface geologic strata for long term isolation from the environment.

GS injection
. fluid injection
. . . liquid injection
. . . . **deep well injection (wastes)**
RT waste disposal

deepwater terminals

RT artificial harbors
cargo ships
marine technology
marine transportation
oceanography
offshore docking
offshore energy sources
offshore platforms
∞ ports
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

deer

GS animals
. vertebrates
. . . mammals
. . . . **deer**
. caribou
RT grazing
livestock

defects

UF *flaws*
imperfections
GS **defects**
. auditory defects
. crystal defects
. . . crystal dislocations
. . . . edge dislocations
. . . . screw dislocations
. . . point defects
. . . . vacancies (crystal defects)
. Frenkel defects
. antisite defects
. hyperopia

. inclusions
. speech defects
. surface defects
RT castings
cavities
cracks
cumulative damage
damage
inhomogeneity
irregularities
leakage
pinholes
porosity
scoring
vignetting
voids
x ray analysis

Defender project

GS programs
. projects
. . . **Defender project**

∞ defense

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air defense
antimissile defense
civil defense
Defense Communications Satellite System
defense communications system (DCS)
defense industry
defense program
DMSP satellites
missile defense
physiological defenses

Defense Communications Satellite System

GS telecommunication
. **Defense Communications Satellite System**
. . . Fleet Satellite Communication System
RT communication satellites
∞ defense
radio relay systems
space communication
∞ systems

defense communications system (DCS)

GS networks
. **defense communications system (DCS)**
telecommunication
. **defense communications system (DCS)**
RT communication networks
∞ defense
military technology
∞ systems

defense industry

GS industries
. **defense industry**
. . . weapons industry
RT antimissile defense
∞ defense
military technology
missile defense

Defense Meteorological Satellite Program

USE **DMSP satellites**

defense program

GS programs
. **defense program**
RT air defense
antimissile defense
armed forces (United States)
civil defense
∞ defense
DMSP satellites
military technology
missile defense

space transportation system
weapons delivery

definition

RT accuracy
delineation
descriptions
dictionaries
∞ measurement
nomenclatures
precision
resolution

deflagration

DEF A sudden or rapid burning, as opposed to a detonation or explosion.

GS combustion
. **deflagration**
RT backfire
fires
flashback

deflating

USE **inflatable structures**
pressure reduction

deflection

RT bending
bending diagrams
camber
deformation
diffraction
dispersing
displacement
distortion
elastic deformation
flexing
Maxwell-Mohr method
reflection
refraction
scattering
structural strain
temperature inversions
torsion
variations
wave dispersion
yokes

deflectors

DEF Plates, baffles, or the like that divert something in its movement or flow.

GS **deflectors**
. blast deflectors
. flame deflectors
RT attenuators
baffles
∞ diffusers
diverters
flow deflection
gust alleviators
reflectors
safety devices
shielding
spoilers

defluorination

GS chemical reactions
. **defluorination**
RT fluorination
halogenation

defocusing

GS focusing
. **defocusing**
RT ∞ optics

defoliant

RT defoliation
foliage
forests
herbicides
leaves
plants (botany)

trees (plants)

defoliation

RT brush (botany)
defoliant
deforestation
forests
grasses
leaves
plants (botany)
trees (plants)

deforestation

RT biological diversity
biomass burning
clearings (openings)
conservation
defoliation
environment effects
forests

deformable mirrors

(added May 1998)
GS mirrors
. **deformable mirrors**
RT adaptive optics
light modulation
phase modulation
segmented mirrors

deformation

DEF A change in the shape or size of a solid body.

GS **deformation**
. axial strain
. elastic deformation
. . elastic bending
. . elastic buckling
. nuclear deformation
. plastic deformation
. static deformation
. tensile deformation
. wave front deformation

RT bending
buckling
camber
collapse
corrugating
creep properties
damage
deflection
deformers
displacement
distortion
elongation
failure
flexing
fractures (materials)
indentation
kinking
mechanical properties
Portevin-le Chatelier effect
set
skewness
stiffness
strain distribution
structural failure
structural strain
temperature inversions
topology
torsion
twisting
volumetric strain
warpage
wrinkling

deformers

GS measuring instruments
. **deformers**
RT deformation
dimensional measurement
extensometers
mechanical measurement
strain gages
stress measurement

tensometers

defrosting

RT deicing
heating
ice prevention
melting
refrigerating
refrigerators

degassing

DEF The deliberate removal of gas from a material, usually by application of heat under high vacuum. Used for bakeout.

UF *bakeout*
GS **degassing**
. deoxygenation
RT absorbers (equipment)
aeration
baking
castings
deoxidizing
desorption
gas evolution
occlusion
offgassing
outgassing
purging
scavenging
∞ separation

degenerate matter

DEF A state of matter found in white dwarf stars and other ultrahigh-density objects in which the electrons follow Fermi-Dirac statistics, i. e. , the matter reaches a density high enough so that the pressure increases more and more rapidly to the point where it becomes independent of the temperature and is a function of the density only, thereby departing from the classical laws of physics.

GS matter (physics)
. **degenerate matter**
RT antimatter
astrophysics
black holes (astronomy)
cosmic gases
critical pressure
density (mass/volume)
extraterrestrial matter
Fermi-Dirac statistics
high pressure
massive stars
naked singularities
neutron stars
nuclear fusion
∞ physics
pulsars
rotating matter
stellar cores
stellar evolution
stellar mass
supermassive stars
white dwarf stars

degeneration

RT atrophy
deterioration
negative feedback

degenerative feedback

USE **negative feedback**

degradation

DEF Gradual deterioration in performance.

GS **degradation**
. biodegradation
. thermal degradation
. wave degradation
RT chemical attack
corrosion
cumulative damage
curing
damage
decay
decomposition

degrees of freedom

depolymerization
deterioration
discoloration
durability
embrittlement
erosion
hot corrosion
oxidation
pitting
preserving
rusting
scale (corrosion)
sterilization effects
thermal dissociation
weathering

degrees of freedom

DEF A mode of motion, either angular or linear, with respect to a coordinate system, independent of any other mode. A body in motion has six possible degrees of freedom, three linear and three angular.

RT equipartition theorem
experiment design
factor analysis
null hypothesis
phase rule
quality control
significance
three dimensional motion
torquers
∞ variance

DEHP

USE **diethyl hydrogen phosphite (DEHP)**

dehumidification

DEF The reduction, by any process, of the quantity of water vapor within a given space.

GS drying
. **dehumidification**
RT condensing
cooling systems
dehydration
diffusion
humidity
refrigerating
∞ separation
silica gel

dehydrated food

RT consumables (spacecrew supplies)
dehydration
drying apparatus
∞ food
food processing
freeze drying
preserving
space flight feeding

dehydration

GS drying
. **dehydration**
RT columns (process engineering)
dehumidification
dehydrated food
dewatering
evaporation
freeze drying
hydration
plasmolysis
∞ separation
silica gel
thermogravimetry
water loss

dehydrogenation

GS chemical reactions
. **dehydrogenation**
RT columns (process engineering)
hydroforming
hydrogenation
hydrogenolysis
oxidation

reduction (chemistry)

deicers

UF *deicing systems*
RT aircraft icing
airfoils
antiicing additives
deicing
∞ heaters
heating equipment
ice prevention

deicing

RT aircraft icing
airfoils
antiicing additives
defrosting
deicers
∞ heaters
heating equipment
ice prevention
melting

deicing systems

USE **deicers**

Deimos

DEF A satellite of Mars orbiting at a mean distance of 23,500 kilometers.

GS celestial bodies
. natural satellites
. . Mars satellites
. . . **Deimos**
RT Charon
Mars (planet)
Nozomi Mars Orbiter
Phobos

deionization

DEF The removal of ions from a solution by ion exchange.

GS chemical reactions
. **deionization**
RT atomic recombination
deminerizing
exchanging
ion recombination
radiative recombination
∞ separation
softening

dekatrons

USE **counters**

delaminating

RT anodic stripping
debonding (materials)
interlaminar stress
peeling
∞ separation

Delaware

GS nations
. United States
. . **Delaware**
RT Delaware River Basin (US)
Delmarva Peninsula (DE-MD-VA)

Delaware Bay (US)

GS bays (topographic features)
. **Delaware Bay (US)**
RT Atlantic Ocean
gulfs
inlets (topography)
New Jersey
Pennsylvania

Delaware River Basin (US)

GS landforms
. structural basins
. . river basins
. . . **Delaware River Basin (US)**
RT Delaware
New Jersey
New York
Pennsylvania

rivers
streams
valleys

delay

RT dwell
∞ holding
lateness
stopping
time lag
∞ time response
transmission rate (communications)

delay circuits

GS circuits
. **delay circuits**
. . phantastrons
RT acoustic delay lines
circulators (phase shift circuits)
comparator circuits
phase shift circuits

delay lines

GS **delay lines**
. acoustic delay lines
. delay lines (computer storage)
RT ∞ lines
time lag

delay lines (computer storage)

DEF In electronic computers, devices for producing a time delay of a signal.

GS computer components
. computer storage devices
. . **delay lines (computer storage)**
delay lines
. **delay lines (computer storage)**
RT shift registers

deletion

GS elimination
. **deletion**
RT disposal
removal

Delfin aircraft

USE **L-29 jet trainer**

Delft camera

GS optical equipment
. cameras
. . **Delft camera**
photographic equipment
. cameras
. . **Delft camera**

delineation

RT boundaries
definition
∞ profiles

delivery

GS **delivery**
. payload delivery (STS)
. weapons delivery
RT air drop operations
airdrops
cargo
circulation
hauling
materials handling
output
∞ receiving
transportation
trucks

Delmarva Peninsula (DE-MD-VA)

GS landforms
. peninsulas
. . **Delmarva Peninsula (DE-MD-VA)**
RT Delaware
Maryland
Virginia

Delphi method (forecasting)

GS management methods

- . **Delphi method (forecasting)**
- predictions
- . forecasting
- . . . technological forecasting
- **Delphi method (forecasting)**
- RT estimating
- ∞ methodology
- operations research
- pattern method (forecasting)
- planning
- probe method (forecasting)
- profile method (forecasting)
- technology assessment

Delrin (trademark)

- GS plastics
- . **Delrin (trademark)**
- RT resins

Delta 3 launch vehicle

(added October 1998)

- GS launch vehicles
- . Delta launch vehicle
- . . **Delta 3 launch vehicle**

Delta 4 launch vehicle

(added October 1998)

- GS launch vehicles
- . Delta launch vehicle
- . . **Delta 4 launch vehicle**

delta antennas

- GS antennas
- . **delta antennas**
- RT antenna design
- resonators
- transmission lines

Delta Clipper

(added September 1994)

- GS launch vehicles
- . reusable launch vehicles
- . . single stage to orbit vehicles
- . . . **Delta Clipper**
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . single stage to orbit vehicles
- **Delta Clipper**
- RT aerospace planes
- liquid propellant rocket engines
- space transportation

Delta Dagger aircraft

- USE **F-102 aircraft**

Delta Dart aircraft

- USE **F-106 aircraft**

delta function

- GS analysis (mathematics)
- . real variables
- . . **delta function**
- functions (mathematics)
- . **delta function**

Delta launch vehicle

- GS launch vehicles
- . **Delta launch vehicle**
- . . Delta 3 launch vehicle
- . . Delta 4 launch vehicle
- RT Anik 1
- Anik 2
- Anik satellites
- Beacon Explorer A
- ESSA 1 satellite
- ESSA 2 satellite
- ESSA 3 satellite
- ESSA 4 satellite
- ESSA 5 satellite
- ESSA 6 satellite
- ESSA 7 satellite
- ESSA 8 satellite
- ESSA 9 satellite
- Explorer 10 satellite
- Explorer 12 satellite

- Explorer 14 satellite
- Explorer 15 satellite
- Explorer 17 satellite
- Explorer 18 satellite
- Explorer 21 satellite
- Explorer 26 satellite
- Explorer 28 satellite
- Explorer 29 satellite
- Explorer 32 satellite
- Explorer 33 satellite
- Explorer 38 satellite
- Explorer 43 satellite
- Explorer 49 satellite
- Explorer 55 satellite
- International Magnetospheric Explorer
- OSO-1
- OSO-2
- OSO-4
- OSO-C
- outer planets explorers
- Pioneer 6 space probe
- Pioneer 7 space probe
- RCA Satcom satellites
- Space Shuttle upper stage D
- SYNCOM 1 satellite
- SYNCOM 2 satellite
- SYNCOM 3 satellite
- TIROS 2 satellite
- TIROS 3 satellite
- TIROS 4 satellite
- TIROS 5 satellite
- TIROS 6 satellite
- TIROS 7 satellite
- TIROS 8 satellite
- TIROS 9 satellite
- TIROS 10 satellite

delta modulation

- GS coding
- . signal encoding
- . . pulse modulation
- . . . pulse code modulation
- **delta modulation**
- modulation
- . pulse modulation
- . . pulse code modulation
- . . . **delta modulation**
- RT pulse communication

delta wings

- DEF Triangularly shaped wings of aircraft.
- USE for triangular wings.
- UF *triangular wings*
- GS airfoils
- . wings
- . . low aspect ratio wings
- . . . **delta wings**
- . . swept wings
- . . . sweptback wings
- **delta wings**
- planforms
- . wing planforms
- . . sweptback wings
- . . . **delta wings**
- RT arrow wings
- AVRO 707 aircraft
- caret wings
- FD 2 aircraft
- GA-5 aircraft
- variable sweep wings
- VATOL aircraft
- waveriders
- wing rock

deltas

- GS landforms
- . **deltas**
- . . Mississippi Delta (LA)
- . . Rhone Delta (France)
- RT alluvium
- fans (landforms)
- rivers
- sands

- soils

demagnetization

- DEF The reduction of residual magnetism to an acceptable level.
- RT magnetic fields
- ∞ reduction

demand (economics)

- GS economics
- . **demand (economics)**
- RT consumption
- supplying

demand assignment multiple access

- DEF A technique of assigning communication resources on an "as needed basis" such as in satellite communications. Used for DAMA.
- UF *DAMA*
- GS telecommunication
- . multiple access
- . . **demand assignment multiple access**
- transmission
- . signal transmission
- . . data transmission
- . . . multiple access
- **demand assignment multiple access**
- RT channel capacity
- communication networks
- communication satellites
- satellite networks

demineralizing

- GS **demineralizing**
- . bone demineralization
- RT crystallization
- deionization
- desalinization
- distillation
- ion exchanging
- osmosis
- purification
- reverse osmosis
- ∞ separation
- softening
- water treatment

Democratic Peoples Republic of Korea

- USE **North Korea**

Democratic Republic of Congo

- SN (REPLACED THE TERM "ZAIRE" IN 1997; ALL OLDER RECORDS HAVE BEEN UPDATED WITH THE NEW FORM OF THE TERM)
- UF *Belgian Congo*
- Congo (Kinshasa)*
- Zaire*
- GS nations
- . **Democratic Republic of Congo**
- RT Africa

demodulation

- RT amplitude modulation
- decoding
- demodulators
- ∞ detectors
- frequency modulation
- heterodyning
- intermodulation
- modulation
- phase modulation
- pulse modulation
- remodulation
- telecommunication

demodulators

- DEF Electronic devices which operate on an input of a modulated carrier to recover the modulating wave as an output.
- GS **demodulators**
- . frequency compression
- demodulators
- . modems
- . phase demodulators

demography

RT . phase lock demodulators
amplitude modulation
decoders
decommutators
demodulation
frequency modulation
matched filters
modulation
modulators
phase modulation
pulse modulation

demography

DEF Statistical study of human populations, especially with reference to size, density, distribution, and vital data.

RT census
communities
∞ density
∞ distribution
human beings
inhabitants
megalopolises
nations
sociology
∞ statistics

demonstration

USE **proving**

demultiplexing

DEF Separation of two or more signals that were previously combined by a compatible multiplexer and transmitted over a single channel.

GS transmission
. **demultiplexing**
RT code division multiplexing
frequency division multiplexing
multiplexing
time division multiplexing
wavelength division multiplexing

denaturation (biopolymers)

USE **biopolymer denaturation**

dendrimers

(added October 2000)

DEF A class of polymeric macromolecules characterized by a regular highly-branched molecular architecture resembling a spherical starburst, and a synthesis process that permits nearly complete control over critical molecular design parameters, such as size, shape, surface/interior chemistry, flexibility, and topology. Because of these characteristics, dendrimers are seen as important elements in the manufacture of nanoscale materials and devices.

UF *dendritic polymers*
hyperbranched polymers

GS molecules
. macromolecules
. . **dendrimers**
RT conducting polymers
dendritic crystals
nanostructure (characteristics)
organometallic polymers
∞ polymers
synthetic metals

dendritic crystals

GS crystals
. **dendritic crystals**
RT dendrimers
isotropy
needles
whiskers (crystals)

dendritic drainage

USE **drainage patterns**

dendritic polymers

(added October 2000)

USE **dendrimers**

dendrochronology

DEF The use of annual growth rings in plant

tissue to determine the age of the plant or tree.

Used for tree ring dating.

UF *tree ring dating*
RT climatology
geochronology
periodic variations
timberline
trees (plants)

denitrogenation

GS chemical reactions
. **denitrogenation**
RT nitration

Denmark

GS nations
. **Denmark**
RT Danish space program
Europe
Greenland
Scandinavia

dense plasmas

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **dense plasmas**
. plasma focus
. strongly coupled plasmas
. corpuscular radiation
. energetic particles
. plasmas (physics)
. **dense plasmas**
. plasma focus
. strongly coupled plasmas
RT astrophysics
beta factor
electron scattering
high temperature plasmas
nuclear fusion
particle collisions
plasma compression
spheromaks
stellar structure

densification

GS pressure
. **densification**
RT agglomeration
chemical vapor infiltration
compacting
compressing
consolidation
Ludox (trademark)
pressurizing

densimeters

DEF Instruments for measuring the density or specific gravity of liquids, gases, or solids.

GS measuring instruments
. **densimeters**
. . ultrasonic densimeters
RT density (mass/volume)
density measurement
∞ instruments
∞ measurement

densitometers

DEF Instruments for the measurement of optical density (photographic transmission, photographic reflection, visual transmission, etc.) of a material, generally of a photographic image.

GS measuring instruments
. **densitometers**
. . microdensitometers
RT gamma ray absorptiometry
gravimeters
optical equipment
optical measurement
optical measuring instruments
photometers
photon absorptiometry

transmissometers

∞ density

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT atmospheric density
atom concentration
biomass
demography
density (mass/volume)
density (number/volume)
flux density
optical density
porosity
Rankine-Hugoniot relation

density (mass/volume)

DEF The mass per unit volume of a material at a specified temperature.

UF *specific gravity*
GS **density (mass/volume)**
. atmospheric density
. gas density
. space density

RT absorptance
absorptivity
bulk modulus
buoyancy
compressibility
degenerate matter
densimeters
∞ density
density measurement
hydrometers
internal friction
isopycnic processes
Lewis numbers
opacity
permeability
∞ physical properties
porosity
pycnometers
stopping power
transmissivity
transmittance
transparence
ultrasonic densimeters
viscosity
void ratio
weight measurement

density (number/volume)

GS **density (number/volume)**
. meteoroid concentration
. packing density
. particle density (concentration)
. . electron density (concentration)
. . . carrier density (solid state)
. . . electron density profiles
. . . ionospheric electron density
. . . magnetospheric electron density
. . . electron distribution
. . . electron density profiles
. . . ion density (concentration)
. . . ionospheric ion density
. . . magnetospheric ion density
. . . magnetospheric proton density
. . . proton density (concentration)
. . . . magnetospheric proton density
. . . plasma density
. . . space density
RT atmospheric density
∞ density

density (rate/area)

USE **flux density**

density distribution

RT baroclinic waves
Fokker-Planck equation
Maxwell-Boltzmann density function
shock discontinuity
Taylor instability

density measurement

GS **density measurement**

- . gamma ray absorptiometry
 - . photon absorptiometry
 - . x ray density measurement
 - RT chemical analysis
 - densimeters
 - density (mass/volume)
 - hydrometers
 - ∞ measurement
 - mechanical measurement
 - ultrasonic densimeters
 - wind tunnel tests
- density wave model**
- GS models
 - . astronomical models
 - . . **density wave model**
 - RT galactic structure
 - mass distribution
 - spiral galaxies
 - wave equations
- dental calculi**
- GS deposits
 - . calculi
 - . . **dental calculi**
 - RT lithiasis
 - teeth
 - tooth diseases
- dentistry**
- GS medical science
 - . **dentistry**
 - RT medical equipment
 - oral hygiene
 - teeth
 - tooth diseases
- deoxidizing**
- GS chemical reactions
 - . reduction (chemistry)
 - . . **deoxidizing**
 - RT degassing
 - ∞ deoxygenation
 - deoxygenation
 - scavenging
- ∞ **deoxygenation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT deoxidizing
 - deoxygenation
 - sterilization effects
- deoxygenation**
- GS degassing
 - . **deoxygenation**
 - RT deoxidizing
 - ∞ deoxygenation
 - ∞ reduction
 - ∞ separation
- deoxyribonucleic acid**
- DEF The molecule that encodes genetic information - a double-stranded moleculeid together by weak bonds between base pairs of nucleotides. Used for DNA.
 - UF *DNA*
 - recombinant DNA*
 - GS acids
 - . nucleic acids
 - . . **deoxyribonucleic acid**
 - biopolymers
 - . nucleic acids
 - . . **deoxyribonucleic acid**
 - organic compounds
 - . nucleic acids
 - . . **deoxyribonucleic acid**
 - RT apoptosis
 - cloning (biology)
 - gene expression
 - gene therapy
 - genes
 - genome
 - mutagenesis
 - plasmids
 - thymidine
- thymine
 - transcription (genetics)
- dependence**
- UF *dependency*
 - GS **dependence**
 - . spatial dependencies
 - . temperature dependence
 - . time dependence
 - RT group dynamics
 - sociology
- dependency*
- USE **dependence**
- dependent variables**
- DEF Variables considered as a function of other variables, the latter being called independent.
 - GS analysis (mathematics)
 - . **dependent variables**
 - RT complex variables
 - independent variables
 - observability (systems)
 - parameterization
 - real variables
 - ∞ variable
- depersonalization**
- RT artificial intelligence
 - automata theory
 - automatic control
 - ∞ automation
 - cybernetics
 - detachment
 - disorders
 - man machine systems
 - mechanization
 - personality
 - personnel
- depletion**
- GS **depletion**
 - . ozone depletion
 - RT consumption
 - depreciation
 - dissipation
 - elimination
 - energy policy
 - exhaustion
 - exploitation
 - life (durability)
 - losses
 - ∞ reduction
 - removal
 - resources
 - utilization
- deployment**
- RT game theory
 - logistics
 - military operations
 - military technology
 - ∞ operations
 - personnel
 - strategy
 - tactics
- depolarization**
- SN (EXCLUDES CONSIDERATION OF OPTICAL DEPOLARIZATION AND PARTICLE SPIN MISALIGNMENT)
 - DEF A decrease in the polarization of an electrode at a specified current density. Used for depolarizers.
 - UF *depolarizers*
 - RT electrolytic polarization
 - electrophysiology
 - polarization (charge separation)
 - ∞ reduction
- spike potentials
- depolarizers*
- USE **depolarization**
- depolymerization**
- GS chemical reactions
 - . **depolymerization**
 - RT degradation
 - deterioration
 - polymerization
- deposition**
- UF *accretion*
 - GS **deposition**
 - . anodizing
 - . electrodeposition
 - . . electroplating
 - . electroless deposition
 - . laser deposition
 - . . pulsed laser deposition
 - . vapor deposition
 - . . metalorganic chemical vapor deposition
 - . . vacuum deposition
 - RT accumulations
 - coagulation
 - coating
 - coatings
 - deposits
 - electroforming
 - electron bombardment
 - forming techniques
 - fouling
 - magnetron sputtering
 - metal coatings
 - plating
 - precipitation (chemistry)
 - sediments
 - ∞ separation
 - settling
 - sputtering
 - thermophoresis
- deposits**
- SN (EXCLUDES BANK MINERAL AND GEOLOGICAL DEPOSITS)
 - GS **deposits**
 - . calculi
 - . . dental calculi
 - . cryodeposits
 - RT coatings
 - corrosion
 - crude oil
 - deposition
 - plating
 - sediments
 - sludge
- depreciation**
- RT depletion
 - deterioration
 - investments
 - life (durability)
 - wear
- depressants**
- GS **depressants**
 - . central nervous system depressants
 - RT anesthesiaology
- ∞ **depression**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT detachment
 - disorders
 - emotions
 - ∞ hollow
 - introversion
 - lethargy
 - low pressure
 - neurotic depression
 - psychotic depression
 - recession
 - schizophrenia
 - tectonics

deprivation

topography

depressions (topography)
USE **structural basins**

depressurization
USE **pressure reduction**

deprivation
GS **deprivation**
. sensory deprivation
. sleep deprivation
. water deprivation
RT confining
isolation
stress (biology)
stress (physiology)

depth
GS dimensions
. **depth**
RT distance
height
thickness

depth measurement
RT bathymeters
core sampling
distance measuring equipment
echo sounding
∞ measurement
mechanical measurement
sounding

depth perception
USE **space perception**

derivation
RT deduction
∞ induction
∞ origins
parameterization
∞ sources

derivation calculus
USE **differential calculus**

dermatitis
GS diseases
. infectious diseases
. . **dermatitis**
. . . contact dermatitis
RT bacterial diseases
dermatology
fungal diseases
itching
radiation hazards
radiation sickness
skin (anatomy)

dermatology
GS medical science
. **dermatology**
RT contact dermatitis
dermatitis
skin (anatomy)

desalinization
RT demineralizing
distillation
osmosis
purification
reverse osmosis
salinity
vaporizing
water treatment

desaturation
RT drying
∞ saturation

descaling
RT chemical cleaning
cleaning
metal finishing

pickling (metallurgy)
scale (corrosion)
∞ separation
shot peening

descent
GS **descent**
. parachute descent
RT approach
ascent
flight paths
gliding
reentry
uncontrolled reentry (spacecraft)

descent propulsion systems
GS propulsion
. **descent propulsion systems**
propulsion system configurations
. **descent propulsion systems**
RT spacecraft propulsion
∞ systems

descent trajectories
GS trajectories
. **descent trajectories**
. . reentry trajectories
RT ascent trajectories
atmospheric entry
ballistic trajectories
coasting flight
falling
flight mechanics
manned reentry
midcourse trajectories
missile trajectories
parabolic flight
reentry
reentry guidance
spacecraft trajectories
terminal guidance

descriptions
RT characterization
definition
nomenclatures
representations

descriptive geometry
GS geometry
. Euclidean geometry
. . **descriptive geometry**
RT analytic geometry
engineering drawings
layouts
∞ projection
projective geometry
toruses

desensitizing
RT corrosion prevention
protective coatings
rusting

desert adaptation
GS adaptation
. **desert adaptation**
RT survival

desertification
DEF The formation of a desert or the gradual expansion of a desertline into previously usable land, due to man-made or natural causes.
RT arid lands
barren land
Death Valley (CA)
desertline
deserts
drought
Earth environment
Gobi desert
land
land use
man environment interactions
Mojave Desert (CA)

oases
remote sensing
Sahara Desert (Africa)
steppes
wadis

desertline
RT arid lands
climatology
desertification
land
topography

deserts
GS land
. **deserts**
. . Gobi desert
. . Libyan desert
. . Mojave Desert (CA)
. . Sahara Desert (Africa)
RT arid lands
barren land
climatology
Coachella Valley (CA)
Death Valley (CA)
desertification
dunes
Earth resources
Imperial Valley (CA)
Kalahari Basin (Africa)
oases
Palo Verde Valley (CA)
playas
remote regions
Salton Sea (CA)
topography
wilderness

desiccants
DEF Chemicals used to absorb moisture.
RT absorbents
adsorbents

desiccation
USE **drying**

desiccators
GS separators
. drying apparatus
. . **desiccators**

∞ **design**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *tailoring*
RT aerodynamic configurations
aircraft design
amplifier design
antenna design
computer aided design
computer design
computer systems design
construction
control systems design
design analysis
design optimization
design to cost
dimensions
drafting machines
engine design
engineering drawings
equipment specifications
estimating
experiment design
factorial design
functional design specifications
helicopter design
IPAD
layouts
lens design
logic design
missile design
nozzle design
optimization
planning
plant design

pressure vessel design
 product development
 reactor design
 reliability
 research
 research and development
 rocket engine design
 satellite design
 shape optimization
 spacecraft design
 structural design
 structural design criteria
 ∞ synthesis
 systems engineering

design analysis

RT ∞ analyzing
 control systems design
 ∞ design
 design optimization
 logic design
 maintainability
 multidisciplinary design optimization
 optimization
 reliability
 reliability analysis
 reverse engineering
 safety factors
 sensitivity analysis
 shape optimization
 Taguchi methods
 value engineering

design of experiments

USE **experiment design**

design optimization

(added February 2001)
 GS optimization
 . **design optimization**
 . . shape optimization
 RT aircraft design
 computer aided design
 ∞ design
 design analysis
 evolvable hardware
 genetic algorithms
 sensitivity analysis
 structural analysis
 structural design
 structural design criteria
 systems engineering

design to cost

DEF A process whereby cost factors are determined and calculated for the life cycle of a product as an integral part of its design.

RT concurrent engineering
 cost analysis
 costs
 ∞ design
 life cycle costs
 production costs

desorption

DEF The process of removing sorbed gas.
 RT ∞ absorption
 adsorption
 degassing
 evolution (liberation)
 mischmetal
 outgassing
 permeating
 ∞ separation
 sublimation

despinning

USE **spin reduction**

destabilization

RT spin reduction
 tumbling motion

Destiny Laboratory Module

(added February 2001)

DEF Component of the International Space

Station providing equipment and support systems for research and technology development. Also provides support and control for the US segment of the Space Station.

UF *US Laboratory Module (ISS)*
 GS laboratories
 . space laboratories
 . . manned orbital laboratories
 . . . **Destiny Laboratory Module**
 manned spacecraft
 . manned orbital laboratories
 . . **Destiny Laboratory Module**
 modules
 . space station modules
 . . **Destiny Laboratory Module**
 RT International Space Station
 spaceborne experiments

Destroyer aircraft

USE **B-66 aircraft**

destruction

RT aborted missions
 accidents
 breaking
 cracking (fracturing)
 damage
 destructive tests
 failure
 fatigue (materials)
 flight hazards
 flight safety
 lethality
 spacecraft breakup
 stresses

destructive tests

GS **destructive tests**
 . burst tests
 RT bend tests
 compression tests
 corrosion tests
 destruction
 drop tests
 fatigue tests
 fiber pushout
 impact tests
 load tests
 ∞ materials tests
 nondestructive tests
 tensile tests
 ∞ tests
 vibration tests
 wear tests

desulfurizing

GS chemical reactions
 . **desulfurizing**
 RT flue gases
 refining
 roasting

desynchronization (biology)

DEF The loss of synchronization between two or more rhythms so that they show independent periods.

GS biological effects
 . **desynchronization (biology)**
 disorientation
 . **desynchronization (biology)**
 psychological effects
 . **desynchronization (biology)**
 RT jet lag
 physiological responses
 rhythm (biology)
 zeitgebers

desynchronized sleep

USE **rapid eye movement state**

detachment

DEF A particular state of isolation in which man is separated or detached from his accustomed behavioral environment by inordinate physical and psychological distances. This condition may compromise his performance.

RT anxiety
 boredom
 depersonalization
 ∞ depression
 disorders
 disorientation
 emotional factors
 human behavior
 ∞ inhibition
 introversion
 lethargy
 psychology
 psychoses

detection

UF *sensing*
 GS **detection**
 . aircraft detection
 . change detection
 . edge detection
 . explosives detection
 . fault detection
 . forest fire detection
 . haze detection
 . high altitude nuclear detection
 . missile detection
 . radar detection
 . remote sensing
 . signal detection
 . . correlation detection
 . asteroid detection
 . planet detection
 . target recognition
 . ultrasonic flaw detection
 RT acquisition
 data acquisition
 ∞ detectors
 early warning systems
 examination
 exploration
 gas detectors
 identifying
 inspection
 marking
 ∞ measurement
 missile signatures
 observation
 position (location)
 radar signatures
 signature analysis
 signatures
 sound localization
 sound ranging
 space observations (from Earth)
 surveillance
 target acquisition
 targets
 tracking (position)
 warning
 warning systems

∞ detectors

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Sensors or instruments employing a sensor.
 RT aircraft detection
 analyzers
 anticoincidence detectors
 autodynes
 character recognition
 correlation detection
 demodulation
 detection
 display devices
 FLIR detectors
 forest fire detection
 gas detectors
 hazards
 helmet mounted displays
 indicating instruments
 infrared detectors
 instrument receivers
 laser target designators
 life detectors
 measuring instruments

detergents

- mine detectors
- monitors
- multispectral linear arrays
- phase detectors
- radiation detectors
- radiation measuring instruments
- readers
- receivers
- remote sensors
- safety
- signal detection
- signal detectors
- squid (detectors)
- telecommunication
- transducers
- ultrasonic flaw detection
- ultraviolet detectors
- Venturi tubes
- warning
- warning systems

detergents

- RT ethylenediaminetetraacetic acids
- lubricating oils
- soaps
- surfactants

deterioration

- RT atrophy
- biodegradability
- biodegradation
- corrosion
- damage
- decay
- decomposition
- degeneration
- degradation
- depolymerization
- depreciation
- disintegration
- durability
- erosion
- erosive burning
- failure
- hot corrosion
- rusting
- soil erosion
- system failures
- wear
- wear resistance
- weathering

determinants

- GS algebra
- . **determinants**
- RT linear equations
- matrices (mathematics)

determination

- USE **measurement**

detonable gas mixtures

- GS gases
- . gas mixtures
- . . **detonable gas mixtures**
- mixtures
- . solutions
- . . gas mixtures
- . . . **detonable gas mixtures**
- RT chemical explosions
- firing (igniting)
- flammability
- flammable gases
- gas explosions
- gas-gas interactions
- oxyacetylene
- reacting flow

detonation

- DEF A rapid chemical reaction which propagates at a supersonic velocity. Used for Chapman-Jouget flame.
- UF *Chapman-Jouget flame*
- RT chemical explosions
- combustion
- ∞ discharge

- explosions
- firing (igniting)
- flame propagation
- initiation
- percussion
- primers (explosives)
- propellant explosions
- pulse detonation engines
- pulsejet engines
- rocket firing
- shock waves

detonation waves

- DEF Shock waves that accompany detonation and have a shock front followed by a region of decreasing pressure in which the reaction occurs.

- GS elastic waves
- . shock waves
- . . **detonation waves**
- RT combustible flow
- flame propagation
- gas explosions
- ram accelerators
- seismic waves
- sound waves
- ∞ waves

detonators

- GS explosive devices
- . initiators (explosives)
- . . **detonators**
- igniters
- . initiators (explosives)
- . . **detonators**
- RT caps (explosives)
- exploding wires
- explosives
- fulminates
- fuses (ordnance)
- primers (explosives)
- sodium azides

deuterides

- GS hydrogen compounds
- . deuterium compounds
- . . **deuterides**
- RT hydrides

deuterium

- DEF A heavy isotope of hydrogen having one proton and one neutron in the nucleus. Used for hydrogen 2.

- UF *hydrogen 2*
- GS chemical elements
- . hydrogen
- . . hydrogen isotopes
- . . . **deuterium**
- . nuclides
- . . isotopes
- . . . hydrogen isotopes
- **deuterium**
- gases
- . hydrogen
- . . hydrogen isotopes
- . . . **deuterium**
- RT heavy water
- hydrogen fuels
- hydrogen plasma
- nuclear fuels

deuterium compounds

- GS hydrogen compounds
- . **deuterium compounds**
- . . deuterides
- . . deuterium fluorides
- . . heavy water
- RT ∞ chemical compounds

deuterium fluoride lasers

- USE **DF lasers**

deuterium fluorides

- DEF Fluorides of deuterium, a heavy isotope of hydrogen. Used for DF.
- UF *DF*

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **deuterium fluorides**
- . halides
- . . fluorides
- . . . **deuterium fluorides**
- hydrogen compounds
- . deuterium compounds
- . . **deuterium fluorides**
- RT DF lasers

deuterium oxides

- USE **heavy water**

deuterium plasma

- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- hydrogen plasma
- **deuterium plasma**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- hydrogen plasma
- **deuterium plasma**
- RT deuterons
- hydrogen

deuteron irradiation

- GS irradiation
- . ion irradiation
- . . **deuteron irradiation**
- RT alpha particles
- charged particles
- nuclear fusion
- particles
- plasmas (physics)
- proton irradiation

deuterons

- DEF The nuclei of deuterium atoms.
- GS ions
- . **deuterons**
- particles
- . charged particles
- . . energetic particles
- . . . nuclei (nuclear physics)
- **deuterons**
- . corpuscular radiation
- . . energetic particles
- . . . nuclei (nuclear physics)
- **deuterons**
- . elementary particles
- . . **deuterons**
- RT alpha particles
- cosmic rays
- deuterium plasma
- photomagnetic effects
- plasmas (physics)
- Pomeranchuk theorem
- protons

developers (photography)

- USE **photographic developers**

developing nations

- RT Caribbean region
- economic development
- economic factors
- nations
- United Nations

∞ development

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT energy policy
- evolution (development)
- exploitation
- growth
- land use
- management planning
- missile design
- personnel development
- photographic developers

product development
rural land use
Starsite program
training analysis
urban development

deviation

DEF The variation from a specified dimension or design requirement, usually defining upper and lower limits.

RT aberration
abnormalities
asymmetry
∞ dispersion
distortion
divergence
∞ drift
eccentricity
heterogeneity
irregularities
nonsynchronization
variations

∞ devices

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air bag restraint devices
alpha plasma devices
antiskid devices
bulk acoustic wave devices
chips (memory devices)
cyclotron resonance devices
error correcting devices
explosive devices
lift devices
lifting bodies
mechanical devices
nanostructures (devices)
NDM semiconductor devices
nuclear devices
photoelectrochemical devices
plasma display devices
positioning devices (machinery)
safety devices
self erecting devices
self repairing devices
solid state devices
surface acoustic wave devices
training devices
TRAPATT devices

devitrification

USE **crystallization**

dew

RT acid rain
frost
hydrometeors
precipitation (meteorology)
water vapor

dew point

DEF Temperature at which water vapor begins to condense.

RT atmospheric moisture
condensing
hygrometers
saturation (chemistry)

Dewar systems

USE **cryogenic equipment**

dewatering

DEF Removal of water by draining, pumping, or other means.

RT dehydration
drying
pollution control
waste disposal
water reclamation

dewaxing

RT decontamination

refining

dewetting

USE **drying**

dextrans

GS biopolymers
. polysaccharides
. . **dextrans**
organic compounds
. carbohydrates
. . polysaccharides
. . . **dextrans**
. . sugars
. . . **dextrans**

DF

USE **deuterium fluorides**

DF lasers

DEF Gas lasers in which the active material is deuterium fluoride. Used for deuterium fluoride lasers.

UF *deuterium fluoride lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **DF lasers**
RT deuterium fluorides

DH 106 aircraft

USE **Comet 4 aircraft**

DH 112 aircraft

UF *de Havilland DH 112 aircraft*
de Havilland Venom aircraft
Venom aircraft
GS attack aircraft
. fighter aircraft
. . **DH 112 aircraft**
de Havilland aircraft
. **DH 112 aircraft**
Hawker Siddeley aircraft
. **DH 112 aircraft**
jet aircraft
. **DH 112 aircraft**
monoplanes
. **DH 112 aircraft**
RT ∞ aircraft

DH 115 aircraft

UF *de Havilland DH 115 aircraft*
Vampire aircraft
GS attack aircraft
. **DH 115 aircraft**
de Havilland aircraft
. **DH 115 aircraft**
Hawker Siddeley aircraft
. **DH 115 aircraft**
jet aircraft
. **DH 115 aircraft**
monoplanes
. **DH 115 aircraft**
RT ∞ aircraft

DH 121 aircraft

UF *de Havilland DH 121 aircraft*
Trident aircraft
GS commercial aircraft
. **DH 121 aircraft**
de Havilland aircraft
. **DH 121 aircraft**
Hawker Siddeley aircraft
. **DH 121 aircraft**
jet aircraft
. turbofan aircraft
. . **DH 121 aircraft**
monoplanes
. **DH 121 aircraft**
passenger aircraft
. **DH 121 aircraft**
transport aircraft
. **DH 121 aircraft**

RT ∞ aircraft

DH 125 aircraft

UF *de Havilland DH 125 aircraft*
HS-125 aircraft
Jet Dragon aircraft
GS *de Havilland aircraft*
. **DH 125 aircraft**
general aviation aircraft
. **DH 125 aircraft**
Hawker Siddeley aircraft
. **DH 125 aircraft**
jet aircraft
. **DH 125 aircraft**
light aircraft
. **DH 125 aircraft**
monoplanes
. **DH 125 aircraft**
passenger aircraft
. **DH 125 aircraft**
transport aircraft
. **DH 125 aircraft**
RT ∞ aircraft

DHC 2 aircraft

DEF *De Havilland Canada STOL utility aircraft. Used for DHC Beaver aircraft.*
UF *DHC Beaver aircraft*
GS *de Havilland aircraft*
. **DHC 2 aircraft**
general aviation aircraft
. **DHC 2 aircraft**
jet aircraft
. **DHC 2 aircraft**
monoplanes
. **DHC 2 aircraft**
transport aircraft
. **DHC 2 aircraft**
RT ∞ aircraft

DHC 4 aircraft

UF *AC-1 aircraft*
Caribou aircraft
CV-2 aircraft
de Havilland DHC 4 aircraft
GS *de Havilland aircraft*
. **DHC 4 aircraft**
monoplanes
. **DHC 4 aircraft**
transport aircraft
. **DHC 4 aircraft**
utility aircraft
. **DHC 4 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 4 aircraft**
RT ∞ aircraft

DHC 5 aircraft

UF *Buffalo aircraft*
CV-7 aircraft
de Havilland DHC 5 aircraft
GS *de Havilland aircraft*
. **DHC 5 aircraft**
jet aircraft
. turboprop aircraft
. . **DHC 5 aircraft**
monoplanes
. **DHC 5 aircraft**
transport aircraft
. **DHC 5 aircraft**
utility aircraft
. **DHC 5 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 5 aircraft**
RT ∞ aircraft

DHC Beaver aircraft

USE **DHC 2 aircraft**

diabetes mellitus

GS diseases
. **diabetes mellitus**
RT carbohydrate metabolism
enzyme activity

Diademe satellites

insulin
pancreas
urinalysis

Diademe satellites

GS artificial satellites
. **Diademe satellites**

diagnosis

RT ∞ analyzing
anesthesiology
behavior
biomarkers
clinical medicine
diseases
examination
injuries
medical equipment
medical science
pathology
prognosis
psychology
psychometrics
telemedicine
veterinary medicine

diagrams

GS **diagrams**
. bending diagrams
. block diagrams
. circuit diagrams
. color-color diagram
. color-magnitude diagram
. creep diagrams
. Feynman diagrams
. Hertzprung-Russell diagram
. Mollier diagram
. Nyquist diagram
. phase diagrams
. S-N diagrams
. stress-strain diagrams
. tephigrams
. Venn diagrams
. Voronoi diagrams
RT charts
drawings
geometry
graphic arts
visual aids

DIAL (lidar)

USE **differential absorption lidar**

DIAL satellite

GS artificial satellites
. scientific satellites
. . **DIAL satellite**
RT aeronomy
astronomical photometry
European space programs
satellite-borne instruments

diallyl compounds

RT allyl compounds
∞ chemical compounds

dials

UF *pointers*
RT display devices
indicating instruments

dialysis

GS **dialysis**
. electro dialysis
RT diaphragms (mechanics)
diffusion
extraction
permeating
∞ separation

diamagnetism

UF *Meissner effect*
GS magnetic properties
. **diamagnetism**
RT Curie temperature
cyclotron resonance

electrical properties
ferromagnetism
paramagnetism

Diamant launch vehicle

GS launch vehicles
. **Diamant launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Diamant launch vehicle**
RT liquid propellant rocket engines
solid propellant rocket engines

diameters

DEF Lengths of the longest straight lines through the centers of the largest cross sections.
GS dimensions
. **diameters**
RT circumferences
geometry
radii
thickness

diamines

GS amines
. **diamines**
. . ethylenediamine
. . guanidines
. . . guanethidine
. . . triaminoguanidinium azide

diamond films

(added November 1991)

GS thin films
. **diamond films**
RT amorphous silicon
coatings
diamonds
metal films
semiconducting films
space processing
vacuum deposition
vapor deposition

diamond pyramid hardness

(added October 2001)

USE **Vickers hardness**

diamond wings

USE **low aspect ratio wings**
swept wings

diamonds

DEF (A) An isometric mineral, representing a naturally occurring crystalline form of carbon dimorphous with graphite and being the hardest natural substance known. (B) Artificially produced crystallized carbon similar to the native form. (C) A crystalline mineral that resembles diamonds in brilliance.

GS **diamonds**
. meteoritic diamonds
RT abrasives
carbon
diamond films
single crystals

diaphragm (anatomy)

DEF Musculomembranous partition separating the abdominal and thoracic cavities.

GS anatomy
. musculoskeletal system
. . muscles
. . . **diaphragm (anatomy)**
. respiratory system
. . **diaphragm (anatomy)**
RT ∞ diaphragms
thorax

∞ diaphragms

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT diaphragm (anatomy)
diaphragms (mechanics)

electrolytic cells
membranes

diaphragms (mechanics)

SN (NON-ANATOMICAL)
UF *bladders (mechanics)*
GS **diaphragms (mechanics)**
. expulsion bladders
RT catholytes
dialysis
∞ diaphragms
electrolytic cells
membrane structures
membranes
optical filters
osmosis
thin plates
thin walls
webs (sheets)
webs (supports)

diastole

GS heart function
. **diastole**
RT blood circulation
blood flow
blood pressure
cardiovascular system
diastolic pressure
heart
heart rate
systole

diastolic pressure

GS pressure
. blood pressure
. . **diastolic pressure**
RT cardiac ventricles
diastole

diatomic gases

GS gases
. molecular gases
. . polyatomic gases
. . . **diatomic gases**

diatomic molecules

GS molecules
. polyatomic molecules
. . **diatomic molecules**
RT low molecular weights
methylidyne
Morse potential
triatomic molecules

diatoms (unicellular plants)

USE **algae**

DIB

(added February 1997)

USE **diffuse interstellar bands**

dibasic compounds

RT ∞ chemical compounds
monomers

diborane

GS boron compounds
. **diborane**
hydrogen compounds
. hydrides
. . **diborane**

dibromides

GS halogen compounds
. bromine compounds
. . bromides
. . . **dibromides**
. halides
. . bromides
. . . **dibromides**

dibutyl compounds

GS alkyl compounds
. **dibutyl compounds**
RT ∞ chemical compounds

- tetrabutyls
- dicarboxylic acids**
 GS acids
 . carboxylic acids
 . . **dicarboxylic acids**
 organic compounds
 . carboxylic acids
 . . **dicarboxylic acids**
 RT terephthalate
- dichlorides**
 GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **dichlorides**
 . halides
 . . chlorides
 . . . **dichlorides**
- dichlorodiphenyltrichloroethane*
 USE **DDT**
- dichotomies**
 GS classifications
 . hierarchies
 . . **dichotomies**
- dichroism**
 GS electromagnetic properties
 . optical properties
 . . **dichroism**
 RT color
 isochromatics
 light (visible radiation)
 photoelasticity
- dichromates*
 USE **chromates**
- Dicke radiometers**
 UF *Dicke type radiometers*
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 **Dicke radiometers**
 RT bolometers
 thermopiles
- Dicke type radiometers*
 USE **Dicke radiometers**
- dictionaries**
 UF *glossaries*
 GS documents
 . **dictionaries**
 RT abbreviations
 coding
 decoding
 definition
 nomenclatures
 space glossaries
 terminology
- didymium**
 DEF A mixture of rare earth elements that is freed from cerium. It was once regarded as an element but contains chiefly neodymium and praseodymium and is usually associated with lanthanum. It is used in coloring glass for optical filters.
 RT lanthanum
 neodymium
 optical filters
 praseodymium
- dieldrin**
 GS poisons
 . pesticides
 . . insecticides
- . . . **dieldrin**
- dielectric constant*
 USE **permittivity**
- dielectric loss**
(added April 2000)
 DEF The electric energy that is converted into heat in a dielectric material subjected to a changing electric field.
 GS electrical properties
 . dielectric properties
 . . **dielectric loss**
 losses
 . **dielectric loss**
 RT dielectrics
 energy dissipation
 permittivity
- dielectric materials*
 USE **dielectrics**
- dielectric permeability**
 GS permeability
 . **dielectric permeability**
 RT magnetic permeability
- dielectric polarization**
 GS polarization (charge separation)
 . **dielectric polarization**
 RT dielectrics
 electrets
 electric fields
- dielectric properties**
 GS electrical properties
 . **dielectric properties**
 . . dielectric loss
 . . permittivity
 RT antiferroelectricity
 capacitance
 ferroelectricity
 ∞ properties
 Sommerfeld waves
- dielectric waveguides**
(added February 1998)
 GS waveguides
 . **dielectric waveguides**
 RT dielectrics
 microwave transmission
 optical waveguides
 waveguide antennas
 waveguide filters
- dielectrics**
 DEF Substances that contain few or no free charges and which can support electrostatic stresses. Used for dielectric materials.
 UF *dielectric materials*
 GS **dielectrics**
 . lossless materials
 . radome materials
 RT barium titanates
 capacitance switches
 capacitive fuel gages
 capacitors
 ceramics
 dielectric loss
 dielectric polarization
 dielectric waveguides
 electrets
 electric conductors
 electrical insulation
 electromagnetic surface waves
 field mode theory
 ∞ insulated structures
 insulators
 magnetolectric media
 screen effect
 spark gaps
- sulfur hexafluoride
- dielectronic satellite lines*
 USE **resonance lines**
- Diels-Alder reactions**
 GS chemical reactions
 . cycloaddition
 . . **Diels-Alder reactions**
 RT organic chemistry
- diencephalon**
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **diencephalon**
 hypothalamus
 pineal gland
 thalamus
 RT embryology
- dienes**
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . **dienes**
 butadiene
 heptadiene
 hexadiene
 polybutadiene
- dies**
 RT casting
 coining
 cutters
 extruding
 injection molding
 machine tools
 molds
 pultrusion
 punches
 rheocasting
 stamping
- diesel engines**
 GS engines
 . internal combustion engines
 . . **diesel engines**
 . piston engines
 . . **diesel engines**
 RT locomotives
- diesel fuels**
 GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . **diesel fuels**
 . . liquid fuels
 . . . **diesel fuels**
 products
 . petroleum products
 . . **diesel fuels**
 RT automobile fuels
 gasoline
 internal combustion engines
 kerosene
- diethyl compounds**
(added July 1992)
 GS organic compounds
 . **diethyl compounds**
 . . diethyl ether
 . . diethyl hydrogen phosphite (DEHP)
 RT ethyl compounds
 triethyl compounds
- diethyl ether**
 GS ethers
 . **diethyl ether**
 organic compounds
 . diethyl compounds
 . . **diethyl ether**
- diethyl hydrogen phosphite (DEHP)**
 UF *DEHP*

diets

- GS organic compounds
 - . diethyl compounds
 - . . **diethyl hydrogen phosphite (DEHP)**
- phosphorus compounds
 - . **diethyl hydrogen phosphite (DEHP)**
- RT ethyl compounds

diets

- RT caloric requirements
- fasting
- ∞ food
- nutrition
- space flight feeding

difference equations

- GS analysis (mathematics)
 - . numerical analysis
 - . . **difference equations**
- RT approximation
- differences
- differential equations
- ∞ equations
 - finite difference theory
 - linear evolution equations
 - nonlinear evolution equations
 - numerical stability

differences

- RT difference equations
- divergence
- finite difference theory
- gradients
- variations

differential absorption lidar

- (added September 1992)
- UF *DIAL (lidar)*
- GS radar
 - . optical radar
 - . . **differential absorption lidar**
- RT absorption spectra
- atmospheric sounding
- backscattering
- radar measurement
- remote sensing

differential algebra

- USE **differential calculus matrices (mathematics)**

differential amplifiers

- GS amplifiers
 - . **differential amplifiers**
- RT analog computers
- error signals
- operational amplifiers
- transistor amplifiers

differential analyzers

- DEF Analog computers designed and used primarily for solving differential equations.
- RT algorithms
- analog computers
- computerized simulation
- differential equations
- digital computers
- digital integrators

differential calculus

- UF *derivation calculus*
- differential algebra*
- GS analysis (mathematics)
 - . calculus
 - . . **differential calculus**
- RT ∞ differentiation
- differentiators
- integral calculus
- limits (mathematics)
- minima
- numerical differentiation
- optimization

real variables

differential equations

- UF *differential operators*
- integrodifferential equations*
- GS analysis (mathematics)
 - . real variables
 - . . **differential equations**
 - . . . Blasius equation
 - . . . Chandrasekhar equation
 - . . . cosine series
 - . . . Duffing differential equation
 - . . . Falkner-Skan equation
 - . . . hyperbolic differential equations
 - . . . Lamé wave equations
 - . . . partial differential equations
 - biharmonic equations
 - Burger equation
 - Cauchy-Riemann equations
 - elliptic differential equations
 - Monge-Ampère equation
 - Euler-Cauchy equations
 - Fokker-Planck equation
 - Gauss equation
 - Helmholtz vorticity equation
 - Liouville equations
 - parabolic differential equations
 - Poisson equation
 - vlasov equations
 - Riccati equation
 - vorticity equations
 - Helmholtz vorticity equation
- RT Airy function
- alternating direction implicit methods
- asymptotic properties
- backward differencing
- Bessel functions
- Bethe-Salpeter equation
- bond graphs
- boundary layer equations
- boundary value problems
- calculus
- calculus of variations
- Cauchy problem
- Crank-Nicholson method
- difference equations
- differential analyzers
- Dirichlet problem
- distributed parameter systems
- ∞ equations
- Floquet theorem
- Fourier analysis
- Fourier-Bessel transformations
- functional integration
- Green's functions
- half planes
- Hankel functions
- Hill determinant
- ill-conditioned problems (mathematics)
- ill-posed problems (mathematics)
- integral equations
- integrals
- Lagrange multipliers
- Lamé functions
- Laplace transformation
- Liapunov functions
- linear equations
- linearity
- Lipschitz condition
- Mathieu function
- maximum principle
- Milne method
- Neumann problem
- nonlinear equations
- nonlinearity
- numerical analysis
- numerical differentiation
- numerical integration
- numerical stability
- operational calculus
- Pfaff equation
- potential theory
- predictor-corrector methods
- Riemann waves
- Riesz theorem
- Schauder fixpoint theorem

- Schmidt method
- spectral methods
- stability derivatives
- Sturm-Liouville theory
- vector analysis
- Whittaker functions

differential games

- (added October 1998)
- GS games
 - . **differential games**
- RT minimax technique
- optimal control
- pursuit-evasion games
- stochastic processes
- zero sum games

differential geometry

- UF *nonEuclidian geometry*
- GS geometry
 - . **differential geometry**
 - . . lie groups
 - . . . spinor groups
 - . . Riemann manifold
 - . . tensor analysis
- RT analytic geometry
- ∞ analyzing
 - curvature
 - curves (geometry)
 - invariant imbeddings
 - lofting
 - relativity

differential interferometry

- GS interferometry
 - . **differential interferometry**
- RT flow visualization
- holography
- Schlieren photography

differential operators

- USE **differential equations operators (mathematics)**

differential pressure

- GS pressure
 - . **differential pressure**
- RT pressure distribution
- pressure gradients
- pressure measurement

differential pulse code modulation

- DEF An efficient signal encoding method of reducing the transmission rate of digital signals. The basic principle of DPCM is to quantize code and transmit the difference between the actual sample and prediction value. Used for DPCM (modulation).
- UF *DPCM (modulation)*
- GS coding
 - . signal encoding
 - . . pulse modulation
 - . . . pulse code modulation
 - **differential pulse code modulation**
- modulation
- . pulse modulation
- . . pulse code modulation
- . . . **differential pulse code modulation**
- RT biternary code
- decommutators
- linear prediction
- P. A. C. M. telemetry
- PCM telemetry
- pulse communication
- pulse frequency modulation
- telemetry

unified S band

differential thermal analysis

USE **thermal analysis**

∞ **differentiation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)

RT anatomy
cytogenesis
differential calculus
differentiation (biology)
discrimination

differentiation (biology)

GS cytogenesis
. **differentiation (biology)**

RT anatomy
biological diversity

∞ biology

∞ differentiation

embryology

morphology

physiology

differentiators

DEF In computer operations, devices whose output is proportional to the derivative of an input signal. In electronics, a transducer whose output waveform is the time derivative of its input waveform.

RT circuits
differential calculus
integrators

diffraction

DEF The process by which the direction of radiation is changed so that it spreads into the geometric shadow region of an opaque or refractive object that lies in a radiation field. Used for interference monochromatization and Kirchhoff-Huygens principle.

UF *interference monochromatization*
Kirchhoff-Huygens principle

GS **diffraction**
. electron diffraction
. Fresnel diffraction
. neutron diffraction
. pulse diffraction
. wave diffraction
. x ray diffraction

RT atmospheric scattering
attenuation
Bragg angle
caustics (optics)
crystal optics
Debye-Scherrer method
deflection
diffractometers
echellette gratings
echelle gratings
electromagnetic radiation
geometrical theory of diffraction
Huygens principle
isochromatics
Laue method
Moire effects
mosaics
optical properties
ray tracing
refraction
transmission
wave dispersion
wave propagation

diffraction gratings

USE **gratings (spectra)**

diffraction limited cameras

GS optical equipment
. cameras
. . **diffraction limited cameras**
photographic equipment
. cameras
. . **diffraction limited cameras**

RT astronomical photography

spaceborne photography
spaceborne telescopes

diffraction optics

USE **diffractive optics**

diffraction paths

RT Bragg angle
electron trajectories
holographic optical elements
multipath transmission
optical paths
∞ paths
spherical waves

diffraction patterns

UF *fringe patterns*
GS distribution (property)
. radiation distribution
. . **diffraction patterns**
. . . Kossel pattern
. . . rainbows
RT diffractometers
Fresnel integrals
Fresnel region
fringe multiplication
geometrical theory of diffraction
holographic interferometry
interferometry
Moire fringes
Moire interferometry
null zones
∞ optics
∞ patterns
phase contrast
Pomeranchuk theorem
signal fading
speckle holography
speckle interferometry
speckle patterns
underwater optics
very long base interferometry

diffraction propagation

DEF Wave propagation around objects, or over the horizon, by diffraction.

GS transmission
. wave propagation
. . **diffraction propagation**
RT diffraction radiation
geometrical optics
∞ optics
∞ propagation
spherical waves
underwater optics

diffraction radiation

DEF Electromagnetic radiation excited by an electron flux passing near a diffractive, periodic structure, such as a wiggler magnet in a free electron laser.

GS electromagnetic radiation
. **diffraction radiation**
RT bremsstrahlung
cyclotron resonance devices
diffraction propagation
electron beams
electron diffraction
free electron lasers
gratings (spectra)
laser outputs
light emission
maser outputs
masers
microwave emission
microwave oscillators
microwave tubes
microwaves
nonuniform magnetic fields
particle motion
relativistic electron beams
stimulated emission devices
transferred electron devices
tunable lasers
wave diffraction
wave excitation

wiggler magnets

diffraction telescopes

USE **spectroscopic telescopes**

diffractive optics

(added July 1995)

DEF Optical elements that add up scattered light from a multiple of disturbances in amplitude or phase to generate a transformed wavefront.

UF *diffraction optics*

RT display devices

holography

∞ optics

photopolymers

diffractometers

GS measuring instruments
. optical measuring instruments
. . **diffractometers**
optical equipment
. optical measuring instruments
. . **diffractometers**
RT chemical analysis
diffraction
diffraction patterns
etalons
goniometers
interferometers
Mach-Zehnder interferometers
optical measurement
photogoniometers
spectrometers
wave front reconstruction

diffuse interstellar bands

(added February 1997)

UF *DIB*

GS spectra
. spectral bands

. . **diffuse interstellar bands**

RT interstellar chemistry
interstellar extinction
interstellar matter
molecular clouds
polycyclic aromatic hydrocarbons

diffuse radiation

DEF Radiant energy propagating in many different directions through a given small volume of space; to be contrasted with parallel radiation. Used for lunar scattering.

UF *lunar scattering*

RT heat transfer

light scattering

point sources

∞ radiation

spectral reflection

∞ **diffusers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Specially designed ducts, chambers, or sections, sometimes equipped with guide vanes, that decrease the velocity of a fluid, as air, and increases its pressure, as in jet engines, wind tunnels, etc. Used for shock diffusers.

UF *shock diffusers*

RT air conditioning
air conditioning equipment
attenuators
baffles
boundary layer separation
ceilings (architecture)
chokes
conical flow
deflectors
diffusion
diverters
engine inlets
exhaust diffusers
hypersonic inlets
∞ illumination
inlet flow
inlet nozzles
louvers

diffusion

- mixers
- mufflers
- ∞ nozzles
- porous walls
- pressure recovery
- separators
- sprayers
- supersonic diffusers
- vaneless diffusers
- ventilators

diffusion

DEF In an atmosphere, or in any gaseous system, the exchange of fluid parcels between regions, in apparently random motions of a scale too small to be treated by the equations of motion. In materials, the movement of atoms of one material into the crystal lattice of an adjoining material, e. g. , penetration of the atoms in a ceramic coating into the lattice of the protected metal. In ion engines, the migration of neutral atoms through a porous structure incident to ionization at the emitting surface. Used for diffusion effect and perfusion.

UF *diffusion effect*
perfusion

GS diffusion

- . ambipolar diffusion
- . atmospheric diffusion
- . gaseous diffusion
- . . gaseous self-diffusion
- . magnetic diffusion
- . molecular diffusion
- . particle diffusion
- . . electron diffusion
- . . ionic diffusion
- . plasma diffusion
- . self diffusion (solid state)
- . self propagation
- . species diffusion
- . surface diffusion
- . thermal diffusion
- . turbulent diffusion

RT ∞ absorption
adsorption
air pollution
atmospheric scattering
chemical engineering
circulation
convection-diffusion equation
dehumidification
dialysis
∞ diffusers
diffusion length
diffusivity
dilution
dispersing
∞ dispersion
dissipation
dissolving
distillation
drying
∞ effects
Einstein equations
∞ equilibrium
evaporation
extraction
Ficks equation
gas-metal interactions
kinetic theory
mixing
nonpoint sources
osmosis
penetration
percolation
permeability
permeating
∞ propagation
radial flow
reflection
scattering
self absorption
∞ separation
sound propagation
sound waves
spraying
spreading

- sublimation
- surface properties
- thermophoresis
- transport properties

diffusion bonding

USE **diffusion welding**

diffusion coefficient

DEF The absolute value of the ratio of the molecular flux per unit area to the concentration gradient of a gas diffusing through a gas or a porous medium where the molecular flux is evaluated across a surface perpendicular to the direction of the concentration gradient.

GS coefficients
. **diffusion coefficient**
. . Soret coefficient
transport properties
. **diffusion coefficient**
. . Soret coefficient
RT attenuation coefficients
convection-diffusion equation
∞ equilibrium
Ficks equation
gaseous diffusion
Lewis numbers
mass flow rate
molecular diffusion
particle diffusion
reaction-diffusion equations

diffusion effect

USE **diffusion**

diffusion electrodes

GS electrodes
. **diffusion electrodes**
RT electrolytic cells
semiconductor devices

diffusion flames

GS flames
. **diffusion flames**
RT boundary layer combustion
combustion
Damkohler number

diffusion length

GS dimensions
. length
. . **diffusion length**
distance
. **diffusion length**
RT carrier transport (solid state)
diffusion
electron diffusion
minority carriers
particle diffusion
semiconductor devices
solar cells

diffusion pumps

GS pumps
. **diffusion pumps**
RT vacuum apparatus
vacuum pumps

diffusion theory

RT Einstein equations
Fokker-Planck equation
Jacobi integral
kinetic theory
Kirkendall effect
Monte Carlo method
∞ theories
transport theory

diffusion waves

RT elastic waves
electron diffusion
electrostatic waves
ionic diffusion
kinetic theory
molecular diffusion
plasma diffusion

- plasma waves

diffusion welding

UF *diffusion bonding*
GS welding
. pressure welding
. . **diffusion welding**
RT bonding
burners
Kirkendall effect
metal bonding
metal-metal bonding

diffusion-convection equation

USE **convection-diffusion equation**

diffusivity

DEF A measure of the rate of diffusion of a substance, expressed as the diffusivity coefficient K.

RT diffusion
fluid mechanics
impedance
Kirkendall effect
mobility
NDM semiconductor devices
permeability
∞ physical properties
∞ resistance
solubility
thermodynamic properties

difluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . **difluorides**
. . . . calcium fluorides
. fluorspar
. halides
. . fluorides
. . . **difluorides**
. . . . calcium fluorides
. fluorspar

difluoro compounds

GS halogen compounds
. fluorine compounds
. fluoro compounds
. . . **difluoro compounds**
. . . . perfluoroalkane
. polytetrafluoroethylene
. teflon (trademark)
RT ∞ chemical compounds

difluorourea

GS amines
. **difluorourea**
nitrogen compounds
. amides
. . ureas
. . . **difluorourea**

digesting

RT eating
enzymology
∞ food
lysine
mastication
physiology
softening

digestive system

GS anatomy
. **digestive system**
. . esophagus
. . . gastrointestinal system
. . . . appendix (anatomy)
. . . . intestines
. rectum
. stomach
. mouth
. lips (anatomy)
. pancreas
. salivary glands
. teeth

. . tongue
 RT abdomen
 enzyme activity
 enzymology
 gall
 organs
 saliva
 ∞ systems

digital cameras
 (added July 1998)
 GS optical equipment
 . cameras
 . . **digital cameras**
 photographic equipment
 . cameras
 . . **digital cameras**
 RT CCD cameras
 digital systems
 digital techniques
 photogrammetry
 television cameras
 video equipment

digital circuits
 USE **digital electronics**

digital command systems
 RT numerical control
 remote control
 servocontrol
 ∞ systems

digital communication
 USE **pulse communication**

digital computers
 DEF Computers which operate with information, numerical or otherwise, represented in a digital form.
 GS data processing equipment
 . computers
 . . **digital computers**
 . . . CDC 160-A computer
 . . . CDC 1604 computer
 . . . CDC 3100 computer
 . . . CDC 3200 computer
 . . . CDC 3600 computer
 . . . CDC 3800 computer
 . . . CDC 6000 series computers
 CDC 6400 computer
 CDC 6600 computer
 CDC 6700 computer
 . . . CDC 7000 series computers
 CDC 7600 computer
 . . . CDC 8090 computer
 . . . CDC Cyber 170 series computers
 CDC Cyber 175 computer
 . . . CDC Cyber 74 computer
 . . . CDC Cyber 174 computer
 . . . CDC Cyber 203 computer
 . . . CDC Cyber 205 computer
 . . . CDC Star 100 computer
 . . . EAI 680 computer
 . . . EAI 8400 computer
 . . . EAI 8900 computer
 . . . EMR 6050 computer
 . . . Ferranti Mercury computer
 . . . GE computers
 GE 625 computer
 GE 635 computer
 . . . Hewlett-Packard computers
 . . . Honeywell computers
 DDP 516 computer
 Honeywell 600/6000 computer
 Honeywell ADEPT computer
 Honeywell DDP 116 computer
 . . . IBM 360 computer
 . . . IBM 370 computer
 . . . IBM 650 computer
 . . . IBM 704 computer
 . . . IBM 709 computer
 . . . IBM 1130 computer
 . . . IBM 1401 computer
 . . . IBM 1410 computer
 . . . IBM 1620 computer

. . . IBM 2250 computer
 . . . IBM 7030 computer
 . . . IBM 7040 computer
 . . . IBM 7044 computer
 . . . IBM 7070 computer
 . . . IBM 7074 computer
 . . . IBM 7090 computer
 . . . IBM 7094 computer
 . . . ICL computers
 . . . Iliac computers
 Iliac 3 computer
 Iliac 4 computer
 . . . microcomputers
 . . . personal computers
 IBM personal computers
 Macintosh personal computers
 . . . minicomputers
 . . . Nova computers
 . . . Modcomp II computer
 . . . Modcomp IV computer
 . . . parallel computers
 . . . massively parallel processors
 Connection Machine
 MIMD (computers)
 SIMD (computers)
 . . . PDP 15 computer
 . . . PDP computers
 PDP 7 computer
 PDP 8 computer
 PDP 9 computer
 PDP 10 computer
 PDP 11 computer
 PDP 11/20 computer
 PDP 11/40 computer
 PDP 11/45 computer
 PDP 11/50 computer
 PDP 11/70 computer
 PDP 12 computer
 . . . Philco 2000 computer
 . . . Raytheon computers
 . . . RCA spectra 70 computer
 . . . SDS 900 series computers
 SDS 930 computer
 SDS 9300 computer
 . . . SEL computers
 . . . sequential computers
 . . . SIGMA 5 computer
 . . . SIGMA computers
 SIGMA 9 computer
 . . . Solomon computers
 . . . Univac 1100 series computers
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . . Univac 80 computer
 . . . Univac 418 computer
 . . . Univac 490 computer
 . . . Univac 494 computer
 . . . Univac 1230 computer
 . . . Univac Larc computer
 . . . VAX computers
 VAX-11 series computers
 VAX-11/780 computer
 RT analog computers
 analog to digital converters
 associative processing (computers)
 CDC computers
 computer compatible tapes
 computer program integrity
 computer programs
 computer systems programs
 data processing
 DDP computers
 differential analyzers
 hybrid computers
 IBM computers
 logic circuits
 Turing machines
 Univac computers

digital data

GS **digital data**
 . digital elevation models
 RT analog data
 binary data

∞ data
 data converters
 data processing
 video compression
 video data

digital electronics

DEF The use of circuits in which there are usually only two states possible at any point. The two states can represent any of a variety of binary digits (bits) of information. Used for digital circuits.

UF *digital circuits*
 RT analog to digital converters
 binary digits
 circuits
 computer components
 digital systems
 digital techniques
 digital to analog converters
 ∞ electronics
 logical elements

digital elevation models

(added September 2002)

DEF Digital data files consisting of terrain elevations for ground positions at regularly spaced horizontal intervals.

GS digital data
 . **digital elevation models**
 models
 . **digital elevation models**
 RT elevation
 radar maps
 relief maps
 satellite altimetry
 terrain
 terrain analysis
 topography

digital filters

DEF Computational means of attenuating undesired frequencies in sets of time-dependent data.

GS electromagnetic wave filters
 . electric filters
 . . **digital filters**
 . . . FIR filters
 . . . IIR filters
 RT ∞ filters
 microwave filters

digital integrators

GS circuits
 . **digital integrators**
 integrators
 . **digital integrators**
 RT binary integration
 differential analyzers
 functional integration
 numerical integration

digital navigation

GS digital systems
 . **digital navigation**
 navigation
 . **digital navigation**
 RT air navigation
 dead reckoning
 inertial navigation
 polar navigation
 space navigation
 surface navigation

digital radar systems

GS digital systems
 . **digital radar systems**
 RT airborne radar
 antiradiation missiles
 data processing equipment
 radar detection
 radar equipment
 radar receivers
 radar scanning
 radar targets
 radar tracking

digital simulation

radar transmission
signal analysis
surveillance radar
tracking radar

digital simulation

GS models
. mathematical models
. . **digital simulation**
simulation
. computerized simulation
. . **digital simulation**
RT analog simulation
biological models (mathematics)
computer systems simulation
war games

digital spacecraft television

GS communication equipment
. spacecraft television
. . **digital spacecraft television**
telecommunication
. pulse communication
. . **digital spacecraft television**
. spacecraft television
. . **digital spacecraft television**
television systems
. digital television
. . **digital spacecraft television**
. spacecraft television
. . **digital spacecraft television**
RT wireless communication

digital systems

UF *binary systems (digital)*
ternary systems (digital)
GS **digital systems**
. digital navigation
. digital radar systems
RT analog to digital converters
binary codes
binary digits
biternary code
data systems
digital cameras
digital electronics
∞ systems
systems integration
telecommunication

digital techniques

RT BCH codes
bistable circuits
coding
computer programming
digital cameras
digital electronics
error correcting codes
error detection codes
∞ methodology
numerical control
shift registers
terminal area energy management
vector quantization

digital television

DEF Television in which picture redundancy is reduced or eliminated by transmitting only the data needed to define motion in the picture, as represented by changes in the areas of continuous white or black.
GS television systems
. **digital television**
. . digital spacecraft television
RT high definition television
pulse communication
television transmission
video compression

digital to analog converters

GS data converters
. **digital to analog converters**
RT analog to digital converters
∞ converters
digital electronics
peripheral equipment (computers)

plotters
signal encoding
x-y plotters

digital to voice translators

UF *DIVOT (voice translators)*
RT computers
∞ translators
vocoders
voice data processing

digital transducers

GS transducers
. **digital transducers**
RT interdigital transducers

digitalis

GS drugs
. **digitalis**

digitizers

USE **analog to digital converters**

digits

SN (EXCLUDES FINGERS AND TOES)
GS symbols
. alphanumeric characters
. . **digits**
. . . binary digits
RT ∞ codes
decimals
integers
number theory
∞ numbers

dihedral angle

GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **dihedral angle**
RT lateral stability

dihedral effect

USE **lateral stability**

dihydrazine

GS hydrazines
. **dihydrazine**

dihydrides

GS hydrogen compounds
. hydrides
. . **dihydrides**

dihydroxyphenylalanine

USE **dopa**

diisocyanates

GS esters
. isocyanates
. . **diisocyanates**
nitrogen compounds
. cyano compounds
. . isocyanates
. . . **diisocyanates**

dikes (geology)

USE **rock intrusions**

dilatation

USE **stretching**

dilatational waves

GS elastic waves
. **dilatational waves**
RT longitudinal waves
P waves
S waves
seismic waves
∞ shear
stretching

∞ waves

dilatometers

USE **extensometers**

dilatometry

RT extensometers
∞ measurement
thermal expansion

diluents

RT additives
∞ agents
combustion products
contaminants
dispersions
exhaust gases
solvents

dilution

GS **dilution**
. geometric dilution of precision
RT attenuation
concentration (composition)
diffusion
dispersing
disposal
dissipation
dissolving
low concentrations
mixing
purity
∞ reduction
waste disposal

dimenhydrinate

GS amines
. **dimenhydrinate**
drugs
. antihistaminics
. . **dimenhydrinate**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **dimenhydrinate**

dimensional analysis

RT ∞ applications of mathematics
aspect ratio
dimensionless numbers
dimensions
fibers (mathematics)
fineness ratio
fluid flow
parameterization
scaling laws
similarity numbers
thickness ratio
units of measurement

dimensional measurement

RT deformeters
distance measuring equipment
ellipsometry
∞ measurement
micrometers
size determination

dimensional stability

GS mechanical properties
. **dimensional stability**
. . structural stability
. . . shell stability
stability
. static stability
. . **dimensional stability**
. . . structural stability
. . . . shell stability
RT aspect ratio
creep properties
curl (materials)
dynamic stability
Roche limit
thermal stability

- tolerances (mechanics)
- dimensionless numbers**
- GS **dimensionless numbers**
- . Biot number
 - . Froude number
 - . Grashof number
 - . Hartmann number
 - . Laval number
 - . Lewis numbers
 - . Mach number
 - . mixing ratios
 - . Nusselt number
 - . Peclet number
 - . Prandtl number
 - . Rayleigh number
 - . Reynolds number
 - . . high Reynolds number
 - . . low Reynolds number
 - . Bond number
 - . Brinkman number
 - . Richardson number
 - . Schmidt number
 - . similarity numbers
 - . Stanton number
 - . Strouhal number
- RT dimensional analysis
fluid flow
heat transfer
- ∞ numbers
scaling laws
- dimensions**
- GS **dimensions**
- . depth
 - . diameters
 - . film thickness
 - . fractals
 - . height
 - . . scale height
 - . length
 - . . diffusion length
 - . radii
 - . . Larmor radius
 - . target thickness
 - . width
- RT amplitudes
- ∞ design
dimensional analysis
distance
drawings
engineering drawings
fineness ratio
geometry
magnitude
particle size distribution
relativistic effects
- ∞ span
thickness
topology
units of measurement
volume
- dimercaprol**
- GS sulfur compounds
- . thiols
 - . . **dimercaprol**
- dimerization**
- GS synthesis (chemistry)
- . polymerization
 - . . **dimerization**
- RT copolymerization
- dimers**
- GS oligomers
- . **dimers**
 - . prepolymers
 - . **dimers**
- RT monomers
trimers
- dimethyl compounds**
(added July 1992)
- GS organic compounds
- . **dimethyl compounds**
- . . dimethylhydrazines
- RT methyl compounds
trimethyl compounds
- dimethylhydrazines**
- GS amines
- . **dimethylhydrazines**
 - . hydrazines
 - . **dimethylhydrazines**
 - . organic compounds
 - . dimethyl compounds
 - . . **dimethylhydrazines**
- RT aeroxine
methylhydrazine
monomethylhydrazines
- diminution*
- USE **reduction**
- dimming**
- RT brightness
light emission
- ∞ reduction
- dimpling**
- RT bulging
metal working
stamping
- Dining Philosophers Problem**
- RT distributed processing
interprocessor communication
problem solving
synchronism
- dinitrates**
- GS nitrogen compounds
- . nitrates
 - . . **dinitrates**
- diodes**
- UF *p-i-n diodes*
- GS electronic equipment
- . **diodes**
 - . . crystal rectifiers
 - . . plasma diodes
 - . . semiconductor diodes
 - . . . avalanche diodes
 - cryosar
 - Barritt diodes
 - . . . germanium diodes
 - . . . Gunn diodes
 - transferred electron devices
 - . . . junction diodes
 - MIM diodes
 - step recovery diodes
 - . . . light emitting diodes
 - . . . parametric diodes
 - . . . photodiodes
 - . . . Schottky diodes
 - . . . tunnel diodes
 - . . . varactor diodes
 - . . thermionic diodes
 - . . . cesium diodes
- RT electron tubes
ion implantation
p-i-n junctions
rectifiers
semiconductor devices
solions
TRAPATT devices
triodes
varactor diode circuits
- Diode-Transistor-Logic integ circuits*
- USE **DTL integrated circuits**
- Dione**
- DEF One of the natural satellites of Saturn orbiting at a mean distance of 378,000 kilometers.
- GS celestial bodies
- . natural satellites
 - . . icy satellites
 - . . . **Dione**
 - . . Saturn satellites
- . . . **Dione**
- RT Saturn (planet)
- diophantine equation**
- GS number theory
- . **diophantine equation**
- RT ∞ equations
- diorite**
- GS rocks
- . igneous rocks
 - . . **diorite**
- RT minerals
soils
- dioxides**
- GS chalcogenides
- . oxides
 - . . **dioxides**
 - . . . carbon dioxide
 - . . . flint
 - . . . hydrogen peroxide
 - . . . silicon dioxide
 - quartz
 - coesite
 - stishovite
 - . . . sulfur dioxides
- RT Karl Fischer reagent
peroxides
sulfur oxides
thorium oxides
titanium oxides
- diphenyl compounds**
- GS organic compounds
- . hydrocarbons
 - . . **diphenyl compounds**
 - . . . diphenyl hydantoin
- RT ∞ chemical compounds
- diphenyl hydantoin**
- GS amines
- . **diphenyl hydantoin**
 - . drugs
 - . . antihistaminics
 - . . **diphenyl hydantoin**
 - . organic compounds
 - . hydrocarbons
 - . . diphenyl compounds
 - . . . **diphenyl hydantoin**
- diphosphates**
- GS phosphorus compounds
- . phosphates
 - . . **diphosphates**
 - . . . adenosine diphosphate
- diphtheria**
- GS diseases
- . infectious diseases
 - . . bacterial diseases
 - . . . **diphtheria**
- RT toxic diseases
- diplexers**
- GS antenna components
- . antenna couplers
 - . . **diplexers**
 - . circuits
 - . . **diplexers**
 - . communication equipment
 - . **diplexers**
 - . couplers
 - . antenna couplers
 - . . **diplexers**
- RT couples
radar antennas
radar equipment
television equipment

dipole antennas

transformers

dipolar ions
(added October 2001)
USE **zwitterions**

dipole antennas
SN (SINGLE DIPOLE ANTENNAS)
DEF A straight radiator, usually fed in the center, and producing a maximum of radiation in the plane normal to its axis. The length specified is the overall length. SN (single dipole antennas)
GS antennas
. directional antennas
. . . **dipole antennas**
RT antenna arrays
antenna design
backfire antennas
∞ dipoles
directors (antenna elements)
lens antennas
linear arrays
log periodic antennas
log spiral antennas
monopole antennas
omnidirectional antennas
parasitic elements (antennas)
radar antennas
turnstile antennas
Yagi antennas

dipole moments
GS moments
. **dipole moments**
. . . electric moments
. . . magnetic moments
RT domains
electrical properties
magnetic domains
magnetic properties
Van der Waals forces

∞ **dipoles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Systems composed of two, separated, equal electric or magnetic charges of opposite sign.
RT dipole antennas
electric charge
electric dipoles
magnetic dipoles
magnetic poles
monopoles
orbiting dipoles
polarity
∞ poles
quadrupoles
zwitterions

dipping
RT baths
coatings
quenching (cooling)
submerging
wetting

Dirac equation
GS wave equations
. **Dirac equation**
RT ∞ equations
field theory (physics)
Klein-Gordon equation
Lorentz transformations
quantum theory

direct broadcast satellites
DEF Domestic satellites used for direct TV transmission to home receivers. Used for DBS (satellites).
UF *DBS (satellites)*
GS artificial satellites
. communication satellites
. . . **direct broadcast satellites**
RT broadcasting

domestic satellite communications systems
satellite television
satellite transmission
space commercialization
space law
telecommunication
television transmission

direct current

UF *DC (current)*
GS electric current
. **direct current**
RT alternating current
current converters (AC to DC)
homopolar generators
inverted converters (DC to AC)
voltage converters (DC to DC)

direct current generators

USE **DC generators**

direct lift controls

RT ∞ control
lift devices

direct numerical simulation

(added October 1997)
UF *DNS (numerical analysis)*
GS analysis (mathematics)
. numerical analysis
. . . **direct numerical simulation**
simulation
. **direct numerical simulation**
RT computational fluid dynamics
low Reynolds number
Navier-Stokes equation
reacting flow
turbulent flow

direct power generators

UF *energy converters*
GS electric generators
. **direct power generators**
. . . DC generators
. . . homopolar generators
. . . electrostatic generators
. . . fuel cells
. . . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
. . . magnetohydrodynamic generators
. . . photoelectric generators
. . . photovoltaic cells
. . . solar cells
. . . vertical junction solar cells
. . . primary batteries
. . . alkaline batteries
. . . dry cells
. . . magnesium cells
. . . nickel zinc batteries
. . . metal air batteries
. . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . . radioisotope batteries
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . thermionic converters
. . . SNAP 13
. . . solar blankets
. . . thermoelectric generators
. . . SNAP 3
. . . SNAP 7

. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants
RT auxiliary power sources
∞ converters
electric batteries
∞ electric cells
electric energy storage
energy absorption films
energy conversion
energy conversion efficiency
∞ generators
heat generation
photoelectric cells
solar generators
solar total energy systems
spacecraft power supplies

∞ direction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT autonomy
azimuth
bearing (direction)
directivity
line of sight
management
reversing

direction finders (radio)

USE **radio direction finders**

direction finding

DEF A procedure or process for locating or localizing the origin of radar, acoustical, or optical emissions.
RT bearing (direction)
radio direction finders
signal processing

directional antennas

DEF Antennas that radiate or receive radio signals more efficiently in some directions than in others. Used for tracking antennas.
UF *tracking antennas*
GS antennas
. **directional antennas**
. . . dipole antennas
. . . helical antennas
. . . horn antennas
. . . lens antennas
. . . log periodic antennas
. . . loop antennas
. . . radar antennas
. . . radant
. . . reflector antennas
. . . parabolic antennas
. . . two reflector antennas
. . . rhombic antennas
. . . slot antennas
. . . steerable antennas
. . . inertialess steerable antennas
. . . Yagi antennas
RT antenna arrays
antenna gain
antenna radiation patterns
backlobes
boresight error
boresights
endfire arrays
microwave antennas
microwave coupling
missile antennas
monopulse antennas
omnidirectional antennas
parasitic elements (antennas)
radio antennas

Sommerfeld approximation

directional control

UF *vector control*
 GS attitude control
 . **directional control**
 . . thrust vector control
 RT aircraft control
 automatic control
 ∞ control
 helicopter control
 jet control
 lateral control
 longitudinal control
 manual control
 missile control
 ∞ reaction control
 rocket engine control
 satellite attitude control
 satellite control
 yaw

directional couplers

GS antenna components
 . antenna couplers
 . . **directional couplers**
 couplers
 . antenna couplers
 . . **directional couplers**
 RT coupling
 couplings
 impedance matching
 microstrip transmission lines
 microwave coupling
 transmission lines
 yokes

directional solidification (crystals)

DEF Controlled solidification (crystal growth) of molten metal in a casting so as to provide feed metal to the solidifying front of the casting.
 GS crystallization
 . **directional solidification (crystals)**
 growth
 . crystal growth
 . . **directional solidification (crystals)**
 solidification
 . **directional solidification (crystals)**
 RT containerless melts
 eutectic composites
 phase transformations

directional stability

DEF The property of an aircraft, rocket, etc., enabling it to restore itself from a yawing or sideslipping condition.
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability
 stability
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability
 RT aerodynamic stability
 aircraft stability
 controllability
 flow stability
 horizontal orientation
 hovering stability
 lateral oscillation
 lateral stability
 longitudinal stability
 rotary stability
 spacecraft stability
 stability augmentation
 vertical orientation

yaw

directivity

DEF The ability of an antenna to radiate or receive more energy in some directions.
 RT alignment
 anisotropy
 collimation
 crystallography
 ∞ direction
 field strength
 instrument orientation
 isotropy
 look angles (electronics)
 ∞ orientation

directories

DEF Alphabetical, geographical, or classified listings by field of persons, organizations, programs and/or objects such as instruments, devices, and products. Use of this term excludes directories in computers.
 RT handbooks
 manuals

directors (antenna elements)

GS antenna components
 . parasitic elements (antennas)
 . . **directors (antenna elements)**
 antennas
 . parasitic elements (antennas)
 . . **directors (antenna elements)**
 RT dipole antennas
 radio receivers
 reflectometers
 reflectors
 rods
 Yagi antennas

Dirichlet problem

GS boundary value problems
 . **Dirichlet problem**
 RT differential equations
 hyperbolic differential equations
 ∞ problems

*dirigibles*USE **airships****dirt**

GS soils
 . **dirt**
 RT contaminants
 dust
 impurities
 particles
 rocks

DIS

(added December 1996)

USE **distributed interactive simulation****disabilities**

UF *handicaps*
 RT auditory defects
 blindness
 frustration
 ∞ inhibition
 paralysis
 wheelchairs

disarmament

RT armed forces (foreign)
 armed forces (United States)
 international cooperation
 weapons

disasters

DEF Large-scale drought, glacier movement, floods, fires, storms, etc.
 RT accidents
 casualties
 emergencies
 first aid

sabotage

∞ discharge

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT detonation
 dispersing
 disposal
 drainage
 effluents
 ejection
 electric discharges
 electrodeless discharges
 elimination
 emission
 exhausting
 expellants
 explosions
 outlets
 releasing
 relieving
 ring discharge
 unloading
 venting

discharge coefficient

GS coefficients
 . flow coefficients
 . . **discharge coefficient**
 RT axial flow
 flow velocity
 influence coefficient
 mass flow factors
 nozzle flow
 nozzle geometry
 nozzle thrust coefficients
 wall flow

*discharge tubes*USE **gas discharge tubes****dischargers**

GS **dischargers**
 . static dischargers
 RT dissipation
 neutralizers

disciplining

RT liabilities
 morale
 penalties

discoloration

RT color
 damage
 degradation
 fading
 staining

disconnect devices

UF *disconnectors*
 RT circuit breakers
 connectors
 decoupling
 dumping
 ejection
 electric connectors
 electric fuses
 electric relays
 ∞ relay
 releasing

*disconnectors*USE **disconnect devices****discontinuity**

DEF A break in sequence or continuity of anything.
 GS **discontinuity**
 . shock discontinuity
 analysis (mathematics)
 RT catastrophe theory
 Gibbs phenomenon
 incoherence

Discos (satellite attitude control)

vortex streets

Discos (satellite attitude control)

DEF A satellite orbit "Disturbance COmpensation System" designed to maintain an object (proof object) in correct orbit by detecting forces and compensating for them by using thrusters.

RT attitude stability
Nova satellites
satellite perturbation
spacecraft stability
Transit satellites

Discoverer recovery capsules

UF *DRC (capsule)*
GS space capsules
. **Discoverer recovery capsules**
RT recovery parachutes
spacecraft recovery

Discoverer satellites

GS artificial satellites
. **Discoverer satellites**
RT Agena A rocket vehicle
Agena B rocket vehicle
Agena rocket vehicles
Thor Agena launch vehicle

discovering

USE **exploration**

Discovery (Orbiter)

UF *Space Shuttle Orbiter 103*
GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Discovery (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . . reusable spacecraft
. . . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Discovery (Orbiter)**
RT manned space flight
Space Shuttle mission 41-D
Space Shuttle mission 51-A
Space Shuttle mission 51-C
Space Shuttle mission 51-D
Space Shuttle mission 51-G
Space Shuttle mission 51-I
∞ spacecraft

discrete address beacon system

DEF Radar beacon system with discretely addressable transponders and a ground-air-ground data link for automated air traffic control (FAA).

GS landing aids
. airport beacons
. . **discrete address beacon system**
navigation aids
. beacons
. . . airport beacons
. . . **discrete address beacon system**
. . . radar beacons
. . . **discrete address beacon system**
radar equipment
. radar beacons
. . **discrete address beacon system**
RT air traffic control
data links
ground-air-ground communication
secondary radar
∞ systems

discrete cosine transform

(added March 1994)
UF *DCT (mathematics)*
GS transformations (mathematics)
. **discrete cosine transform**
RT data compression
discrete functions
image processing
signal processing

video compression

discrete functions

GS functions (mathematics)
. **discrete functions**
RT discrete cosine transform
discretization (mathematics)
distribution functions
histograms
normal density functions
Poisson density functions
probability density functions
probability distribution functions
statistical analysis

discretization (mathematics)

(added June 1997)
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **discretization (mathematics)**
RT discrete functions

discriminant analysis (statistics)

DEF A linear combination of a set of N variables that will classify (into two different classes) the events or items for which the measurements of the N variables are available, with the smallest proportion of misclassifications. Used for discriminant functions.

UF *discriminant functions*
GS functions (mathematics)
. **discriminant analysis (statistics)**
statistical analysis
. **discriminant analysis (statistics)**
RT ∞ classifying
multivariate statistical analysis
populations
temporal logic

discriminant functions

USE **discriminant analysis (statistics)**

discrimination

GS **discrimination**
. sensory discrimination
. . brightness discrimination
. . tactile discrimination
. . visual discrimination
. . . spectral mixture analysis
RT acuity
comparator circuits
∞ differentiation
selectivity
signal detection
signal detectors
target recognition

discriminators

DEF In general, a circuit in which output depends upon the difference between an input signal and a reference signal.

GS circuits
. **discriminators**
. . Fraunhofer line discriminators
. . frequency discriminators
RT analog computers
anticoincidence detectors
comparators
error signals
intermodulation
RC circuits

∞ **discussion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT conferences
evaluation
examination
reports

reviewing

diseased vegetation

USE **plant diseases**

diseases

SN (RESTRICTED TO DISEASES IN ANIMALS INCLUDING MAN--FOR DISEASES IN PLANTS SEE PLANT DISEASES)

GS **diseases**
. albinism
. anemias
. arteriosclerosis
. arthritis
. ataxia
. atelectasis
. bone demineralization
. colic
. cyanosis
. diabetes mellitus
. encephalitis
. epilepsy
. eye diseases
. . . asthenopia
. . . astigmatism
. . . cataracts
. . . conjunctivitis
. . . glaucoma
. . . keratitis
. . . phoria
. . . fat embolisms
. . . fibrosis
. . . cystic fibrosis
. . . headache
. . . heart diseases
. . . angina pectoris
. . . coronary artery disease
. . . infarction
. . . myocardial infarction
. . . infectious diseases
. . . airborne infection
. . . bacterial diseases
. . . cholera
. . . diphtheria
. . . keratitis
. . . syphilis
. . . tuberculosis
. . . typhoid
. . . typhus
. . . conjunctivitis
. . . dermatitis
. . . contact dermatitis
. . . fungal diseases
. . . hepatitis
. . . meningitis
. . . parasitic diseases
. . . viral diseases
. . . acquired immunodeficiency syndrome
. . . influenza
. . . poliomyelitis
. . . smallpox
. . . kidney diseases
. . . nephritis
. . . lithiasis
. . . metabolic diseases
. . . narcolepsy
. . . neurasthenia
. . . neuritis
. . . occupational diseases
. . . osteoporosis
. . . paralysis
. . . Parkinson disease
. . . pulmonary lesions
. . . radiation sickness
. . . respiratory diseases
. . . aerosinusitis
. . . asthma
. . . emphysema
. . . influenza
. . . pneumonia
. . . tuberculosis
. . . rheumatic diseases
. . . tachycardia
. . . thrombopenia
. . . thrombosis
. . . tooth diseases

. toxic diseases
 . . benzene poisoning
 . . beryllium poisoning
 . . carbon monoxide poisoning
 . . carbon tetrachloride poisoning
 . . hydrocarbon poisoning
 . . lead poisoning
 . tumors
 . . neoplasms
 . . . cancer
 . . . leukemias
 . ulcers
 . urolithiasis

RT chronic conditions
 creatinine
 cures
 diagnosis
 disorders
 etiology
 medical science
 necrosis
 pathogenesis
 pathological effects
 plant diseases
 pneumothorax
 prophylaxis
 signs and symptoms
 symptomology
 therapy
 vaccines
 veterinary medicine

dishes
 USE **parabolic reflectors**

disilicides
 GS silicon compounds
 . silicides
 . . **disilicides**

RT silanes
 silicates

disinfectants
 USE **antiseptics**

disintegration
 RT atomizing
 comminution
 crushers
 crushing
 damage
 decay
 decomposition
 deterioration
 flaking
 grinding (comminution)
 ionization
 lysogenesis

disk galaxies
 DEF Galaxies consisting of a central bulge of a spheroidal aggregation of stars and a surrounding disk of stars fanning outward in a thin layer.
 GS celestial bodies
 . galaxies
 . . **disk galaxies**

RT astrophysics
 barred galaxies
 blazars
 elliptical galaxies
 galactic clusters
 galactic evolution
 galactic halos
 galactic nuclei
 galactic rotation
 galactic structure
 local group (astronomy)
 radio galaxies
 spiral galaxies
 star clusters
 Virgo galactic cluster

disk operating system (DOS)
(added October 1988)
 DEF A program with which the computer

performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print information.

GS computer programs
 . computer systems programs
 . . operating systems (computers)
 . . . **disk operating system (DOS)**

RT assembler routines
 compilers
 computer information security
 computer systems design

∞ disks
 graphical user interface
 input/output routines
 magnetic disks

∞ routines
 ∞ systems

∞ **disks**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT actuator disks
 disk operating system (DOS)
 disks (shapes)
 intervertebral disks
 magnetic disks

disks (shapes)

GS **disks (shapes)**
 . actuator disks
 . intervertebral disks
 . rotating disks

RT accretion disks
 aerodynamic configurations
 bodies of revolution
 circular plates

∞ disks
 ∞ plates
 video disks

dislocations (materials)

GS **dislocations (materials)**
 . crystal dislocations
 . . edge dislocations
 . . screw dislocations

RT displacement
 flow theory

∞ materials

disorders

GS disorientation
 . **disorders**

RT chronic conditions
 depersonalization

∞ depression
 detachment
 diseases

∞ disturbances
 dithers
 emotional factors
 human behavior
 jet lag
 psychology
 psychoses
 violence

disorientation

SN (EXCLUDES PHYSICAL OR MATHEMATICAL MISALIGNMENT)

GS **disorientation**
 . desynchronization (biology)
 . disorders
 . jet lag

RT biological effects
 Coriolis effect
 detachment
 dithers
 irrationality
 misalignment
 psychological effects
 psychology
 staggering

weightlessness

*dispatching*USE **distributing****dispensers**

RT distributors
 ejectors
 feeders
 materials handling
 rollers
 sprayers

dispersing

SN (OF MATERIALS OR PARTICLES)
 RT agitation
 assimilation
 chemical release modules
 circulation
 cloud dispersal
 colloid
 deflection
 diffusion
 dilution

∞ discharge
 ∞ dispersion
 dispersions
 disposal
 dissipation
 distributing

∞ distribution
 entrainment
 exhausting
 fog dispersal
 homogenizing
 Langevin formula
 permeating
 pollution transport

∞ reduction
 releasing
 scattering

∞ separation
 shaking
 spraying
 spreading
 stirring
 suspending (mixing)
 swirling

∞ **dispersion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT deviation
 diffusion
 dispersing
 dispersions
 dust
 Kramers-Kronig formula
 magnetic dispersion
 mixers
 random errors
 statistical analysis
 variability
 wave dispersion

*dispersion precipitation hardening*USE **precipitation hardening****dispersion strengthening**

(added February 1994)
 GS **dispersion strengthening**
 . oxide dispersion strengthening

RT alloys
 hardening (materials)
 heat resistant alloys

∞ metallurgy
 ∞ strength

dispersions

DEF A two-phase system consisting of finely divided particles dispersed in a solid, liquid, or gas.
 GS mixtures
 . **dispersions**
 . . colloids
 . . . aerosols

displacement

- fog
- colloidal propellants
- . . . emulsions
- photographic emulsions
- nuclear emulsions
- . . . liquid-gas mixtures
- . . . aerosols
- fog
- plastisols
- smoke

RT Brownian movements
colloidal generators
crop dusting
diluents
dispersing
∞ dispersion
dust
ferrofluids
fog dispersal
fumes
mist
particles
particulates
slurries
slurry propellants
suspending (mixing)
∞ suspensions

displacement

DEF A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest.

GS **displacement**
. crack opening displacement

RT amplitudes
bending
bias
boresight error
deflection
deformation
dislocations (materials)
distortion
divergence
engines
flexible spacecraft
heaving
kinking
level (quantity)
magnitude
∞ motion
nutaton
positioning
skewness
temperature inversions
variations
vibration

displacement measurement

SN (MEASUREMENT IN CHANGE OF POSITION)
GS mechanical measurement
. **displacement measurement**
RT boresight error
shearography

display devices

UF *data readout systems*
display systems
visual displays
GS **display devices**
. approach indicators
. flat panel displays
. flow direction indicators
. . wind vanes
. gyro horizons
. head-up displays
. helmet mounted displays
. kinoform
. microvision landing aid
. plasma display devices
. position indicators
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
. radarscopes
. . plan position indicators

. speed indicators
. . tachometers
RT airborne surveillance radar
aircraft equipment
aircraft instruments
audio visual equipment
automatic typewriters
blinking
cancellation circuits
cathode ray tubes
charts
cockpit weather information systems
computer graphics
consoles
control boards
crew procedures (inflight)
crew procedures (preflight)
data recorders
∞ detectors
dials
diffractive optics
electrochromism
flight control
flight instruments
flying spot scanners
graphical user interface
human-computer interface
image reconstruction
image tubes
imagery
images
indicating instruments
instrument landing systems
instrument receivers
∞ instruments
light emitting diodes
lists
man machine systems
map matching guidance
monitors
navigation aids
perceptual errors
photographs
photopolymers
picture tubes
planetariums
∞ plots
plotters
plotting
printers (data processing)
promotion
radar
radar resolution
rapid ballistics identification
raster scanning
reading
readout
real time operation
receivers
remote consoles
scientific visualization
∞ screens
situational awareness
solar compasses
∞ strip
∞ systems
target simulators
TERCOM
video data
video equipment
viewing
visual aids
visual control
warning systems

display systems

USE **display devices**

disposal

GS **disposal**
. waste disposal
. . composting
. . hazardous material disposal (in space)
RT agitation
∞ containers
decontamination

deletion
dilution
∞ discharge
dispersing
dissipation
distributing
∞ distribution
dumping
ejection
elimination
emptying
exhausting
expulsion
isolation
jettisoning
materials handling
materials recovery
removal
sinks
spreading
∞ storage
unloading

disrupting

RT ∞ interference
rupturing

dissection

RT autopsies
pathology

dissipation

UF *dissipators*
GS **dissipation**
. energy dissipation
. ohmic dissipation
RT atmospheric turbulence
attenuation
damping
decontamination
depletion
diffusion
dilution
dischargers
dispersing
disposal
exhausting
pollution
purification
∞ reduction
removal
waste disposal

dissipators

USE **dissipation**

dissociation

DEF The separation of a complex molecule into constituents by collision with a second body, or by absorption of a photon. The product of dissociation of a molecule is two ions, one positively charged and one negatively charged. Used for molecular dissociation.

UF *molecular dissociation*

GS **dissociation**

. autoionization
. biodegradability
. gas dissociation
. photodissociation
. radiolysis
. thermal dissociation
RT atomic recombination
chemical equilibrium
Debye-Huckel theory
decomposition
electrodissolution
heat of dissociation
ionization
molecular diffusion
molecular interactions

dissolution

USE **dissolving**

dissolved gases

DEF Gases in solution.

- GS gases
 . **dissolved gases**
- RT aeration
 dissolving
 mixtures
 oxygenation
 solubility
 solutions
- dissolved organic matter**
(added October 1997)
 UF *gelbstoff*
 RT chlorophylls
 organic solids
 phytoplankton
 sea water
 sediments
 solutes
 water color
 water pollution
- dissolving**
 UF *dissolution*
 GS mixing
 . **dissolving**
 RT aeration
 chemical attack
 chemical cleaning
 cleaning
 compounding
 corrosion
 diffusion
 dilution
 dissolved gases
 extraction
 homogenizing
 leaching
 precipitation (chemistry)
 ∞ separation
 softening
 solubility
 solutes
 ∞ solution
 solvent retention
 solvents
 washing
- dissymmetry*
 USE **asymmetry**
- distance**
 GS **distance**
 . Debye length
 . diffusion length
 . miss distance
 . optical slant range
 . radar range
 . radio range
 . range and range rate tracking
 . reentry range
 RT aircraft performance
 aircraft specifications
 altitude
 depth
 dimensions
 focusing
 geometry
 height
 length
 position (location)
 proximity
 radar navigation
 ∞ range
 range (extremes)
 takeoff runs
 ∞ travel
- distance measuring equipment**
 DEF A radio aid to navigation which provides distance information by measuring total round trip time of transmission from an integrator to a transponder and return.
 GS measuring instruments
 . **distance measuring equipment**
 . . altimeters
 . . . laser altimeters
- . . . radio altimeters
 . . geodimeters
 . . range finders
 . . . optical range finders
 laser range finders
 . . stadimeters
 . . tellurometers
- RT automatic flight control
 automatic landing control
 Decca navigation
 depth measurement
 dimensional measurement
 LORAC navigation system
 loran
 lunar rangefinding
 micrometers
 navigation
 navigation aids
 omnidirectional radio ranges
 position indicators
 radar
 radar equipment
 radar measurement
 radar navigation
 radio navigation
 range errors
 Shoran
 solar compasses
 sonar
 sound ranging
- distance perception*
 USE **space perception**
- distillation**
 GS **distillation**
 . stripping (distillation)
 RT chemical fractionation
 concentrating
 condensing
 demineralizing
 desalinization
 diffusion
 evaporation
 flashing (vaporizing)
 materials recovery
 purging
 purification
 rectification
 refining
 ∞ separation
 tar sands
 vaporizing
 washing
- distillation equipment**
 RT columns (process engineering)
 condensers (liquefiers)
 ∞ equipment
 stills
- distortion**
 DEF An undesired change in waveform. In a system used for transmission or reproduction of sound, a failure by the system to transmit or reproduce a received waveform with exactness. An undesired change in the dimensions or shape of a structure as, distortion of a fuel tank due to abnormal stresses or extreme temperature gradients.
 GS **distortion**
 . flow distortion
 . signal distortion
 . surface distortion
 RT aberration
 abnormalities
 astigmatism
 asymmetry
 bending
 buckling
 camber
 deflection
 deformation
 deviation
 displacement
 expansion
- failure
 flexing
 folding
 frequency pulling
 geometric accuracy
 ghosts
 heaving
 refraction
 skewness
 stretching
 swelling
 temperature inversions
 twisting
 variations
 warpage
 wrinkling
- distributed amplifiers**
 GS amplifiers
 . **distributed amplifiers**
 RT frequency response
 transmission lines
- distributed Bragg reflector lasers*
 USE **DBR lasers**
- distributed feedback lasers**
 DEF Lasers containing a periodic medium which provides the necessary feedback for laser action.
 GS stimulated emission devices
 . lasers
 . . **distributed feedback lasers**
 RT DBR lasers
 feedback amplifiers
 feedback control
 heterojunction devices
 laser outputs
 lasing
 semiconductor lasers
 solid state lasers
- distributed interactive simulation**
(added December 1996)
 SN ((Multiple simultaneous use of simulation in networks))
 UF *DIS*
 GS simulation
 . computerized simulation
 . . **distributed interactive simulation**
 RT computer networks
 distributed processing
- distributed memory**
(added April 1997)
 GS memory (computers)
 . **distributed memory**
 RT architecture (computers)
 distributed processing
 interprocessor communication
 multiprocessing (computers)
 parallel processing (computers)
- distributed parameter systems**
 RT control theory
 differential equations
 independent variables
 integral equations
 linear circuits
 linear systems
 network analysis
 nonlinear systems
 ∞ systems
- distributed processing**
 DEF Processing with multiple small computers that are capable of operating independently but can communicate over a network with each other and/or a central computer.
 GS data processing
 . **distributed processing**
 . . grid computing (computer networks)
 RT architecture (computers)
 client server systems
 computer networks

distributing

computer systems design
Dining Philosophers Problem
distributed interactive simulation
distributed memory
microprocessors
transputers
VSAT (network)
wide area networks

distributing

UF *dispatching*
RT allocations
assimilation
commercial energy
dispersing
disposal
∞ distribution
domestic energy
∞ food
industrial energy
inventory controls
materials handling
positioning
proportion
resource allocation
transportation
transportation energy

∞ distribution

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT allocations
assimilation
brightness distribution
circulation distribution
demography
dispersing
disposal
distributing
distribution (property)
geographic distribution
kurtosis
load distribution (forces)
mass distribution
materials handling
positioning
pressure distribution
spectral energy distribution
statistical distributions
thrust distribution
transportation

distribution (property)

UF *pattern distribution*
GS **distribution (property)**
. angular distribution
. Boltzmann distribution
. brightness distribution
. charge distribution
. current distribution
. electron distribution
. . . electron density profiles
. energy distribution
. . . spectral energy distribution
. flow distribution
. force distribution
. frequency distribution
. . . kurtosis
. hole distribution (electronics)
. hole distribution (mechanics)
. interference lift
. ion distribution
. load distribution (forces)
. mass distribution
. moment distribution
. neutron distribution
. pressure distribution
. radial distribution
. radiation distribution
. . . antenna radiation patterns
. . . . sidelobes
. . . diffraction patterns
. . . Kossel pattern
. . . rainbows
. spatial distribution
. . horizontal distribution

. . vertical distribution
. . . star distribution
. . . geographic distribution
. strain distribution
. stress distribution
. . stress concentration
. temperature distribution
. velocity distribution

RT chemical composition
∞ cross sections
∞ distribution
dynamic characteristics
field theory (physics)
gradients
jet lift
lift
∞ patterns
∞ profiles
rotor lift
statistical distributions
synthetic arrays
zero lift

distribution functions

DEF The density functions or number of particles per unit volume of phase space. The distribution functions are a function of the three space coordinates and the three velocity coordinates.

GS functions (mathematics)
. **distribution functions**
. . probability distribution functions
RT Chapman-Enskog theory
discrete functions
maximum entropy method
∞ nets
probability theory
statistical distributions

distribution moments

UF *statistical moments*
GS moments
. **distribution moments**
. . mean
. . orthogonality
. . standard deviation
RT average
median (statistics)
method of moments
mode (statistics)
skewness
statistical distributions
variance (statistics)

distributors

RT commutators
dispensers
feeders
ignition systems
internal combustion engines
materials handling
rollers
sprayers

District of Columbia

GS nations
. United States
. . **District of Columbia**
RT Potomac River Valley (MD-VA-WV)

disturbance theory

USE **perturbation theory**

∞ disturbances

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bursts
disorders
electromagnetic interference
ionospheric disturbances
ionospheric storms
magnetic disturbances
perturbation
radio auroras
radio bursts
solar activity

storms
sudden ionospheric disturbances
vortices

disturbing functions

GS functions (mathematics)
. **disturbing functions**
RT perturbation theory

disulfides

GS chalcogenides
. sulfides
. . **disulfides**
. . . carbon disulfide
sulfur compounds
. sulfides
. . **disulfides**
. . . carbon disulfide

ditches

RT canals
irrigation
landforms
troughs

∞ ditching

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ditching (landing)
excavation

ditching (excavation)

USE **excavation**

ditching (landing)

GS crashes
. crash landing
. . **ditching (landing)**
landing
. **ditching (landing)**
RT aircraft accidents
∞ ditching
glide landings
water landing

dithers

GS shaking
. **dithers**
shivering
. **dithers**
RT disorders
disorientation
emotional factors
human behavior
∞ inhibition
irrationality
vacillation

dithiols

USE **thiols**

diuresis

RT body fluids
edema
urination

diuretics

GS **diuretics**
. aminophylline
RT acetazolamide
ureas

diurnal rhythms

USE **circadian rhythms**

diurnal variations

GS variations
. periodic variations
. . **diurnal variations**
RT cycles
darkness
daytime
magnetic variations
night
nocturnal variations

- tropopause
wind variations
- divergence**
DEF The expansion or spreading out of a vector field; also a precise measure thereof. A static instability of a lifting surface or of a body on a vehicle wherein the aerodynamic loads tending to deform surface or body are greater than the elastic restoring forces.
GS **divergence**
. magnetic charge density
RT catastrophe theory
convergence
deviation
differences
displacement
∞ drift
Fourier analysis
functions (mathematics)
geostrophic wind
refraction
series (mathematics)
series expansion
variations
vortices
- divergent nozzles**
RT conical nozzles
exhaust nozzles
nozzle geometry
nozzle walls
∞ nozzles
rocket nozzles
thrust chambers
wind tunnel nozzles
- diverters**
GS **diverters**
. divertors (fusion reactors)
RT baffles
blast deflectors
bypasses
deflectors
∞ diffusers
dividers
flame deflectors
∞ separation
separators
shielding
valves
- divertors (fusion reactors)**
(added March 1995)
GS divertors
. **divertors (fusion reactors)**
RT limiters (fusion reactors)
magnetic field configurations
plasma control
tokamak devices
- dividers**
SN (EXCLUDES VOLTAGE AND FREQUENCY DIVIDERS)
GS separators
. **dividers**
RT baffles
∞ barriers
curtains
diverters
panels
spacers
- divides (landforms)**
GS landforms
. **divides (landforms)**
RT drainage patterns
mountains
watersheds
- dividing (mathematics)**
GS number theory
. **dividing (mathematics)**
RT arithmetic
computation
congruences
- ∞ division
quotients
- diving (underwater)**
GS submerged bodies
. **diving (underwater)**
RT barotrauma
decompression sickness
human tolerances
medical phenomena
physiological effects
underwater physiology
underwater tests
- ∞ **division**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cell division
dividing (mathematics)
number theory
∞ separation
subdivisions
subsidiaries
- DIVOT (voice translators)*
USE **digital to voice translators**
- Djibouti**
(added February 1989)
GS nations
. **Djibouti**
RT Africa
- DME-A satellite*
USE **Explorer 31 satellite**
- DMSF satellites**
DEF Satellites of the defense meteorological satellite program, a program sponsored by the United States Air Force System Command's Space Division which provides timely global imagery and specialized meteorological data for supporting a variety of Department of Defense operations. Used for Defense Meteorological Satellite Program.
UF *Defense Meteorological Satellite Program*
GS artificial satellites
. meteorological satellites
. . **DMSF satellites**
military spacecraft
. **DMSF satellites**
RT air defense
∞ defense
defense program
meteorology
photomapping
photoreconnaissance
remote sensing
satellite-borne photography
- DNA*
USE **deoxyribonucleic acid**
- DNS (numerical analysis)*
(added October 1997)
USE **direct numerical simulation**
- DO-27 aircraft**
UF *Dornier DO-27 aircraft*
GS Dornier aircraft
. **DO-27 aircraft**
general aviation aircraft
. **DO-27 aircraft**
light aircraft
. **DO-27 aircraft**
monoplanes
. **DO-27 aircraft**
passenger aircraft
. **DO-27 aircraft**
RT ∞ aircraft
- DO-28 aircraft**
UF *Dornier DO-28 aircraft*
GS Dornier aircraft
. **DO-28 aircraft**
general aviation aircraft
. **DO-28 aircraft**
light aircraft
. **DO-28 aircraft**
monoplanes
. **DO-28 aircraft**
passenger aircraft
. **DO-28 aircraft**
RT ∞ aircraft
- DO-31 aircraft**
UF *Dornier DO-31 aircraft*
GS Dornier aircraft
. **DO-31 aircraft**
jet aircraft
. turboprop aircraft
. . **DO-31 aircraft**
monoplanes
. **DO-31 aircraft**
transport aircraft
. **DO-31 aircraft**
V/STOL aircraft
. **DO-31 aircraft**
RT ∞ aircraft
- DO-328 aircraft**
(added September 1994)
GS commercial aircraft
. **DO-328 aircraft**
Dornier aircraft
. **DO-328 aircraft**
jet aircraft
. turboprop aircraft
. . **DO-328 aircraft**
passenger aircraft
. **DO-328 aircraft**
transport aircraft
. **DO-328 aircraft**
RT ∞ aircraft
- docking*
USE **spacecraft docking**
- document indexing*
(added April 2000)
USE **indexing (information science)**
- document markup languages**
(added July 1995)
DEF Standardized nomenclatures that specify the organization of complex text (including technical and scientific notation, graphics, and images) and define the document type, data elements within the document, and the relationship between data elements for electronically prepared, stored, interchanged, and published documents.
UF *DSSSL*
HTML
HYTIME
markup languages
SGML
SPDL
GS languages
. **document markup languages**
RT documentation
electronic publishing
human-computer interface
hypertext
information transfer
printing
standards
- document storage**
RT data storage
documentation
∞ files
reproduction (copying)
∞ storage
- documentation**
SN (LIMITED TO WRITTEN MATERIAL THAT ACCOMPANIES, EXPLAINS, SPECIFIES OR DESCRIBES EQUIPMENT OR SYSTEMS)
DEF The assembling, coding, and dissemi-

nating of recorded knowledge.

- GS literature
 - . **documentation**
- RT acquisition
 - . bibliographies
 - . biography
 - . case histories
 - . catalogs (publications)
 - . conferences
 - . data retrieval
 - . document markup languages
 - . document storage
 - . documents
 - . histories
 - . indexes (documentation)
 - . information
 - . information dissemination
 - . information resources management
 - . information retrieval
 - . knowledge
 - . libraries
 - . news
 - . records
- ∞ reference systems
 - . reports
 - . selective dissemination of information
 - . space glossaries
 - . summaries
 - . technical writing
 - . technology transfer
 - . translating

documents

- UF *publications*
- GS **documents**
 - . abstracts
 - . bibliographies
 - . catalogs (publications)
 - . . . astronomical catalogs
 - . congressional reports
 - . dictionaries
 - . drawings
 - . . . engineering drawings
 - . . . blueprints
 - . handbooks
 - . . . user manuals (computer programs)
 - . manuals
 - . . . installation manuals
 - . . . user manuals (computer programs)
 - . papers
 - . periodicals
 - . postlaunch reports
 - . Presidential reports
 - . proposals
 - . records
 - . . . video disks
 - . supplements
 - . textbooks
 - . texts
 - . theses
- RT conferences
 - . copyrights
 - . documentation
 - . electronic publishing
 - . format
 - . hardware utilization lists
 - . indexes (documentation)
 - . information retrieval
 - . libraries
 - . literature
 - . reports
 - . technology transfer

Dodge satellite

- GS artificial satellites
 - . **Dodge satellite**

doghouses (electronics)

- DEF Small enclosures placed at the base of transmitting antenna towers to house antenna tuning equipment.
- GS housings
 - . **doghouses (electronics)**
 - . radar equipment
 - . **doghouses (electronics)**
- RT enclosures

radar antennas

dogs

- GS animals
 - . vertebrates
 - . . . mammals
 - . . . **dogs**
- RT wolves

dollies

- GS surface vehicles
 - . **dollies**
- RT carriages
 - . materials handling
 - . sleds
 - . trucks
 - . undercarriages

dolomite (mineral)

DEF A common rock-forming rhombohedral material consisting of calcium, magnesium, and carbonates. It is used for refractory products.

- GS carbon compounds
 - . carbonates
 - . . . **dolomite (mineral)**
 - . magnesium compounds
 - . . . **dolomite (mineral)**
 - . minerals
 - . . . **dolomite (mineral)**
- RT aggregates
 - . limestone
 - . rocks
 - . sedimentary rocks

dolphins

- GS animals
 - . vertebrates
 - . . . mammals
 - marine mammals
 - **dolphins**

domain wall

- RT domains
 - . ferroelasticity
 - . magnetic domains
- ∞ motion

domains

- GS **domains**
 - . magnetic domains
- RT dipole moments
 - . domain wall
 - . electrical properties
 - . range (extremes)

∞ domes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT domes (geology)
- domes (structural forms)

domes (geology)

- GS geology
 - . **domes (geology)**
- RT anticlines
 - . ∞ domes
 - . geosynclines
 - . synclines

domes (structural forms)

- GS shells (structural forms)
 - . **domes (structural forms)**
 - . . . radomes
- RT ∞ cupolas
 - . ∞ domes
 - . hemispherical shells
 - . housings
 - . pressure vessels
 - . protuberances

domestic energy

- RT allocations
 - . commercial energy
 - . distributing
 - . economic factors

- ∞ energy
 - . energy consumption
 - . energy conversion
 - . industrial energy
 - . solar cooling
 - . solar houses
 - . transportation energy
 - . water heating

domestic satellite communications systems

- RT communication satellites
 - . direct broadcast satellites
 - . microwave transmission
 - . RCA Satcom satellites
 - . satellite networks
 - . satellite transmission
- ∞ systems

dominance

- GS **dominance**
 - . eye dominance
- RT genetics

Dominica

- GS landforms
 - . islands
 - . . . West Indies
 - . . . **Dominica**
- nations
 - . **Dominica**

Dominican Republic

- GS nations
 - . **Dominican Republic**
- RT Caribbean region
 - . Caribbean Sea

Domino propellants

- GS propellants
 - . high energy propellants
 - . . . **Domino propellants**
- RT plasticizers
 - . rocket oxidizers
 - . solid rocket propellants

Donnell equations

- RT buckling
- ∞ equations
 - . stress analysis

donor materials

- GS semiconductors (materials)
 - . **donor materials**
- RT antisite defects
 - . carrier density (solid state)
 - . doping (materials)
 - . electrons
 - . holes (electron deficiencies)
- ∞ materials
 - . modulation doping

doors

- UF *exits (doors)*
- RT air locks
 - . apertures
 - . curtains
 - . egress
 - . entrances
 - . floors
 - . gates (openings)
 - . hatches
 - . ingress (spacecraft passageway)
 - . openings
 - . outlets
- ∞ thresholds
 - . windows (apertures)

dopa

DEF An intermediate organic compound produced by oxidation of tyrosine by tyramine; also, an intermediate product in the synthesis of both epinephrine and melanin. Used for dihydroxyphenylalanine.

- UF *dihydroxyphenylalanine*
- GS acids
 - . amino acids

. . **dopa**
 organic compounds
 . amino acids
 . . **dopa**
 RT ∞ chemical compounds
 dopamine
 melanin
 oxidation
 pigments

dopamine
 (added June 1997)
 RT catecholamine
 dopa
 drugs
 epinephrine
 neurophysiology
 neurotransmitters
 norepinephrine

doped crystals
 GS crystals
 . **doped crystals**
 RT crystal growth
 crystal optics
 crystal structure
 doping (materials)
 fullerides
 gadolinium-gallium garnet
 MODFETS
 modulation doping
 neutron transmutation doping

dopes
 RT additives
 fillers
 finishes
 gels
 primers (coatings)
 sealers

doping (additives)
 USE **additives**

doping (materials)
 (added June 2003)
 DEF The incorporation of impurities into silicon or other semiconductor materials in order to modify the conductivity or other electrical properties of these materials
 GS **doping (materials)**
 . modulation doping
 . neutron transmutation doping
 RT additives
 crystal lattices
 donor materials
 doped crystals
 ion implantation
 semiconductor devices
 semiconductors (materials)

Doppler effect
 DEF The change in frequency with which energy reaches a receiver when the receiver and the energy source are in motion relative to each other. Used for DOVAP and stellar Doppler shift.
 UF *DOVAP*
stellar Doppler shift
 GS **Doppler effect**
 . Doppler-Fizeau effect
 RT blue shift
 ∞ effects
 elastic waves
 electromagnetic radiation
 Fizeau effect
 frequency shift
 optical heterodyning
 radial velocity
 red shift
 satellite doppler positioning
 stellar motions

Doppler navigation
 DEF Dead reckoning performed automatically by a device which gives a continuous

indication of position by integrating the speed derived from measurement of the Doppler effect of echoes from directed beams of radiant energy transmitted from the craft.
 GS navigation
 . **Doppler navigation**
 RT air navigation
 all-weather air navigation
 dead reckoning
 radar navigation
 radio navigation
 satellite doppler positioning

Doppler radar
 DEF Radar which utilizes the Doppler effect to determine the radial component of velocities of relative radar targets or to select targets having particular radial velocities.
 GS radar
 . **Doppler radar**
 . . multistatic radar
 . . pulse Doppler radar
 . . . monopulse radar
 . . . Shuttle Imaging Radar
 RT airborne radar
 coherent radar
 continuous wave radar
 monopulse radar
 moving target indicators
 polystation doppler tracking system
 pulse radar
 radar detection
 radar equipment
 radar navigation
 radar networks
 radar tracking
 satellite doppler positioning
 surveillance radar

Doppler-Fizeau effect
 DEF The Doppler effect applied to a source of light. When the distance between the observer and the source of light is diminishing, the lines of the spectrum are displaced towards the violet, and, when the distance is increasing, they are displaced toward the red, the displacement being proportional to the relative velocity of approach or recession.
 GS Doppler effect
 . **Doppler-Fizeau effect**
 RT blue shift
 ∞ effects
 Fizeau effect
 frequency shift
 radar navigation
 red shift
 stellar motions

Dornier aircraft
 GS **Dornier aircraft**
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-31 aircraft
 . DO-328 aircraft
 RT ∞ aircraft

Dornier DO-27 aircraft
 USE **DO-27 aircraft**

Dornier DO-28 aircraft
 USE **DO-28 aircraft**

Dornier DO-31 aircraft
 USE **DO-31 aircraft**

Dornier paraglider rocket vehicle
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Dornier paraglider rocket vehicle**
 . . sounding rockets
 . . **Dornier paraglider rocket vehicle**
 RT liquid propellant rocket engines

dorsal sections
 RT anatomy

posterior sections

dosage
 UF *dose*
 GS **dosage**
 . radiation dosage
 . sublethal dosage
 RT biological effects
 dosimeters
 drugs
 radiation measurement

dose
 USE **dosage**

dosimeters
 DEF Instruments for measuring the ultraviolet in solar and sky radiation. Devices worn by persons working around radioactive material, which indicate the dose of radiation to which they have been exposed. Used for dosimetry.
 UF *dosimetry*
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **dosimeters**
 threshold detectors (dosimeters)
 RT actinometers
 dosage
 exposure
 flux (rate)
 flux density
 Geiger counters
 ionization chambers
 irradiation
 neutron counters
 nuclear emulsions
 photographic measurement
 proportional counters
 radiant flux density
 radiation counters
 radiation dosage
 radiation effects
 radiation hazards
 radiation measurement
 radiobiology

dosimetry
 USE **dosimeters**

double base propellants
 DEF Solid rocket propellants using two unstable compounds, such as nitrocellulose and nitroglycerin. The unstable compounds used in a double based propellant do not require a separate oxidizer. Used for cordite.
 UF *cordite*
 GS propellants
 . **double base propellants**
 . . double base rocket propellants
 RT cellulose nitrate
 composite propellants
 endothermic fuels
 explosives
 nitroglycerin
 plastisols
 pyrotechnics

double base rocket propellants
 GS gels
 . **double base rocket propellants**
 propellants
 . double base propellants
 . . **double base rocket propellants**
 . rocket propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 . solid propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 RT cellulose nitrate
 composite propellants
 explosives

double cusps

nitroglycerin

double cusps

- UF *osculations*
- GS geometry
 - . cusps (mathematics)
 - .. **double cusps**
- RT ∞ cusps

double precision arithmetic

- GS number theory
 - . arithmetic
 - .. **double precision arithmetic**
- RT arithmetic and logic units
 - ∞ numbers

double sideband transmission

- GS transmission
 - . electromagnetic wave transmission
 - .. radio transmission
 - ... **double sideband transmission**
 - . signal transmission
 - .. radio transmission
 - ... **double sideband transmission**
- RT modulation
 - sidebands
 - single sideband transmission
 - television transmission
 - wave propagation

double stars

DEF Stars which appear as single points of light to the eye but which can be resolved into two points by a telescope. A double star is not necessarily a binary, a two star system revolving about a common center, but may be an optical double, two unconnected stars in the same line of sight.

- GS celestial bodies
 - . stars
 - .. **double stars**
 - ... binary stars
 - cataclysmic variables
 - companion stars
 - Nemesis (star)
 - eclipsing binary stars
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
 - Sigma Orionis
 - symbiotic stars
 - x ray binaries
- RT astrometry
 - stellar motions

double-layer capacitors

(added September 2003)

USE **electrochemical capacitors**

doughnut shape wheels

USE **toroidal wheels**

Douglas aircraft

- GS McDonnell Douglas aircraft
 - . **Douglas aircraft**
 - .. A-1 aircraft
 - .. A-3 aircraft
 - .. A-4 aircraft
 - .. B-66 aircraft
 - .. C-9 aircraft
 - .. C-47 aircraft
 - .. C-54 aircraft
 - .. C-118 aircraft
 - .. C-124 aircraft
 - .. C-133 aircraft
 - .. D-558 aircraft
 - .. DC 3 aircraft
 - .. DC 7 aircraft
 - .. DC 8 aircraft
 - .. DC 9 aircraft
 - .. DC 10 aircraft
 - .. PD-808 aircraft
 - .. X-3 aircraft

RT ∞ aircraft

Douglas D-558 aircraft

USE **D-558 aircraft**

Douglas DC-3 aircraft

USE **DC 3 aircraft**

Douglas DC-7 aircraft

USE **DC 7 aircraft**

Douglas DC-8 aircraft

USE **DC 8 aircraft**

Douglas DC-9 aircraft

USE **DC 9 aircraft**

Douglas PD-808 aircraft

USE **PD-808 aircraft**

DOVAP

USE **Doppler effect**

downbursts

(added March 1991)

- GS storms
 - . storms (meteorology)
 - .. **downbursts**
 - ... microbursts (meteorology)
- RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

down-converters

- GS frequency converters
 - . **down-converters**
- RT ∞ converters
 - frequency dividers

downlinking

DEF The transmission of signals (data, information, etc.) from satellites to ground terminals.

- RT carrier to noise ratios
 - communication satellites
 - frequency reuse
 - ground stations
 - microwave transmission
 - satellite transmission
 - transmission efficiency
 - uplinking

downrange

DEF The airspace extending downstream on a given rocket test range.

- RT ballistic ranges
 - ballistic trajectories
 - flight tests
 - impact prediction
 - missile ranges
 - recovery zones
 - test ranges
 - touchdown
 - trajectories

Downrange Antimissile Measurement Program

- UF *DAMP program*
- GS programs
 - . **Downrange Antimissile Measurement Program**
- RT ∞ measurement

downrange measurement

- RT ∞ measurement
 - test ranges

downtime

DEF A period during which equipment is not operating correctly because of machine failure.

- GS time
 - . **downtime**
- RT failure

inventory management
logistics
maintenance
malfunctions
MTBF
reliability
spare parts
system failures
turnaround (STS)

downwash

- RT backwash
 - ∞ draft
 - ground effect (aerodynamics)
 - helicopter wakes
 - lift augmentation
 - peripheral jet flow
 - upwash
 - wakes

DPCM (modulation)

USE **differential pulse code modulation**

Draconid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - .. **Draconid meteoroids**
 - . meteoroids
 - .. **Draconid meteoroids**
- RT Giacobini-Zinner comet

∞ draft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layers
 - downwash
 - draft (gas flow)
 - drafting (drawing)
 - upwash
 - wakes

draft (gas flow)

- RT ∞ draft
 - flues
 - ventilation

drafting (drawing)

- RT ∞ draft
 - ∞ drawing
 - drawings
 - graphic arts

drafting machines

- RT computer aided design
 - ∞ design
 - ∞ machinery

drag

DEF A retarding force acting upon the direction of motion of the body. It is a component of the total fluid forces acting on the body. Used for drag effect.

- UF *drag effect*
- GS dynamic characteristics

. drag

- .. electrostatic drag
- .. friction drag
- ... aerodynamic drag
- ... supersonic drag
- ... viscous drag
- .. induced drag
- .. minimum drag
- .. pressure drag
- ... supersonic drag
- ... wave drag
- ... interference drag
- .. satellite drag

RT aerodynamic configurations

- aerodynamics
 - boundary layers
 - ∞ drag coefficients
 - drag measurement
 - friction
 - gravitation
 - ground effect (aerodynamics)
 - lift

- skin friction
wakes
- drag balance*
USE **aerodynamic balance**
lift drag ratio
- drag chutes**
UF *drogue parachutes*
GS brakes (for arresting motion)
. aerodynamic brakes
. . . **drag chutes**
drag devices
. aerodynamic brakes
. . . **drag chutes**
parachutes
. **drag chutes**
RT aircraft brakes
airdrops
ballutes
ribbon parachutes
towed bodies
- ∞ **drag coefficients**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The ratios of drag to the products of dynamic pressures and reference areas.
RT aerodynamic coefficients
aerodynamic drag
drag
hydrodynamic coefficients
- drag devices**
UF *dragulators*
GS **drag devices**
. aerodynamic brakes
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. spoilers
RT abort apparatus
aircraft brakes
boundary layer control
brakes (for arresting motion)
control surfaces
flaps (control surfaces)
lift devices
skin friction
vortex alleviation
- drag effect*
USE **drag**
- drag force anemometers**
DEF Instruments for measuring both the static and dynamic velocity head and flow in high frequency, unsteady flow.
GS measuring instruments
. anemometers
. . **drag force anemometers**
RT flow measurement
∞ instruments
velocity measurement
- drag measurement**
GS mechanical measurement
. **drag measurement**
RT aerodynamic drag
drag
electrostatic drag
flow measurement
∞ measurement
measuring instruments
- drag reduction**
RT aerodynamic drag
fluid flow
friction
induced drag
lift drag ratio
- ∞ reduction
riblets
winglets
- dragulators*
USE **brakes (for arresting motion)**
drag devices
- drainage**
UF *draining*
runoffs
RT ∞ discharge
evacuating (vacuum)
excavation
flood control
hydrology
hydrology models
irrigation
liquid wastes
mines (excavations)
permeability
∞ pumping
seepage
sewers
sumps
tunneling (excavation)
waste disposal
water flow
water runoff
water tables
- drainage patterns**
UF *dendritic drainage*
interlacing drainage
radial drainage patterns
rectangular drainage
RT arroyos
divides (landforms)
flood damage
hydrology
irrigation
Mississippi River (US)
∞ patterns
precipitation (meteorology)
tributaries
water erosion
water flow
watersheds
- draining*
USE **drainage**
- ∞ **drawing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bundle drawing
cold drawing
drafting (drawing)
drawings
extruding
layouts
metal drawing
pulling
records
stretch forming
stretching
tempering
- drawings**
UF *elevations (drawings)*
GS documents
. **drawings**
. . engineering drawings
. . . blueprints
RT charts
∞ cross sections
diagrams
dimensions
drafting (drawing)
∞ drawing
graphic arts
inks
layouts
∞ plans
∞ projection
representations
- reproduction (copying)
specifications
∞ tracing
visual aids
- DRC (capsule)*
USE **Discoverer recovery capsules**
- dreams**
RT rapid eye movement state
sleep
- dredged materials**
DEF Sand, mud, silt, gravel, etc. , recovered from the bottoms of harbors, canals, etc. , during dredging operations.
RT channel flow
∞ channels
∞ materials
sediments
- dredging**
DEF Mechanical or hydraulic excavation of underwater material. Used in maintaining and building of channels and ports as well as underwater mining of sand, gravel, and minerals.
RT artificial harbors
harbors
mineral deposits
mining
underwater resources
- ∞ **drift**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT deviation
divergence
drift (instrumentation)
drift rate
flight paths
ionospheric drift
stability
- drift (instrumentation)**
UF *instrument drift*
RT accuracy
circuit reliability
∞ drift
drift rate
dynamic stability
errors
instrument errors
static stability
tolerances (mechanics)
- drift rate**
DEF The amount of drift, in any of its several senses, per unit time. Drift rate has many specific meanings in different fields. The type of drift rate should always be specified.
GS rates (per time)
. **drift rate**
RT ∞ drift
drift (instrumentation)
ionospheric drift
mobility
orbit perturbation
orbital mechanics
rotating plasmas
stability
trajectory control
- drill bits**
GS cutters
. **drill bits**
tools
. **drill bits**
RT bits
drilling
drills
- drilling**
GS **drilling**
. laser drilling
RT boreholes

drills

core sampling
cutting
drill bits
drills
exploration
machining
micromachining
natural gas exploration
offshore energy sources
oil exploration
oil fields
penetration
perforating
piercing
tunneling (excavation)
wells

drills

GS cutters
. **drills**
tools
. **drills**
RT boring machines
compressed air
drill bits
drilling
machine tools
taps

drinking

GS ingestion (biology)
. **drinking**
RT beverages
swallowing

∞ drives

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT mechanical drives
motivation
propulsion
sex
sleep
wind tunnel drives

drogue parachutes

USE **drag chutes**

drogues

USE **towed bodies**

drone aircraft

DEF Remotely controlled aircraft. Used for drone helicopters.

UF *drone helicopters*
GS drone vehicles
. **drone aircraft**
... target drone aircraft
... Firebee 2 target drone aircraft
... Jindivik target aircraft
pilotless aircraft
. **drone aircraft**
... target drone aircraft
... Firebee 2 target drone aircraft
... Jindivik target aircraft
RT ∞ aircraft
antisubmarine warfare aircraft
DAST program
light aircraft
∞ military aircraft
oblique wings
remotely piloted vehicles
research aircraft
V/STOL aircraft

drone helicopters

USE **drone aircraft**
helicopters

drone vehicles

GS **drone vehicles**
. drone aircraft
... target drone aircraft
... Firebee 2 target drone aircraft
... Jindivik target aircraft
RT ∞ military aircraft

pilotless aircraft
Sandpiper target missile
∞ vehicles
∞ winged vehicles

Drones for Aerodynamic and Struct Test

USE **DAST program**

drooped airfoils

DEF A baseline airfoil with an abrupt change in cross-section at about midspan from the fuselage. The outboard portion of the wing has a cross-section with a nearly flat bottom and a drooped (downward) leading edge in relation to the inboard baseline wing.

GS aerodynamic configurations

. **drooped airfoils**

aircraft configurations

. **drooped airfoils**

airfoils

. **drooped airfoils**

RT body-wing configurations

wing roots

wings

∞ drop

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT drops (liquids)
gradients

drop calorimeters

GS measuring instruments

. calorimeters

. . **drop calorimeters**

RT bomb calorimeters

flame calorimeters

heat measurement

high temperature tests

temperature measuring instruments

drop size

DEF The diameter of a drop if it is approximately spherical; otherwise, the approximate shape and appropriate dimensions must be described.

RT cloud physics

clouds (meteorology)

condensates

condensing

fog

humidity

hydrogen clouds

nucleation

particle diffusion

particle size distribution

∞ precipitation

precipitation particle measurement

raindrops

size distribution

drop tests

UF *drop weight tests*

RT Charpy impact test

destructive tests

impact testing machines

impact tests

notch tests

shock tests

∞ tests

drop towers

DEF Large devices for low gravity processing of molten material which consist of either a capsule which is dropped, or a drop tube where containerless low gravity studies are conducted or both. Used for drop tubes.

UF *drop tubes*

RT falling spheres

gravitational effects

low gravity manufacturing

microgravity

weightlessness

drop transfer

GS transferring

. **drop transfer**

RT arc melting

melting

plasma jets

refining

drop tubes

USE **drop towers**

drop weight tests

USE **drop tests**

dropouts

DEF Discrete variations in signal levels during the reproduction of recorded data which result in data reduction errors.

RT circuit breakers

electric contacts

electric switches

switches

drops (liquids)

DEF Small bodies of liquid held together primarily by surface tension. Used for liquid drops.

UF *liquid drops*

GS particles

. **drops (liquids)**

. . raindrops

RT

air pollution

Bond number

condensation nuclei

condensing

∞ drop

hydrometeors

sprayers

thermocapillary migration

dropsondes

DEF Radiosondes equipped with a parachute, dropped from an aircraft to transmit measurements of atmospheric conditions as it descends.

GS measuring instruments

. meteorological instruments

. . **dropsondes**

. sondes

. . **dropsondes**

RT

meteorological balloons

radiosondes

rawinsondes

Drosophila

GS animals

. invertebrates

. . arthropods

. . . insects

. . . . **Drosophila**

RT

chironomus flies

drought

UF *drought conditions*

RT arid lands

conservation

desertification

floods

hydrology

potable water

precipitation (meteorology)

water consumption

water management

water pollution

water reclamation

drought conditions

USE **drought**

drowsiness

USE **sleep**

drug therapy

USE **chemotherapy**

drugs

GS **drugs**

. adrenergics

- . aminophylline
- . anesthetics
- . . chloroform
- . . cyclopropane
- . . methyl chloride
- . . novocain
- . antiadrenergics
- . antibiotics
- . . actinomycin
- . . penicillin
- . . pleurotin
- . . streptomycin
- . . tetracyclines
- . anticonvulsants
- . antidiuretics
- . antidotes
- . antiemetics and antinauseants
- . antihistaminics
- . . dimenhydrinate
- . . diphenyl hydantoin
- . . promethazine
- . antihypertensive agents
- . antiinfectives and antibacterials
- . antiradiation drugs
- . . cysteamine
- . central nervous system depressants
- . cholinergics
- . . anticholinergics
- . . cortisone
- . . cysteine
- . decongestants
- . digitalis
- . epinephrine
- . ergotamine
- . hemostatics
- . histamines
- . insulin
- . methamphetamine
- . motion sickness drugs
- . muscle relaxants
- . narcotics
- . . morphine
- . Nembutal (trademark)
- . pentobarbital sodium
- . . reserpine
- . psychotropic drugs
- . . marijuana
- . sedatives
- . stimulants
- . . atropine
- . . caffeine
- . . central nervous system stimulants
- . . norepinephrine
- . tranquilizers
- . trimethadione
- . vasoconstrictor drugs
- . . hypertensin
- . . serotonin

RT

- alkaloids
- analgesia
- anesthesiology
- bioflavonoids
- biotin
- chemical defense
- chemotherapy
- cures
- dopamine
- dosage
- ethers
- ∞ medicine
- pentobarbital
- pharmacology
- phenobarbital
- psychopharmacology
- quinoline
- salicylates
- sublethal dosage
- thiophenes
- vaccines
- vitamins

drumlins

USE **glacial drift**

∞ **drums**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ barrels
 ∞ cylinders
 drums (containers)
 magnetic drums
 magnetic storage

drums (containers)

SN (EXCLUDE MAGNETIC COMPUTER MEMORIES)
 RT barrels (containers)
 ∞ buckets
 cans
 ∞ containers
 ∞ cylinders
 ∞ drums
 tanks (containers)

dry cells

GS electric generators
 . direct power generators
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 RT metal air batteries
 nickel cadmium batteries
 storage batteries
 thermal batteries

dry friction

GS friction
 . **dry friction**
 RT abrasion
 kinetic friction
 sliding friction
 static friction

dry heat

GS heat
 . **dry heat**
 RT geothermal resources
 geothermal technology
 high temperature environments
 humidity
 ovens

drydocks

RT ∞ ports
 sea launching

dryers (equipment)

USE **drying apparatus**

drying

UF *desiccation*
dewetting
 GS **drying**
 . dehumidification
 . dehydration
 . freeze drying
 RT ∞ absorption
 baking
 concentrating
 curing
 desaturation
 dewatering
 diffusion
 enthalpy
 evaporation
 firing (igniting)
 roasting
 ∞ separation
 silica gel
 water loss

drying apparatus

UF *dryers (equipment)*
 GS separators
 . **drying apparatus**
 . . desiccators

RT absorbers (equipment)
 columns (process engineering)
 condensers (liquefiers)
 dehydrated food
 evaporators
 furnaces

DS1 (space mission)

(added October 1998)

USE **Deep Space 1 Mission**

DSIF (instrumentation facility)

USE **Deep Space Instrumentation Facility**

DSN (space network)

USE **Deep Space Network**

DSN helicopter

USE **QH-50 helicopter**

DSSSL

USE **document markup languages**

DTA (analysis)

USE **thermal analysis**

DTL integrated circuits

UF *Diode-Transistor-Logic integ circuits*

GS circuits

. integrated circuits
 . . **DTL integrated circuits**

RT electronic packaging
 large scale integration
 microminiaturization
 molecular electronics
 transistor circuits

DTMB-111 ground effect machine

USE **ground effect machines**

DTMB-430 ground effect machine

USE **ground effect machines**

Dual Air Density Explorer

UF *DAD Explorer*

GS artificial satellites

. scientific satellites

. . Explorer satellites

. . . **Dual Air Density Explorer**

dual frequency radar

USE **multispectral radar**

dual mode propulsion

USE **hybrid propulsion**

dual spin spacecraft

RT OSO-7

∞ spacecraft

spacecraft stability

spin stabilization

dual thrust nozzles

GS rocket nozzles

. **dual thrust nozzles**

RT ∞ nozzles

thrust

dual wing configurations

DEF A configuration of two wings of nearly the same planform and area, one behind the other.

RT biplanes

joined wings

tandem wing aircraft

wings

duality principle

DEF Principle that for any theorem in electric circuit analysis there is a dual theorem in which quantities are replaced with dual quantities. Examples are current and voltage or impedance and admittance.

RT ∞ analyzing

duality theorem

- circuits
- equivalent circuits
- network analysis
- ∞ paths
- ∞ principles
- signal flow graphs

duality theorem

DEF Theorem which states that if either of two dual linear programming problems has a solution, then so does the other.

- GS theorems
 - . **duality theorem**
- RT homology
- isomorphism
- ∞ mathematics
- ∞ relationships

dubnium

(added May 1998)

- GS chemical elements
 - . **dubnium**
- RT rutherfordium
- seaborgium

duct geometry

DEF The shape and dimensions of ports or other openings designed for passage of fluids (gases, liquids, or mixtures) in or external to engines.

- GS geometry
 - . **duct geometry**
- RT air flow
- annular ducts
- circular tubes
- dump combustors
- fluid flow
- intake systems
- openings
- spatial marching

ducted bodies

- RT annular ducts
- axisymmetric bodies
- bluff bodies
- blunt bodies
- ∞ bodies
- ducts
- intake systems
- nacelles
- nose inlets
- shrouds
- slender bodies
- two dimensional bodies

ducted fan engines

DEF Aircraft engines incorporating a fan or propeller enclosed in a duct; especially jet engines in which an enclosed fan or propeller is used to ingest ambient air to augment the gases of combustion in the jetstream.

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **ducted fan engines**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **ducted fan engines**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **ducted fan engines**
- RT turbofan engines

ducted fans

- DEF Fans enclosed in ducts.
- RT blowers
- fan blades
- ∞ fans
- lift fans
- propeller fans

- ring wings
- shrouded propellers
- turbofans
- ventilation fans

ducted flow

- GS fluid flow
 - . internal flow
 - . . **ducted flow**
 - . . . Knudsen flow
- RT air flow
- cavity flow
- channel flow
- choked flow
- corner flow
- dump combustors
- flow geometry
- flow noise
- fuel flow
- heat transmission
- wall flow

ducted propellers

USE **shrouded propellers**

ducted rocket engines

- GS engines
 - . rocket engines
 - . . **ducted rocket engines**
- RT booster rocket engines
- ∞ hybrid rocket engines
- internal combustion engines
- liquid propellant rocket engines
- restartable rocket engines
- solid propellant rocket engines
- sustainer rocket engines

ductile-brittle transition

(added February 1994)

- SN ((INCLUDES BOTH DUCTILE-TO-BRITTLE AND BRITTLE-TO-DUCTILE TRANSITIONS))
- UF *brittle-ductile transition*
- RT brittleness
- ductility
- fracture strength
- plastic deformation
- ∞ transition
- transition temperature
- yield strength

ductility

- GS mechanical properties
 - . **ductility**
- RT brittleness
- compressive strength
- creep properties
- ductile-brittle transition
- elongation
- fatigue (materials)
- flattening
- fractography
- fracture strength
- hardness
- impact strength
- malleability
- metal drawing
- notch strength
- plastic properties
- shear properties
- softness
- stress relaxation
- stretching
- temper (metallurgy)
- tensile strength
- toughness
- Tresca flow
- weldability

ducts

DEF Specifically, tubes or passages that confine and conduct fluids, as passages for the flow of air to compressors of gas turbine engines, or pipes leading air to superchargers.

- GS **ducts**
 - . acoustic ducts
 - . air ducts

- . annular ducts
- RT baffles
- cavities
- ∞ channels
- ducted bodies
- exhaust systems
- flues
- intake systems
- nose inlets
- openings
- orifices
- outlets
- pipes (tubes)
- plenum chambers
- ports (openings)
- scoops
- throats
- ∞ tubes
- ventilation
- vents
- windows (apertures)

Duffing differential equation

- GS algebra
 - . nonlinear equations
 - . . **Duffing differential equation**
 - analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **Duffing differential equation**
 - . . nonlinear equations
 - . . . **Duffing differential equation**
- RT ∞ equations
- probability theory

dullness

USE **luster**

dummies

- RT decoys
- models
- simulators

dummy loads

USE **impedance loading output**

dump combustors

DEF Combustors having a means of reducing flow velocity and forming recirculation zones through the sudden enlargement area between the inlet duct and the combustion chamber.

- GS combustion chambers
 - . **dump combustors**
- RT combustible flow
- combustion efficiency
- duct geometry
- ducted flow
- engine parts
- flame holders
- flow velocity
- inlet flow
- ramjet engines
- rocket engines

dumping

- RT disconnect devices
- disposal
- ejection
- emptying
- expulsion
- jettisoning
- materials handling
- oil slicks
- releasing
- spilling
- spreading
- unloading

Dunaliella

- GS plants (botany)
 - . algae

.. **Dunaliella**

dunes
 DEF Low mounds, ridges, banks, or hills of loose, windblown granular material, usually sand, capable of movement. Used for barchans, coastal dunes, and sand dunes.
 UF *barchans*
coastal dunes
sand dunes
 GS landforms
 . **dunes**
 RT beaches
 coasts
 deserts
 lagoons
 Sahara Desert (Africa)
 sands
 topography
 wind effects

Dungeys wind shear mechanism
 USE **wind shear**

dunite
 GS rocks
 . igneous rocks
 . . **dunite**
 RT minerals
 olivine
 peridotite
 soils

duochromators
 RT electromagnetic radiation
 ∞ generators
 light sources
 measuring instruments
 monochromators
 radiation sources
 spectrophotometers

duoplasmatrons
 GS ion sources
 . plasmatrons
 . . **duoplasmatrons**
 plasma generators
 . plasmatrons
 . . **duoplasmatrons**
 RT electric discharges
 ion propulsion
 plasma propulsion
 plasmas (physics)
 sputtering

duplex operation
 DEF The operation of associated transmitting and receiving apparatus in which the processes of transmission and reception are concurrent.
 RT ∞ metallurgy
 phase shift circuits
 switching circuits

duplexers
 DEF Devices which permit a single antenna system to be used for both transmitting and receiving. Duplexers should not be confused with diplexers, devices permitting an antenna system to be used simultaneously or separately by two transmitters.
 RT circuits
 circulators (phase shift circuits)
 magic tees
 monopulse radar
 receivers
 switching circuits
 transmitters

duplicating
 USE **reproduction (copying)**

durability
 RT aircraft survivability
 corrosion
 cumulative damage

damage
 degradation
 deterioration
 ∞ endurance
 life (durability)
 long term effects
 mechanical properties
 ∞ physical properties
 quality
 reliability
 ∞ resistance
 ruggedness
 stability
 vulnerability
 wear

duration
 USE **time**

durene
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **durene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **durene**

dust
 DEF An imprecise term referring to particulates capable of temporary suspension in air or other gases - also particles smaller than an arbitrary selected size.

GS particles
 . **dust**
 . . cosmic dust
 . . . interplanetary dust
 meteoroid dust clouds
 zodiacal dust
 . . lunar dust
 . . terrestrial dust belt
 RT aerosols
 air pollution
 Aitken nuclei
 cleaning
 ∞ clouds
 combustion products
 contaminants
 dirt
 ∞ dispersion
 dispersions
 dusty plasmas
 fumes
 particulates
 pollen
 powder (particles)
 R Coronae Borealis stars
 sands
 smoke
 space debris

dust collectors
 GS accumulators
 . **dust collectors**
 separators
 . **dust collectors**
 RT air filters
 electrostatic precipitators
 exhaust systems
 precipitators

dust storms
 GS storms
 . storms (meteorology)
 . . **dust storms**
 RT atmospheric electricity
 atmospheric physics
 Mars (planet)
 Mars environment
 Mars surface
 wind effects

dusty plasmas
(added May 2001)
 DEF Ionized gases containing small particles of solid matter, which are charged and

interact through a Coulomb repulsion. They behave much like a colloidal suspension, exhibiting for example crystalline, liquid, and gas phases, and a melting/freezing phase transition.

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **dusty plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **dusty plasmas**
 RT dust
 planetary rings
 plasma clouds
 plasma composition
 plasma-particle interactions
 space plasmas
 strongly coupled plasmas

dwarf galaxies
 DEF Galaxies with low luminosity.
 GS celestial bodies
 . galaxies
 . . **dwarf galaxies**
 RT local group (astronomy)

dwarf novae
 DEF Short period binary systems in which a red quasi-main sequence star fills its Roche lobe and transfers matter, via an accretion disk, onto a white dwarf.

GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 eclipsing binary stars
 **dwarf novae**
 . . main sequence stars
 . . . dwarf stars
 **dwarf novae**
 . . variable stars
 . . . novae
 **dwarf novae**
 RT Hercules nova
 stellar mass accretion
 stellar mass ejection
 superhumps (astronomy)
 white dwarf stars

dwarf stars
 GS celestial bodies
 . stars
 . . main sequence stars
 . . . **dwarf stars**
 dwarf novae
 flare stars
 red dwarf stars
 RT brown dwarf stars
 cataclysmic variables
 F stars
 G stars
 K stars
 late stars
 Nemesis (star)
 subdwarf stars
 subgiant stars
 white dwarf stars

dwell
 RT delay
 ignition systems
 timing devices

dyadics
 GS algebra
 . polynomials
 . . **dyadics**
 RT vectors (mathematics)

dye lasers
 GS stimulated emission devices
 . lasers
 . . organic lasers
 . . . **dye lasers**

- RT dyes
 - infrared lasers
 - laser outputs
 - liquid lasers
 - optical communication
 - rhodamine
 - tuning
 - two-wavelength lasers

dyes

- GS **dyes**
 - . methylene blue
 - . rhodamine
 - . thiazine (trademark)
- RT acriflavine
 - aniline
 - anthraquinones
 - azines
 - azo compounds
 - chromophores
 - dye lasers
- ∞ markers
 - methylene
 - phenanthrene
 - stilbene

dynamic characteristics

- UF *dynamic properties*
- GS **dynamic characteristics**
 - . drag
 - . . electrostatic drag
 - . . friction drag
 - . . . aerodynamic drag
 - supersonic drag
 - viscous drag
 - . . . induced drag
 - . . . minimum drag
 - . . . pressure drag
 - supersonic drag
 - wave drag
 - interference drag
 - satellite drag
 - . . dynamic pressure
 - . . dynamic stability
 - . . combustion stability
 - . . . flame stability
 - . . . control stability
 - . . . frequency stability
 - . . . motion stability
 - aerodynamic stability
 - aircraft stability
 - hovering stability
 - attitude stability
 - directional stability
 - gyroscopic stability
 - lateral stability
 - longitudinal stability
 - flow stability
 - boundary layer stability
 - flame stability
 - magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - Taylor instability
 - low speed stability
 - rotary stability
 - gyroscopic stability
 - spacecraft stability
 - gravitational instability
 - . . . flow characteristics
 - flow distribution
 - flow stability
 - boundary layer stability
 - flame stability
 - magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - Taylor instability
 - . . . flow velocity
 - solar wind velocity
 - . lift
 - . . interference lift
 - . . jet lift
 - . . rotor lift
 - . . zero lift
 - . . transient response
 - RT accuracy

- aerodynamic balance
- aerodynamic characteristics
- amplification
- automatic control
- automatic control valves
- bandwidth
- ∞ characteristics
- ∞ control
 - damping
 - distribution (property)
 - dynamic range
- ∞ dynamics
- ∞ equilibrium
 - errors
 - frequency response
 - hysteresis
 - impedance
 - linearity
 - ocean dynamics
 - precision
- ∞ properties
 - range (extremes)
 - reaction time
 - reliability
 - remote control
 - resolution
 - resonant frequencies
 - rotor dynamics
 - sensitivity
 - stability
 - time constant
 - transfer functions

dynamic control

- GS automatic control
 - . **dynamic control**
- RT adaptive control
 - aeroservoelasticity
- ∞ control
 - control theory
- ∞ dynamics
 - feedback control
 - inverse kinematics
 - model reference adaptive control
 - robot control
 - robot dynamics

dynamic loads

- DEF Loads imposed by dynamic action, as distinguished from a static load. Specifically, with respect to aircraft, rockets, or spacecraft, a load due to an acceleration of craft, as imposed by gusts, by maneuvering, by landing, by firing rockets, etc.
- GS loads (forces)
 - . **dynamic loads**
 - . . aerodynamic loads
 - . . . blast loads
 - . . . gust loads
 - . . . cyclic loads
 - . . . rolling contact loads
 - . . . thrust loads
 - . . . transient loads
 - gust loads
 - impact loads
 - landing loads
 - shock loads
 - blast loads
 - . . . variable amplitude loading
 - . . . vibratory loads
 - . . . wing loading
- RT axial compression loads
 - axial loads
 - compression loads
 - critical loading
- ∞ dynamics
 - edge loading
 - gas-solid interactions
 - NASTRAN
 - random loads
 - static loads
 - structural design criteria
 - transverse loads
 - wind pressure

dynamic models

- DEF Models of aircraft or other objects hav-

ing their linear dimensions and weight and moments of inertia reproduced in scale in proportion to the original.

- GS models
 - . **dynamic models**
- RT aircraft models
 - biological models (mathematics)
 - bond graphs
- ∞ dynamics
 - large eddy simulation
 - mathematical models
 - ocean models
 - Petri nets
 - powered models
 - similarity theorem
 - spacecraft models
 - static models
 - systems simulation
 - wind tunnel models

dynamic modulus of elasticity

- GS mechanical properties
 - . elastic properties
 - . . modulus of elasticity
 - . . . **dynamic modulus of elasticity**
- RT ∞ dynamics
 - ultrasonic tests

dynamic pressure

DEF The pressure of a fluid resulting from its motion, equal to one half the fluid density times the fluid velocity squared. In incompressible flow, dynamic pressure is the difference between total pressure and static pressure.

- GS dynamic characteristics
 - . **dynamic pressure**
 - pressure
- RT blast loads
 - contact loads
- ∞ dynamics
 - impact loads
 - kinetic theory
 - overpressure
 - Riemann waves

dynamic programming

- GS optimization
 - . mathematical programming
 - . . **dynamic programming**
 - research
 - . **dynamic programming**
- RT ∞ applications of mathematics
 - Bellman theory
 - constraints
 - critical path method
 - decision theory
- ∞ dynamics
 - formalism
 - linear programming
 - mathematical models
 - nonlinear systems
 - operations research
- ∞ programming
 - steepest descent method

dynamic properties

- USE **dynamic characteristics**

dynamic range

- (added August 1991)
- SN (LIMITED TO SIGNAL DETECTION/MODULATION)
- DEF The range of a signal detector or transmitter between the smallest and largest detectable signal levels which can be detected without inducing changes in its gain characteristics; usually expressed in decibels.
- GS range (extremes)
 - . **dynamic range**
- RT amplification
 - amplifiers
 - dynamic characteristics
 - equipment specifications
 - frequency ranges
 - frequency response
 - microchannel plates

modulation
ratios
signal detection
signal to noise ratios

dynamic response

GS responses
 . **dynamic response**
 . . transient response
RT aeroservoelasticity
 amplification
 damping
∞ dynamics
 fiber orientation
 frequency domain analysis
 frequency response
 impedance
 modal response
 parameter identification
 ramp functions
 reaction time
 response bias
 rotor dynamics
 sensitivity
 step functions
 stroking tests
 system identification
 time constant
 time domain analysis
 transfer functions

dynamic stability

DEF The characteristics of a body, such as an aircraft or rocket, that causes it, when disturbed from an original state of steady flight or motion, to damp the oscillations set up by restoring moments and gradually return to its original state; specifically, the aerodynamic characteristics.

GS dynamic characteristics
 . **dynamic stability**
 . . combustion stability
 . . . flame stability
 . . control stability
 . . frequency stability
 . . motion stability
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 . . . directional stability
 gyroscopic stability
 . . . lateral stability
 . . . longitudinal stability
 . . . flow stability
 . . . boundary layer stability
 . . . flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 Taylor instability
 . . . low speed stability
 . . . rotary stability
 gyroscopic stability
 . . . spacecraft stability
 . . . gravitational instability
 stability
 . **dynamic stability**
 . . combustion stability
 . . . flame stability
 . . control stability
 . . frequency stability
 . . motion stability
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 . . . directional stability
 gyroscopic stability
 . . . lateral stability
 . . . longitudinal stability
 . . . flow stability
 . . . boundary layer stability
 . . . flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability

. . . . Taylor instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
. . . gravitational instability
RT coning motion
 counterbalances
 damping
 dimensional stability
 drift (instrumentation)
∞ dynamics
 horizontal orientation
 missing mass (astrophysics)
 resonant vibration
 rotor dynamics
 spacecraft motion
 stable oscillations
 static stability
 surface stability
 systems stability
 transient response
 vertical orientation

dynamic structural analysis

UF *structural dynamics*
GS structural analysis
 . **dynamic structural analysis**
 . . flutter analysis
RT aeroservoelasticity
 ∞ dynamics
 Euler-Bernoulli beams
 flat plates
 Mindlin plates
 shock spectra

dynamic tests

RT aerodynamic stability
 ∞ dynamics
 flight tests
 low speed stability
 motion stability
 spin dynamics
 spin tests
 static tests
 ∞ tests
 vibration tests

dynamical systems

RT attractors (mathematics)
 control theory
 mathematical models
 nonlinear systems
 systems simulation

∞ **dynamics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Study of the motion of a system of material particles under the influence of forces, especially those which originate outside the system under consideration.
RT aerodynamics
 aerostatics
 aerothermodynamics
 astrodynamics
 biodynamics
 chiral dynamics
 computational fluid dynamics
 continuum mechanics
 dynamic characteristics
 dynamic control
 dynamic loads
 dynamic models
 dynamic modulus of elasticity
 dynamic pressure
 dynamic programming
 dynamic response
 dynamic stability
 dynamic structural analysis
 dynamic tests
 elastodynamics
 electrodynamics
 equations of motion
 field theory (physics)
 fluid dynamics

fluid mechanics
gas dynamics
geodynamics
group dynamics
Hamiltonian functions
hemodynamics
hydrodynamics
kinematics
kinetics
magnetohydrodynamics
∞ mechanics (physics)
 molecular dynamics
 momentum
 momentum transfer
 nutations
 ocean dynamics
 plasma dynamics
 quantum chromodynamics
 rarefied gas dynamics
 resonant frequencies
 resonant vibration
 robot dynamics
 rotor dynamics
 spin dynamics
 stabilizers (fluid dynamics)
 statics
 terradyamics
 thermodynamics
 variational principles
 velocity
 vibration

Dynamics Explorer 1 satellite

DEF A twin satellite of Dynamics Explorer 2 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . Dynamics Explorer satellites
 **Dynamics Explorer 1 satellite**

Dynamics Explorer 2 satellite

DEF A twin satellite of Dynamics Explorer 1 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . Dynamics Explorer satellites
 **Dynamics Explorer 2 satellite**

Dynamics Explorer satellites

DEF Two satellites that have been designed to occupy different orbits and supply comparative data for studying the boundary region between earth and space. Of the 24 goals of the program, one half require both satellite's data, one fourth one satellite's data and one fourth the other satellite's data. The satellites were launched together in August of 1981.

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Dynamics Explorer satellites**
 Dynamics Explorer 1 satellite
 Dynamics Explorer 2 satellite

dynamite

GS explosives
 . **dynamite**
RT nitroglycerin

dynamo theory

RT Earth core
 geomagnetism
 solar convection (astronomy)
 stellar convection
 telluric currents
∞ theories

dynamometers

DEF Instruments for measuring power or force; specifically, instruments for measuring the power, torque, or thrust of aircraft engines or rockets. Used for electrodynamicometers.

dynodes

UF *electrodynamometers*
GS electric generators
. rotating generators
. . **dynamometers**
measuring instruments
. **dynamometers**
RT ergometers
mechanical measurement
∞ test equipment
thrust measurement
torquemeters

dynamos

USE **rotating generators**

Dyna-Soar space glider

USE **X-20 aircraft**

dynodes

GS electrodes
. **dynodes**
RT camera tubes
photomultiplier tubes

secondary emission

Dyson theory

RT Heisenberg theory
quantum mechanics
∞ theories

dyspnea

DEF Difficult or labored breathing.
GS rates (per time)
. respiratory rate
. . **dyspnea**
signs and symptoms
. **dyspnea**

dysprosium

GS chemical elements
. rare earth elements
. . **dysprosium**
. . . dysprosium isotopes
metals
. rare earth elements
. . **dysprosium**

. . . dysprosium isotopes

dysprosium 161

USE **dysprosium isotopes**

dysprosium compounds

GS rare earth compounds
. **dysprosium compounds**
RT ∞ chemical compounds
∞ metal compounds

dysprosium isotopes

UF *dysprosium 161*
GS chemical elements
. nuclides
. . isotopes
. . . **dysprosium isotopes**
. rare earth elements
. . dysprosium
. . . **dysprosium isotopes**
metals
. rare earth elements
. . dysprosium
. . . **dysprosium isotopes**

E

E glass

DEF A low alkali lime borosilicate glass made into glass fiber filaments used in composite materials.

- GS glass
 - . **E glass**
 - .. S glass
- RT composite materials
 - glass fiber reinforced plastics
 - glass fibers
 - silicon dioxide

E layers

USE **E region**

E region

SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 90 AND 150 KM)
 DEF A portion of the ionosphere extending from about 90 to 150 km. In daylight, the electron density has one maximum at about 105 km. and is dependent upon solar activity and the solar zenith angle. At night the E region nearly disappears except at high latitudes where particle precipitation can produce ionization at altitudes greater than those experienced under sunlight conditions.

- UF *E layers*
 - night E layer*
- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... **E region**
 - E-1 layer
 - E-2 layer
 - sporadic E layer regions
 - . **E region**
 - .. E-1 layer
 - .. E-2 layer
 - .. sporadic E layer
- RT lower ionosphere
 - upper ionosphere

E-1 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-1 layer** regions
 - . E region
 - .. **E-1 layer**
- RT sporadic E layer

E-2 aircraft

- UF *Hawkeye aircraft*
 - W2F aircraft*
- GS AWACS aircraft
 - . **E-2 aircraft**
 - Grumman aircraft
 - . **E-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - .. **E-2 aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft
 - passenger aircraft
 - turboprop engines

E-2 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-2 layer** regions
 - . E region
 - .. **E-2 layer**

RT sporadic E layer

E-3A aircraft

- GS AWACS aircraft
 - . **E-3A aircraft**
 - Boeing aircraft
 - . **E-3A aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft

E-4A aircraft

- UF *AABNCP*
 - Advanced Airborne Command Post*
 - Boeing 747B aircraft*
- GS AWACS aircraft
 - . **E-4A aircraft**
 - Boeing aircraft
 - . **E-4A aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft

EAI 680 computer

- GS data processing equipment
 - . computers
 - .. analog computers
 - ... **EAI 680 computer**
 - .. digital computers
 - ... **EAI 680 computer**

EAI 8400 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8400 computer**

EAI 8900 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8900 computer**

EAM (physical chemistry)

(added February 1998)
 USE **embedded atom method**

EAP (polymers)

(added June 2000)
 USE **electroactive polymers**

ear

- GS anatomy
 - . sense organs
 - .. **ear**
 - ... eardrums
 - ... eustachian tubes
 - ... labyrinth
 - cochlea
 - Corti organ
 - otolith organs
 - semicircular canals
 - vestibules
 - ... middle ear
- RT artificial ears
 - auditory perception
 - endolymph
 - hearing
 - labyrinthectomy
 - mastoids
 - otolaryngology
 - otology

ear pressure test

- GS physiological tests
 - . **ear pressure test**
- RT middle ear pressure
 - pressure

vertigo
 vestibular tests

ear protectors

- GS protectors
 - . **ear protectors**
- RT noise injuries
 - noise reduction

eardrums

- GS anatomy
 - . sense organs
 - .. ear
 - ... **eardrums**
- RT eustachian tubes
 - middle ear pressure
 - semicircular canals

Early Apollo Surface Experiments Package

USE **EASEP**

Early Bird satellites

- GS artificial satellites
 - . active satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - .. communication satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - .. synchronous satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
- RT ATS
 - Comsat program

early stars

- GS celestial bodies
 - . stars
 - .. **early stars**
 - ... hot stars
 - A stars
 - B stars
 - shell stars
 - Sigma Orionis
 - blue stars
 - O stars
 - white dwarf stars
 - Wolf-Rayet stars
- RT late stars
 - main sequence stars
 - star formation

early warning systems

- GS warning systems
 - . **early warning systems**
 - .. Ballistic Missile Early Warning System
- RT air defense
 - AWACS aircraft
 - Cobra Dane (radar) detection
 - E-2 aircraft
 - E-3A aircraft
 - E-4A aircraft
 - missile detection
 - over-the-horizon radar
 - radar targets
 - radar tracking
 - Synchronous Earth Observatory satellite
 - ∞ systems
 - warning

earphones

DEF Electroacoustic transducers operating from an electrical system to an acoustical system and intended to be closely coupled acoustically to the ear. Used for headsets.
 UF *headsets*
 GS audio equipment

- RT . earphones
- acoustics
- auditory perception
- interphones
- sound transmission
- telephones

Earth & Ocean Physics Applications Program

- UF *EOPAP*
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
 - . projects
 - .. **Earth & Ocean Physics Applications Program**
 - . space programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
- RT oceanography
- ∞ research projects

Earth (planet)

DEF That planet of the solar system which is fifth in size of the 9 major planets, and third (between Venus and Mars) in order of distance from the sun (about 93 million miles). Major data for the Earth: equatorial radius: 6,378 kilometers (3,963. 5 miles); polar radius: 6,357 kilometers (3,941 miles); equatorial circumference: 40,075 kilometers (24,902 miles).

- UF *world*
- GS celestial bodies
 - . planets
 - .. terrestrial planets
 - ... **Earth (planet)**
- RT asteroid collisions
- Earth sciences
- Eastern Hemisphere
- geodesy
- geoelectricity
- geography
- geology
- geomagnetism
- geophysics
- ∞ globes
- planetary craters
- polar caps
- terrestrial radiation
- Western hemisphere

Earth albedo

DEF The fraction of the solar incident radiation that is reflected off the Earth and back into space.

- GS albedo
 - . **Earth albedo**
- RT absorptance
- cosmic ray albedo
- Earth radiation budget
- Earth radiation budget experiment
- Ebert spectrometers
- lunar albedo
- reflectance
- terrestrial radiation

Earth atmosphere

- GS **Earth atmosphere**
 - . chemosphere
 - . free atmosphere
 - . heterosphere
 - . homosphere
 - . lower atmosphere
 - .. troposphere
 - ... tropopause
 - . middle atmosphere
 - .. mesosphere
 - ... mesopause
 - . stratosphere
 - ... ozonosphere
 - ... stratopause
 - . midlatitude atmosphere
 - . primitive Earth atmosphere

- . upper atmosphere
- .. Earth ionosphere
- ... E region
- E-1 layer
- E-2 layer
- sporadic E layer
- ... lower ionosphere
- D region
- ... upper ionosphere
- F region
- F 1 region
- F 2 region
- .. exosphere
- .. thermosphere
- ... turbopause

- RT acoustic sounding
- aerospace environments
- air
- air pollution
- air quality
- airglow
- ∞ atmospheres
- atmospheric circulation
- atmospheric composition
- atmospheric electricity
- atmospheric entry
- Atmospheric General Circulation Experiment
- auroras
- bioastronautics
- Earth magnetosphere
- environments
- geopotential height
- global air pollution
- greenhouse effect
- meteor trails
- OPEN Project
- planetary atmospheres
- plasmasphere
- radiation belts
- satellite atmospheres
- scale height
- superrotation
- teleconnections (meteorology)
- weathering

Earth axis

DEF Any one of a set of mutually perpendicular reference axes established with the upright axis (the Z axis) pointing to the center of the Earth, used in describing the position or performance of an aircraft or other body in flight. The Earth axes may remain fixed or may move with the aircraft or other object.

- GS axes (reference lines)
 - . axes of rotation
 - .. **Earth axis**
- RT Chandler wobble
- coordinates
- Earth orientation
- geodesy
- polar wandering (geology)

Earth core

- GS cores
 - . planetary cores
 - .. **Earth core**
 - lithosphere
 - . **Earth core**
- RT core-mantle boundary
- dynamo theory
- geophysical fluids
- structural properties (geology)

Earth crust

- UF *crustal dynamics*
- GS crusts
 - . planetary crusts
 - .. **Earth crust**
 - lithosphere
 - . **Earth crust**
- RT coesite
- continental drift
- core sampling
- cratons
- crustal fractures
- Earth mantle

- earthquake damage
- folds (geology)
- lunar crust
- massifs
- plates (tectonics)
- San Andreas Fault
- sea floor spreading
- stishovite
- structural properties (geology)

Earth cryosphere

- (added June 1996)
- DEF The part of the Earth's surface that is perennially frozen - the zone of the Earth where ice and frozen ground are formed.
- RT air land interactions
- air water interactions
- ∞ cryospheres
- ice environments
- meteorology
- permafrost
- polar caps
- snow cover

Earth currents

- USE **telluric currents**

Earth Energy Budget Experiment

- USE **LZEEBE satellite**

Earth environment

- GS environments
 - . **Earth environment**
- RT air pollution
- arid lands
- desertification
- magnetosheath

Earth figure

- USE **geodesy**

Earth gravitation

- GS gravitation
 - . **Earth gravitation**
- RT geomagnetism
- geopotential
- geopotential height
- gravitational fields
- gravity anomalies

Earth hydrosphere

DEF That part of the Earth that consists of the oceans, seas, lakes, and rivers. Used for hydrosphere (Earth).

- UF *hydrosphere (Earth)*
- RT biosphere
- hydrological cycle
- hydrology
- lakes
- limnology
- oceans
- seas

Earth ionosphere

- SN (ALTITUDES ABOVE APPROXIMATELY 50 KM)
- GS Earth atmosphere
 - . upper atmosphere
 - .. **Earth ionosphere**
 - ... E region
 - E-1 layer
 - E-2 layer
 - sporadic E layer
 - ... lower ionosphere
 - D region
 - ... upper ionosphere
 - F region
 - F 1 region
 - F 2 region
- RT atmospheric ionization
- chemosphere
- CRRES (satellite)
- Earth magnetosphere
- Earth-ionosphere waveguide
- electrojets
- exosphere

field aligned currents
heterosphere
homosphere
Intasat satellite
ion concentration
ion density (concentration)
∞ ionospheres
ionospheric propagation
ionospheric storms
∞ layers
magnetosphere-ionosphere coupling
mesosphere
midlatitude atmosphere
Polar/GGS spacecraft
regions
satellite atmospheres
shear layers
space weather
thermosphere

Earth limb

GS planetary limb
. **Earth limb**
RT astronomy
libration
∞ limbs

Earth magnetosphere

GS environments
. **Earth magnetosphere**
. . geomagnetic tail
. . magnetopause
. . magnetosheath
RT AMPTE (satellites)
barium ion clouds
Chapman-Ferraro problem
Cluster Mission
corotation
CRRES (satellite)
Earth atmosphere
Earth ionosphere
exosphere
field aligned currents
geomagnetic hollow
geomagnetism
GEOS satellites (ESA)
heterosphere
IMAGE satellite
International Magnetospheric Explorer
International Magnetospheric Study
KP index
magnetic fields
magnetosphere-ionosphere coupling
∞ magnetospheres
neutral sheets
OPEN Project
planetary magnetospheres
plasma clouds
plasmapause
plasmasphere
polar cusps
Polar/GGS spacecraft
radiation belts
radiation trapping
satellite atmospheres
screen effect
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space plasmas
space weather
thermosphere
Wind/GGS spacecraft

Earth magnetotail

USE **geomagnetic tail**

Earth mantle

DEF The zone of the Earth below the crust and above the core (to a depth of 3480 km), which is divided into the upper mantle and the lower mantle, with a transition zone between. Used for mantle (Earth structure).
UF *mantle (Earth structure)*
GS lithosphere
. **Earth mantle**

planetary mantles
. **Earth mantle**
RT asthenosphere
coesite
core-mantle boundary
Earth crust
lunar mantle
plates (tectonics)
regolith
sea floor spreading
siderophile elements
stishovite
structural properties (geology)
subduction (geology)

∞ **Earth motion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Chandler wobble
Earth movements
Earth orientation
Earth rotation
polar wandering (geology)
solar orbits

Earth movements

GS **Earth movements**
. earthquakes
. landslides
RT avalanches
crevasses
crustal fractures
∞ Earth motion
earthquake damage
geodynamics
large aperture seismic array
neotectonics
sea floor spreading
seismic waves
seismology
tectonics
tsunami waves

Earth observations (from space)

DEF The acquisition of Earth surface data from aircraft or spacecraft.
GS observation
. **Earth observations (from space)**
. . satellite observation
RT aerial photography
data acquisition
Earth Observing System (EOS)
Earthnet
Feature Identification and Location
Exper
International Geosphere-Biosphere program
Landsat satellites
MODIS (radiometry)
multispectral band scanners
multispectral photography
observation scheduling
photography
Shuttle Imaging Radar
SPOT (French satellite)
Terra spacecraft

Earth Observing System (EOS)

DEF NASA's orbital multisensor observatory system for the long term acquisition of Earth sciences data to be operated in conjunction with an integrated ground-based science information system. This international system will become operational in 1995 when the first of four polar platforms will be launched. The first and third will be launched under U. S. auspices. The second under ESA auspices and the last under Japanese auspices.
UF **EOS**
GS **Earth Observing System (EOS)**
. Terra spacecraft
RT Advanced Microwave Sounding Unit
Earth observations (from space)
EOS data and information system
Ice, Cloud and Land Elevation
Satellite

information systems
Landsat 6
Landsat 7
Mission to Planet Earth
remote sensing
space platforms
space station payloads
space station polar platforms

Earth orbital environments

UF *GEO environments*
Geosynchronous Earth Orbital Environments
LEO environments
low Earth orbital environments
GS environments
. aerospace environments
. . **Earth orbital environments**
. . extraterrestrial environments
. . **Earth orbital environments**
RT extraterrestrial radiation
low Earth orbits
microgravity
near Earth objects
space weather
spacecraft glow

Earth orbital rendezvous

UF *EOR (rendezvous)*
GS maneuvers
. orbital maneuvers
. . orbital rendezvous
. . . **Earth orbital rendezvous**
rendezvous
. space rendezvous
. . orbital rendezvous
. . . **Earth orbital rendezvous**
RT lunar orbital rendezvous
orbital mechanics
rendezvous trajectories
spacecraft trajectories
transfer orbits

Earth orbiting space stations

USE **space stations**

Earth orbits

SN (ORBITS AROUND THE EARTH)
GS orbits
. **Earth orbits**
. . geosynchronous orbits
. . low Earth orbits
. . twenty-four hour orbits
RT apogees
Apollo asteroids
circular orbits
circumlunar trajectories
elliptical orbits
equatorial orbits
Hansen lunar theory
Hill lunar theory
Hill method
lunar orbits
Near Earth Asteroid Rendezvous
Mission
orbital lifetime
orbital mechanics
parking orbits
perigees
planetary orbits
polar orbits
satellite orbits
spacecraft orbits
stationary orbits
transfer orbits

Earth orientation

RT Chandler wobble
Earth axis
∞ Earth motion
Earth rotation
nutaton
polar wandering (geology)

Earth planetary structure

precession

Earth planetary structure

RT asthenosphere
 continental drift
 geology
 geophysics
 hydrology
 lithosphere
 oceanography
 planetary composition
 planetary structure
 plates (tectonics)
 primitive Earth atmosphere
 structural properties (geology)
 ∞ structures
 tectonics

Earth radiation

USE **terrestrial radiation**

Earth radiation budget

GS energy budgets
 . **Earth radiation budget**
 RT atmospheric heat budget
 atmospheric radiation
 ∞ budgets
 Earth albedo
 Earth radiation budget experiment
 heat budget
 terrestrial radiation
 TRMM satellite

Earth radiation budget experiment

DEF Radiation measurements to determine the spatial and temporal variations of the Earth's radiance. The measurements have continued for the past two decades beginning with Explorer 7 in 1959 and through Nimbus 6 and 7. Used for ERBE.

UF **ERBE**

GS payloads
 . Space Shuttle payloads
 . . **Earth radiation budget experiment**

RT albedo
 Earth albedo
 Earth radiation budget
 ∞ radiation
 radiation measuring instruments
 terrestrial radiation

Earth resources

DEF Power sources and renewable or non-renewable materials occurring naturally on Earth.

GS resources
 . **Earth resources**
 . . forests
 . . . rain forests
 . . fossil fuels
 . . coal
 . . . anthracite
 . . . lignite
 . . . solvent refined coal
 . . crude oil
 . . natural gas
 . . . liquefied natural gas
 . . peat
 . . shale oil
 . . glaciers
 . . icebergs
 . . kerogen
 . . land ice
 . . marine resources
 . . oil fields
 . . range resources
 . . springs (water)
 . . tar sands
 . . thermal resources
 . . . geothermal resources
 . . . geysers
 . . underwater resources
 . . water resources
 . . . aquifers

RT alfalfa

arid lands
 Baltic Shield (Europe)
 bedrock
 birds
 brush (botany)
 chaparral
 coastal ecology
 coastal plains
 corn
 cotton
 crop growth
 crop identification
 deciduous trees
 deserts
 Earthnet
 energy policy
 energy technology
 environment management
 environment pollution
 environmental surveys
 EROS (satellites)
 farm crops
 farmlands
 fishes
 flats (landforms)
 ∞ food
 forest management
 geographic applications program
 geothermal energy conversion
 grains (food)
 granite
 grasslands
 Great Basin (US)
 Great Lakes (North America)
 Great Salt Lake (UT)
 ground water
 habitats
 hay
 ice mapping
 imagery
 kettles (geology)
 keys (islands)
 land use
 Large Area Crop Inventory
 Experiment
 lava
 leguminous plants
 limestone
 mammals
 marshlands
 millet
 mineral deposits
 minerals
 Mississippi River (US)
 NASA Interactive Planning System
 oats
 oceanography
 photography
 photomapping
 plants (botany)
 reconnaissance
 regolith
 remote sensing
 remote sensors
 resources management
 rivers
 rocks
 rural land use
 sands
 sandstones
 scanning
 shales
 soils
 sorghum
 spaceborne photography
 spectral reconnaissance
 SPOT (French satellite)
 strip mining
 sugar beets
 sugar cane
 sunflowers
 surface water
 surveillance
 terrain analysis
 thermal mapping
 tidepower
 timber identification

timber inventory
 tributaries
 vegetation
 vineyards
 waterwave energy
 waterwave energy conversion
 wharves
 windpower utilization

Earth Resources Experiment Package

USE **EREP**

Earth Resources Information System

GS information systems
 . **Earth Resources Information System**
 RT data systems
 EOS data and information system
 NASA programs
 programs
 Skylab program
 ∞ systems

Earth Resources Observation Satellites

USE **EROS (satellites)**

Earth Resources Program

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Earth Resources Program**
 Earth Resources Survey
 Program
 SEASAT program
 . space programs
 . . NASA space programs
 . . . **Earth Resources Program**
 Earth Resources Survey
 Program
 SEASAT program
 RT Apollo applications program
 change detection
 geographic applications program
 infrared radiometers
 Large Area Crop Inventory
 Experiment
 plant stress
 satellite observation
 Skylab program

Earth resources shuttle imaging radar

USE **Shuttle Imaging Radar**

Earth Resources Survey aircraft

RT aerial photography
 aerial reconnaissance
 ∞ aircraft
 photogeology
 photoreconnaissance
 reconnaissance aircraft

Earth Resources Survey Program

GS programs
 . NASA programs
 . . NASA space programs
 . . . Earth Resources Program
 **Earth Resources Survey Program**
 SEASAT program
 . space programs
 . . NASA space programs
 . . . Earth Resources Program
 **Earth Resources Survey Program**
 SEASAT program
 RT Apollo applications program

Skylab program

Earth Resources Technology Satellite 1
USE **Landsat 1**

Earth Resources Technology Satellite B
USE **Landsat 2**

Earth Resources Technology Satellite C
USE **Landsat 3**

Earth Resources Technology Satellite D
USE **Landsat 4**

Earth Resources Technology Satellite E
USE **Landsat E**

Earth Resources Technology Satellite F
USE **Landsat F**

Earth Resources Technology Satellites
USE **Landsat satellites**

Earth rotation
GS gyration
. rotation
. . **Earth rotation**
RT Chandler wobble
∞ Earth motion
Earth orientation
sidereal time
superrotation

Earth sciences
(added December 1991)
RT atmospheric physics
Earth (planet)
ecology
geochemistry
geodynamics
geology
geomagnetism
geophysics
hydrodynamics
hydrology
meteorology
oceanography
seismology

Earth shape
USE **geodesy**

Earth surface
GS lithosphere
. **Earth surface**
RT cratons
crustal fractures
equatorial regions
geodetic accuracy
marshlands
ocean surface
planetary surfaces
structural properties (geology)
∞ surfaces
terradyamics
topography

Earth terminal measurement system
DEF NBS system for measuring electromagnetic parameters of communication satellites and ground stations relative to antenna gain, ratio of carrier power to operating noise temperature, and satellite effective isotropic power.
RT communication satellites
electromagnetic measurement
electronic equipment tests
ground support equipment
∞ measurement
radio relay systems
∞ systems
∞ test equipment

Earth terminals
DEF Portable or stationary ground-based

equipment used to transmit and receive signals and other data via satellites in communications networks.

GS stations
. ground stations
. . **Earth terminals**

RT carrier to noise ratios
communication equipment
radio relay systems
satellite communication
satellite transmission
spacecraft communication
television systems
VSAT (network)

Earth tides
GS tides
. **Earth tides**
RT atmospheric tides
lunar tides

Earth Viewing Applications Laboratory
UF *EVAL*
GS laboratories
. space laboratories
. . **Earth Viewing Applications Laboratory**
payloads
. Space Shuttle payloads
. . **Earth Viewing Applications Laboratory**
RT SAIL project

Earth-ionosphere waveguide
(added August 1991)
DEF A natural waveguide consisting of the atmospheric duct formed by the ionospheric D region and the surface of the Earth making possible long-range communications in the 10KHz frequency range.
GS waveguides
. **Earth-ionosphere waveguide**
RT D region
Earth ionosphere
ionospheric propagation
plasmaguides
radio transmission
very low frequencies

Earth-Mars trajectories
GS trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . **Earth-Mars trajectories**
RT elliptical orbits
Mars exploration
Mars missions
orbital mechanics
transfer orbits

Earth-Mercury trajectories
GS trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . **Earth-Mercury trajectories**
RT elliptical orbits
orbital mechanics
transfer orbits

Earth-Moon system
RT Charon
gravitational fields
gravitational waves
lunar retroreflectors
moon
natural satellites
orbital mechanics
solar system
∞ systems
two body problem

Earth-Moon trajectories
GS trajectories
. spacecraft trajectories
. . lunar trajectories
. . . **Earth-Moon trajectories**

RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
cislunar space
interplanetary trajectories
lunar flight
lunar orbits
moon-Earth trajectories
parking orbits
rendezvous trajectories
round trip trajectories
transfer orbits

Earthnet
RT Earth observations (from space)
Earth resources
ESA satellites
European space programs
Landsat satellites
remote sensors
synthetic aperture radar

earthquake damage
GS damage
. **earthquake damage**
RT Earth crust
Earth movements
geological faults
microseisms
seismic energy
seismic waves
seismology
shock waves
tsunami waves

earthquake resistance
DEF Structural strength of natural geological formations reacting to seismic forces.
GS mechanical properties
. **earthquake resistance**
RT crustal fractures
earthquakes
fracture strength
impact strength
landforms
∞ resistance
seismic waves
shock resistance
shock waves
tremors

earthquake resistant structures
DEF Buildings and other structures designed for maximum safety and protection from the effects of earthquakes.
RT concrete structures
elastic bending
∞ elastic systems
seismic waves
shock waves
structural vibration
∞ structures

earthquakes
DEF Sudden motions or tremblings in the Earth caused by the abrupt release of slowly accumulated strain.
GS Earth movements
. **earthquakes**
RT crustal fractures
earthquake resistance
geological faults
large aperture seismic array
microseisms
planetary quakes

Earth-Venus trajectories

- plates (tectonics)
- Rouse belts
- San Andreas Fault
- San Andreas Fault experiment
- seismic waves
- seismology
- shock waves
- subduction (geology)
- tremors
- tsunami waves

Earth-Venus trajectories

- GS trajectories
 - . spacecraft trajectories
 - . . interplanetary trajectories
 - . . . **Earth-Venus trajectories**
- RT ∞ astronautics
 - flight optimization
 - interplanetary flight
- ∞ missions
 - orbits
 - space missions
 - space navigation
 - spacecraft reentry
 - transfer orbits

EASEP

- UF *Early Apollo Surface Experiments Package*
- GS packages
 - . instrument packages
 - . . **EASEP**
- RT ∞ instruments
 - lunar exploration
 - payloads
- ∞ surfaces

East Germany

- UF *German Democratic Republic*
Peoples Democratic Republic of Germany
- GS nations
 - . **East Germany**
- RT Central Europe
 - Europe
 - German space program
 - Germany
 - West Germany

East Pakistan

- USE **Bangladesh**

Eastern Hemisphere

- RT Earth (planet)
 - geography
 - ∞ hemispheres
 - Western hemisphere

eating

- GS ingestion (biology)
 - . **eating**
- RT digesting
 - ∞ food
 - mastication
 - space flight feeding
 - swallowing
 - synthetic food

Ebert spectrometers

- GS measuring instruments
 - . optical measuring instruments
 - . . **Ebert spectrometers**
 - . radiation measuring instruments
 - . . **Ebert spectrometers**
 - . spectrometers
 - . . **Ebert spectrometers**
 - optical equipment
 - optical measuring instruments
 - . . **Ebert spectrometers**
- RT Earth albedo
 - filter wheel infrared spectrometers
 - infrared spectrometers

- ultraviolet spectrometers

EBF

- USE **externally blown flaps**

EBR-1 reactor

- USE **Experimental Breeder Reactor 1**

EBR-2 reactor

- USE **Experimental Breeder Reactor 2**

ebullition

- USE **boiling**

EBWR (reactor)

- USE **experimental boiling water reactors**

EC-121 aircraft

- USE **C-121 aircraft**

EC-135 aircraft

- USE **C-135 aircraft**

Eccentric Geophysical Observatory

- USE **EGO**

Eccentric Orbit Geophysical Observatory

- USE **EGO**

eccentric orbits

- GS orbits
 - . **eccentric orbits**
- RT circular orbits
 - elliptical orbits
 - Exosat satellite
 - Lissajous figures

eccentricity

- RT abnormalities
 - asymmetry
 - balancing
 - concentricity
 - deviation
 - ellipticity
 - elongation
 - skewness
 - symmetry
 - variability
 - variations

eccentrics

- UF *cranks*
- RT cams
 - linkages

echelle gratings

- GS gratings (spectra)
 - . **echelle gratings**
- RT diffraction
 - echelle gratings
 - reflection

echelle gratings

- (added August 1988)
- GS gratings (spectra)
 - . **echelle gratings**
- RT diffraction
 - echelle gratings
 - reflection

echelon faults

- USE **geological faults**

Echo 1 carrier rocket

- USE **Thor Delta launch vehicle**

Echo 1 satellite

- UF *A-11 satellite*
- GS artificial satellites
 - . passive satellites
 - . . Echo satellites
 - . . . **Echo 1 satellite**

- RT Thor Delta launch vehicle

Echo 2 satellite

- UF *A-12 satellite*
- GS artificial satellites
 - . passive satellites
 - . . Echo satellites
 - . . . **Echo 2 satellite**
 - unmanned spacecraft
 - . **Echo 2 satellite**

Echo project

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Echo project**
 - . projects
 - . . **Echo project**
 - . space programs
 - . . NASA space programs
 - . . . **Echo project**
- RT communication satellites
 - passive satellites

Echo satellites

- GS artificial satellites
 - . passive satellites
 - . . **Echo satellites**
 - . . . Echo 1 satellite
 - . . . Echo 2 satellite
- RT Agena B rocket vehicle
 - Agena rocket vehicles

echo sounding

- GS sounding
 - . **echo sounding**
- RT deep scattering layers
 - depth measurement
 - echoes
 - navigation aids
 - sonar
 - sound localization
 - sound ranging
 - underwater acoustics

echo suppressors

- GS circuits
 - . **echo suppressors**
 - suppressors
 - . **echo suppressors**
- RT noise reduction
 - pulse radar
 - radiotelephones
 - sonar
 - switches
 - telephony
 - voice communication

echocardiography

- GS bioengineering
 - . biometrics
 - . . cardiology
 - . . . phonocardiography
 - **echocardiography**
- RT cardiac ventricles
 - heart diseases
 - heart function

echoencephalography

- DEF A diagnostic technique in which pulses of ultrasonic waves are beamed through the head from both sides, and echoes from the midstructures of the brain are recorded as graphic tracings.
- GS bioengineering
 - . biometrics
 - . . **echoencephalography**
- RT bioinstrumentation
 - brain
 - electrophysiology
 - medical electronics
 - medical equipment

echoes

- DEF Waves that have been reflected or otherwise returned with sufficient magnitude and

delay to be detected as a wave distinct from that directly transmitted. In radar, a pulse of reflected radiofrequency energy; the appearance on a radar indicator of the energy returned from a target.

- GS **echoes**
 - . auroral echoes
 - . lunar echoes
 - .. lunar radar echoes
 - . radar echoes
 - .. angels (radar)
 - .. clutter
 - .. lunar radar echoes
 - .. solar radar echoes
 - .. Venus radar echoes
 - . radio echoes
 - . signal reflection
- RT
 - acoustics
 - cepstral analysis
 - echo sounding
 - ground effect (communications)
 - noise (sound)
 - reverberation

eclipse project

- GS programs
 - . projects
 - .. **eclipse project**

eclipses

DEF The reductions in visibility or disappearances of nonluminous bodies by passing into the shadows cast by another nonluminous body. The apparent cutting off, wholly or partially, of the light from a luminous body by a dark body coming between it and the observer.

- GS **eclipses**
 - . lunar eclipses
 - . solar eclipses
- RT eclipsing binary stars
 - lunar shadow
 - occultation
 - penumbras
 - umbras

eclipsing binary stars

- GS celestial bodies
 - . stars
 - .. double stars
 - ... binary stars
 - **eclipsing binary stars**
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
- RT accretion disks
 - cataclysmic variables
 - eclipses
 - stellar occultation
 - superhumps (astronomy)
 - symbiotic stars
 - variable stars
 - x ray binaries

ecliptic

DEF The apparent annual path of the sun among the stars; the intersection of the plane of the Earth's orbit with the celestial sphere. The ecliptic is a great circle of the celestial sphere inclined at an angle of about 23 degrees 27 minutes to the celestial equator.

- RT planets
 - solar orbits
 - zodiac

eclogite

- GS rocks
 - . igneous rocks
 - .. **eclogite**
- RT gadolinium-gallium garnet
 - garnets
 - pyroxenes

soils

ecological systems

USE **ecosystems**

ecology

DEF The study of the environmental relations of organisms. Used for ecological systems.

- GS **ecology**
 - . coastal ecology
- RT biochemical oxygen demand
 - ∞ biology
 - biometeorology
 - carbon cycle
 - Central Atlantic Regional Ecol Test Site
 - closed ecological systems
 - coastal plains
 - Earth sciences
 - ecosystems
 - endangered species
 - energy policy
 - environments
 - Gaia hypothesis
 - habitability
 - habitats
 - phenology
 - predators
 - symbiosis
 - vegetation growth

e-commerce

(added April 2000)

USE **electronic commerce**

econometrics

DEF The application of mathematics and statistical techniques to the testing and quantifying of economic theories and the solution of economic problems.

- RT ∞ applications of mathematics
 - economics
 - gross national product
 - statistical correlation

economic analysis

- RT allocations
 - comparison
 - cost analysis
 - cost estimates
 - costs
 - economy
 - efficiency
 - management
 - operating costs
 - value engineering

economic development

- RT commerce
 - developing nations
 - economy
 - geographic distribution
 - geography
 - industries
 - land use
 - manufacturing
 - resources
 - space industrialization
 - urban development

economic factors

- RT allocations
 - budgeting
 - commercial energy
 - costs
 - developing nations
 - domestic energy
 - economy
 - efficiency
 - energy policy
 - feasibility analysis
 - industrial energy
 - insurance (contracts)
 - management
 - reserves
 - resources

transportation energy

economic impact

DEF The impact on the economy from whatever cause.

- GS impact
 - . **economic impact**
- RT costs
 - environments
 - industries
 - investments
 - resources

economics

DEF Study of the production, distribution, and consumption of goods and services.

- GS **economics**
 - . demand (economics)
- RT costs
 - econometrics
 - evaluation
 - fiduciaries
 - income
 - international trade
 - investments
 - prejudices
 - progress
 - recession
 - resources
 - statistical analysis

economy

- RT cost estimates
 - decision making
 - economic analysis
 - economic development
 - economic factors
 - financial management
 - low cost
 - management planning
 - recycling

ecosystems

- UF *ecological systems*
- RT closed ecological systems
 - ecology
 - endangered species
 - food chain
 - Gaia hypothesis
 - predators
 - ∞ systems

ECS

USE **European Communications Satellite**

Ecuador

- GS nations
 - . **Ecuador**
- RT South America

eddies

USE **vortices**

Eddington approximation

- GS analysis (mathematics)
 - . numerical analysis
 - .. approximation
 - ... **Eddington approximation**

eddy currents

SN (LIMITED TO ELECTRIC CURRENTS)
 DEF Electric currents caused to flow in a conductor by the time or space variation, or both, of an applied magnetic field.

- GS electric current
 - . **eddy currents**
- RT braking
 - electric conductors
 - electrical properties
 - hysteresis
 - losses
 - magnetic properties
 - ∞ physical properties
 - plasma currents

eddy viscosity

vorticity transport hypothesis

eddy diffusion

USE **turbulent diffusion**

eddy viscosity

DEF The turbulent transfer of momentum by eddies giving rise to an internal fluid friction, in a manner analogous to the action of molecular viscosity in laminar flow, but taking place on a much larger scale.

GS transport properties
. viscosity
. . **eddy viscosity**

RT Baldwin-Lomax turbulence model
flow characteristics
flow resistance
internal friction
large eddy simulation
turbulent flow
viscous drag
viscous flow

edema

GS signs and symptoms
. **edema**
RT body fluids
diuresis
water balance

edge cracks

(added October 1997)

GS fractures (materials)
. cracks
. . **edge cracks**

RT cracking (fracturing)
edge loading
edges
stress intensity factors
surface cracks

edge detection

(added January 1990)

UF *boundary detection (imagery)*
GS detection
. **edge detection**
RT computer vision
image analysis
image processing
pattern recognition
scene analysis

edge dislocations

UF *slip bands*
GS defects
. crystal defects
. . crystal dislocations
. . . **edge dislocations**
dislocations (materials)
. crystal dislocations
. . **edge dislocations**
RT ∞ bands
kink bands
screw dislocations

edge loading

GS loads (forces)
. **edge loading**
RT aerodynamic loads
compression loads
dynamic loads
edge cracks
static loads
wing loading

edges

GS **edges**
. leading edges
. . blunt leading edges
. . sharp leading edges
. trailing edges
. . blunt trailing edges
RT edge cracks
margins
rims
scalloping

sides
tips

editing

RT data processing
data reduction
editing routines (computers)
format
technical writing

editing routines (computers)

GS computer programs
. **editing routines (computers)**
RT computer systems programs
data processing
editing

EDTA

USE **ethylenediaminetetraacetic acids**

education

UF *instructions*
teaching
training
GS **education**
. ejection training
. flight training
. . pilot training
. . space flight training
. . . astronaut training
. gunnery training
. maintenance training
. programmed instruction
. . computer assisted instruction
RT behavior
communicating
creativity
experience
human factors engineering
human resources
instructors
knowledge
learning
learning theory
lectures
memory
 ∞ orientation
psychometrics
qualifications
retraining
safety management
schools
students
 ∞ tests
textbooks
training analysis
training devices
transfer of training
universities

educational television

GS telecommunication
. **educational television**
television systems
. **educational television**
RT closed circuit television
color television
communication equipment
learning
networks
stereotelevision
training devices

EEG (*electroencephalograms*)

USE **electroencephalography**

effective perceived noise levels

UF *EPNL*
GS level (quantity)
. **effective perceived noise levels**
RT acoustic measurement
acoustics
loudness
 ∞ noise
noise (sound)
noise intensity

noise reduction
sound intensity

effectiveness

GS **effectiveness**
. cost effectiveness
. system effectiveness
RT antenna gain
efficiency

∞ effectors

(added September 1989)
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT actuators
control equipment
end effectors
manipulators

∞ effects

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *affects*
RT atmospheric effects
Auger effect
Barkhausen effect
Bauschinger effect
biological effects
Brillouin effect
brown wave effect
capture effect
causes
Cerenkov radiation
chemical effects
Coanda effect
compressibility effects
Compton effect
Coriolis effect
diffusion
Doppler effect
Doppler-Fizeau effect
electro-optical effect
environment effects
Ettingshausen effect
Faraday effect
field effect transistors
Fizeau effect
Forbush decreases
galvanomagnetic effects
gravitational effects
green wave effect
greenhouse effect
ground effect (aerodynamics)
ground effect (communications)
ground effect machines
Gunn effect
Hall effect
hydrodynamic ram effect
isotope effect
Jahn-Teller effect
jet blast effects
Joule-Thomson effect
 ∞ Kerr effects
Kerr electrooptical effect
Kerr magneto-optical effect
Kirkendall effect
Kondo effect
long term effects
lunar effects
lunar gravitational effects
Luxembourg effect
magnetic effects
Magnus effect
Moire effects
Mossbauer effect
Nernst-Ettingshausen effect
nonohmic effect
nuclear explosion effect
Overhauser effect
pathological effects
Peltier effects
Penning effect
photoelectric effect
photoelectromagnetic effects
photomagnetic effects
photomechanical effect

- photovoltaic effect
 physiological effects
 pinch effect
 POGO effects
 Portevin-le Chatelier effect
 Poynting-Robertson effect
 pressure effects
 proximity effect (electricity)
 psychological effects
 radiation effects
 Ramsauer effect
 reentry effects
 relativistic effects
 scale effect
 Schach effect
 screen effect
 Seebeck effect
 solar activity effects
 Stark effect
 sterilization effects
 Suhl effect
 Sunyaev-Zeldovich effect
 surface effect ships
 surface roughness effects
 sweep effect
 temperature effects
 thermoacoustic effects
 thermomagnetic effects
 turbulence effects
 Umkehr effect
 vacuum effects
 vibration effects
 view effects
 Voigt effect
 wind effects
 Zeeman effect
 Zener effect
- effluent nervous systems**
 UF *motor systems (biology)*
 GS anatomy
 . nervous system
 . . **effluent nervous systems**
 RT sensorimotor performance
 ∞ systems
- effervescence**
 RT boiling
 bubbles
 surface properties
- efficiency**
 GS **efficiency**
 . charge efficiency
 . combustion efficiency
 . compressor efficiency
 . energy conversion efficiency
 . nozzle efficiency
 . power efficiency
 . propulsive efficiency
 . . propeller efficiency
 . thermodynamic efficiency
 . transmission efficiency
 RT aircraft production costs
 comfort
 commonality
 compression ratio
 computer systems performance
 cost incentives
 cost reduction
 costs
 economic analysis
 economic factors
 effectiveness
 feasibility
 figure of merit
 human factors engineering
 incentive techniques
 indexes (ratios)
 optimization
 ∞ performance
 productivity
 ratios
- utilization
- effluents**
 RT air pollution
 contaminants
 ∞ discharge
 environment protection
 exhaust gases
 filtration
 liquid wastes
 reaction products
 settling
 sewage
 sewers
 volcanic eruptions
 waste disposal
 wastes
- efflux**
 RT emission
 output
- effort**
 RT abilities
 consistency
 fatigue (biology)
 ∞ performance
 physical work
- effusives**
 GS **effusives**
 . lava
 RT cones (volcanoes)
 igneous rocks
 Mars volcanoes
 rocks
 volcanoes
 volcanology
- EGCR (reactor)*
 USE **experimental gas cooled reactors**
- eggs**
 GS cells (biology)
 . gametocytes
 . . **eggs**
 RT embryos
 fetuses
 ∞ food
 ovaries
- EGO**
 UF *Eccentric Geophysical Observatory*
 Eccentric Orbit Geophysical
 Observatory
 EOGO
 GS artificial satellites
 . geophysical satellites
 . . OGO
 . . . **EGO**
 observatories
 . geophysical observatories
 . . OGO
 . . . **EGO**
 RT Agena B rocket vehicle
 Atlas launch vehicles
 POGO
- egress**
 RT air locks
 doors
 hatches
 ingress (spacecraft passageway)
 openings
 outlets
- Egypt**
 GS nations
 . **Egypt**
 RT Africa
- EH-101 helicopter**
(added April 1997)
 UF *Heliliner (helicopter)*
 Merlin (helicopter)
 GS V/STOL aircraft
- . rotary wing aircraft
 . . helicopters
 . . . **EH-101 helicopter**
 RT ∞ aircraft
 commercial aircraft
 military helicopters
- EHW (computers)*
(added September 2001)
 USE **evolvable hardware**
- eigenfunctions*
 USE **eigenvectors**
- eigenstates*
 USE **eigenvectors**
- eigenvalues**
 UF *characteristic equations*
 characteristic functions
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvalues**
 RT eigenvectors
 flux vector splitting
 Hill determinant
 Jacobi matrix method
 Jordan form
 polynomials
 roots of equations
- eigenvectors**
 UF *characteristic equations*
 characteristic functions
 eigenfunctions
 eigenstates
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvectors**
 . . vectors (mathematics)
 . . . **eigenvectors**
 RT eigenvalues
 Jacobi matrix method
 Mathieu function
 polynomials
- eikonal equation**
 GS wave equations
 . **eikonal equation**
 RT ∞ equations
 geometrical optics
 Pomeranchuk theorem
 refracted waves
 wave fronts
 ∞ waves
- Einstein equations**
 GS analysis (mathematics)
 . real variables
 . . **Einstein equations**
 RT Brownian movements
 diffusion
 diffusion theory
 ∞ equations
 equations of motion
 grand unified theory
 kinetic equations
 probability theory
- Einstein Observatory*
 USE **HEAO 2**
- einsteinium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **einsteinium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 . . . transuranium elements
 **einsteinium**
 metals
 . actinide series

einsteinium compounds

. . . transuranium elements
. . . **einsteinium**
RT einsteinium compounds

einsteinium compounds
GS actinide series compounds
. **einsteinium compounds**
RT einsteinium

EISCAT radar system (Europe)

DEF The European Incoherent Scatter Radar system. Used for European Incoherent Scatter Radar.

UF *European Incoherent Scatter Radar*
GS radar

. incoherent scatter radar
. . . **EISCAT radar system (Europe)**

RT incoherent scattering
international cooperation
ionospheric propagation
radar scattering
radar transmission
∞ systems
ultrahigh frequencies

ejecta

DEF Matter ejected during impact cratering processes, usually meteoritic.

RT cratering
craters
debris
ejection
fragments
impact damage
Mars craters
meteorite craters
meteoritic damage
projectile cratering
Wolf-Rayet stars

ejection

GS **ejection**
. stellar mass ejection
. . . coronal mass ejection

RT bailout
∞ discharge
disconnect devices
disposal
dumping
ejecta
ejectors
emission
emptying
escape (abandonment)
escape systems
evacuating (transportation)
evacuating (vacuum)
exhausting
expulsion
expulsion bladders
flushing
jettison systems
jettisoning
materials handling
parachute descent
releasing
removal
shedding
throwing
unloading

ejection injuries

GS injuries
. **ejection injuries**
RT bailout
pilot training

ejection seats

GS onboard equipment
. aircraft equipment
. . . **ejection seats**
. . . flying ejection seats
safety devices
. **ejection seats**
. . . flying ejection seats
seats

. ejection seats

. . . flying ejection seats
RT abort apparatus
aircraft safety
bailout
cockpits
ejectors
escape capsules
escape systems
jettison systems
∞ propellant actuated devices

ejection training

GS education
. **ejection training**
RT astronaut training
bailout
escape (abandonment)
flight training
parachute descent
pilot training

ejectors

DEF Devices consisting of a nozzle, mixing tube, and diffuser utilizing the kinetic energy of a fluid from a low pressure region by direct mixing and ejecting both streams.

RT dispensers
ejection
ejection seats
exhaust diffusers
exhaust nozzles
exhaust systems
flying ejection seats
injectors
jet engines
jet pumps
materials handling
pumps
rocket engines
sprayers
vacuum pumps

Ekman layer

DEF The layer of transition between the surface boundary layer of the atmosphere, where the shearing stress is constant, and the free atmosphere, which is treated as an ideal fluid in approximate geostrophic equilibrium.

RT atmospheric boundary layer
boundary layer transition
∞ layers
mixing layers (fluids)
porous boundary layer control
turbulent boundary layer

ekranoplanes

(added December 1999)

USE **wing-in-ground effect vehicles**

el Nino

DEF A warming of the surface waters of the eastern equatorial Pacific Ocean that occurs at irregular intervals of 1-2 years, usually lasting 1-2 years.

GS circulation
. water circulation
. . . water currents
. . . . ocean currents
. . . . **el Nino**
RT air water interactions
Madden-Julian Oscillation
ocean temperature
Pacific Ocean
periodic variations
quasi-biennial oscillation
Southern Oscillation
tropical meteorology

El Salvador

GS nations
. **El Salvador**
RT Central America

Elara

(added July 1995)

DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,737,000 kilometers.

GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . **Elara**
RT Jupiter (planet)

elastic anisotropy

GS anisotropy
. plastic anisotropy
. . **elastic anisotropy**

elastic bars

GS bars
. **elastic bars**

elastic bending

GS bending
. **elastic bending**
deformation
. elastic deformation
. . **elastic bending**
RT earthquake resistant structures

elastic bodies

RT ∞ bodies
∞ elastic systems
elastodynamics
elastostatics
plastic bodies

elastic buckling

GS buckling
. **elastic buckling**
deformation
. elastic deformation
. . **elastic buckling**
RT failure modes

elastic collisions

USE **elastic scattering**

elastic constants

USE **elastic properties**

elastic cylinders

RT ∞ cylinders
cylindrical bodies
cylindrical shells

elastic damping

GS damping
. **elastic damping**
. . viscoelastic damping
elastodynamics
. **elastic damping**
. . viscoelastic damping
RT resonance testing
vibration damping
viscous damping

elastic deformation

GS deformation
. **elastic deformation**
. . elastic bending
. . elastic buckling
RT axial strain
bending
Bordoni peaks
deflection
elastodynamics
elastostatics
flexible spacecraft
plane strain
plastic deformation
prestressing
strain distribution
strain energy release rate
stress-strain relationships
stretching
structural strain
tensile deformation

elastic media

GS media

RT . **elastic media**
 elastodynamics
 elastostatics

elastic modulus

USE **modulus of elasticity**

elastic plates

GS structural members
 . plates (structural members)
 . . **elastic plates**
 RT plastic bodies
 plastic plates

elastic properties

DEF Properties of materials by virtue of which they tend to recover their original size and shape immediately after removal of the forces causing deformation. Used for elastic constants and elasticity.

UF *elastic constants*
elasticity

GS mechanical properties
 . **elastic properties**
 . . aeroelasticity
 . . . aeroservoelasticity
 . . . athermoelasticity
 . . anelasticity
 . . elastoplasticity
 . . hydroelasticity
 . . hypoelasticity
 . . magnetostriction
 . . modulus of elasticity
 . . dynamic modulus of elasticity
 . . photoelasticity
 . . . photoviscoelasticity
 . . proportional limit
 . . thermoelasticity
 . . . athermoelasticity
 . . viscoelasticity
 . . . photoviscoelasticity
 . . . thermoviscoelasticity
 . . ferroelasticity

RT Airy function
 biharmonic equations
 compressive strength
 elastodynamics
 elastometers
 elastostatics
 Euler-Bernoulli beams
 flexibility
 Hookes law
 hybrid structures
 influence coefficient
 microsonics
 microyield strength
 ∞ physical properties
 piezoelectricity
 plastic properties
 Poisson ratio
 propellant properties
 ∞ properties
 resilience
 softness
 strain energy release rate
 stress tensors
 tensile properties
 tensile strength
 yield strength

elastic scattering

UF *elastic collisions*
 GS scattering
 . **elastic scattering**
 RT atomic collisions
 ∞ coherence
 coherent scattering
 electron scattering
 Glauber theory
 inelastic scattering
 nuclear scattering
 photon-electron interaction
 Pomeranchuk theorem

elastic sheets

RT girder webs

∞ sheets
 webs (sheets)
 webs (supports)

elastic shells

GS shells (structural forms)
 . **elastic shells**
 RT anisotropic shells
 plastic shells

elastic stability

USE **damping**

elastic strength

USE **proportional limit**

∞ **elastic systems**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT earthquake resistant structures
 elastic bodies
 ∞ systems

elastic waves

UF *expansion waves*
loading waves
pressure waves
rarefaction waves

GS **elastic waves**
 . capillary waves
 . . gravity waves
 . . . baroclinic waves
 . . ripples
 . coherent acoustic radiation
 . compression waves
 . dilatational waves
 . ionic waves
 . magnetoelastic waves
 . . magnetoacoustic waves
 . magnetohydrodynamic waves
 . plasma waves
 . . electrostatic waves
 . P waves
 . phonons
 . . phonon beams
 . polarized elastic waves
 . S waves
 . . SH waves
 . seismic waves
 . . Love waves
 . . microseisms
 . . Rayleigh waves
 . shock waves
 . . detonation waves
 . . Mach cones
 . . normal shock waves
 . . oblique shock waves
 . . Riemann waves
 . . sonic booms
 . sound waves
 . . electroacoustic waves
 . . ion acoustic waves
 . . Lamb waves
 . . noise (sound)
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . . engine noise
 rocket engine noise
 . . . flow noise
 . . . thermal noise
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones
 . stress waves
 . Tollmien-Schlichting waves
 . ultrasonic radiation
 . unloading waves

RT acoustic propagation
 acoustic simulation
 acoustics
 aeolian tones
 background noise

backward waves
 cnoidal waves
 coherent radiation
 combustion vibration
 continuous radiation
 cylindrical waves
 diffusion waves
 Doppler effect
 elastodynamics
 elastoacoustics
 elasto-hydrodynamics
 Lamé wave equations
 longitudinal waves
 magnetohydrodynamic stability
 plane waves
 polarized radiation
 pressure
 pulsed radiation
 ∞ radiation
 radiation distribution
 radiation pressure
 rarefaction
 reflected waves
 refracted waves
 sine waves
 solitary waves
 sound transmission
 spherical waves
 stress propagation
 surface waves
 transverse waves
 traveling waves
 tropospheric waves
 underwater acoustics
 vibration
 wave dispersion
 ∞ waves

elasticity

USE **elastic properties**

elasticizers

USE **plasticizers**

elastin

GS biopolymers
 . proteins
 . . **elastin**
 organic compounds
 . proteins
 . . **elastin**
 RT albumins

elastodynamics

GS **elastodynamics**
 . elastic damping
 . . viscoelastic damping
 . elasto-hydrodynamics
 RT ∞ dynamics
 elastic bodies
 elastic deformation
 elastic media
 elastic properties
 elastic waves
 elastostatics
 electrorheological fluids

elastohydrodynamics

GS elastodynamics
 . **elastohydrodynamics**
 fluid mechanics
 . fluid dynamics
 . . hydrodynamics
 . . . **elastohydrodynamics**
 . hydromechanics
 . . hydrodynamics
 . . . **elastohydrodynamics**
 RT ball bearings
 elastic waves
 friction measurement
 lubrication
 rotating cylinders
 squeeze films
 water waves

elastomers

DEF Macromolecular materials which, at

elastometers

room temperature, are capable of recovering substantially in size and shape after removal of a deforming force.

GS elastomers

- . rubber
- . . synthetic rubbers
- . . . Adiprene (trademark)
- . . . Buna (trademark)
- . . . silicone rubber
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- Viton rubber (trademark)
- vulcanized elastomers
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- . . . chloroprene resins

RT

- latex
- organic materials
- plastics
- ∞ polymers
- solithanes
- sponges (materials)
- thioplastics

elastometers

GS measuring instruments

. elastometers

RT

- elastic properties
- extensometers
- strain gages

elastoplasticity

GS mechanical properties

- . elastic properties
- . . elastoplasticity
- . plastic properties
- . . elastoplasticity

RT

- J integral
- plastic bodies
- plastic plates
- plastic shells
- superplastic forming

elastostatics

RT

- elastic bodies
- elastic deformation
- elastic media
- elastic properties
- elastodynamics
- statics

Elber equation

DEF In fatigue crack propagation studies, the effective stress range ratio $U = 0.5 + 0.4R$, where R is the stress ratio.

RT

- crack closure
- cracks
- cyclic loads
- ∞ equations
- fractography
- fracture mechanics
- microcracks
- stress concentration
- stress cycles

elbow (anatomy)

GS

- anatomy
- . limbs (anatomy)
- . . arm (anatomy)
- . . . elbow (anatomy)
- . . . musculoskeletal system
- . . . joints (anatomy)
- . . . elbow (anatomy)
- appendages
- . arm (anatomy)
- . . elbow (anatomy)

RT

- humerus
- ulna

Eldo launch vehicle

GS

- launch vehicles
- . Eldo launch vehicle
- rocket vehicles
- . multistage rocket vehicles
- . . Eldo launch vehicle

RT

- Ariane launch vehicle

Blue Streak launch vehicle

Europa launch vehicles

European 1 spacecraft

European Space Agency

Electra aircraft

GS

commercial aircraft

. Electra aircraft

jet aircraft

. turboprop aircraft

. . Electra aircraft

Lockheed aircraft

. . . Electra aircraft

monoplanes

. . . Electra aircraft

passenger aircraft

. . . . Electra aircraft

transport aircraft

. Electra aircraft

RT

∞ aircraft

electrets

RT

- capacitors
- Curie temperature
- dielectric polarization
- dielectrics
- electric energy storage
- electric fields
- energy storage
- magnets
- polarization (charge separation)

electric aircraft

USE **fly by wire control**

electric appliances

USE **electric equipment**

electric arcs

DEF (1) a luminous discharge of electricity through a gas. (2) A prolonged electrical discharge or series of prolonged discharges between two electrodes with no physical contact between them.

GS

electric current

. electric discharges

. . electric arcs

. . . carbon arcs

. . . mercury arcs

RT

arc chambers

arc discharges

arc generators

∞ arcs

coronas

electrical faults

flashover

gas discharges

glow discharges

ionization

light sources

lightning

magnetohydrodynamics

planotrons

plasma generators

plasmas (physics)

Saha equations

short circuits

electric automobiles

GS

- surface vehicles
- . motor vehicles
- . . automobiles
- . . . electric automobiles
- . . . electric motor vehicles
- . . . electric automobiles

RT

transportation

electric batteries

SN

(INCLUDES BOTH RECHARGEABLE OR STORAGE BATTERIES AND NON-RECHARGEABLE BATTERIES FOR GENERATING CURRENT FROM A STORED CHEMICAL ENERGY SOURCE)

UF

batteries

GS

- electrochemical cells
- . electric batteries
- . . nickel iron batteries

- . . primary batteries
- . . . alkaline batteries
- . . . dry cells
- magnesium cells
- nickel zinc batteries
- . . . metal air batteries
- zinc-oxygen batteries
- . . . sodium sulfur batteries
- . . . thermal batteries
- . . Redox cells
- . . storage batteries
- . . . lead acid batteries
- . . . nickel cadmium batteries
- . . . nickel hydrogen batteries
- . . . nickel zinc batteries
- . . . silver cadmium batteries
- . . . silver hydrogen batteries
- . . . silver zinc batteries
- . . . zinc-bromide batteries
- . . . zinc-chlorine batteries
- . . lithium batteries
- . . wet cells
- . . . lithium sulfur batteries

RT

- auxiliary power sources
- battery chargers
- charge efficiency
- chemical auxiliary power units
- direct power generators
- ∞ electric cells
- ∞ electric power
- electrodes
- electrolytes
- electrolytic cells
- electromotive forces
- ∞ energy sources
- energy storage
- nonaqueous electrolytes
- ∞ power supplies
- pulse charging
- radioisotope batteries
- roadway powered vehicles
- space station power supplies
- spacecraft power supplies
- voltage converters (DC to DC)

electric bridges

GS

- circuits
- . electric bridges
- . . wire bridge circuits
- . . . Wheatstone bridges

RT

- ∞ bridges
- capacitors
- electrical measurement
- measuring instruments
- solid state devices

∞ electric cells

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

- amplifiers
- direct power generators
- electric batteries
- electric generators
- electrochemical cells
- electrolytic cells
- fission electric cells
- fuel cells
- Kerr cells
- lead acid batteries
- lithium sulfur batteries
- nonaqueous electrolytes
- photoelectric cells
- sodium sulfur batteries
- solar cells
- wet cells

electric charge

GS

- electric charge
- . electric dipoles
- . . orbiting dipoles
- . electrostatic charge
- . ion charge
- . space charge
- . traveling charge

RT

- capacitance
- ∞ charging

- ∞ dipoles
- electrical properties
- electrometers
- polarity
- polarization (charge separation)
- pulse charging
- SCATHA satellite

electric choppers

- SN (DEVICES FOR CONVERTING DC TO AC)
- UF *choppers (electric)*
- RT amplifiers
- mechanical oscillators

electric circuits

- USE **circuits**

electric coils

- GS **electric coils**
 - . magnetic coils
 - . . field coils
 - . . magnet coils
- RT chokes
- ∞ coils
 - ignition systems
 - impedance
 - magnetic cores
 - transformers

electric conductors

- UF *electrical leads*
- GS conductors
 - . **electric conductors**
 - . . beam leads
 - . . conducting polymers
 - . . electric wire
- RT ∞ conduction
 - dielectrics
 - eddy currents
 - electrical insulation
 - electrical resistivity
 - electrostatic shielding
 - insulators
 - resistors
 - semiconductors (materials)
 - Sommerfeld waves
 - thermal conductors
 - transmission lines

electric connectors

DEF Connecting devices, ordinarily designed for use in a fixed location to which a wire or wires of a circuit may be attached and that are arranged for the insertion of a plug. Used for jacks (electrical).

- UF *connectors (electric)*
- jacks (electrical)*
- GS connectors
 - . **electric connectors**
- RT beam leads
 - circuits
 - disconnect devices
 - electric terminals
 - flat conductors
- ∞ jacks
 - optical interconnects
 - switches

electric contacts

- UF *contacts (electric)*
- RT brushes
 - brushes (electrical contacts)
 - commutators
 - contact potentials
 - contact resistance
 - dropouts
 - flat conductors
- ∞ relay
- ∞ sliding contact
 - sliding friction
 - switches

electric control

- UF *electrohydraulic control*
- RT automatic control
- ∞ control

- control equipment
- control systems design
- electronic control
- engine control
- numerical control
- optical control
- remote control
- solenoid valves
- voltage controlled oscillators

electric corona

DEF A luminous, and often audible, electric discharge that is intermediate in nature between a spark discharge (with, usually, its single discharge channel) and a non point discharge (with its diffuse, quiescent, nonluminous character).

Used for corona discharges.

- UF *corona discharges*
- GS coronas
 - . **electric corona**
 - electric current
 - . electric discharges
 - . . **electric corona**
- RT atmospheric electricity
 - electrohydrodynamics
 - glow discharges
 - ionization
 - solar corona
 - static electricity

electric current

- UF *amperage*
- electroseismic effect*
- Hall currents*
- photocurrents*
- GS **electric current**
 - . alternating current
 - . beam currents
 - . Brillouin flow
 - . direct current
 - . eddy currents
 - . electric discharges
 - . . arc discharges
 - . . electric arcs
 - . . . carbon arcs
 - . . . mercury arcs
 - . . electric corona
 - . . electric sparks
 - . . electrodeless discharges
 - . . flashover
 - . . glow discharges
 - . . lightning
 - . . . ball lightning
 - . . . cloud-to-cloud discharges
 - . . . cloud-to-ground discharges
 - . . . intracloud discharges
 - . . . leaders (meteorology)
 - stepped leaders
 - . . multipactor discharges
 - . . Penning discharge
 - . . radio frequency discharge
 - . . Saint Elmo fire
 - . . Townsend discharge
 - . . . gas discharges
 - toroidal discharge
 - ring discharge
 - . external surface currents
 - . field aligned currents
 - . Birkeland currents
 - . high current
 - . ionospheric currents
 - . . Birkeland currents
 - . . electrojets
 - . . . auroral electrojets
 - . . . equatorial electrojet
 - . . Pedersen currents
 - . critical current
 - . dark current
 - . line current
 - . low currents
 - . plasma currents
 - . ring currents
 - . short circuit currents
 - . telluric currents
 - . threshold currents

- RT ammeters
- circuits

- current converters (AC to DC)
- current density
- current regulators
- current sheets
- ∞ currents
- ∞ electric power
- electrical resistivity
- electricity
- high voltages
- hydroelectricity
- inverted converters (DC to AC)
- Kirchhoff law of networks
- levitation melting
- Lienard potential
- low conductivity
- micromilliammeters
- Ohms law
- power conditioning
- system generated electromagnetic pulses
- transmission lines
- volt-ampere characteristics

electric dipoles

- GS electric charge
 - . **electric dipoles**
 - . . orbiting dipoles
- RT ∞ dipoles
 - magnetic dipoles
 - zwitterions

electric discharges

DEF The flowing of electricity through a gas, resulting in the emission of radiation that is characteristic of the gas and the intensity of the current.

- GS electric current
 - . **electric discharges**
 - . . arc discharges
 - . . electric arcs
 - . . . carbon arcs
 - . . . mercury arcs
 - . . electric corona
 - . . electric sparks
 - . . electrodeless discharges
 - . . flashover
 - . . glow discharges
 - . . lightning
 - . . . ball lightning
 - . . . cloud-to-cloud discharges
 - . . . cloud-to-ground discharges
 - . . . intracloud discharges
 - . . . leaders (meteorology)
 - stepped leaders
 - . . multipactor discharges
 - . . Penning discharge
 - . . radio frequency discharge
 - . . Saint Elmo fire
 - . . Townsend discharge
 - . . . gas discharges
 - toroidal discharges
 - ring discharge

- RT avalanches
- coronas
- ∞ discharge
 - duoplasmatrons
 - electron emission
 - electrostatic charge
- ∞ flash
 - ionization
 - lightning suppression
 - Molniya satellites
 - plasma currents
 - space charge
 - Zener effect

electric energy storage

- GS energy storage
 - . **electric energy storage**
- RT capacitors
 - direct power generators
 - electrets
 - electrochemical capacitors
 - inductors

electric equipment

potential energy

∞ electric equipment

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *electric appliances*

RT airborne equipment

circuits

current regulators

electric generators

electric power transmission

electricity

electromechanical devices

electronic equipment

heating equipment

homopolar generators

lighting equipment

logistics

miniature electronic equipment

motors

solenoid valves

utilities

voltage converters (AC to AC)

voltage converters (DC to DC)

welding machines

electric equipment tests

SN (CHECKOUT OF ELECTRICAL EQUIPMENT)

RT electrical measurement

electronic equipment tests

ground tests

∞ tests

electric field strength

GS field strength

. **electric field strength**

RT Coulomb potential

∞ force

H waves

∞ strength

electric fields

UF *electrostatic fields*

RT barium ion clouds

cavitons

constitutive equations

Coulomb potential

crossed fields

crystal field theory

dielectric polarization

electrets

electrodynamics

electromagnetism

electromechanics

electrostatic charge

electrostatics

external surface currents

field emission

field strength

∞ fields

Lienard potential

magnetic fields

Pedersen currents

permittivity

polarity

spacecraft charging

spark gaps

Stark effect

static electricity

electric filters

GS electromagnetic wave filters

. **electric filters**

. . . bandstop filters

. . . crystal filters

. . . digital filters

. . . FIR filters

. . . IIR filters

. . . microwave filters

. . . radar filters

. . . radio filters

. . . tracking filters

. . . waveguide filters

RT adaptive filters

bandpass filters

capacitors

circuits

electronic filters

∞ filters

high pass filters

infrared filters

Kalman filters

linear filters

low pass filters

nonlinear filters

optical filters

RC circuits

receivers

reduced order filters

resistors

transformers

tunable filters

ultraviolet filters

Wiener filtering

electric furnaces

DEF Furnaces whose heat is derived from electrical energy, generally achieved through resistance heating. Materials research and space processing are research uses.

GS heating equipment

. furnaces

. . **electric furnaces**

RT ∞ materials

space processing

electric fuses

RT circuit protection

disconnect devices

∞ fuses

electric generators

UF *electric power conversion*

electrogenerators

power generators

GS **electric generators**

. AC generators

. . linear alternators

. . static alternators

. . direct power generators

. . DC generators

. . . homopolar generators

. . electrostatic generators

. . fuel cells

. . . biochemical fuel cells

. . . hydrogen oxygen fuel cells

. . . molten carbonate fuel cells

. . . phosphoric acid fuel cells

. . . regenerative fuel cells

. . . solid oxide fuel cells

. . magnetohydrodynamic generators

. . photoelectric generators

. . . photovoltaic cells

. . . . solar cells

. . . . vertical junction solar cells

. . primary batteries

. . . alkaline batteries

. . . dry cells

. . . . magnesium cells

. . . . nickel zinc batteries

. . . metal air batteries

. . . . zinc-oxygen batteries

. . . sodium sulfur batteries

. . thermal batteries

. . radioisotope batteries

. . . SNAP 7

. . . SNAP 9A

. . . SNAP 11

. . . SNAP 13

. . . SNAP 15

. . . SNAP 17

. . . SNAP 19

. . . SNAP 21

. . . SNAP 23

. . . SNAP 27

. . . SNAP 29

. . thermionic converters

. . . SNAP 13

. . . solar blankets

. . thermoelectric generators

. . . SNAP 3

. . . SNAP 7

. . . SNAP 9A

. . . SNAP 10A

. . . SNAP 11

. . . SNAP 15

. . . SNAP 17

. . . SNAP 19

. . . SNAP 21

. . . SNAP 23

. . . SNAP 27

. . . SNAP 29

. . . solar sea power plants

. rotating generators

. . amplidyne

. . dynamometers

. . homopolar generators

. . turbogenerators

. . . ASTEC solar turboelectric

generator

. solar generators

. . solar auxiliary power units

. . . ASTEC solar turboelectric

generator

. . solar cells

. . . vertical junction solar cells

. . solar dynamic power systems

RT aircraft power supplies

arc generators

armatures

auxiliary power sources

brushes

brushes (electrical contacts)

closed cycles

cogeneration

combined cycle power generation

∞ conversion

∞ converters

∞ electric cells

∞ electric equipment

electrical engineering

electromotive forces

∞ energy sources

∞ generators

nuclear electric power generation

∞ power

power conditioning

∞ power supplies

SNAP

solar ponds (heat storage)

static inverters

thermonuclear power generation

tide powered generators

windmills (windpowered machines)

windpowered generators

electric hybrid vehicles

DEF Surface vehicles which utilize propulsion systems of both electric motors and conventional internal combustion engines.

GS surface vehicles

. **electric hybrid vehicles**

RT automobiles

internal combustion engines

∞ rotating electrical machines

∞ vehicles

electric ignition

GS ignition

. **electric ignition**

RT igniters

ignition systems

spark ignition

squibs

starting

electric impulses

USE **electric pulses**

electric moments

GS electrical properties

. **electric moments**

moments

. dipole moments

. . **electric moments**

RT magnetic moments

- polarization (charge separation)
- electric motor vehicles**
 GS surface vehicles
 . motor vehicles
 . . **electric motor vehicles**
 . . . electric automobiles
 RT automated transit vehicles
 automobiles
 crawler tractors
 research vehicles
 roadway powered vehicles
 test vehicles
 tractors
 trucks
 ∞ vehicles
- electric motors**
 GS electromechanical devices
 . **electric motors**
 . . asynchronous motors
 . . induction motors
 . . micromotors
 . . piezoelectric motors
 . . stepping motors
 . . synchronous motors
 . . torque motors
 motors
 . **electric motors**
 . . asynchronous motors
 . . induction motors
 . . micromotors
 . . piezoelectric motors
 . . stepping motors
 . . synchronous motors
 . . torque motors
 RT amplidyne
 armatures
 brushes
 brushes (electrical contacts)
 circuits
 commutators
 decommutators
 ∞ rotating electrical machines
 servomechanisms
 servomotors
 stators
 transformers
- electric networks**
 GS networks
 . **electric networks**
 RT impedance matching
 sneak circuit analysis
 voltage controlled oscillators
- electric outlets**
 RT ∞ power transmission
- electric potential**
 DEF In electrostatics, the work done in moving unit positive charge from infinity to the point whose potential is being specified. Used for voltage.
 UF *voltage*
 GS potential energy
 . **electric potential**
 . . bioelectric potential
 . . contact potentials
 . . Coulomb potential
 . . high voltages
 . . Lienard potential
 . . low voltage
 . . open circuit voltage
 . . photovoltages
 . . quantum wells
 . . . photoexcitation
 . . spike potentials
 . . threshold voltage
 RT Barritt diodes
 bias
 capacitance-voltage characteristics
 electromotive forces
 Gibbs-Helmholtz equations
 ionization potentials
- Kirchhoff law of networks
 overvoltage
 ∞ potential
 potentiometers (instruments)
 power conditioning
 static electricity
 transconductance
 volt-ampere characteristics
- electric power**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *electrical energy*
 RT auxiliary power sources
 electric batteries
 electric current
 electric power plants
 electric propulsion
 electrical properties
 electricity
 electrification
 geothermal energy utilization
 hydroelectricity
 induction motors
 Poynting theorem
 tokamak devices
 turbogenerators
 utilities
 voltage converters (AC to AC)
 voltage converters (DC to DC)
- electric power conversion*
 USE **electric generators**
- electric power plants**
 GS **electric power plants**
 . fuel cell power plants
 . nuclear power plants
 . . Enrico Fermi atomic power plant
 . . Hallam Nuclear Power Facility
 . . ML-1 nuclear power plant
 . solar thermal electric power plants
 RT cogeneration
 combined cycle power generation
 ∞ electric power
 electrical engineering
 ∞ facilities
 flue gases
 fly ash
 hydroelectric power stations
 integrated energy systems
 Modular Integrated Utility System
 ∞ power plants
 solar sea power plants
- electric power supplies**
 GS **electric power supplies**
 . aircraft power supplies
 . solar dynamic power systems
 . space station power supplies
 . spacecraft power supplies
 RT auxiliary power sources
 compulsators
 induction motors
 line current
 payload delivery (STS)
 ∞ power supplies
- electric power transmission**
 GS transmission
 . **electric power transmission**
 RT circuit protection
 circuits
 ∞ conduction
 ∞ electric equipment
 electrical engineering
 electrification
 hydroelectric power stations
 poles (supports)
 power lines
 ∞ power transmission
 superconducting power transmission
 transmission circuits
 transmission lines
 transmission loss
- underground transmission lines
- electric propulsion**
 SN (EXCLUDES PROPULSION USING ELECTRIC MOTORS AS PRIME MOVERS)
 DEF A general term encompassing all the various types of propulsion in which the propellant consists of charged electrical particles which are accelerated by electrical or magnetic fields, or both; for example, electrostatic propulsion, electromagnetic propulsion, and electrothermal propulsion.
 GS propulsion
 . **electric propulsion**
 . . electromagnetic propulsion
 . . . magnetic sails
 . . electrostatic propulsion
 . . . ion propulsion
 . . laser propulsion
 . . plasma propulsion
 . . solar electric propulsion
 RT arc jet engines
 ∞ electric power
 Hall thrusters
 low thrust propulsion
 marine propulsion
 nuclear electric propulsion
 plasma power sources
 RIFT (reactor in flight test)
 SERT 1 spacecraft
 SERT 2 spacecraft
 space station propulsion
 spacecraft propulsion
 two stage plasma engines
 underwater propulsion
- electric pulses**
 UF *electric impulses*
 GS pulses
 . **electric pulses**
 RT electromagnetic missiles
 electromagnetic pulses
 pulse amplitude
 pulse duration
 pulse generators
 pulse modulation
 pulse rate
 ∞ signals
 system generated electromagnetic pulses
- electric reactors**
 GS **electric reactors**
 . saturable reactors
 RT capacitors
 circuit protection
 ∞ reactors
 resistors
 transformers
- electric relays**
 SN (EXCLUDES COMMUNICATION SYSTEM REPEATERS)
 GS switches
 . **electric relays**
 RT armatures
 circuit breakers
 disconnect devices
 interruption
 ∞ relay
 selectors
 solenoid valves
 solenoids
 switching circuits
 time lag
- electric rocket engines**
 GS engines
 . rocket engines
 . . **electric rocket engines**
 . . . electrostatic engines
 . . . ion engines
 cesium engines
 Hall thrusters
 mercury ion engines
 RIT engines
 . . electrothermal engines

electric sparks

- arc jet engines
- pulsed jet engines
- resistojet engines
- . . . plasma engines
- magnetoplasmadynamic thrusters
- pulsed inductive thrusters
- pulsed plasma thrusters
- two stage plasma engines
- VASIMR (propulsion system)
- RT magnetic nozzles
- microrocket engines
- restartable rocket engines
- SERT 1 spacecraft
- SERT 2 spacecraft
- space electric rocket tests
- sustainer rocket engines
- Vernier engines

electric sparks

- UF *spark discharges*
- GS electric current
- . electric discharges
- . . **electric sparks**
- sparks
- . **electric sparks**
- RT flashover
- gas discharges
- ionization
- lightning
- spark chambers
- spark gaps
- spark ignition
- spark plugs
- static electricity

electric stimuli

- RT ∞ stimuli

electric switches

- GS switches
- . **electric switches**
- . . cryotrons
- . . stepping switches
- . . thermostats
- . . vacuum arc switches
- RT contactors
- cryostats
- current regulators
- dropouts
- electronic control
- pressure switches
- solenoid valves
- switching circuits
- voltage regulators

electric terminals

- RT electric connectors
- network analysis
- ∞ terminals

electric welding

- GS welding
- . fusion welding
- . . **electric welding**
- . . . arc welding
- gas tungsten arc welding
- plasma arc welding
- electroslag welding
- flash welding
- RT electron beam welding
- pressure welding
- spot welds
- welding machines

electric wire

- UF *electric wiring*
- GS conductors
- . electric conductors
- . . **electric wire**
- wire
- . **electric wire**
- RT bus conductors
- circuits
- communication cables
- electrical insulation

- exploding wires
- flat conductors
- power lines
- transmission lines
- wire bridge circuits

electric wiring

- USE **electric wire wiring**

electrical breakdown

- USE **electrical faults**

electrical conductivity

- USE **electrical resistivity**

electrical conductivity meters

- GS measuring instruments
- . conductivity meters
- . . **electrical conductivity meters**
- RT ohmmeters

electrical energy

- USE **electric power**

electrical engineering

- DEF Branch of engineering related to the design, development, and operation of electrical devices and systems.
- RT electric generators
- electric power plants
- electric power transmission
- ∞ electronics
- ∞ engineering
- ∞ power transmission systems engineering
- transmission lines
- turbogenerators

electrical faults

- UF *electrical breakdown voltage breakdown*
- GS **electrical faults**
- . short circuits
- RT ∞ breakdown
- circuit protection
- electric arcs
- failure
- ∞ faults
- flashover
- sneak circuit analysis
- spark gaps

electrical grounding

- RT circuit protection
- circuits
- noise reduction
- transformers

electrical impedance

- UF *admittance*
- immittance*
- GS electrical properties
- . **electrical impedance**
- . . electrical resistance
- . . . contact resistance
- . . . Hall resistance
- . . . skin resistance
- . . . transconductance
- . . reactance
- impedance
- . **electrical impedance**
- . . electrical resistance
- . . . contact resistance
- . . . Hall resistance
- . . . skin resistance
- . . . transconductance
- . . reactance
- RT capacitance
- impedance matching
- impedance measurement
- inductance
- latch-up
- ohmmeters

Smith chart

electrical insulation

DEF A material of relatively low electrical conductivity and high dielectric strength, usually used to support or provide electrical separation for conductors, in which a voltage applied between two points on or within the material produces a small and sometimes negligible current.

- UF *nonconductors*
- GS insulation
- . **electrical insulation**
- RT asbestos
- circuit protection
- dielectrics
- electric conductors
- electric wire
- excitons
- ∞ insulated structures
- insulators
- wiring

electrical leads

- USE **electric conductors**

electrical measurement

- SN (MEASUREMENT OF ELECTRICAL PROPERTIES, QUANTITIES, OR CONDITIONS)
- UF *voltage measurement*
- GS **electrical measurement**
- . coulometry
- . polarography
- RT ammeters
- bolometers
- coulometers
- electric bridges
- electric equipment tests
- electromagnetic measurement
- electrometers
- electronic equipment tests
- flowmeters
- impedance measurement
- magnetometers
- ∞ measurement
- measuring instruments
- micromilliammeters
- mismatch (electrical)
- ohmmeters
- oscillographs
- potentiometers (instruments)
- wattmeters

electrical properties

- UF *Bardeen approximation*
- GS **electrical properties**
- . antiferroelectricity
- . capacitance
- . capacitance-voltage characteristics
- . carrier mobility
- . . electron mobility
- . . hole mobility
- . charge distribution
- . dielectric properties
- . . dielectric loss
- . . permittivity
- . electric moments
- . electrical impedance
- . . electrical resistance
- . . . contact resistance
- . . . Hall resistance
- . . . skin resistance
- . . . transconductance
- . . reactance
- . electrical resistivity
- . . ionospheric conductivity
- . . magnetoresistivity
- . . photoconductivity
- . . plasma conductivity
- . . superconductivity
- . . Kondo effect
- . electrostriction
- . ferroelectricity
- . inductance
- . . proximity effect (electricity)
- . photovoltaic effect
- . piezoelectricity

. pyroelectricity
 RT ∞ conductivity
 crystal oscillators
 diamagnetism
 dipole moments
 domains
 eddy currents
 electric charge
 ∞ electric power
 electricity
 electromagnetic properties
 field strength
 hysteresis
 impedance
 magnetic properties
 open circuit voltage
 optical properties
 photoelectric emission
 photoelectricity
 ∞ physical properties
 ∞ properties
 quality control
 ∞ resistance
 ∞ solid state physics
 standing wave ratios

electrical resistance
 GS electrical properties
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
 impedance
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
 galvanic skin response
 RT
 ∞ high resistance
 linear circuits
 ∞ low resistance
 Manganin (trademark)
 ohmmeters
 Ohms law
 RC circuits
 reactance
 ∞ resistance
 RL circuits
 RLC circuits

electrical resistivity
 DEF A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.
 UF *electrical conductivity*
electroconductivity
resistivity
 GS electrical properties
 . **electrical resistivity**
 . . ionospheric conductivity
 . . magnetoresistivity
 . . photoconductivity
 . . plasma conductivity
 . . superconductivity
 . . . Kondo effect
 transport properties
 . **electrical resistivity**
 . . ionospheric conductivity
 . . magnetoresistivity
 . . photoconductivity
 . . plasma conductivity
 . . superconductivity
 . . . Kondo effect
 RT
 air conductivity
 atmospheric conductivity
 carrier mobility
 ∞ conductivity
 electric conductors
 electric current
 electromigration
 Hall resistance
 high temperature superconductors
 low conductivity

open circuit voltage
 plasma currents
 ∞ resistance

electrically suspended gyroscopes
 USE **electrostatic gyroscopes**

electricity
 GS **electricity**
 . alternating current
 . atmospheric electricity
 . . ionospheric currents
 . . . Birkeland currents
 . . . electrojets
 auroral electrojets
 equatorial electrojet
 . . . Pedersen currents
 . . geoelectricity
 . . telluric currents
 . hydroelectricity
 . static electricity
 RT electric current
 ∞ electric equipment
 ∞ electric power
 electrical properties
 electromagnetism
 ∞ electronics
 lightning
 Maxwell equation
 Ohms law
 photoelectricity
 piezoelectricity
 proximity effect (electricity)

electrification
 RT ∞ electric power
 electric power transmission
 ∞ power transmission
 transmission lines

electroacoustic transducers
 DEF Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. Microphones and earphones are electroacoustic transducers.
 GS transducers
 . sound transducers
 . . **electroacoustic transducers**
 . . . hydrophones
 . . . loudspeakers
 . . . microphones
 RT electroacoustics
 interdigital transducers
 surface acoustic wave devices

electroacoustic waves
 GS elastic waves
 . sound waves
 . . **electroacoustic waves**
 RT electroacoustics
 electromagnetic radiation
 plasma waves
 pressure sensors
 wave interaction
 ∞ waves

electroacoustics
 GS acoustics
 . **electroacoustics**
 RT electroacoustic transducers
 electroacoustic waves
 sound transducers
 surface acoustic wave devices
 ultrasonic wave transducers
 ultrasonics

electroactive polymers
 (added June 2000)
 UF *EAP (polymers)*
 RT actuators
 conducting polymers
 electromechanical devices
 electrorheological fluids
 electrostriction
 microelectromechanical systems
 ∞ polymers

robot arms

electroanesthesia
 GS anesthesia
 . **electroanesthesia**
 RT electronarcosis

electrocardiograms
 USE **electrocardiography**

electrocardiography
 UF *electrocardiograms*
 GS bioengineering
 . biometrics
 . . cardiology
 . . . **electrocardiography**
 RT ballistocardiography
 body measurement (biology)
 electrophysiology
 heart diseases
 medical electronics
 muscles
 phonocardiography
 vectorcardiography

electrocatalysts
 UF *fuel cell catalysts*
 GS catalysts
 . **electrocatalysts**
 RT fuel cells

electrochemical capacitors
 (added September 2003)
 DEF Devices that store energy in the electric field of an electrochemical double-layer.
 UF *double-layer capacitors*
supercapacitors
ultracapacitors
 GS capacitors
 . **electrochemical capacitors**
 RT electric energy storage

electrochemical cells
 DEF Electrochemical systems consisting of an anode and a cathode in metallic contact and immersed in an electrolyte. (The anode and cathode may be different metals or dissimilar areas on the same metal surface).
 GS **electrochemical cells**
 . electric batteries
 . . nickel iron batteries
 . . primary batteries
 . . . alkaline batteries
 . . . dry cells
 magnesium cells
 nickel zinc batteries
 . . . metal air batteries
 zinc-oxygen batteries
 . . . sodium sulfur batteries
 . . . thermal batteries
 . . Redox cells
 . . storage batteries
 . . . lead acid batteries
 . . . nickel cadmium batteries
 . . . nickel hydrogen batteries
 . . . nickel zinc batteries
 . . . silver cadmium batteries
 . . . silver hydrogen batteries
 . . . silver zinc batteries
 . . . zinc-bromide batteries
 . . . zinc-chlorine batteries
 . . lithium batteries
 . . wet cells
 . . . lithium sulfur batteries
 . fuel cells
 . . biochemical fuel cells
 . . hydrogen oxygen fuel cells
 . . molten carbonate fuel cells
 . . phosphoric acid fuel cells
 . . regenerative fuel cells
 . . solid oxide fuel cells
 RT ∞ cells
 ∞ electric cells
 electrochemistry
 photoelectric cells
 photoelectrochemical devices

electrochemical corrosion

photovoltaic cells

electrochemical corrosion

- GS corrosion
- . **electrochemical corrosion**
- RT electrodisolution
- electrolysis
- metal-water reactions

electrochemical machining

- UF *electrolytic grinding*
- GS machining
- . chemical machining
- . . **electrochemical machining**
- RT electropolishing

electrochemical oxidation

- GS chemical reactions
- . oxidation
- . . **electrochemical oxidation**

electrochemical synthesis

- (added January 2000)
- DEF A chemical synthesis reaction that is induced by an electric current.
- UF *electrosynthesis*
- GS synthesis (chemistry)
- . **electrochemical synthesis**
- RT electrochemistry
- electrolysis
- polymerization

electrochemistry

- DEF The branch of science and technology which deals with transformations between chemical and electrical energy.
- GS **electrochemistry**
- . electrolysis
- . . coulometry
- . photoelectrochemistry
- RT ∞ chemistry
- corrosion
- coulometers
- electrochemical cells
- electrochemical synthesis
- electrochromism
- electrodeposition
- electrodes
- electrodissolution
- electrolytes
- electrolytic cells
- electrophysics
- fuel cells
- glass electrodes
- nonaqueous electrolytes
- oxidation-reduction reactions
- Redox cells

electrochromism

- DEF A phenomenon whereby a select number of solid materials will change color when an electric field is applied.
- RT chromophores
- color
- display devices
- electrochemistry
- electro-optics
- thin films

electroconductivity

- USE **electrical resistivity**

electrocutaneous communication

- GS communicating
- . **electrocutaneous communication**
- RT perception
- sensory perception
- touch

electrode dark current

- (added October 1997)
- USE **dark current**

electrode film barriers

- RT ∞ barriers
- electrodes

∞ films

- polarization (charge separation)
- thin films

electrode materials

- RT anions
- anodes
- anodic coatings
- cathodes
- cathodic coatings
- cell anodes
- cell cathodes
- electrodes
- mischmetal
- photocathodes
- photoelectric cells
- photoelectric materials
- photoelectrochemical devices
- polypyrroles
- tube anodes

electrodeless discharges

- GS electric current
- . electric discharges
- . . **electrodeless discharges**
- RT ∞ discharge
- gas discharges
- glow discharges
- lightning
- Penning discharge
- radio frequency discharge
- ring discharge
- toroidal discharge
- Townsend discharge

electrodeposition

- GS deposition
- . **electrodeposition**
- . . electroplating
- RT cathodic coatings
- cell cathodes
- coulometers
- electrochemistry
- electroforming
- electroless deposition
- electrolysis
- electrolytes
- electrolytic cells
- electrophoresis
- electrowinning
- metal matrix composites
- metal powder
- plating
- powder metallurgy
- reduction (chemistry)

electrodermal response

- USE **galvanic skin response**

electrodes

DEF Terminals at which electricity passes from one medium into another. The positive electrodes are called the anodes; the negative electrodes are called the cathodes. In semiconductor devices, elements that perform one or more of the functions of emitting or collecting electrons or holes, or of controlling their movements by electric fields. In electron tubes, conducting elements that perform one or more of the functions of emitting, collecting, or controlling by electromagnetic fields, the movements of electrons or ions.

- GS **electrodes**
- . anodes
- . . cell anodes
- . . shell anodes
- . . tube anodes
- . cathodes
- . . cell cathodes
- . . hollow cathodes
- . . tube cathodes
- . . . cold cathodes
- . . . hot cathodes
- . . . photocathodes
- . . . thermionic cathodes
- . . . tunnel cathodes

- . diffusion electrodes
- . dynodes
- . glass electrodes
- . implanted electrodes (biology)
- . ion selective electrodes
- . plasma electrodes
- . solid electrodes
- . tube grids
- RT cold cathode tubes
- electric batteries
- electrochemistry
- electrode film barriers
- electrode materials
- electrolysis
- electroplating
- electrorefining
- electrowinning
- graphite
- photomultiplier tubes
- phototubes
- Tafel law
- transconductance

electrodialysis

- GS dialysis
- . **electrodialysis**
- RT colloids
- hydrometallurgy
- ∞ separation

electrodissolution

- RT dissociation
- electrochemical corrosion
- electrochemistry
- electrolysis

electrodynamics

- DEF The science dealing with the forces and energy transformations of electric currents and the magnetic fields associated with them.
- GS **electrodynamics**
- . electrohydrodynamics
- . electromechanics
- . quantum electrodynamics
- RT Born-Infeld theory
- ∞ dynamics
- electric fields
- electromagnetic interactions
- electromechanical devices
- line current
- Maxwell equation
- ponderomotive forces
- traveling charge

electrodynamometers

- USE **dynamometers**

electroencephalogram

- USE **electroencephalography**

electroencephalography

- UF *EEG (electroencephalograms)*
- electroencephalogram*
- GS bioengineering
- . biometrics
- . . **electroencephalography**
- RT arousal
- body measurement (biology)
- brain
- electrophysiology
- medical electronics
- medical equipment

electroepitaxy

- DEF Crystal growth process achieved by passing an electric current through the substrate solution.
- GS growth
- . crystal growth
- . . epitaxy
- . . . **electroepitaxy**
- RT crystals
- hydrothermal crystal growth
- liquid phases

- traveling solvent method
- electroerosion*
USE **spark machining**
- electroexplosive devices*
USE **initiators (explosives)**
- electroforming**
GS forming techniques
 . **electroforming**
RT deposition
 electrodeposition
 electroless deposition
 electroplating
 spark machining
- electrogenerators*
USE **electric generators**
- electrohydraulic control*
USE **electric control**
hydraulic control
- electrohydraulic forming**
GS forming techniques
 . cold working
 . . **electrohydraulic forming**
RT explosive forming
 metal working
- electrohydrodynamics**
GS electrodynamics
 . **electrohydrodynamics**
 fluid mechanics
 . fluid dynamics
 . . hydrodynamics
 . . . **electrohydrodynamics**
 . hydromechanics
 . . hydrodynamics
 . . . **electrohydrodynamics**
RT electric corona
 electrokinetics
 electron gas
 electron mobility
 ion distribution
 ionic mobility
 magnetohydrodynamics
- electrojets**
DEF Laterally limited, relatively intense electric currents located in the ionosphere.
GS electric current
 . ionospheric currents
 . . **electrojets**
 . . . auroral electrojets
 . . . equatorial electrojet
 electricity
 . atmospheric electricity
 . . ionospheric currents
 . . . **electrojets**
 . . . auroral electrojets
 . . . equatorial electrojet
RT Birkeland currents
 Earth ionosphere
 geomagnetism
 ionospheric conductivity
 ionospheric drift
 ring currents
- electrokinetics**
GS kinetics
 . **electrokinetics**
RT electrohydrodynamics
 electromagnetic fields
 electromechanics
 electrophysics
- electroless deposition**
DEF Controlled autocatalytic reduction method of depositing coatings.
GS deposition
 . **electroless deposition**
RT coatings
 electrodeposition
 electroforming
- metal coatings
plating
vacuum deposition
vapor deposition
- electroluminescence**
DEF Emission of light caused by an application of electric fields to solids or gases. In gas electroluminescence, light is emitted when the kinetic energy of electron or ions accelerated in an electric field is transferred to the atoms or molecules of the gas in which the discharge takes place. Used for electroluminescent lamps.
UF *electroluminescent lamps*
GS emission
 . light emission
 . . luminescence
 . . . **electroluminescence**
RT electro-optics
 light emitting diodes
 light sources
 porous silicon
- electroluminescent lamps*
USE **electroluminescence**
luminaires
- electrolysis**
DEF The production of chemical changes by the passage of current through an electrolyte.
GS electrochemistry
 . **electrolysis**
 . . coulometry
RT corrosion
 coulometers
 cracking (chemical engineering)
 current density
 decomposition
 electrochemical corrosion
 electrochemical synthesis
 electrodeposition
 electrodes
 electrodissolution
 electrolytes
 electrolytic cells
 electroplating
 hydrogen production
 ionic mobility
 metathesis
 passivity
 photolysis
 reduction (chemistry)
 Tafel law
 water splitting
- electrolyte metabolism**
GS metabolism
 . **electrolyte metabolism**
RT aerospace medicine
 aldosterone
 blood plasma
 body fluids
 physiological effects
 potassium
 sodium
 weightlessness
- electrolytes**
GS conductors
 . **electrolytes**
 . . anolytes
 . . catholytes
 . . ion exchange membrane electrolytes
 . . jumpers
 . . molten salt electrolytes
 . . nonaqueous electrolytes
 . . solid electrolytes
RT conducting fluids
 Debye-Huckel theory
 electric batteries
 electrochemistry
 electrodeposition
 electrolysis
 electrolytic cells
 electroplating
- electrorefining
electrowinning
fuel cells
ions
nonelectrolytes
primary batteries
Redox cells
storage batteries
wet cells
- electrolytic cells**
DEF Unit apparatus in which electrochemical reactions are produced by applying electrical energy, or which supply electrical energy as a result of chemical reactions and which include two or more electrodes and one or more electrolytes contained in a suitable vessel. Used for galvanic cells.
UF *galvanic cells*
RT ∞ cells
 ∞ diaphragms
 diaphragms (mechanics)
 diffusion electrodes
 electric batteries
 ∞ electric cells
 electrochemistry
 electrodeposition
 electrolysis
 electrolytes
 electroplating
 electrorefining
 electrowinning
 ionic mobility
 lead acid batteries
 nonaqueous electrolytes
 phosphoric acid fuel cells
- electrolytic grinding*
USE **electrochemical machining**
- electrolytic polarization**
GS polarization (charge separation)
 . **electrolytic polarization**
RT depolarization
 magnesium cells
- electrolytic polishing*
USE **electropolishing**
- electromagnetic absorption**
UF *ionospheric absorption*
light absorption
magnetic absorption
optical absorption
GS energy absorption
 . radiation absorption
 . . **electromagnetic absorption**
 . . . auroral absorption
 . . . gamma ray absorption
 . . . infrared absorption
 . . . microwave absorption
 . . . multiphoton absorption
 . . . photoabsorption
 . . . polar cap absorption
 . . . ultraviolet absorption
 . . . x ray absorption
RT absorbers (materials)
 absorbance
 ∞ absorption
 absorption spectra
 absorptivity
 activation
 atmospheric attenuation
 attenuation
 Beer law
 Bouguer law
 Chandrasekhar equation
 electromagnetic properties
 excitation
 fading
 fluorescence
 gamma ray absorptiometry
 irradiation
 laser induced fluorescence
 light scattering
 molecular absorption

electromagnetic acceleration

Mossbauer effect
nuclear physics
opacity
optical properties
optical reflection
pair production
perfectly matched layers
photodecomposition
photodissociation
photon absorptiometry
photoproduction
radar absorbers
radar attenuation
radiation shielding
radio attenuation
reflection
resonant frequencies
signal fading
solar energy absorbers
Townsend avalanche
transmission
transmittance
transparence
wave attenuation
wave propagation

electromagnetic acceleration

DEF The use of perpendicular components of electric and magnetic fields to accelerate a current carrier.

RT ∞ acceleration
electromagnetic interactions
magnetic fields
mass drivers
particle acceleration
plasma accelerators

electromagnetic compatibility

GS compatibility
. **electromagnetic compatibility**
RT atmospherics
crosstalk
electronic countermeasures
electronic warfare
∞ interference
noise spectra
radio frequency interference

electromagnetic control

USE **electromagnets**
remote control

electromagnetic coupling

(added September 1988)
GS coupling
. **electromagnetic coupling**
. . microwave coupling
. . optical coupling
RT electromagnetic interactions
laser plasma interactions
magnetosphere-ionosphere coupling
plasma-electromagnetic interaction

electromagnetic deduction

USE **magnetic induction**

electromagnetic environment experiment

DEF Shuttleborne radio frequency experiment.

GS payloads
. Space Shuttle payloads
. . **electromagnetic environment experiment**

electromagnetic fields

GS **electromagnetic fields**
. far fields
. near fields
. system generated electromagnetic pulses
RT Abrikosov theory
biomagnetism
blackout (propagation)
electrokinetics
electromagnetism
electromechanics

external surface currents
field mode theory
field strength
field theory (physics)
grand unified theory
magnetic field configurations
magnetic field inversions
magnetic fields
quantum electrodynamics
reciprocity theorem
solar magnetic field
Sommerfeld approximation
squeezed states (quantum theory)
stellar magnetic fields
unified field theory
whistlers
Yang-Mills fields

electromagnetic hammers

GS tools
. hammers
. . **electromagnetic hammers**
RT forming techniques
magnetic coils
magnetic forming
metal working

electromagnetic interactions

GS **electromagnetic interactions**
. photoproduction
. plasma-electromagnetic interaction
. . laser plasma interactions
RT biomagnetism
electrodynamics
electromagnetic acceleration
electromagnetic coupling
electrostatics
electroweak interactions (field theory)
electroweak model
elementary particle interactions
Feynman diagrams
grand unified theory
∞ interactions
meson-meson interactions
photonuclear reactions
plasma resonance
quantum mechanics
unified field theory
wave interaction
wave-particle interactions

electromagnetic interference

GS **electromagnetic interference**
. crosstalk
. . ionospheric cross modulation
. jamming
. radio frequency interference
. . blackout (propagation)
. . . polar radio blackout
. . chirp
. . . chirp signals
. . electromagnetic noise
. . . atmospherics
. . . . ionospherics
. dawn chorus
. hiss
. sudden enhancement of atmospherics
. whistlers
. . . cosmic noise
. . . ionospheric noise
. . . . whistlers
. . . shot noise
. . . white noise
. . . . thermal noise
. . cochannel interference
. . ionospheric cross modulation
RT ∞ disturbances
electronic countermeasures
electronic warfare
environments
feedback
ground effect (communications)
∞ interference
interference immunity
noise reduction
SCATHA satellite

signal to noise ratios
system generated electromagnetic pulses

electromagnetic measurement

SN (MEASUREMENT OF ELECTROMAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
GS **electromagnetic measurement**
. electromagnetic noise measurement
RT Barkhausen effect
Earth terminal measurement system
electrical measurement
electromagnetism
infrared detectors
magnetic measurement
magnetic transducers
∞ measurement
signal measurement

electromagnetic missiles

(added January 1992)
RT electric pulses
external surface currents
missiles
picosecond pulses
pulse communication
pulse modulation
wave attenuation
wave degradation
wave propagation

electromagnetic noise

UF *radiation noise*
radio frequency noise
GS electromagnetic interference
. radio frequency interference
. . **electromagnetic noise**
. . . atmospherics
. . . . ionospherics
. dawn chorus
. hiss
. sudden enhancement of atmospherics
. whistlers
. . . cosmic noise
. . . ionospheric noise
. . . . whistlers
. . . shot noise
. . . white noise
. . . . thermal noise
RT background noise
background radiation
blackout (propagation)
channel noise
chirp signals
extraterrestrial radiation
ground effect (communications)
microwaves
millimeter waves
∞ noise
noise generators
noise intensity
noise reduction
noise spectra
noise storms
noise temperature
radar receivers
∞ radiation
radio receivers
radio spectra
radio waves
random noise
signal to noise ratios
solar radio emission
squelch circuits
submillimeter waves

electromagnetic noise measurement

GS electromagnetic measurement
. **electromagnetic noise measurement**
RT cosmic noise
∞ measurement
thermal noise

- white noise
- electromagnetic propagation
 - USE **electromagnetic wave transmission**
- electromagnetic properties**
 - GS **electromagnetic properties**
 - . Faraday effect
 - . inductance
 - . . . proximity effect (electricity)
 - . Kerr magneto-optical effect
 - . magnetoresistivity
 - . optical properties
 - . . . absorptance
 - . . . absorptivity
 - . . . birefringence
 - . . . Kerr electro-optical effect
 - . . . brightness
 - . . . sky brightness
 - . . . brightness distribution
 - . . . color
 - . . . iridescence
 - . . . stellar color
 - . . . water color
 - . . . dichroism
 - . . . luminosity
 - . . . stellar luminosity
 - . . . opacity
 - . . . optical bistability
 - . . . optical reflection
 - . . . phosphorescence
 - . . . photoconductivity
 - . . . photoviscoelasticity
 - . . . radiance
 - . . . reflectance
 - . . . bidirectional reflectance
 - . . . spectral reflectance
 - . . . refractivity
 - . . . photorefractivity
 - . . . stigmatism
 - . . . translucence
 - . . . transmissivity
 - . . . transmittance
 - . . . transparency
 - . . . turbidity
 - . . . photoelasticity
 - . . . photoviscoelasticity
 - RT carrier mobility
 - clarity
 - electrical properties
 - electromagnetic absorption
 - gamma ray absorption
 - gyrotropism
 - magnetic properties
 - ∞ physical properties
 - polarization (waves)
 - ∞ properties
- electromagnetic propulsion**
 - GS propulsion
 - . electric propulsion
 - . . . **electromagnetic propulsion**
 - . . . magnetic sails
 - . . . low thrust propulsion
 - . . . **electromagnetic propulsion**
 - . . . magnetic sails
 - . . . spacecraft propulsion
 - . . . **electromagnetic propulsion**
 - . . . magnetic sails
 - RT electrostatic propulsion
 - ion propulsion
 - magnetoplasmadynamic thrusters
 - mass drivers
 - photonic propulsion
 - plasma propulsion
 - pulsed inductive thrusters
 - pulsed plasma thrusters
- electromagnetic pulses**
 - UF *EMP (electromagnetism)*
 - GS electromagnetic radiation
 - . **electromagnetic pulses**
 - . . . system generated electromagnetic pulses
 - . . . system generated electromagnetic pulses
 - pulsed radiation
 - . **electromagnetic pulses**
- . . . system generated electromagnetic pulses
- pulses
- . **electromagnetic pulses**
- . . . system generated electromagnetic pulses
- RT electric pulses
- external surface currents
- picosecond pulses
- pulse communication
- pulse modulation
- pulse radar
- radar transmission
- electromagnetic pumps**
 - SN (ENCOMPASSES DEVICES FOR MATERIALS HANDLING ONLY--EXCLUDES OPTICAL AND PARTICLE ENERGIZING DEVICES)
 - GS pumps
 - . **electromagnetic pumps**
 - RT fuel pumps
- electromagnetic radiation**
 - DEF Energy propagated through space or through material media in the form of an advancing disturbance in electric and magnetic fields existing in space or in media. The term radiation, alone, is used commonly for this type of energy, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.
 - UF *electromagnetic waves*
 - wave radiation*
 - GS **electromagnetic radiation**
 - . bremsstrahlung
 - . Cerenkov radiation
 - . coherent electromagnetic radiation
 - . . . coherent light
 - . . . laser beams
 - . diffraction radiation
 - . electromagnetic pulses
 - . . . system generated electromagnetic pulses
 - . electromagnetic surface waves
 - . gamma ray beams
 - . gamma rays
 - . . . gamma ray bursts
 - . H waves
 - . infrared radiation
 - . . . far infrared radiation
 - . . . near infrared radiation
 - . kilometric waves
 - . light (visible radiation)
 - . . . coherent light
 - . . . gegenschein
 - . . . polarized light
 - . . . sky radiation
 - . . . airglow
 - . . . geocoronal emissions
 - . . . nightglow
 - . . . twilight glow
 - . . . dayglow
 - . . . elves
 - . . . sprites (atmospheric physics)
 - . . . sunlight
 - . . . zodiacal light
 - . light beams
 - . . . laser beams
 - . modulated continuous radiation
 - . monochromatic radiation
 - . nonequilibrium radiation
 - . nonthermal radiation
 - . cyclotron radiation
 - . . . ion cyclotron radiation
 - . . . synchrotron radiation
 - . photon beams
 - . planetary radiation
 - . plasmons
 - . polarized electromagnetic radiation
 - . . . polarized light
 - . . . synchrotron radiation
 - . radio waves
 - . . . decametric waves
 - . . . extraterrestrial radio waves
 - . . . galactic radio waves
 - . . . North Polar Spur (astronomy)
 - . . . radio bursts
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar radio emission
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . cosmic microwave background radiation
- . . . long wave radiation
- . . . radio emission
- . . . CN emission
- . . . hydroxyl emission
- . . . radio bursts
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar radio emission
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar radio emission
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . short wave radiation
- . . . microwaves
- . . . centimeter waves
- . . . cosmic microwave background radiation
- decimeter waves
- microwave emission
- millimeter waves
- submillimeter waves
- . . . sky waves
- . . . whistlers
- . Sommerfeld waves
- . terrestrial radiation
- . thermal radiation
- . . . black body radiation
- . . . phonon beams
- . tropospheric radiation
- . ultraviolet radiation
- . . . extreme ultraviolet radiation
- . . . far ultraviolet radiation
- . . . Lyman alpha radiation
- . . . Lyman beta radiation
- . . . near ultraviolet radiation
- . . . ultraviolet emission
- . . . x rays
- . . . cosmic x rays
- . . . solar x-rays
- . . . photosynthetically active radiation
- RT aerospace environments
- antennas
- atmospheric radiation
- atmospheric refraction
- backward waves
- beams (radiation)
- coherent radiation
- continuous radiation
- corpuscular radiation
- cosmic rays
- cylindrical waves
- diffraction
- Doppler effect
- duochromators
- electroacoustic waves
- electromagnetism
- extraterrestrial radiation
- far fields
- flux (rate)
- flux density
- galactic radiation
- gamma ray absorption
- gauge invariance
- glare
- harmonic radiation
- incident radiation
- incoherent scattering
- interstellar radiation
- ionizing radiation
- Kerr electro-optical effect

electromagnetic scattering

- light emission
- magneto-optics
- near fields
- nonlinear optics
- nuclear radiation
- phase velocity
- photons
- Plancks constant
- polarized radiation
- Poynting theorem
- ∞ propagation
- propagation velocity
- pulsed radiation
- radar
- ∞ radiation
- radiation chemistry
- radiation distribution
- radiation hazards
- radiation laws
- radiation pressure
- radiation sources
- radiative transfer
- ∞ rays
- reflected waves
- reflection
- refracted waves
- Ronchi test
- scattering
- sine waves
- solar radiation
- solitary waves
- spectral emission
- spectral energy distribution
- spherical waves
- spontaneous emission
- Stefan-Boltzmann law
- stellar radiation
- stratosphere radiation
- telecommunication
- Thomson scattering
- transmission
- transverse waves
- traveling waves
- ultraviolet astronomy
- VLF emission recorders
- wave amplification
- wave dispersion
- wave generation
- ∞ waves
- whispering gallery modes
- white holes (astronomy)

electromagnetic rocket engines
(added April 2001)
USE **plasma engines**

electromagnetic scattering

- GS scattering
 - . wave scattering
 - . . **electromagnetic scattering**
 - . . . ionospheric F-scatter propagation
 - . . . light scattering
 - halos
 - microwave scattering
 - Mie scattering
 - Rayleigh scattering
 - Raman spectra
 - Thomson scattering
 - . . . x ray scattering
- RT atmospheric attenuation
- atmospheric scattering
- finite difference time domain method
- magnetic dispersion
- perfectly matched layers
- reciprocity theorem

electromagnetic shielding

- GS shielding
 - . **electromagnetic shielding**
 - . . radio frequency shielding
- RT magnetic shielding
- radiation shielding

electromagnetic spectra

DEF Spectra of known electromagnetic radiations, extending from the shortest cosmic

rays, through gamma rays, x rays, ultraviolet radiation, visible radiation, and including microwave and all other wavelengths of radio energy.

- GS spectra
 - . radiation spectra
 - . . **electromagnetic spectra**
 - . . . gamma ray spectra
 - . . . infrared spectra
 - . . . line spectra
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line
 - H gamma line
 - K lines
 - . . . Lyman spectra
 - . . . Paschen series
 - . . . Rydberg series
 - . . . telluric lines
 - . . . radio spectra
 - microwave spectra
 - . . . Raman spectra
 - . . . stellar spectra
 - solar spectra
 - UVB spectra
 - ultraviolet spectra
 - vibrational spectra
 - visible spectrum
 - x ray spectra
- RT absorption spectra
- astronomical spectroscopy
- electronic warfare
- emission spectra
- energy spectra
- light (visible radiation)
- molecular spectra
- noise spectra
- spectral correlation
- spectral reconnaissance

electromagnetic surface waves

- GS electromagnetic radiation
 - . **electromagnetic surface waves**
 - surface waves
 - . **electromagnetic surface waves**
- RT dielectrics
- propagation modes
- radio waves
- ∞ surfaces
- waveguides
- ∞ waves

electromagnetic wave filters

- GS **electromagnetic wave filters**
 - . bandpass filters
 - . . crystal filters
 - . . tracking filters
 - . . electric filters
 - . . bandstop filters
 - . . crystal filters
 - . . digital filters
 - . . . FIR filters
 - . . . IIR filters
 - . . . microwave filters
 - . . radar filters
 - . . radio filters
 - . . tracking filters
 - . . waveguide filters
 - . . matched filters
 - . . optical filters
 - . . birefringent filters
 - . . infrared filters
 - . . ultraviolet filters
- RT absorbers (materials)
- adaptive filters
- attenuators
- correlation detection
- ∞ filters
 - . high pass filters
 - . linear filters
 - . low pass filters
 - . nonlinear filters

screen effect

electromagnetic wave transmission

- UF *electromagnetic propagation*
- GS transmission
 - . **electromagnetic wave transmission**
 - . . light transmission
 - . . . light scattering
 - halos
 - . . . microwave attenuation
 - . . . radar transmission
 - . . . radio transmission
 - double sideband transmission
 - ionospheric propagation
 - ionospheric F-scatter propagation
 - microwave transmission
 - multipath transmission
 - short wave radio transmission
 - single sideband transmission
 - spread spectrum transmission
 - transequatorial propagation
 - transhorizon radio propagation
 - . . . scatter propagation
 - . . . ionospheric F-scatter propagation
 - . . . television transmission
- RT atmospheric attenuation
- attenuation
- Fermat principle
- incoherent scattering
- lossy media
- magnetoionics
- plasma decay
- plasmaguides
- radar attenuation
- radio attenuation
- radome materials
- screen effect
- transmission efficiency
- wave propagation
- whispering gallery modes

electromagnetic waves

USE **electromagnetic radiation**

electromagnetics

USE **electromagnetism**

electromagnetism

DEF Magnetism produced by an electric current. The science dealing with the physical relations between electricity and magnetism. Used for electromagnetics.

UF *electromagnetics*

GS **electromagnetism**

- . magnetostatics
- RT Barkhausen effect
- Biot-Savart law
- computational electromagnetics
- electric fields
- electricity
- electromagnetic fields
- electromagnetic measurement
- electromagnetic radiation
- electromagnets
- electrophysics
- grand unified theory
- magnet coils
- magnetic coils
- magnetic field inversions
- magnetic fields
- magnetic properties
- magnetoconductivity
- unified field theory

electromagnets

UF *electromagnetic control*

GS magnets

. **electromagnets**

- . . high field magnets
- . . superconducting magnets

RT electromagnetism

- field coils
- magnet coils
- racetracks (particle accelerators)

- solenoids
- electromechanical devices**
- GS **electromechanical devices**
- . electric motors
 - . microelectromechanical systems
 - . piezoelectric actuators
 - . . asynchronous motors
 - . . induction motors
 - . . micromotors
 - . . piezoelectric motors
 - . . stepping motors
 - . . synchronous motors
 - . . torque motors
- RT ∞ electric equipment
- electroactive polymers
 - electrodynamics
 - electromechanics
- ∞ equipment
- homopolar generators
- electromechanics**
- GS electrodynamics
- . **electromechanics**
- RT circuits
- electric fields
 - electrokinetics
 - electromagnetic fields
 - electromechanical devices
 - electrostatics
 - magnetic field inversions
 - magnetic fields
 - Maxwell equation
- ∞ mechanics (physics)
- electrometers**
- DEF Instruments for measuring differences of electric potential.
- GS measuring instruments
- . **electrometers**
- RT electric charge
- electrical measurement
 - electron counters
 - galvanometers
 - potentiometers (instruments)
 - voltmeters
 - wattmeters
- electromigration**
- RT electrical resistivity
- electron mobility
 - hole mobility
 - ionic mobility
 - polarization (charge separation)
 - thermocapillary migration
 - thermomigration
- electromotive forces**
- DEF Forces capable of maintaining a potential difference, and thus a current, within a circuit. They can be established by chemical action or by mechanical work.
- GS **electromotive forces**
- . ponderomotive forces
- RT electric batteries
- electric generators
 - electric potential
 - Ohms law
 - open circuit voltage
- electromyograms*
- USE **electromyography**
- electromyographs*
- USE **electromyography**
- electromyography**
- DEF The study of the response of a muscle to an electric stimulation. Used for electromyograms and electromyographs.
- UF *electromyograms*
- electromyographs*
- GS bioengineering
- . biometrics
 - . . **electromyography**
- RT electrophysiology
- medical electronics
- myoelectricity
- electron acceleration**
- DEF The acceleration of electrons by action of solar cosmic rays.
- GS rates (per time)
- . acceleration (physics)
 - . . **electron acceleration**
- RT ∞ acceleration
- cosmic rays
 - electrons
 - extraterrestrial radiation
 - particle beams
 - solar cosmic rays
- electron accelerators**
- GS particle accelerators
- . **electron accelerators**
 - . . betatrons
- RT ∞ accelerators
- linear accelerators
 - synchrotrons
 - Van de Graaff accelerators
- electron affinity**
- GS affinity
- . **electron affinity**
- RT anions
- molecular ions
 - negative electron affinity
 - semiconductors (materials)
- electron attachment**
- GS **electron attachment**
- . nucleophiles
- RT ∞ attachment
- gas ionization
 - ionization
- electron avalanche**
- DEF The process in which a relatively small number of free electrons in a gas that is subjected to a strong electric field accelerate, ionize gas atoms by collision, and thus form new free electrons to undergo the same process in cumulative fashion.
- GS avalanches
- . **electron avalanche**
- RT CATT devices
- channel multipliers
 - free electrons
 - gas discharges
 - Townsend avalanche
- electron beam welding**
- GS welding
- . fusion welding
 - . . **electron beam welding**
- RT arc welding
- electric welding
 - spiking
- electron beams**
- DEF Specifically, focused streams of electrons used for neutralization of the positively charged ion beam in an ion engine. Also used to melt or weld materials with externally high melting points.
- GS beams (radiation)
- . particle beams
 - . . **electron beams**
 - . . . relativistic electron beams
- particles
- . corpuscular radiation
 - . . electron radiation
 - . . . **electron beams**
 - relativistic electron beams
- RT beam injection
- beam neutralization
 - beam plasma amplifiers
 - beta particles
 - Brillouin flow
 - diffraction radiation
 - electron cyclotron heating
 - ionizing radiation
- magnetic lenses
- monoscopes
- nanofabrication
- plasma jets
- scalloping
- scanning electron microscopy
- transmission electron microscopy
- electron bombardment**
- RT ∞ bombardment
- deposition
 - particle beams
 - plasma jets
 - relativistic electron beams
 - sputtering
- electron bunching**
- GS bunching
- . **electron bunching**
- RT catchers
- convection currents
 - klystrons
 - traveling wave tubes
 - velocity modulation
- electron capture**
- GS nuclear reactions
- . nuclear interactions
 - . . nuclear capture
 - . . . **electron capture**
 - . . . spin-orbit interactions
 - . . . **electron capture**
- particle interactions
- . elementary particle interactions
 - . . nuclear capture
 - . . . **electron capture**
 - . . . nuclear interactions
 - . . . nuclear capture
 - . . . **electron capture**
 - . . . spin-orbit interactions
 - . . . **electron capture**
 - spin
 - . spin-orbit interactions
 - . . **electron capture**
- RT capture effect
- many electron effects
- electron clouds**
- RT ∞ clouds
- orbitrons
 - space charge
- electron collisions*
- USE **electron scattering**
- electron compounds*
- USE **intermetallics**
- electron counters**
- UF *electron detectors*
- GS measuring instruments
- . counters
 - . . radiation counters
 - . . . **electron counters**
 - . . . radiation measuring instruments
 - . . . radiation counters
 - . . . **electron counters**
- RT electrometers
- ionization chambers
- electron cyclotron heating**
- DEF A type of radio frequency plasma heating in which high-power microwave energy is introduced into the plasma region.
- GS heating
- . plasma heating
 - . . **electron cyclotron heating**
- RT electron beams
- electron cyclotron resonance
 - electron guns
 - klystrons
 - magnetic pumping
- electron cyclotron resonance**
- (added June 1997)
- GS resonance

electron decay rate

. cyclotron resonance
. . . **electron cyclotron resonance**
RT cyclotron resonance devices
electron cyclotron heating
plasma heating
plasma resonance

electron decay rate

GS rates (per time)
. decay rates
. . . **electron decay rate**
RT muons
secondary cosmic rays

electron density (concentration)

GS density (number/volume)
. particle density (concentration)
. . . **electron density (concentration)**
. . . . carrier density (solid state)
. . . . electron density profiles
. . . . ionospheric electron density
. . . . magnetospheric electron density
RT atmospheric composition
atmospheric density
atom concentration
free electrons
ion density (concentration)
plasma density
plasma frequencies
radiation belts
semiconductors (materials)
space density

electron density profiles

GS density (number/volume)
. particle density (concentration)
. . . electron density (concentration)
. . . . **electron density profiles**
. . . . electron distribution
. . . . **electron density profiles**
distribution (property)
. electron distribution
. . . **electron density profiles**
gradients
. **electron density profiles**
RT angular distribution
atmospheric electricity
atmospheric ionization

electron detectors

USE **electron counters**

electron diffraction

DEF The phenomenon, or the technique of producing diffraction patterns through the incidence of electrons as a function of kinetic energy.

GS diffraction
. **electron diffraction**
RT Bragg angle
diffraction radiation
x ray diffraction

electron diffusion

GS diffusion
. particle diffusion
. . . **electron diffusion**
RT ambipolar diffusion
diffusion length
diffusion waves
gaseous self-diffusion
ionic diffusion
plasma diffusion
thermal diffusion

electron distribution

GS density (number/volume)
. particle density (concentration)
. . . **electron distribution**
. . . . electron density profiles
distribution (property)
. **electron distribution**
. . . electron density profiles
RT charge distribution
current distribution
Thomas-Fermi model

vertical distribution

electron emission

GS emission
. particle emission
. . . **electron emission**
. . . . field emission
. . . . photoelectric emission
. . . . secondary emission
RT cathodes
electric discharges
emitters
negative electron affinity
pair production
photoelectric materials
photoelectron spectroscopy
photoelectrons
photoionization
radio frequency discharge
self sustained emission
stimulated emission
thermal emission
thermionic emission
thermionics
work functions

electron energy

UF *electron temperature*
electronic levels
GS particle energy
. **electron energy**
. . . electron states
RT activation energy
electronic structure
electrostatic probes
 ∞ energy
forbidden bands
Hartree-Fock-Slater method
interfacial energy
ionospheric temperature
kinetic energy
noise temperature
plasmas (physics)
proton energy
space temperature
surface energy
temperature

electron flux

USE **electrons flux (rate)**

electron flux density

SN (LIMITED TO ELECTRON EMISSION OR DETECTION RATE PER UNIT AREA)
UF *electron intensity*
GS rates (per time)
. flux density
. . . radiant flux density
. . . . particle flux density
. . . . **electron flux density**
RT irradiance
radiance
solar flux density

electron gas

RT cosmic gases
electrohydrodynamics
free electrons
ionized gases
plasmons
quantum Hall effect
rarefied gases
screen effect
superconductors (materials)

electron guns

DEF Electrode structures which produce and may control, focus, deflect, and converge one or more electron beams.
RT cathode ray tubes
crossed field guns
electron cyclotron heating
flying spot scanners
 ∞ guns
magnetic lenses
particle accelerators

plasma guns
tube anodes
tube cathodes
tube grids

electron holes

USE **holes (electron deficiencies)**

electron impact

GS impact
. **electron impact**
RT ion impact
point impact
proton impact

electron intensity

USE **electron flux density**

electron interactions

USE **electron scattering**

electron ionization

USE **ionization**

electron irradiation

GS irradiation
. **electron irradiation**
RT auroral irradiation
ion irradiation
secondary emission

electron mass

GS mass
. particle mass
. . . **electron mass**
RT electrons

electron microscopes

GS microscopes
. **electron microscopes**
RT field emission
ion microscopes
magnetic lenses
microanalysis
optical microscopes
photomicrography
replicas
scanning electron microscopy
scanning tunneling microscopy

electron microscopy

DEF The interpretive application of an electron microscope for the magnification of materials that cannot be properly seen with an optical microscope.

GS microscopy
. **electron microscopy**
. . . scanning electron microscopy
. . . scanning tunneling microscopy
. . . transmission electron microscopy
RT field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast

electron mobility

GS electrical properties
. carrier mobility
. . . **electron mobility**
mobility
. carrier mobility
. . . **electron mobility**
transport properties
. carrier mobility
. . . **electron mobility**
RT ambipolar diffusion
atomic mobilities
charge carriers
electrohydrodynamics
electromigration
high electron mobility transistors
hole mobility
majority carriers
minority carriers
modulation doping

- NDM semiconductor devices
semiconductor plasmas
∞ solid state physics
square wells
- electron multipliers*
USE **photomultiplier tubes**
- electron optics**
DEF The science that deals with the propagation of electrons, as light optics deals with light and its phenomena.
RT atom optics
beam switching
Brillouin flow
cathode ray tubes
electro-optics
flying spot scanners
ion optics
∞ optics
particle trajectories
steering
- electron orbitals**
GS orbitals
. **electron orbitals**
RT configuration interaction
electronic structure
excimers
- electron oscillations**
GS oscillations
. **electron oscillations**
RT oscillator strengths
plasma oscillations
transient oscillations
- electron paramagnetic resonance**
UF *electron spin resonance*
GS resonance
. magnetic resonance
. . . paramagnetic resonance
. . . **electron paramagnetic resonance**
RT Jahn-Teller effect
- electron paths*
USE **electron trajectories**
- electron phonon interactions**
RT ∞ interactions
particle interactions
plasma-particle interactions
polarons
superconductivity
thermodynamic coupling
- electron photography**
GS imagery
. photography
. . **electron photography**
RT black and white photography
- electron photon cascades**
RT bremsstrahlung
∞ cascades
cosmic ray showers
pair production
secondary cosmic rays
- electron plasma**
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . **electron plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . **electron plasma**
RT electron-positron plasmas
helium plasma
high temperature plasmas
Landau damping
metallic plasmas
plasma waves
- plasma-particle interactions
rarefied plasmas
relativistic plasmas
thermal plasmas
- electron precipitation**
GS particle precipitation
. **electron precipitation**
particles
. corpuscular radiation
. . **electron precipitation**
RT auroras
∞ precipitation
proton precipitation
radiation belts
secondary cosmic rays
trapped particles
- electron pressure**
GS pressure
. radiation pressure
. . **electron pressure**
- electron probes**
DEF Narrow beams of electrons used to scan or illuminate an object or screen.
GS measuring instruments
. **electron probes**
RT chemical analysis
irradiation
microwave plasma probes
spectrometers
- electron pumping**
RT energy transfer
excimer lasers
gas lasers
lasers
nuclear pumping
nuclear radiation
optical pumping
population inversion
∞ pumping
stimulated emission
stimulated emission devices
- electron radiation**
SN (LIMITED TO RADIATION CONSISTING OF ELECTRONS--EXCLUDES ELECTROMAGNETIC RADIATION)
GS particles
. corpuscular radiation
. . **electron radiation**
. . . beta particles
. . . electron beams
. . . relativistic electron beams
RT bremsstrahlung
nuclear radiation
plasma radiation
proton irradiation
∞ radiation
radiation effects
- electron recombination**
GS recombination reactions
. **electron recombination**
. . radiative recombination
RT ion recombination
neutral particles
- electron ring accelerators*
USE **storage rings (particle accelerators)**
- electron runaway (plasma physics)**
DEF High acceleration of electrons in a collisional plasma caused by a suddenly applied electric field (which greatly reduces the collision cross section of the electrons).
GS scattering
. electron scattering
. . **electron runaway (plasma physics)**
RT collisional plasmas
high acceleration
plasma physics
- scattering cross sections
- electron scattering**
UF *electron collisions*
electron interactions
GS scattering
. **electron scattering**
. . electron runaway (plasma physics)
RT atomic collisions
dense plasmas
elastic scattering
inelastic scattering
ion scattering
many electron effects
nuclear reactions
nuclear scattering
particle interactions
photon-electron interaction
Ramsauer effect
recoil ions
relativistic electron beams
transmission electron microscopy
Umklapp process
- electron sources**
RT ∞ energy sources
ion sources
∞ power supplies
radiation sources
∞ sources
- electron spectroscopy**
DEF The study and interpretation of atomic, molecular, and solid state structure based on x ray induced electron emission from substances.
GS spectroscopy
. **electron spectroscopy**
RT absorption spectra
emission spectra
infrared spectroscopy
molecular spectroscopy
optical emission spectroscopy
x ray absorption
- electron spin**
GS spin
. particle spin
. . **electron spin**
RT angular momentum
nuclear spin
spin dynamics
- electron spin resonance*
USE **electron paramagnetic resonance**
- electron states**
GS level (quantity)
. energy levels
. . **electron states**
particle energy
. electron energy
. . **electron states**
RT electronic structure
excimers
excitation
ground state
many electron effects
noise temperature
- electron sweeping*
USE **sweep frequency**
- electron telescopes*
USE **particle telescopes**
- electron temperature*
USE **electron energy**
- electron trajectories**
DEF The paths of electrons. Used for electron paths.
UF *electron paths*
GS trajectories
. particle trajectories
. . **electron trajectories**
RT diffraction paths

electron transfer

magnetic rigidity
radiation belts

electron transfer

RT backward wave tubes
charge exchange
charge transfer
oxidation
transferred electron devices
transferring

electron transitions

RT atomic theory
Auger effect
Auger spectroscopy
Balmer series
band structure of solids
Bohr theory
conduction bands
excimers
excitation
forbidden transitions
Franck-Condon principle
Jahn-Teller effect
lasing
many electron effects
nuclear capture
optical transition
oscillator strengths
Paschen series
Rydberg series
∞ transition
transition probabilities
x ray lasers
xenon chloride lasers
xenon fluoride lasers

electron tubes

DEF Devices in which conduction by electrons takes place through a vacuum of gaseous medium within a gas tight envelope.

GS electron tubes

. camera tubes
. . image dissector tubes
. . orthicons
. . . image orthicons
. . vidicons
. . . return beam vidicons
. . . . thermicons
. cold cathode tubes
. phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
. gas discharge tubes
. ignitrons
. thyratrons
. image tubes
. thermicons
. thermionic diodes
. cesium diodes
. vacuum tubes
. cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . telescopes
. . cyclotron resonance devices
. . klystrons
. . . magnetrons
. . . . nigotrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. helitrons
. carcinotrons
. vacuum tube oscillators

RT cavity resonators

circuits
crossed field amplifiers
diodes
fiber optics
∞ heaters
modulators
orbitrons
oscillators

pentodes
rectifiers
resonators
tetrodes
transconductance
triodes
tube grids
∞ tubes
tunnel cathodes
velocity modulation
x ray tubes

electron tunneling

UF *tunnel resistors*
RT energy levels
Josephson effect
MIM diodes
quantum dots
resonant tunneling
scanning tunneling microscopy
semiconductors (materials)
superconductivity
tunnel diodes
tunnel junctions
∞ tunneling

electronarcosis

RT electroanesthesia
electrophysiology

electron-hole drops

DEF Exciton condensations exhibiting the properties of electrically conducting plasmas which form in germanium and silicon crystals at sufficiently low cryogenic temperatures.

RT carrier density (solid state)
luminescence
magnetic fields
optical pumping
phase transformations
plasma density
plasma equilibrium
semiconductor plasmas
single event upsets

electronic aircraft

DEF Designation for tactical electronic warfare aircraft.

RT ∞ aircraft
automatic control
electronic countermeasures

electronic amplifiers

USE **amplifiers**

electronic bulletin boards

(added September 1993)
UF *computer bulletin boards*
RT communication networks
computer conferencing
electronic mail
Internet resources
internets
websites
World Wide Web

electronic commerce

(added April 2000)
DEF The buying and selling of goods and services via the Internet or other computer communications network.
UF *e-commerce*
GS commerce
. **electronic commerce**
RT computer information security
electronic mail
Internet resources
websites
World Wide Web

electronic control

RT automatic control
cascade control
∞ control
control equipment
control systems design

controllers
current regulators
electric control
electric switches
feedback control
hydraulic control
optical control
pneumatic control
remote control
Terminal Configured Vehicle Program
voltage regulators

electronic countermeasures

GS countermeasures
. **electronic countermeasures**
. . antiradar coatings
. . chaff
RT deception
electromagnetic compatibility
electromagnetic interference
electronic aircraft
electronic warfare
jamming
optical countermeasures
radar detection
radio frequency interference
stealth technology

electronic equipment

DEF Equipment in which electricity is conducted principally by electrons moving through a vacuum, gas, or semiconductor.

GS electronic equipment

. diodes
. . crystal rectifiers
. . plasma diodes
. . semiconductor diodes
. . . avalanche diodes
. . . . cryosar
. . . . Barritt diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . parametric diodes
. . . photodiodes
. . . Schottky diodes
. . . tunnel diodes
. . . varactor diodes
. . thermionic diodes
. . . cesium diodes
. electronic filters
. electronic modules
. . micromodules
. electronic packaging
. electronic recording systems
. electronic transducers
. miniature electronic equipment
. solid state devices
. . cryotrons
. . crystal rectifiers
. . metal-nitride-oxide-semiconductors
. . multispectral linear arrays
. . semiconductor devices
. . . avalanche diodes
. . . . cryosar
. . . . Barritt diodes
. . . charge transfer devices
. . . . bucket brigade devices
. . . . charge coupled devices
. . . . charge injection devices
. . . germanium diodes
. . . heterojunction devices
. . . . high electron mobility transistors
. MODFETS
. . . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . metal oxide semiconductors
. . . . CMOS
. ITO (semiconductors)
. SOS (semiconductors)
. . . MIM (semiconductors)

- ... MIS (semiconductors)
 - ... MOM (semiconductors)
 - ... MSM (semiconductors)
 - ... NDM semiconductor devices
 - ... neuristors
 - ... parametric diodes
 - ... photodiodes
 - ... photovoltaic cells
 - ... solar cells
 - ... vertical junction solar cells
 - ... Schottky diodes
 - ... semiconductor lasers
 - ... aluminum gallium arsenide lasers
 - ... gallium arsenide lasers
 - ... quantum cascade lasers
 - ... quantum well lasers
 - ... YLF lasers
 - ... SOI (semiconductors)
 - ... thermistors
 - ... thyristors
 - ... silicon controlled rectifiers
 - ... transferred electron devices
 - ... transistor amplifiers
 - ... transistors
 - ... bipolar transistors
 - ... field effect transistors
 - ... charge flow devices
 - ... JFET
 - ... MODFETS
 - ... high electron mobility transistors
 - ... MODFETS
 - ... junction transistors
 - ... JFET
 - ... phototransistors
 - ... silicon transistors
 - ... SOS (semiconductors)
 - ... cascode devices
 - ... TRAPATT devices
 - ... varactor diodes
 - ... varistors
 - ... SIS (semiconductors)
 - ... SIS (superconductors)
 - ... solid state lasers
 - ... aluminum gallium arsenide lasers
 - ... DBR lasers
 - ... fiber lasers
 - ... gallium arsenide lasers
 - ... quantum cascade lasers
 - ... quantum well lasers
 - ... ruby lasers
 - ... YAG lasers
 - ... YLF lasers
 - ... spacecraft electronic equipment
- RT antenna components
bubble technique
∞ electric equipment
∞ electronics
∞ equipment
radiation hardening
spherical antennas
system generated electromagnetic pulses
- electronic equipment tests**
SN (CHECKOUT OF ELECTRONIC EQUIPMENT)
RT Earth terminal measurement system
electric equipment tests
electrical measurement
environmental tests
fault detection
nondestructive tests
oscilloscopes
quality control
resonance testing
self tests
stability tests
∞ test equipment
∞ tests
vibration tests
- electronic filters**
GS electronic equipment
... **electronic filters**
RT electric filters
∞ filters
- FIR filters
- electronic levels*
USE **electron energy energy levels**
- electronic mail**
UF *e-mail*
GS telecommunication
... **electronic mail**
RT communication networks
communication satellites
computer conferencing
computer networks
data transmission
electronic bulletin boards
electronic commerce
electronic publishing
Internet resources
internets
- electronic modules**
GS electronic equipment
... **electronic modules**
... micromodules
modules
... **electronic modules**
... micromodules
RT ∞ hardware
miniature electronic equipment
modularity
subminiaturization
- electronic packaging**
GS electronic equipment
... **electronic packaging**
packaging
... **electronic packaging**
RT circuit boards
DTL integrated circuits
encapsulating
hybrid circuits
integrated circuits
large scale integration
linear integrated circuits
medium scale integration
micromodules
printed circuits
thick films
TTL integrated circuits
- electronic photography*
USE **electro-optical photography**
- electronic publishing**
(added July 1995)
RT computer conferencing
document markup languages
documents
electronic mail
hypertext
information dissemination
multimedia
printing
- electronic recording systems**
GS electronic equipment
... **electronic recording systems**
RT recording instruments
∞ systems
tape recorders
- electronic signal measurement*
USE **signal measurement**
- electronic spectra**
SN (EMISSION OR ABSORPTION MOLECULAR SPECTRA OF AN ELECTRON TRANSITION)
GS spectra
... energy spectra
... **electronic spectra**
... molecular spectra
... **electronic spectra**
... radiation spectra
... electromagnetic spectra
- ... line spectra
... **electronic spectra**
RT absorption spectra
emission spectra
Lyman spectra
spectral bands
vibrational spectra
- electronic structure**
(added April 1999)
SN (THE TERM "ATOMIC STRUCTURE" WAS USED FOR THIS CONCEPT PRIOR TO MAY 1999)
RT atomic structure
band structure of solids
electron energy
electron orbitals
electron states
energy bands
energy gaps (solid state)
energy levels
Fermi liquids
- electronic switches*
USE **switching circuits**
- electronic transducers**
GS electronic equipment
... **electronic transducers**
transducers
... **electronic transducers**
RT magnetic transducers
∞ sensors
ultrasonic wave transducers
- electronic warfare**
DEF Military action involving the use of electromagnetic energy to determine, exploit, reduce, or prevent hostile use of the electromagnetic spectrum, and action which retains friendly use of the electromagnetic spectrum.
GS military operations
... **electronic warfare**
warfare
... **electronic warfare**
RT air defense
antiradar coatings
chaff
combat
deception
electromagnetic compatibility
electromagnetic interference
electromagnetic spectra
electronic countermeasures
evasive actions
jamming
missile detection
peacetime
radar detection
radio frequency interference
stealth technology
strategy
- ∞ **electronics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Study and application of the motions of electrons through vacuum and gaseous, conducting, or semiconducting media. Used for photoelectronics.
UF *photoelectronics*
RT astronics
avionics
digital electronics
electrical engineering
electricity
electronic equipment
electrophysics
medical electronics
microelectronics
molecular electronics
nucleonics
quantum electronics
radio electronics
thermionics
transistor circuits

electron-ion recombination

volt-ampere characteristics

electron-ion recombination

- GS recombination reactions
 - . **electron-ion recombination**
 - . . radiative recombination
- RT ion recombination
- plasma control

electronography

- RT electrophysiology
- printing

electron-positron annihilation

USE **positron annihilation**

electron-positron pairs

(added September 1988)

- GS particles
 - . elementary particles
 - . . **electron-positron pairs**
- RT annihilation reactions
- charged particles
- electron-positron plasmas
- electrons
- pair production
- positron annihilation
- positrons

electron-positron plasmas

(added September 1988)

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **electron-positron plasmas**
 - . . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **electron-positron plasmas**
- RT electron plasma
- electron-positron pairs
- electrons
- positrons
- relativistic plasmas

electrons

DEF Particles of very small mass, carrying a unit negative or positive charge. Negative electrons, surrounding the nucleus (i. e. , orbital electrons) are present in all atoms. Their number is equal to the number of positive charges (or protons) in the particular nucleus. The term electron, when used alone, commonly refers to a negative electron. A positive electron is usually called a positron, and a negative electron is sometimes called a negatron.

UF *electron flux*
nonrelativistic electrons

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . **electrons**
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - . . corpuscular radiation
 - . . energetic particles
 - . . . **electrons**
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons

- polarons
- solar electrons
- . elementary particles
- . . fermions
- . . . leptons
- **electrons**
- conduction electrons
- free electrons
- high energy electrons
- relativistic electron beams
- hot electrons
- N electrons
- negatrons
- photoelectrons
- pi-electrons
- polarons
- solar electrons

- RT acceptor materials
- beta particles
- Bohr magneton
- cosmic rays
- donor materials
- electron acceleration
- electron mass
- electron-positron pairs
- electron-positron plasmas
- excitons
- holes (electron deficiencies)
- Lewis base
- majority carriers
- ∞ materials
- minority carriers
- muonium
- n-type semiconductors
- nuclear radiation
- Pomeranchuk theorem
- quantum numbers
- radiation belts
- semiconductors (materials)
- Suhl effect

electronystagmography

- GS bioengineering
- . biometrics
- . . **electronystagmography**
- physiological tests
- . **electronystagmography**
- RT eye examinations
- eye movements
- nystagmus
- ophthalmology

electro-optical effect

- RT ∞ effects
- ∞ Kerr effects
- light modulation
- nonlinear optics
- ∞ optics

electro-optical photography

- UF *electronic photography*
- GS imagery
- . photography
- . . **electro-optical photography**
- RT astronomical photography
- black and white photography
- image resolution
- Lallemand cameras
- optical measurement
- ∞ optics
- streak photography

electro-optical switching

USE **optical switching**

electro-optics

- GS electrophysics
- . **electro-optics**
- RT acousto-optics
- birefringence
- charge injection devices
- electrochromism
- electroluminescence
- electron optics
- integrated optics
- Kerr electrooptical effect

- laser microscopy
- light modulators
- light valves
- magneto-optics
- optical computers
- optical control
- optical relay systems
- optical switching
- ∞ optics
- optoelectronic devices
- photonics
- position sensing
- pushbroom sensor modes
- Stark effect
- tunable filters

electrophoresis

DEF The movement of colloidal particles produced by the application of an electric potential. Used for continuous flow electrophoresis.

UF *continuous flow electrophoresis*

- RT bioprocessing
- colloids
- electrodeposition
- electroplating
- ∞ microgravity applications
- particle motion

electrophotometers

- UF *photoelectric photometers*
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **electrophotometers**
- . . radiation measuring instruments
- . . . photometers
- **electrophotometers**
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . **electrophotometers**
- RT electrophotometry

electrophotometry

- GS chemical tests
- . chemical analysis
- . . **electrophotometry**
- optical measurement
- . photometry
- . . **electrophotometry**
- RT colorimetry
- electrophotometers
- electrophysics
- ∞ materials tests
- microanalysis
- photometers
- pixels
- qualitative analysis
- quantitative analysis
- spectroscopic analysis
- spectroscopy

electrophysics

- GS **electrophysics**
- . electro-optics
- . . molecular electronics
- RT electrochemistry
- electrokinetics
- electromagnetism
- ∞ electronics
- electrophotometry
- ∞ physics
- ∞ science
- theoretical physics

electrophysiology

- GS physiology
- . **electrophysiology**
- RT body measurement (biology)
- depolarization
- echoencephalography
- electrocardiography
- electroencephalography
- electromyography
- electronarcosis
- electronography

electroplethysmography
 electroretinography
 His bundle
 information processing (biology)
 ion channels (biology)
 nervous system
 neurology
 ∞ science

electroplating
 GS coating
 . **electroplating**
 coatings
 . **electroplating**
 deposition
 . electrodeposition
 . . **electroplating**
 plating
 . **electroplating**
 RT baths
 cathodic coatings
 current density
 electrodes
 electroforming
 electrolysis
 electrolytes
 electrolytic cells
 electrophoresis
 metallizing
 nickel plate
 protective coatings
 surface finishing

electroplethysmography
 GS bioengineering
 . biometrics
 . . body measurement (biology)
 . . . **electroplethysmography**
 . . plethysmography
 . . . **electroplethysmography**
 RT blood circulation
 electrophysiology
 medical electronics

electropolishing
 DEF The improvement in surface finish of a metal effected by making it anodic in an appropriate solution. Used for electrolytic polishing.
 UF *electrolytic polishing*
 GS metal finishing
 . **electropolishing**
 polishing
 . metal polishing
 . . **electropolishing**
 RT electrochemical machining
 metallography
 surface finishing

electrorefining
 GS refining
 . **electrorefining**
 RT electrodes
 electrolytes
 electrolytic cells
 electrowinning

electroretinography
 GS bioengineering
 . biometrics
 . . **electroretinography**
 RT electrophysiology
 medical electronics
 retina

electrorheological fluids
 (added June 1990)
 UF *ER fluids*
 RT elastodynamics
 electroactive polymers
 magnetorheological fluids
 rheology

smart materials
electroseismic effect
 USE **electric current**
seismic waves
 ∞ **electroslag process**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT electroslag refining
 electroslag welding

electroslag refining
 GS refining
 . **electroslag refining**
 RT arc melting
 ∞ electroslag process
 resistance heating

electroslag welding
 GS welding
 . fusion welding
 . . electric welding
 . . . **electroslag welding**
 RT ∞ electroslag process

electrostatic bonding
 DEF Use of the particle-attracting property of electrostatic charges to bond particles of one charge to those of the opposite charge.
 RT binding energy
 coverings
 encapsulating
 energy technology
 glass
 solar arrays
 solar cells

electrostatic charge
 GS electric charge
 . **electrostatic charge**
 RT capacitance
 charge distribution
 ∞ charging
 electric discharges
 electric fields
 electrostatics
 SCATHA satellite
 static electricity
 xerography

electrostatic drag
 GS dynamic characteristics
 . drag
 . . **electrostatic drag**
 RT drag measurement
 satellite drag

electrostatic engines
 DEF Electric rocket engines that use charge potential differences to accelerate propellant ions.
 GS engines
 . rocket engines
 . . electric rocket engines
 . . . **electrostatic engines**
 ion engines
 cesium engines
 Hall thrusters
 mercury ion engines
 RIT engines
 RT arc jet engines
 microrocket engines
 restartable rocket engines
 sustainer rocket engines
 Vernier engines

electrostatic erosion
 USE **spark machining**

electrostatic fields
 USE **electric fields**

electrostatic generators
 GS electric generators

. direct power generators
 . . **electrostatic generators**
 RT arc generators
 ∞ generators
 klystrons
 magnetrons
 rotating generators
 voltage generators

electrostatic gyroscopes
 UF *electrically suspended gyroscopes*
ESG (gyroscopes)
 GS gyroscopes
 . **electrostatic gyroscopes**
 RT levitation

electrostatic plasma
 USE **plasmas (physics)**

electrostatic precipitators
 GS separators
 . precipitators
 . . **electrostatic precipitators**
 RT adsorption
 air purification
 air sampling
 dust collectors
 fly ash
 ∞ separation

electrostatic probes
 UF *Langmuir probes*
 GS measuring instruments
 . plasma probes
 . . **electrostatic probes**
 . . radiation measuring instruments
 . . . **electrostatic probes**
 RT electron energy
 plasma frequencies
 radiation counters
 SCATHA satellite

electrostatic propulsion
 GS propulsion
 . electric propulsion
 . . **electrostatic propulsion**
 . . . ion propulsion
 . . low thrust propulsion
 . . . **electrostatic propulsion**
 . . . ion propulsion
 . . spacecraft propulsion
 . . . **electrostatic propulsion**
 . . . ion propulsion
 RT electromagnetic propulsion
 plasma propulsion

electrostatic shielding
 GS shielding
 . **electrostatic shielding**
 RT electric conductors
 SCATHA satellite

electrostatic waves
 GS elastic waves
 . magnetohydrodynamic waves
 . . plasma waves
 . . . **electrostatic waves**
 RT diffusion waves
 ionic waves
 longitudinal waves
 magnetoelastic waves
 shock waves
 wave-particle interactions

electrostatics
 GS statics
 . **electrostatics**
 RT Born-Infeld theory
 electric fields
 electromagnetic interactions
 electromechanics
 electrostatic charge
 magnetostatics
 Poisson equation

electrostriction

static electricity

electrostriction

DEF The phenomenon wherein some dielectric materials experience an elastic strain when subjected to an electric field, this strain being independent of polarity of the field.

GS electrical properties
. **electrostriction**
mechanical properties
. **electrostriction**

RT electroactive polymers
magnetostriction
piezoelectricity
smart materials

electrosynthesis

(added January 2000)

USE **electrochemical synthesis**

electrothermal engines

DEF Electric rocket engines that use electric energy to heat the propellant and add additional enthalpy.

GS engines
. rocket engines
. . . electric rocket engines
. . . . **electrothermal engines**
. arc jet engines
. pulsed jet engines
. resistojet engines

RT high temperature propellants
ion engines
nuclear electric propulsion
plasma engines
restartable rocket engines
sustainer rocket engines

electroweak interactions (field theory)

(added April 1994)

GS particle interactions
. elementary particle interactions
. . **electroweak interactions (field theory)**

RT electromagnetic interactions
electroweak model
∞ interactions
standard model (particle physics)
weak interactions (field theory)

electroweak model

(added April 1994)

UF *standard electroweak model*
Weinberg-Salam Gauge Model

GS field theory (physics)
. gauge theory
. . unified field theory
. . . **electroweak model**
models

RT **electroweak model**
electromagnetic interactions
electroweak interactions (field theory)
Higgs bosons
particle theory
quantum theory
standard model (particle physics)
weak interactions (field theory)

electrowinning

DEF The production of metals by electrolysis with insoluble anodes in solutions derived from ores or other materials.

RT electrodeposition
electrodes
electrolytes
electrolytic cells
electrorefining

Elektron 1 satellite

GS artificial satellites
. meteorological satellites
. . Elektron satellites
. . . **Elektron 1 satellite**

Elektron 2 satellite

GS artificial satellites

. meteorological satellites
. . Elektron satellites
. . . **Elektron 2 satellite**

Elektron 4 satellite

GS artificial satellites
. meteorological satellites
. . Elektron satellites
. . . **Elektron 4 satellite**

Elektron satellites

GS artificial satellites
. meteorological satellites
. . **Elektron satellites**
. . . Elektron 1 satellite
. . . Elektron 2 satellite
. . . Elektron 4 satellite

element abundance

USE **abundance**

elementary excitations

UF *quasi-particles*
GS **elementary excitations**
. excitons
. magnons
. phonons
. . phonon beams
. plasmons
. polarons

RT many body problem

elementary particle interactions

GS particle interactions
. **elementary particle interactions**
. . electroweak interactions (field theory)
. . . high energy interactions
. . . . strong interactions (field theory)
. . . . meson-meson interactions
. . . . meson-nucleon interactions
. . . . nuclear capture
. . . . electron capture
. . . . nucleon-nucleon interactions
. . . . weak energy interactions
. . . . weak interactions (field theory)
. . . . proton-antiproton interactions
RT angular distribution
electromagnetic interactions
∞ interactions
ion atom interactions
Mandelstam representation
particle decay
photon-electron interaction
transverse momentum
Veneziano model

elementary particles

GS particles
. **elementary particles**
. . antiparticles
. . . antineutrinos
. . . . antinucleons
. . . . antiprotons
. . . . positrons
. . . . beta particles
. . . . bosons
. . . . alpha particles
. . . . Higgs bosons
. . . . mesons
. eta-mesons
. hyperons
. xi hyperons
. kaons
. meson resonance
. X mesons
. muons
. omega-mesons
. pions
. vector mesons
. rho-mesons
. sigma-mesons
. photons
. xi hyperons
. deuterons
. electron-positron pairs

. . fermions
. . . baryons
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. eta-mesons
. leptons
. antineutrinos
. electrons
. conduction electrons
. free electrons
. high energy electrons
. relativistic electron beams
. hot electrons
. N electrons
. negatrons
. photoelectrons
. pi-electrons
. polarons
. solar electrons
. muons
. neutrinos
. solar neutrinos
. positrons
. meson resonance
. X mesons
. neutrons
. cold neutrons
. fast neutrons
. photonutrons
. solar neutrons
. thermal neutrons
. protons
. recoil protons
. solar protons
. hadrons
. baryons
. hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. mesons
. eta-mesons
. hyperons
. xi hyperons
. kaons
. meson resonance
. X mesons
. muons
. omega-mesons
. pions
. vector mesons
. rho-mesons
. sigma-mesons
. hypothetical particles
. magnetic monopoles
. nucleons
. gluons
. gravitinos
. gravitons
. partons
. quarks
. tachyons
. weakly interacting massive particles
RT atomic structure
bubble chambers
charged particles
de Broglie wavelengths
geocyclotrons
hypernuclei
instantons
ionizing radiation
neutron scattering
nuclear interactions
nuclear particles
nuclear radiation
nuclei (nuclear physics)
particle accelerators
Pomeranchuk theorem
positron annihilation
quantum theory
radiation belts

standard model (particle physics)

tabs (control surfaces)

GS analysis (mathematics)
 . complex variables
 . . meromorphic functions
 . . . **elliptic functions**
 functions (mathematics)
 . meromorphic functions
 . . **elliptic functions**
 RT Jacobi integral
 Weierstrass functions

∞ elements

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT atoms
 chemical elements
 hahnium
 heavy elements
 isoparametric finite elements
 light elements
 logical elements
 neutral atoms
 nuclear fuel elements
 orbital elements
 rutherfordium
 tasks

elimination

GS **elimination**
 . deletion
 RT attenuation
 cancellation
 decontamination
 depletion
 ∞ discharge
 disposal
 evacuating (transportation)
 evacuating (vacuum)
 exclusion
 exhaust systems
 exhausting
 Gaussian elimination
 pollution
 purification
 ∞ reduction
 rejection
 ∞ separation
 stopping
 waste disposal

elliptic integrals

USE **elliptic functions**

elliptical cylinders

RT circular cylinders
 ∞ cylinders
 cylindrical bodies
 cylindrical shells

elliptical galaxies

GS celestial bodies
 . galaxies
 . . **elliptical galaxies**
 RT disk galaxies
 galactic clusters
 local group (astronomy)
 peculiar galaxies
 Population II stars
 ring galaxies
 shell galaxies
 spiral galaxies
 star clusters
 Virgo galactic cluster

elevation

RT altimetry
 altitude
 contours
 digital elevation models
 head (fluid mechanics)
 hydrostatic pressure
 hydrostatics
 hypsography
 low altitude
 pressure heads
 topography

elevation angle

UF *almucantar*
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **elevation angle**
 RT altitude
 azimuth
 datum (elevation)
 field of view
 look angles (tracking)
 topography

ellipses

DEF Plane curves constituting the locus of all points the sum of whose distances from two fixed points called foci is constant; an elongated circle.
 GS geometry
 . Euclidean geometry
 . . analytic geometry
 . . . conics
 **ellipses**
 RT circles (geometry)

elliptical orbits

UF *Hohmann trajectories*
Hohmann transfer orbits
 GS orbits
 . **elliptical orbits**
 . . transfer orbits
 . . . interplanetary transfer orbits
 RT aphellions
 apogees
 apsides
 circular orbits
 Earth orbits
 Earth-Mars trajectories
 Earth-Mercury trajectories
 eccentric orbits
 ellipticity
 equatorial orbits
 Euler-Lambert equation
 low Earth orbits
 lunar orbits
 orbital mechanics
 PAS
 perigees
 perihelions
 planetary orbits
 polar orbits
 satellite orbits
 solar orbits
 spacecraft orbits

elevations (drawings)

USE **drawings**

elevator illusion

GS psychological effects
 . illusions
 . . optical illusion
 . . . **elevator illusion**
 RT visual perception

ellipsoids

DEF Surfaces whose plane sections (cross sections) are all ellipses or circles, or the solid enclosed by such a surface. Used for Izsak ellipsoid.
 UF *Izsak ellipsoid*
 GS symmetrical bodies
 . **ellipsoids**
 RT bodies of revolution
 ellipticity
 ogives

elliptical plasmas

DEF Confined non-circular plasmas.
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **elliptical plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **elliptical plasmas**
 RT magnetohydrodynamic stability
 plasma control
 toroidal plasmas

elevators (control surfaces)

GS airfoils
 . **elevators (control surfaces)**
 control surfaces
 . **elevators (control surfaces)**
 RT ailerons
 ∞ control
 elevons
 horizontal tail surfaces
 hydrofoils
 stabilizers (fluid dynamics)
 ∞ surfaces
 tabs (control surfaces)
 tail assemblies
 tail surfaces

ellipsometers

DEF Instruments for determining the ellipticity of polarized light. Used to measure the thickness of very thin transparent films.
 GS measuring instruments
 . optical measuring instruments
 . . **ellipsometers**
 optical equipment
 . optical measuring instruments
 . . **ellipsometers**
 RT ellipsometry
 photometers
 polarimeters

elliptical polarization

DEF The polarization of a wave radiated by an electric vector rotating in a plane and simultaneously varying in amplitude so as to describe an ellipse.
 GS polarization (waves)
 . **elliptical polarization**

elevators (lifts)

RT conveyors
 escalators
 ∞ jacks
 ∞ lifts
 winches

ellipsometry

(added December 1989)
 RT dimensional measurement
 ellipsometers
 ellipticity
 film thickness
 ∞ measurement
 optical measurement
 polarized light

elliptic differential equations

GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **elliptic differential equations**
 Monge-Ampere equation
 RT ∞ equations
 half spaces
 maximum principle

elevons

GS airfoils
 . **elevons**
 control surfaces
 . **elevons**
 RT ailerons
 elevators (control surfaces)
 lateral control

elliptic functions

UF *elliptic integrals*

ellipticity

RT circular polarization
magnetoionics

ellipticity

DEF The amount by which a spheroid differs from a circle, calculated by dividing the difference in the length of the axes by the length of the major axis.

GS shapes

. **ellipticity**

RT eccentricity
ellipsoids
ellipsometry
elliptical orbits
flattening
oblate spheroids

elongation

RT angles (geometry)
deformation
ductility
eccentricity
expansion
mechanical properties
plastic deformation
stretching
superplasticity
tensile deformation
tensile strength

elution

UF *elutriation*

RT adsorption
extraction
flushing
leaching
purification
∞ separation
washing

elutriation

USE **elution**

elves

(added January 2000)

DEF Transient air glow events observed near 90 km, nearly simultaneously with a strong cloud-to-ground lightning stroke. They often precede sprites, which may occur at lower altitudes a few milliseconds later. It is believed that elves are the result of wave heating by very low frequency (VLF) radio pulses emitted by the lightning discharge current.

GS atmospheric radiation
. sky radiation
. . **elves**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **elves**

RT atmospheric electricity
atmospheric ionization
cloud-to-ground discharges
lightning
sprites (atmospheric physics)
thunderstorms

e-mail

(added April 2000)

USE **electronic mail**

emanation

USE **emission**

embedded atom method

(added February 1998)

DEF A semiempirical calculation method developed by Daw and Baskes for determining the energetics of atoms in a bulk environment. The original form of the method was based on density functional theory and was intended primarily for tight-packed transition metals. More recent modifications have extended the applicability of the method to a large number of elements in the periodic table.

UF *EAM (physical chemistry)*

MEAM (physical chemistry)

modified embedded atom method

RT alloys
crystal defects
grain boundaries
interatomic forces
metals
∞ methodology
molecular dynamics
potential energy

embedded computer systems

DEF Computer systems physically incorporated into larger systems whose primary function is not data processing.

GS data processing equipment
. computers
. . **embedded computer systems**
. . . airborne/spaceborne computers
RT Ada (programming language)

embedding

RT acceleration protection
encapsulating
insertion

embolisms

DEF Large amounts of air in the blood stream which, when reaching the heart, cause it to fail; small amounts are resorbed and cause no symptoms.

GS **embolisms**
. aeroembolism
. fat embolisms
RT blood vessels
clotting
coagulation
infarction

embossing

DEF Raising in relief on a surface.
RT braille

embrittlement

DEF The severe loss of ductility or toughness or both, of a material, usually a metal or alloy.

GS **embrittlement**
. hydrogen embrittlement
RT brittle materials
brittleness
degradation
time temperature parameter

embryology

RT ∞ biology
diencephalon
differentiation (biology)
embryos
fetuses
neuroblasts
reproduction (biology)

embryos

RT eggs
embryology
fetuses
seeds

emerald

USE **beryl**

emergencies

RT accidents
disasters
fail-safe systems

emergency breathing techniques

RT ∞ breathing
∞ methodology
pressure breathing
respirators
resuscitation

emergency landing

(added March 2002)

DEF Unscheduled aircraft or spacecraft landing necessitated by an unexpected problem.

GS landing
. **emergency landing**

RT abort trajectories
aircraft accidents
aircraft landing
aircraft safety
crash landing
engine failure
flight safety
hard landing
spacecraft landing

emergency life sustaining systems

GS support systems
. life support systems
. . **emergency life sustaining systems**
. . . AEPS
RT Assured Crew Return Vehicle
environmental control
escape capsules
floats
high altitude breathing
medical equipment
oxygen supply equipment
portable life support systems
pressurized cabins
protective clothing
safety
safety devices
survival equipment
∞ systems

emergency locator transmitters

DEF Aircraft distress signal equipment with a radio beacon on a specific emergency frequency and used for locating downed aircraft. The set is activated by the impact of the crash.

GS transmitters
. **emergency locator transmitters**

emerging

RT emission
emissivity
emittance

emission

UF *emanation*
GS **emission**
. acoustic emission
. exhaust emission
. light emission
. . incandescence
. . luminescence
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence
. . . optical resonance
. . . photoluminescence
. . . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence
. microwave emission
. particle emission
. electron emission
. . . field emission
. . . photoelectric emission
. . . secondary emission
. . . ion emission
. . . neutron emission
. thermionic emission
. photoionization

. radio emission
 . . CN emission
 . . hydroxyl emission
 . . radio bursts
 . . . solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . solar radio emission
 . . . solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . self sustained emission
 . spectral emission
 . spontaneous emission
 . stimulated emission
 . thermal emission
 . . thermionic emission
 . ultraviolet emission
 . water masers

RT airglow
 atomic recombination
 bursts
 decay
 ∞ discharge
 efflux
 ejection
 emerging
 emitters
 excitation
 ionizing radiation
 irradiation
 nuclear reactions
 pair production
 quantum theory
 ∞ radiation
 radioactive decay
 radioactivity
 releasing
 selection rules (nuclear physics)
 sputtering

emission spectra
 SN (LIMITED TO ELECTROMAGNETIC RADIATION OF ANY WAVELENGTH EMITTED FROM EXCITED MATTER--EXCLUDES PARTICLE SPECTRA)
 DEF The spectra of wavelengths and relative intensities of electromagnetic radiation emitted by a given radiator. Each radiating substance has a unique, characteristic emission spectrum, just as every medium of transmission has its individual absorption spectrum.
 GS spectra
 . radiation spectra
 . . **emission spectra**

RT absorption spectra
 atomic recombination
 Balmer series
 blue shift
 continuous radiation
 D lines
 electromagnetic spectra
 electron spectroscopy
 electronic spectra
 flame spectroscopy
 gamma ray spectra
 gamma rays
 H alpha line
 H beta line
 H gamma line
 H II regions
 H lines
 hydroxyl emission
 infrared spectra
 K lines
 laser-induced breakdown spectroscopy
 line spectra
 Lyman spectra
 molecular spectra
 molecular spectroscopy
 nuclear radiation
 optical emission spectroscopy

optical transition
 Paschen series
 photoluminescent bands
 plasma spectra
 Raman spectra
 Rydberg series
 Schumann-Runge bands
 solar spectra
 solar spectrometers
 spectral signatures
 spectrum analysis
 spontaneous emission
 stellar spectra
 Swan bands
 symbiotic stars
 ultraviolet emission
 ultraviolet spectra
 Vegard-Kaplan bands
 visible spectrum
 x ray stars
 x rays

emissivity

DEF A property of a material, measured as the emittance of a specimen of the material that is thick enough to be completely opaque and has an optically smooth surface. Used for photoemissivity.

UF *photoemissivity*
 GS thermodynamic properties
 . thermophysical properties
 . . **emissivity**

RT black body radiation
 brightness
 emerging
 emittance
 hohlraums
 incandescence
 luminosity
 nongray atmospheres
 nongray gas
 optical measurement
 radiance
 radiant flux density
 Stefan-Boltzmann law
 surface properties
 temperature
 thermal emission

emissographs

USE **actinometers**
recording instruments

emittance

RT emerging
 emissivity
 flux (rate)
 luminosity
 luminous intensity
 optical properties
 radiance
 radiant flux density
 spectral emission
 thermodynamic properties

emitters

GS **emitters**
 . thermionic cathodes
 . thermionic emitters

RT electron emission
 emission
 semiconductors (materials)
 thermophotovoltaic conversion

emotional factors

RT angina pectoris
 detachment
 disorders
 dieters
 feedback
 frustration
 human reactions
 moods
 panic
 phobias
 psychological factors

psychology
 sensory feedback
 sensory stimulation

emotions

RT ∞ depression
 fear
 fear of flying
 frustration
 human behavior
 laughing
 moods
 panic
 psychological effects
 psychology
 sensory feedback

EMP (electromagnetism)
(added May 1997)

USE **electromagnetic pulses**

empennage

USE **tail assemblies**

emphysema

GS diseases
 . respiratory diseases
 . . **emphysema**

RT occupational diseases

employee relations

RT ∞ cooperation
 human relations
 personnel
 personnel development
 personnel management
 position (title)
 production management
 retirement
 wage surveys

employment

RT personnel selection
 ∞ tests

emptying

RT disposal
 dumping
 ejection
 expulsion
 expulsion bladders
 jettisoning
 materials handling
 releasing
 removal
 spilling
 spreading
 unloading

EMR 6050 computer

GS data processing equipment
 . computers
 . . digital computers
 . . . **EMR 6050 computer**

emulsions

DEF Suspensions of fine particle or globules of one or more liquids in another liquid.

GS mixtures
 . dispersions
 . . **emulsions**
 . . . photographic emulsions
 nuclear emulsions

RT Brownian movements
 colloids
 slurries
 solutions

enamels

DEF Thin ceramic coatings, usually of high glass content, applied to a substrate, generally a metal.

GS coatings
 . **enamels**
 finishes
 . **enamels**

enantiomers

RT porcelain

enantiomeric compounds

(added August 1998)

USE **enantiomers**

enantiomers

(added August 1998)

DEF Isomeric pairs whose crystalline forms or molecular structures are non-superimposable mirror images.

UF *enantiomeric compounds*

enantiomorphs

GS isomers

. **enantiomers**

RT chirality

crystal structure

isomorphism

molecular structure

stereochemistry

symmetry

enantiomorphs

(added August 1998)

USE **enantiomers**

encapsulated microcircuits

DEF Microelectronic circuits enclosed in plastic.

GS circuits

. integrated circuits

. . . **encapsulated microcircuits**

RT microelectronics

encapsulating

GS coating

. **encapsulating**

coatings

. **encapsulating**

RT canning

electronic packaging

electrostatic bonding

embedding

∞ imbeddings

materials handling

packaging

plastic coatings

potting compounds

protective coatings

sealing

sheaths

Enceladus

DEF A satellite of Saturn orbiting at a mean distance of 238,000 kilometers.

GS celestial bodies

. natural satellites

. . . icy satellites

. . . **Enceladus**

. . . Saturn satellites

. . . **Enceladus**

RT Saturn (planet)

encephalitis

GS diseases

. **encephalitis**

RT bacterial diseases

brain

viral diseases

Encke comet

DEF A very faint comet with a periodicity of 3.3 years which is the shortest of any known comet.

GS celestial bodies

. comets

. . . **Encke comet**

RT Comet Nucleus Tour

Encke method

RT ∞ methodology

enclosure

RT ∞ casing

housings

packaging

enclosures

RT air locks

asteroid capture

∞ barriers

biopaks

losures

compartments

∞ containers

coverings

doghouses (electronics)

∞ envelopes

housings

∞ pens

perforated shells

pressure chambers

protectors

rooms

safety devices

shells (structural forms)

shielding

shipyards

walls

encoders

USE **coders**

encoding

USE **coding**

encounters

RT crashes

scattering

end effectors

UF *fingers (robotics)*

hands (robotics)

mechanical fingers

mechanical hands

robot fingers

robot hands

RT ∞ effectors

manipulators

robot arms

robot dynamics

robotics

robots

tactile sensors (robotics)

torque sensors (robotics)

end moraines

USE **glacial drift**

end plates

GS structural members

. plates (structural members)

. . . **end plates**

RT anisotropic plates

bulkheads

circular plates

losures

flat plates

shallow shell equations

endangered species

DEF Living organisms (except plants) whose populations have diminished to such low levels that survival may require extraordinary conservation procedures. Changes in size and quality of the ecology are considered the cause of the possible extinction of some species.

RT animals

birds

ecology

ecosystems

habitats

pollution

toxicity

wildlife

Endeavour (orbiter)

(added June 1989)

UF *Space Shuttle Orbiter 105*

GS manned spacecraft

. space shuttles

. . . Space Shuttle orbiters

. . . **Endeavour (orbiter)**

reentry vehicles

. recoverable spacecraft

. . . reusable spacecraft

. . . space shuttles

. . . . Space Shuttle orbiters

. . . . **Endeavour (orbiter)**

RT Challenger (Orbiter)

∞ spacecraft

endfire arrays

GS arrays

. antenna arrays

. . . linear arrays

. . . . **endfire arrays**

. . . . Yagi antennas

RT backfire antennas

directional antennas

endocrine glands

GS anatomy

. glands (anatomy)

. . . **endocrine glands**

. . . adrenal gland

. . . gonads

. . . . ovaries

. . . . testes

. . . hypothalamus

. . . pancreas

. . . parathyroid gland

. . . pineal gland

. . . pituitary gland

. . . thymus gland

. . . thyroid gland

RT endocrinology

estrogens

endocrine secretions

GS secretions

. **endocrine secretions**

. . . hormones

. . . corticosteroids

. . . . aldosterone

. . . . hydroxycorticosteroid

. cortisone

. glucocorticoids

. . . estrogens

. . . hypertension

. . . pituitary hormones

. . . . adrenocorticotropin (ACTH)

. . . prostaglandins

. . . thyroxine

. . . insulin

endocrine systems

RT endocrinology

glands (anatomy)

hormones

mineral metabolism

∞ systems

endocrinology

GS medical science

. **endocrinology**

RT endocrine glands

endocrine systems

endolymph

GS body fluids

. **endolymph**

RT ear

endoplasmic reticulum

GS organelles

. **endoplasmic reticulum**

. . . sarcoplasmic reticulum

RT cells (biology)

cytoplasm

endoscopes

UF *borescopes*

GS medical equipment

. **endoscopes**

optical equipment

. **endoscopes**

energy absorption

particle energy
potential energy
proton energy
radiant heating
seismic energy
solar energy
solar total energy systems
stacking fault energy
strain energy methods
surface energy
thermal energy
thermonuclear power generation
transportation energy
waterwave energy
work

energy absorption

UF *nonreflection*
GS **energy absorption**
. moderation (energy absorption)
. . thermalization (energy absorption)
. . . neutron thermalization
. radiation absorption
. . electromagnetic absorption
. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption
. . molecular absorption
. . self absorption
. thermal absorption
. . polar cap absorption
RT absorbers (materials)
∞ absorption
damping
energy conversion efficiency
gamma ray absorptiometry
heat sinks
infrared radiation
light (visible radiation)
photon absorptiometry
shock absorbers
sound transmission
vibration isolators

energy absorption films

GS thin films
. **energy absorption films**
RT ∞ absorption
aluminum oxides
coatings
direct power generators
Golay detector cells
monomolecular films
photoelectric cells
photothermal conversion
selective surfaces
semiconducting films

energy bands

GS **energy bands**
. Bloch band
. conduction bands
. forbidden bands
RT ∞ bands
electronic structure
excitons
laser windows
quantum wells
spectral bands
windows (intervals)

energy budgets

DEF Quantitative descriptions of the total energy exchange into and out of a given physical or ecological system; may include radiation heat, kinetic, and biological process.
GS **energy budgets**
. Earth radiation budget
. heat budget
. . atmospheric heat budget

RT atmospheric energy sources
∞ budgets
exergy

energy conservation

GS conservation
. **energy conservation**
RT ∞ energy
energy policy
exergy
power factor controllers
residential energy
resource allocation
resources

energy consumption

GS consumption
. **energy consumption**
RT coal utilization
commercial energy
domestic energy
∞ energy sources
fuel consumption
industrial energy

energy conversion

DEF The change of a working substance or natural power into a more useable form of energy such as electricity or mechanical motion.
GS **energy conversion**
. biomass energy production
. geothermal energy conversion
. ocean thermal energy conversion
. satellite solar energy conversion
. solar energy conversion
. . photothermal conversion
. . . thermophotovoltaic conversion
. . photovoltaic conversion
. . . thermophotovoltaic conversion
. . solar total energy systems
. waterwave energy conversion
RT cogeneration
commercial energy
∞ conversion
direct power generators
domestic energy
geothermal energy extraction
hydrogen production
hydrothermal systems
industrial energy
integrated energy systems
laser power beaming
lignite
organic wastes (fuel conversion)
power beaming
power conditioning
satellite solar power stations
solar ponds (heat storage)
solar sea power plants
space industrialization
transportation energy
waste energy utilization

energy conversion efficiency

GS efficiency
. **energy conversion efficiency**
RT carrier transport (solid state)
∞ conversion
direct power generators
∞ energy
energy absorption
engines
exergy
fuel cells
∞ generators
motors
open circuit voltage
photothermal conversion
power conditioning
power factor controllers
quantum efficiency
Redox cells
spectrophotovoltaics
thermophotovoltaic conversion
tide powered generators
transducers

volumetric efficiency
waterwave energy conversion

energy converters

USE **direct power generators**

energy density

USE **flux density**

energy dissipation

DEF The difference between energy input and output as a result of transfer of energy between two points. Used for energy loss.
UF *energy loss*
GS dissipation
. **energy dissipation**
RT dielectric loss
exergy
friction
insertion loss
Lagrange similarity hypothesis
losses
nonadiabatic theory
∞ power loss
traveling charge

energy distribution

GS distribution (property)
. **energy distribution**
. . spectral energy distribution
RT equipartition theorem
flux density
force distribution
integrated energy systems
quantum mechanics
statistical mechanics

Energy Efficiency Transport program

USE **ACEE program**

energy equipartition

USE **equipartition theorem**

energy exchange

USE **energy transfer**

energy gaps (solid state)

DEF A range of forbidden energies in the band theory of solids. Used for bandgap.
UF *bandgap*
GS gaps
. **energy gaps (solid state)**
RT band structure of solids
blue shift
electronic structure
MODFETS
modulation doping
quantum well lasers
quantum wells
solid state
∞ solid state physics

energy levels

DEF Any one of different values of energy which a particle, atom, or molecule may adopt under conditions where the possible values are restricted by quantizing conditions. Used for electronic levels.
UF *electronic levels*
GS level (quantity)
. **energy levels**
. . atomic energy levels
. . electron states
. . ground state
. . molecular energy levels
. . . intermolecular forces
. . . rotational states
. . . vibrational states
. . . yrast state
RT atomic excitations
atomic structure
electron tunneling
electronic structure
excitation
Fermi surfaces
molecular excitation

- nuclear capture
 - nuclear models
 - nuclear quadrupole resonance
 - nuclear spin
 - nuclear structure
 - population inversion
 - quantum numbers
 - quantum theory
- energy loss*
- USE **energy dissipation**
- energy methods**
- GS structural analysis
 - . **energy methods**
 - . . Bernstein energy principle
 - . . strain energy methods
 - RT Castigliano variational theorem
 - matrices (mathematics)
 - ∞ methodology
 - stress analysis
- energy of formation**
- GS chemical energy
 - . **energy of formation**
 - RT ∞ energy
 - free energy
 - molecular energy levels
- energy policy**
- GS policies
 - . **energy policy**
 - RT abundance
 - availability
 - coal
 - coal gasification
 - coal liquefaction
 - coal utilization
 - conservation
 - crude oil
 - depletion
 - ∞ development
 - Earth resources
 - ecology
 - economic factors
 - energy conservation
 - fuel oils
 - fuels
 - hydrocarbon fuels
 - land use
 - lignite
 - logistics
 - mining
 - ∞ nuclear energy
 - nuclear fuels
 - oil exploration
 - oils
 - operating costs
 - pollution
 - refining
 - renewable energy
 - reserves
 - resource allocation
 - resources
 - safety
- energy requirements**
- RT ∞ energy sources
 - fuel consumption
 - ∞ power supplies
- ∞ **energy sources**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT atmospheric energy sources
 - auxiliary power sources
 - biomass energy production
 - electric batteries
 - electric generators
 - electron sources
 - energy consumption
 - energy requirements
 - energy technology
 - geothermal resources
 - heat sources
 - lithium sulfur batteries
- ocean thermal energy conversion
 - plasma power sources
 - point sources
 - propellants
 - rectifiers
 - renewable energy
 - spacecraft power supplies
 - tidepower
 - waterwave energy conversion
- energy spectra**
- GS spectra
 - . **energy spectra**
 - . . electronic spectra
 - . . neutron spectra
 - RT absorption spectra
 - electromagnetic spectra
 - gamma ray astronomy
 - GRIST (telescope)
 - mass spectra
 - molecular spectra
 - plasma spectra
 - power spectra
 - radiation spectra
 - shock spectra
 - spectral energy distribution
 - spectrophotovoltaics
 - vibrational spectra
- energy storage**
- UF *energy storage devices*
 - GS **energy storage**
 - . electric energy storage
 - . heat storage
 - . magnetic energy storage
 - RT capacitors
 - compressed air
 - electrets
 - electric batteries
 - flywheels
 - fuel cells
 - fuels
 - geothermal energy utilization
 - heat sources
 - inductors
 - lead acid batteries
 - nickel hydrogen batteries
 - ∞ nuclear energy
 - potential energy
 - Redox cells
 - regenerators
 - roadway powered vehicles
 - space station power supplies
 - springs (elastic)
 - ∞ storage
 - superconductors (materials)
- energy storage devices*
- USE **energy storage**
- energy technology**
- GS technologies
 - . **energy technology**
 - . . geothermal technology
 - RT biomass energy production
 - coal utilization
 - combined cycle power generation
 - Earth resources
 - electrostatic bonding
 - ∞ energy sources
 - fuel cell power plants
 - gas recovery
 - geothermal energy extraction
 - heat engines
 - hydrocarbon fuel production
 - hydrogen-based energy
 - lignite
 - magnetic energy storage
 - offshore energy sources
 - oil recovery
 - phosphoric acid fuel cells
 - photoelectrochemical devices
 - photothermal conversion
 - quantum efficiency
 - renewable energy
 - residential energy
- solar cooling
 - solar energy conversion
 - solar houses
 - space cooling (buildings)
 - Trombe walls
 - waste heat
- energy transfer**
- UF *energy exchange*
 - GS **energy transfer**
 - . linear energy transfer (LET)
 - RT acoustic coupling
 - antenna couplers
 - coupling circuits
 - cyclotron resonance
 - electron pumping
 - gas transport
 - gas-liquid interactions
 - heat transfer
 - Heisenberg theory
 - Lagrange similarity hypothesis
 - mass transfer
 - momentum transfer
 - nonadiabatic conditions
 - nonisothermal processes
 - nuclear pumping
 - plasma heating
 - Poynting theorem
 - radiative transfer
 - terminal ballistics
 - transferring
 - wave rotors
- engine airframe integration**
- DEF Physics of the interface between the engine and the airframe.
 - RT aerodynamic characteristics
 - aerodynamic configurations
 - aircraft design
 - aircraft engines
 - airframes
- engine analyzers**
- GS measuring instruments
 - . analyzers
 - . . **engine analyzers**
- engine control**
- DEF Any control for regulating the power and speed of an engine, such as the throttle, mixture control, manifold pressure regulator, fuel pressure control, or supercharger control.
 - GS **engine control**
 - . rocket engine control
 - . turbojet engine control
 - RT air start
 - aircraft control
 - automatic control
 - combustion control
 - ∞ control
 - electric control
 - flight instruments
 - fuel control
 - hydraulic control
 - manual control
 - pneumatic control
 - remote control
 - spacecraft control
 - speed control
 - temperature control
 - thrust control
 - variable stream control engines
- engine coolants**
- DEF Liquids used in an engine cooling system to transfer heat from the engine to the radiator.
 - GS coolants
 - . **engine coolants**
 - RT cooling
 - cooling systems
- engine design**
- GS **engine design**
 - . rocket engine design
 - RT aircraft design

engine failure

- computer aided design
- ∞ design
 - helicopter design
 - missile design
 - nozzle design
 - product development
 - reactor design
 - spacecraft design
 - Stirling engines
 - volumetric efficiency
- engine failure**
 - GS failure
 - . **engine failure**
 - RT aborted missions
 - ∞ cut-off
 - emergency landing
 - ingestion (engines)
 - ∞ stalling
- engine inlets**
 - GS intake systems
 - . air intakes
 - . . **engine inlets**
 - RT bypass ratio
 - cavity flow
 - ∞ diffusers
 - hypersonic inlets
 - inlet airframe configurations
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - nacelles
- engine monitoring instruments**
 - GS measuring instruments
 - . **engine monitoring instruments**
 - RT fault detection
 - flight instruments
 - systems health monitoring
- engine noise**
 - GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . **engine noise**
 - rocket engine noise
 - RT aircraft noise
 - aircraft runup
 - jet aircraft noise
 - propeller noise
 - quiet engine program
- engine parts**
 - RT carburetors
 - clutches
 - combustion chambers
 - ∞ components
 - dump combustors
 - flywheels
 - internal combustion engines
 - pistons
 - retirement for cause
 - rocket linings
 - spare parts
 - turbine blades
 - turbine wheels
 - valves
 - wave rotors
- engine primers**
 - RT internal combustion engines
 - ∞ primers
 - starting
- engine relight (in-flight)*
 - USE **air start**
- engine starters**
 - GS starters
 - . **engine starters**
 - RT engines
 - internal combustion engines

- jet engines
- engine testing laboratories**
 - GS laboratories
 - . **engine testing laboratories**
 - test facilities
 - . **engine testing laboratories**
 - RT engines
- engine tests**
 - GS **engine tests**
 - . cold flow tests
 - . prefiring tests
 - . space electric rocket tests
 - . static firing
 - RT aircraft runup
 - altitude tests
 - captive tests
 - flight tests
 - fuel tests
 - full scale tests
 - ground tests
 - lubricant tests
 - missile tests
 - nondestructive tests
 - prelaunch tests
 - propellant tests
 - propulsive efficiency
 - rocket engine design
 - rocket test facilities
 - SERT 1 spacecraft
 - SERT 2 spacecraft
 - static tests
 - Stirling engines
 - test firing
 - test stands
 - testing time
 - ∞ tests
 - vibration tests
- ∞ **engineering**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The useful application of scientific or other systematic knowledge of the properties of matter and the sources of energy in nature.
 - RT aeronautical engineering
 - aerospace engineering
 - aircraft production costs
 - anthropometry
 - bioengineering
 - bioinstrumentation
 - biometrics
 - biotelemetry
 - body measurement (biology)
 - chemical engineering
 - concurrent engineering
 - electrical engineering
 - environmental engineering
 - human factors engineering
 - man machine systems
 - mechanical engineering
 - production engineering
 - reactor technology
 - reliability engineering
 - software engineering
 - structural engineering
 - systems engineering
 - underwater engineering
 - value engineering
- engineering development*
 - USE **product development**
- engineering drawings**
 - UF *mechanical drawings*
 - GS documents
 - . drawings
 - . . **engineering drawings**
 - . . . blueprints
 - RT circuit diagrams
 - descriptive geometry
 - ∞ design
 - dimensions
 - graphic arts
 - layouts

- lofting
- reproduction (copying)
- engineering management**
 - GS management
 - . industrial management
 - . . **engineering management**
 - RT allocations
 - ∞ budgets
 - goals
 - manpower
 - priorities
 - research management
 - resource allocation
 - resources
- engineering test reactors**
 - UF *ETR (reactors)*
 - GS nuclear reactors
 - . **engineering test reactors**
 - RT reactor design
 - reactor technology
- Engineering Test Satellites**
 - (added October 1997)
 - SN (LIMITED TO THE JAPANESE ETS SERIES OF SATELLITES)
 - UF *ETS series satellites*
 - GS artificial satellites
 - . **Engineering Test Satellites**
 - Japanese spacecraft
 - . **Engineering Test Satellites**
- engineers**
 - (added November 1992)
 - GS manpower
 - . **engineers**
 - personnel
 - . **engineers**
 - RT awards
 - scientists
- engines**
 - SN (LIMITED TO MACHINES WITH SELF-CONTAINED POWER SOURCES FOR CONTINUOUS OPERATION--SEE MOTORS FOR MACHINES UTILIZING EXTERNAL POWER SOURCES FOR NORMAL OPERATION)
 - DEF Machines or apparatus that convert energy, especially heat energy, into work. Used for gas generator engines.
 - UF *gas generator engines*
 - GS **engines**
 - . air breathing engines
 - . . gas turbine engines
 - . . . hydrogen engines
 - jet engines
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turbofan engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine

- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- .. T-58 engine
- . aircraft engines
- .. convertible fan-shaft engines
- .. helicopter engines
- .. J-52 engine
- .. J-58 engine
- .. J-97 engine
- .. T-34 engine
- .. T-38 engine
- .. T-55 engine
- .. T-63 engine
- .. T-76 engine
- .. T-78 engine
- .. TF-30 engine
- .. TF-34 engine
- .. TF-41 engine
- .. variable cycle engines
- .. variable stream control engines
- . external combustion engines
- .. Stirling engines
- . internal combustion engines
- .. diesel engines
- .. gas turbine engines
- .. hydrogen engines
- .. jet engines
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
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- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- T-78 engine
- turboramjet engines
- .. helicopter engines
- .. rotary engines
- .. Wankel engines
- . JATO engines
- . Marquardt R4D engine
- . piston engines
- .. diesel engines
- .. free-piston engines
- .. Stirling engines
- . rocket engines
- .. booster rocket engines
- .. AJ-10 engine
- .. Algol engine
- .. apogee boost motors
- .. H-1 engine
- .. LR-87-AJ-5 engine
- .. M-1 engine
- .. M-55 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. rocket engine 9KS-11000
- .. Space Shuttle Boosters
- .. Advanced Solid Rocket Motor (STS)
- .. X-405 engine
- .. ducted rocket engines
- .. electric rocket engines
- .. electrostatic engines
- ion engines
- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- .. electrothermal engines
- .. arc jet engines
- .. pulsed jet engines
- .. resistojet engines
- .. plasma engines
- .. magnetoplasmadynamic thrusters
- .. pulsed inductive thrusters
- .. pulsed plasma thrusters
- .. two stage plasma engines
- .. VASIMR (propulsion system)
- .. HEUS rocket engines
- .. hot water rocket engines
- .. hybrid propellant rocket engines
- .. lithergol rocket engines
- .. liquid propellant rocket engines
- .. AJ-10 engine
- .. F-1 rocket engine
- .. H-1 engine
- .. hydrazine engines
- .. hydrogen oxygen engines
- .. J-2 engine
- .. M-1 engine
- .. RL-10-A-1 engine
- .. RL-10-A-3 engine
- .. liquid air cycle engines
- .. LR-62-RM-2 engine
- .. LR-87-AJ-5 engine
- .. LR-91-AJ-5 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. oxygen-hydrocarbon rocket engines
- .. RL-10 engines
- .. RL-10-A-1 engine
- .. RL-10-A-3 engine
- .. pulse detonation engines
- .. Space Shuttle Main Engine
- .. X-405 engine
- .. XLR-99 engine
- .. YLR-91-AJ-1 engine
- .. M-100 engine
- .. microrocket engines
- .. Orbit Maneuvering Engine (Space Shuttle)
- .. nozzleless rocket engines
- .. nuclear engine for rocket vehicles
- .. nuclear ramjet engines
- .. nuclear rocket engines
- .. nuclear lightbulb engines
- .. restartable rocket engines
- .. retrorocket engines
- .. BE-3 engine
- .. reusable rocket engines
- .. solid propellant rocket engines
- .. Algol engine
- .. apogee boost motors
- .. ASROC engine
- .. Hercules engine
- .. M-46 engine
- .. M-55 engine
- .. M-56 engine
- .. M-57 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. SL-3 rocket engine
- .. Space Shuttle Boosters
- .. Advanced Solid Rocket Motor (STS)
- .. SYNCOM apogee engines
- .. TX-77 engine
- .. TX-354 engine
- .. X-248 engine
- .. X-254 engine
- .. X-258 engines
- .. X-258-B1 engine
- .. X-259 engine
- .. XM-33 engine
- .. sustainer rocket engines
- .. turborocket engines
- .. ullage rocket engines
- .. upper stage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- .. aerospike engines
- .. rocket-based combined-cycle engines
- . torpedo engines
- .. turborocket engines
- .. ullage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- . turbine engines
- .. gas turbine engines
- .. hydrogen engines
- .. jet engines
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
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- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine

England

. T-34 engine
 T-38 engine
 T-53 engine
 T-55 engine
 T-56 engine
 T-63 engine
 T-64 engine
 T-74 engine
 T-76 engine
 T-78 engine
 turboramjet engines
 . . . T-58 engine
 RT auxiliary propulsion
 carburetors
 combustion chambers
 displacement
 energy conversion efficiency
 engine starters
 engine testing laboratories
 exhaust systems
 expendable stages (spacecraft)
 fuel consumption
 fuel systems
 geothermal energy conversion
 heat engines
 heat sources
 ignition systems
 lubrication
 ∞ machinery
 missile components
 motors
 ∞ power plants
 propulsion
 reaction products
 shutdowns
 speed regulators
 supersonic combustion
 thermodynamic efficiency
 thermodynamics
 transportation energy
 turbines
 ∞ vehicles

England

GS nations
 . United Kingdom
 . . **England**
 RT Europe

English Channel

RT Atlantic Ocean
 France
 North Sea
 United Kingdom

English language

GS languages
 . **English language**
 RT speech
 words (language)

engraving

RT etching
 printing

enhanced vision

(*added June 1995*)
 UF *EVS*
synthetic vision
 GS vision
 . **enhanced vision**
 RT aircraft landing
 landing aids
 multisensor applications
 night vision
 visibility

enhancement

USE **augmentation**

enlarging

USE **expansion**

ENO schemes

USE **essentially non-oscillatory schemes**

enrichment

GS **enrichment**

. isotopic enrichment
 . . jet membrane process
 RT beneficiation
 concentrating
 purification
 refining
 upgrading

Enrico Fermi atomic power plant

GS electric power plants
 . nuclear power plants
 . . **Enrico Fermi atomic power plant**
 nuclear electric power generation
 . nuclear power plants
 . . **Enrico Fermi atomic power plant**
 RT breeder reactors
 fast nuclear reactors
 liquid metal cooled reactors
 ∞ power plants

Enskog-Chapman theory

USE **Chapman-Enskog theory**

enstatite

GS chalcogenides
 . oxides
 . . pyroxenes
 . . . **enstatite**
 magnesium compounds
 . **enstatite**
 minerals
 . pyroxenes
 . . **enstatite**
 silicon compounds
 . silicates
 . . pyroxenes
 . . . **enstatite**
 RT chondrule
 igneous rocks
 regolith
 rocks
 soils

enstrophy

USE **vorticity**

Enterprise (Orbiter)

UF *Space Shuttle Orbiter 101*
 GS manned spacecraft
 . space shuttles
 . . Space Shuttle orbiters
 . . . **Enterprise (Orbiter)**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . space shuttles
 Space Shuttle orbiters
 **Enterprise (Orbiter)**
 RT manned space flight
 ∞ spacecraft

enthalpy

DEF A mathematically defined thermodynamic function of state. Used for heat content.

UF *heat content*
 GS heat
 . **enthalpy**
 . . Gibbs free energy
 . . heat of dissociation
 . . heat of formation
 . . heat of solution
 . . latent heat
 . . . heat of fusion
 . . . heat of vaporization
 thermodynamic properties
 . **enthalpy**
 . . Gibbs free energy
 . . heat of dissociation
 . . heat of formation
 . . heat of solution
 . . latent heat
 . . . heat of fusion
 . . . heat of vaporization
 RT adiabatic conditions
 drying
 ∞ energy

entropy
 free energy
 Gibbs-Helmholtz equations
 heat measurement
 Joule-Thomson effect
 Mollier diagram
 specific heat
 thermochemistry
 thermodynamics

enthalpy-entropy diagrams

USE **Mollier diagram**

entire functions

UF *integral functions*
 GS analysis (mathematics)
 . complex variables
 . . analytic functions
 . . . **entire functions**
 functions (mathematics)
 . analytic functions
 . . **entire functions**

entomology

RT insecticides
 insects
 ∞ science
 ∞ zoology

entrainment

RT aeration
 aerosols
 blowing
 Coanda effect
 dispersing
 spraying
 suspending (mixing)

entrances

RT curtains
 doors
 intake systems
 ∞ thresholds
 transfer tunnels

entrapment

RT accumulators
 confusion
 escape (abandonment)
 radiation belts
 tangling
 traps

entropy

DEF A measure of the extent to which the energy of a system is unavailable.
 GS thermodynamic properties
 . **entropy**
 RT Crocco method
 ∞ energy
 enthalpy
 exergy
 heat
 maximum entropy method
 Mollier diagram
 nonisentropicity
 Shannon-Wiener measure
 tephigrams
 thermochemistry
 thermodynamics

entropy (statistics)

DEF A factor or quantity that is a function of a mechanical system and is equal to the logarithm of the probability of the particular arrangement in that state.

GS **entropy (statistics)**
 . maximum entropy method
 . minimum entropy method
 RT ∞ statistics

∞ entry

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT atmospheric entry

reentry

entry guidance (STS)

DEF The precise steering commands for trajectory from initial penetration of the Earth's atmosphere until the terminal area guidance is activated at an Earth-relative speed (about 2500 fps).

GS guidance (motion)
 . **entry guidance (STS)**

RT atmospheric entry
 flight control
 hypersonic reentry
 pointing control systems
 space shuttles
 Space Transportation System flights
 spacecraft reentry
 terminal guidance

enumeration

RT counting
 lists
 number theory

∞ **envelopes**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT coverings
 enclosures
 flight envelopes
 limits (mathematics)
 stellar envelopes

environment effects

SN (EFFECTS ON ENVIRONMENT)
 RT air pollution
 coastal ecology
 coastal water
 contaminants
 contamination
 debris
 deforestation
 ∞ effects
 environments
 eutrophication
 exhaust gases
 greenhouse effect
 habitats
 ice environments
 man environment interactions
 marine biology
 marine environments
 metabolic wastes
 noise pollution
 poisons
 pollution
 sewage
 soil erosion
 thermal pollution
 waste disposal
 wastes
 water pollution
 water quality
 water resources
 wetlands
 wildlife

environment management

GS management
 . **environment management**
 RT conservation
 Earth resources
 environmental cleanup
 environmental monitoring
 land management
 land use
 man environment interactions
 resources management
 waste management
 water management
 water resources

environment models

GS models
 . **environment models**
 RT atmospheric models

climate models
 exobiology
 test chambers

environment pollution

DEF Alterations of the natural environment that are harmful to life; normally as produced by human activities.

GS pollution
 . **environment pollution**
 . . air pollution
 . . . global air pollution
 . . . indoor air pollution
 . . soil pollution
 . . water pollution
 . . . oil pollution

RT aerobiology
 aerosols
 air sampling
 biomass burning
 clean energy
 Earth resources
 environmental monitoring
 environmental surveys
 human wastes
 metabolic wastes
 noise pollution
 oil slicks
 poisons
 pollution monitoring
 pollution transport
 radioactive wastes
 thermal pollution
 waste disposal

environment protection

GS protection
 . **environment protection**
 RT air pollution
 Central Atlantic Regional Ecol Test
 Site
 effluents
 environmental cleanup
 environmental monitoring
 planetary protection
 pollution
 radioactive wastes
 waste disposal
 water pollution

environment simulation

GS simulation
 . **environment simulation**
 . . acoustic simulation
 . . altitude simulation
 . . space environment simulation
 . . thermal simulation
 . . . weightlessness simulation
 neutral buoyancy simulation
 RT atmospheric entry simulation
 atmospheric models
 environmental tests
 flight simulation
 virtual reality

environment simulators

GS simulators
 . **environment simulators**
 . . Lunar Gravity Simulator
 . . solar simulators
 . . space simulators
 . . . clinostats
 . . . High Vacuum Orbital Simulator
 . . . Langley complex coordinator
 RT test chambers

environmental chambers

USE **test chambers**

environmental chemistry

DEF Collective term comprising the complex chemical relationships involving the atmosphere, climatology, air and water pollution, fuels, pesticides, energy, biochemistry, geochemistry, etc.

GS **environmental chemistry**

. aérothermochemistry
 . atmospheric chemistry
 . geochemistry
 . . biogeochemistry
 . marine chemistry

RT air pollution
 ∞ chemistry
 climatology
 hydrocarbon fuels
 pesticides
 smog
 waste disposal
 water pollution

environmental cleanup

(added February 1999)
 GS cleaning
 . **environmental cleanup**
 RT decontamination
 environment management
 environment protection
 hazardous wastes
 oil pollution
 oil slicks
 pollution control
 reclamation
 soil pollution
 waste disposal
 waste treatment
 water pollution
 water treatment

environmental control

GS **environmental control**
 . pollution control
 RT antiseptics
 artificial gravity
 automatic control
 biosatellites
 cabin atmospheres
 clean rooms
 ∞ control
 emergency life sustaining systems
 environments
 habitability
 manned reentry
 manned spacecraft
 pressurized cabins
 resources management
 spacecraft cabin atmospheres
 spacecraft environments
 temperature control
 test chambers
 weather modification
 windshields

environmental engineering

RT ∞ aerospace sciences
 clean energy
 climatology
 comfort
 ∞ engineering
 environments
 heating
 human factors engineering
 illuminating
 life sciences
 life support systems
 meteorology
 physiological effects
 psychological effects
 shelters
 space heating (buildings)
 Starsite program
 temperature control
 temperature distribution
 terraforming
 ventilation
 waste disposal
 waste management

environmental index

RT physiological tests

environmental laboratories

GS laboratories

environmental monitoring

- . **environmental laboratories**
- test facilities
- . **environmental laboratories**
- RT human factors laboratories
- test chambers

environmental monitoring

- RT ambience
- biomarkers
- environment management
- environment pollution
- environment protection
- infrared radiometers
- meteorology
- monitors
- oceanography
- water sampling
- weather forecasting

environmental quality

- GS quality
- . **environmental quality**
- . . air quality
- . . water quality
- RT air pollution
- contaminants
- environments
- Global Air Sampling Program
- marine biology
- noise pollution
- pollution
- thermal pollution
- water pollution

Environmental Research Satellites

- UF *Octahedral Research Satellites*
- GS artificial satellites
- . scientific satellites
- . . **Environmental Research Satellites**
- . . . ERS 17
- . . . ERS 18
- . . . Intasat satellite
- RT Atlas Agena launch vehicles

environmental surveys

- SN (LIMITED TO INDEXING ENVIRONMENTAL IMPACT STATEMENTS)
- RT aerosols
- air pollution
- Earth resources
- environment pollution
- human wastes
- metabolic wastes
- poisons
- pollution
- pollution control
- radioactive wastes
- thermal pollution
- waste disposal
- water pollution

environmental temperature

- USE **ambient temperature**

environmental tests

- GS **environmental tests**
- . cold weather tests
- . corrosion tests
- . . corrosion test loops
- . . salt spray tests
- . high temperature tests
- . low temperature tests
- . underwater tests
- . . neutral buoyancy simulation
- RT ASSET project
- electronic equipment tests
- environment simulation
- field tests
- high altitude tests
- ∞ materials tests
- orbital space tests
- physiological tests
- psychological tests
- reverberation chambers
- spin tests
- test chambers

- ∞ tests
- thermal cycling tests
- thermal vacuum tests
- vibration tests

environments

DEF External conditions or the sum of such conditions, in which pieces of equipment, living organisms, or systems operate as in temperature environment, vibration environment, or space environment. Environments are usually specified by a range of values, and may be either natural or artificial.

GS environments

- . aerospace environments
- . . cislunar space
- . . deep space
- . . . interplanetary space
- . . . interstellar space
- . . Earth orbital environments
- . Earth environment
- . Earth magnetosphere
- . . geomagnetic tail
- . . magnetopause
- . . magnetosheath
- . extraterrestrial environments
- . . cislunar space
- . . deep space
- . . . interplanetary space
- . . . interstellar space
- . . Earth orbital environments
- . . lunar environment
- . . . lunar atmosphere
- . . planetary environments
- . . . Mars environment
- Mars atmosphere
- . . . planetary atmospheres
- helium hydrogen atmospheres
- Jupiter atmosphere
- Mars atmosphere
- Mercury atmosphere
- Neptune atmosphere
- . . . planetary ionospheres
- . . . Pluto atmosphere
- . . . Saturn atmosphere
- . . . Uranus atmosphere
- . . . Venus atmosphere
- Venus clouds
- . . planetary magnetospheres
- . . . planetary magnetotails
- . . satellite atmospheres
- . . . lunar atmosphere
- . . stellar atmospheres
- . . . chromosphere
- . . . solar atmosphere
- solar transition region
- . . frictionless environments
- . heterosphere
- . high altitude environments
- . high gravity environments
- . high temperature environments
- . ice environments
- . inner radiation belt
- . low temperature environments
- . marine environments
- . midlatitude atmosphere
- . rotating environments
- . spacecraft environments
- . thermal environments
- RT adiabatic conditions
- air
- air pollution
- air quality
- ambience
- ∞ atmospheres
- coastal ecology
- coastal plains
- controlled atmospheres
- Earth atmosphere
- ecology
- economic impact
- electromagnetic interference
- environment effects
- environmental control
- environmental engineering
- environmental quality
- global air pollution

- gravitation
- habitability
- habitats
- human factors engineering
- humidity
- life support systems
- nonpoint sources
- ∞ performance
- physiological effects
- plants (botany)
- pressure
- programming environments
- psychological effects
- regimes
- temperature
- thermal pollution
- vacuum effects
- weightlessness

Envisat-1 satellite

(added August 2000)

DEF Polar-orbiting Earth observation satellite designed to provide continuous global measurements including high- and medium-resolution radar and optical images from its Advanced Synthetic Aperture Radar (ASAR) and Medium-Resolution Imaging Spectrometer (MERIS). Acquired data will support Earth science research and allow monitoring of environmental and climatic changes.

GS artificial satellites

- . ESA satellites
- . . **Envisat-1 satellite**
- ESA spacecraft
- . ESA satellites
- . . **Envisat-1 satellite**
- RT ERS-2 (esa satellite)
- imaging spectrometers
- remote sensing
- satellite observation
- satellite-borne radar
- synthetic aperture radar

enzyme activity

- GS metabolism
- . **enzyme activity**
- . . fermentation
- RT bioconversion
- diabetes mellitus
- digestive system
- lysosomes
- tyrosine

enzymes

- GS biopolymers
- . proteins
- . . **enzymes**
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . protease
- . . . thrombin
- . . . trypsin
- organic compounds
- . proteins
- . . **enzymes**
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin

... protease
 ... thrombin
 ... trypsin
 RT activation (biology)
 catalysts
 coenzymes
 enzymology

enzymology
 GS biochemistry
 . **enzymology**
 RT digesting
 digestive system
 enzymes
 metabolism
 nitrogen metabolism

EOCR (reactor)
 USE **experimental organic cooled reactors**

EOGO
 USE **EGO**

EOLE satellites
 GS artificial satellites
 . French satellites
 . . **EOLE satellites**
 . meteorological satellites
 . . **EOLE satellites**
 RT French space program
 GEOLE satellites
 geophysical satellites

EOPAP
 USE **Earth & Ocean Physics Applications Program**

EOR (rendezvous)
 USE **Earth orbital rendezvous**

EOS
 USE **Earth Observing System (EOS)**

EOS AM-1 spacecraft (added June 1999)
 USE **Terra spacecraft**

EOS data and information system
(added April 1995)
 DEF A system to manage data resulting from NASA's Earth Observing Systems's science research satellites and field measurement programs, and other data essential for interpreting these measurements.
 UF *EOSDIS*
 GS information systems
 . **EOS data and information system**
 RT Earth Observing System (EOS)
 Earth Resources Information System
 remote sensing
 satellite observation
 scientific satellites

EOS-A
 USE **Landsat E**

EOS-B
 USE **Landsat F**

EOSDIS
 USE **EOS data and information system**

eosinophils
 DEF A type of white blood cell or leukocyte which stains a red color with eosin stain; normally about 2 to 3 percent of white cells in the blood but tending to decrease during stressful situations and thus usable as an index for stress.
 GS cells (biology)
 . blood cells
 . . leukocytes
 . . . **eosinophils**

RT cytoplasm

EPE-A
 USE **Explorer 12 satellite**

EPE-B
 USE **Explorer 14 satellite**

EPE-C
 USE **Explorer 15 satellite**

EPE-D
 USE **Explorer 26 satellite**

ephemerides

DEF Periodical publications tabulating the predicted positions of celestial bodies at regular intervals, such as daily, and containing other data of interest to astronomers. A publication giving similar information useful to a navigator is called an almanac.

GS **ephemerides**
 . planet ephemerides
 RT astronomical catalogs
 celestial mechanics
 ephemeris time
 orbits
 position (location)

ephemeris time

DEF The uniform measure of time defined by the laws of dynamics and determined in principle from the orbital motions of the planets, specifically, the orbital motion of the Earth as represented by Newcomb's Tables of the sun.

GS time
 . **ephemeris time**
 RT ephemerides
 universal time

epicardium

GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . heart
 **epicardium**
 membranes
 . **epicardium**
 tissues (biology)
 . **epicardium**

epicycloids

GS geometry
 . curves (geometry)
 . . **epicycloids**
 . Euclidean geometry
 . . analytic geometry
 . . . **epicycloids**
 RT cusps (mathematics)

epidemiology

DEF The branch of medicine that studies the sources, distribution, and determinants of diseases and injuries in human populations.

GS medical science
 . **epidemiology**
 RT infectious diseases
 vaccines
 veterinary medicine

epidermis

GS anatomy
 . skin (anatomy)
 . . **epidermis**
 RT contact dermatitis

epilepsy

GS diseases
 . **epilepsy**
 RT cramps
 human pathology
 shaking

Epimetheus

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 151,422 kilometers.
 GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Epimetheus**
 RT Saturn (planet)

epinephrine

DEF The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics.

UF *adrenaline*
 GS amines
 . catecholamine
 . . **epinephrine**
 drugs
 . **epinephrine**
 RT adrenal gland
 dopamine
 heart rate
 hormones
 neurotransmitters
 stimulants

epitaxy

DEF The oriented growth of a crystalline substance on a substrate of the same or different crystalline substance.

GS growth
 . crystal growth
 . . **epitaxy**
 . . . atomic layer epitaxy
 . . . electroepitaxy
 . . . liquid phase epitaxy
 . . . molecular beam epitaxy
 . . . vapor phase epitaxy
 RT bipolar transistors
 crystal lattices
 crystal structure
 junction transistors
 laser deposition
 pulsed laser deposition

epithelium

GS tissues (biology)
 . **epithelium**
 RT anatomy
 histology
 peritoneum
 skin (anatomy)

EPNL

USE **effective perceived noise levels**

epochs

USE **time measurement**

epoxidation

GS chemical reactions
 . **epoxidation**
 RT oxidation

epoxides

USE **epoxy compounds**

epoxy compounds

UF *epoxides*
 GS **epoxy compounds**
 . endrin
 . ethylene oxide
 . hyoscine
 . propylene oxide
 RT ∞ chemical compounds
 ethers

epoxy matrix composites

DEF High strength compositions consisting of epoxy resin and a reinforcing matrix of filaments or fibers of glass, metal, or other materials.

epoxy resins

- GS composite materials
 - . polymer matrix composites
 - . . . **epoxy matrix composites**
 - . . . boron-epoxy composites
 - . . . graphite-epoxy composites
- RT aramid fiber composites
 - aramid fibers
 - braided composites
 - fiber orientation
 - low density research
- ∞ materials
- ∞ matrices
 - matrix materials
 - pultrusion
 - sandwich structures
 - woven composites

epoxy resins

DEF Viscous liquids or brittle solids containing epoxide groups that can be crosslinked into final form by means of a chemical reaction with a variety of setting agents used with or without heat.

- GS plastics
 - . synthetic resins
 - . . . thermosetting resins
 - . . . **epoxy resins**
 - phenolic epoxy resins
- resins
 - . synthetic resins
 - . . . thermosetting resins
 - . . . **epoxy resins**
 - phenolic epoxy resins
- RT adhesives
 - boron reinforced materials
 - boron-epoxy composites
 - coatings
 - glass transition temperature
 - graphite-epoxy composites
 - lay-up
 - prepregs
 - resin matrix composites

equalizers (circuits)

- RT attenuators
 - frequency response
 - phase shift
 - signal processing

∞ equations

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- UF *balance equations*
 - forced vibratory motion equations*
- RT adiabatic equations
 - approximation
 - Bernoulli theorem
 - Bethe-Salpeter equation
 - biharmonic equations
 - Blasius equation
 - Boltzmann transport equation
 - Boltzmann-Vlasov equation
 - Born approximation
 - boundary layer equations
 - Brillouin-Wigner equation
 - Burger equation
 - Cauchy-Riemann equations
 - Chandrasekhar equation
 - Chaplygin equation
 - conservation equations
 - constitutive equations
 - continuity equation
 - convection-diffusion equation
 - cubic equations
 - difference equations
 - differential equations
 - diophantine equation
 - Dirac equation
 - Donnell equations
 - Duffing differential equation
 - eikonal equation
 - Einstein equations
 - Elber equation
 - elliptic differential equations
 - equations of motion
 - equations of state

- equilibrium equations
- Euler equations of motion
- Euler-Cauchy equations
- Euler-Lagrange equation
- Euler-Lambert equation
- Faddeev equations
- Falkner-Skan equation
- Ficks equation
- flow equations
- Fokker-Planck equation
- Fredholm equations
- Gauss equation
- Gibbs adsorption equation
- ∞ Gibbs equations
 - Gibbs-Helmholtz equations
 - Glimm method
 - Hamilton-Jacobi equation
- ∞ Helmholtz equations
 - Helmholtz vorticity equation
 - Hugoniot equation of state
 - hydrodynamic equations
 - hyperbolic differential equations
 - identities
 - inhour equation
 - integral equations
 - kinematic equations
 - kinetic equations
 - Klein-Gordon equation
 - Korteweg-Devries equation
 - Krook equation
 - Lame wave equations
 - Landau-Ginzburg equations
 - Laplace equation
 - linear equations
 - linear evolution equations
 - linearization
 - Liouville equations
 - macroscopic equations
 - Mathieu function
 - Maxwell equation
 - Monge-Ampere equation
 - Navier-Stokes equation
 - nonholonomic equations
 - nonlinear equations
 - nonlinear evolution equations
 - Orr-Sommerfeld equations
 - parabolic differential equations
 - partial differential equations
 - Pfaff equation
 - Poisson equation
 - polynomials
 - primitive equations
 - quadratic equations
 - quartic equations
 - Rayleigh equations
 - reaction-diffusion equations
 - Reynolds equation
 - roots of equations
 - Saha equations
 - Schroedinger equation
 - semiempirical equations
 - shallow shell equations
 - simultaneous equations
 - singular integral equations
 - Stokes-Beltrami equation
 - thermodynamics
 - vlasov equations
 - Volterra equations
 - Von Karman equation
 - vorticity equations
 - wave equations
 - Wiener Hopf equations

equations of motion

DEF A set of equations which give information regarding the motion of a body or of a point in space as a function of time when initial position and initial velocity are known. Used for motion equations.

- UF *motion equations*
- GS **equations of motion**
 - . Euler equations of motion
 - . Euler-Lagrange equation
 - . kinetic equations
 - . . hydrodynamic equations
 - . . . Burnett equations
 - . . . Helmholtz vorticity equation

- . . kinematic equations
- . Navier-Stokes equation
- . Reynolds equation
- RT autonomy
 - Bethe-Salpeter equation
 - celestial mechanics
 - classical mechanics
 - computational fluid dynamics
 - continuity equation
 - control moment gyroscopes
- ∞ dynamics
 - Einstein equations
- ∞ equations
 - equilibrium equations
 - Hamilton-Jacobi equation
 - inertia principle
 - kinematics
 - Lissajous figures
 - Mach inertia principle
 - moments of inertia
 - motion aftereffects
 - spinning unguided rocket trajectory
 - stability
 - systems stability
 - trajectories
 - trajectory analysis
 - variable mass systems
 - von Zeipel method

equations of state

DEF Equations relating temperature, pressure, and volume of a system in thermodynamic equilibrium. Used for state equations.

- UF *state equations*
- GS **equations of state**
 - . Hugoniot equation of state
- RT adiabatic equations
 - BBGKY hierarchy
 - Bose geometry
 - compressibility
 - continuity equation
- ∞ equations
 - equilibrium equations
 - ideal fluids
 - ideal gas
 - kinetic theory
 - Mollier diagram
 - real gases
 - thermodynamics
 - virial coefficients

equatorial atmosphere

DEF The composition and characteristics of the Earth's atmosphere at and/or near the equator.

- RT ∞ atmospheres
 - atmospheric composition
 - meteorological parameters
 - middle atmosphere
 - quasi-biennial oscillation
 - TRMM satellite
 - tropical meteorology
 - tropical regions

equatorial electrojet

- GS electric current
 - . ionospheric currents
 - . . electrojets
 - . . . **equatorial electrojet**
 - electricity
 - . atmospheric electricity
 - . . ionospheric currents
 - . . . electrojets
 - **equatorial electrojet**
- RT auroral electrojets

equatorial orbits

DEF Inclined orbits with an inclination of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.

- GS orbits
 - . **equatorial orbits**
 - . . stationary orbits
- RT circular orbits
 - Earth orbits
 - elliptical orbits

geosynchronous orbits
 lunar orbits
 orbital mechanics
 planetary orbits
 polar orbits
 satellite orbits
 spacecraft orbits
 twenty-four hour orbits

equatorial regions

DEF Areas on or near the Earth's equator; regions between the Tropic of Cancer and the Tropic of Capricorn (23 degrees 27 minutes North or South of the Equator).

GS regions
 . **equatorial regions**
 RT arid lands
 Earth surface
 tropical regions

equators

DEF The primary great circle of a sphere or spheroid, such as the Earth, perpendicular to the polar axis; or a line resembling or approximating such a circle.

GS **equators**
 . lunar equator
 . magnetic equator
 RT coordinates
 rotating spheres
 transequatorial propagation

∞ **equilibrium**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF A state of dynamic balance between the opposing actions, reactions, or velocities of a reversible process.
 RT acid base equilibrium
 aerostatics
 balance
 balancing
 body sway test
 chemical equilibrium
 diffusion
 diffusion coefficient
 dynamic characteristics
 equilibrium equations
 heat of dissociation
 homeostasis
 isostasy
 liquid-vapor equilibrium
 loads (forces)
 Maxwell-Mohr method
 nonequilibrium conditions
 Onsager relationship
 plasma equilibrium
 relaxation (mechanics)
 relaxation time
 stability
 stabilization
 statics
 steady state
 systems stability
 thermodynamic equilibrium
 thermodynamic properties
 thermodynamics
 transition points
 unsteady state
 variability
 water balance

equilibrium diagrams

USE **phase diagrams**

equilibrium equations

RT analysis (mathematics)
 ∞ equations
 equations of motion
 equations of state
 ∞ equilibrium

equilibrium flow

DEF Gas flow in which energy is constant along streamlines and the composition of the

gas at any point is not time dependent. Used for steady state flow.

UF *steady state flow*
 GS fluid flow
 . gas flow
 . . **equilibrium flow**
 . . . frozen equilibrium flow
 . . . shifting equilibrium flow
 RT Eyring theory
 heat transmission
 nonequilibrium flow
 plasma equilibrium
 quasi-steady states
 steady flow

equilibrium methods

SN (LIMITED TO STRUCTURAL ANALYSIS)
 GS structural analysis
 . **equilibrium methods**
 RT matrix methods
 ∞ methodology
 variational principles

equinoxes

DEF One of two points of intersection of the ecliptic and the celestial equator occupied by the sun when its declination is zero degrees.

RT seasons
 solar position
 solstices
 winter

equipartition theorem

UF *energy equipartition*
 GS theorems
 . **equipartition theorem**
 RT degrees of freedom
 energy distribution
 kinetic energy
 specific heat

∞ **equipment**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *apparatus*
 RT abort apparatus
 absorbers (equipment)
 accumulators (computers)
 air conditioning equipment
 airborne equipment
 aircraft equipment
 airport surface detection equipment
 audio equipment
 automatic test equipment
 bedding equipment
 bombing equipment
 breathing apparatus
 communication equipment
 computer storage devices
 consoles
 cryogenic computer storage
 cryogenic equipment
 data processing equipment
 distillation equipment
 electromechanical devices
 electronic equipment
 ground support equipment
 handling equipment
 ∞ hardware
 heating equipment
 hydraulic equipment
 laboratory equipment
 lighting equipment
 lunar based equipment
 lunar excavation equipment
 mechanical devices
 medical equipment
 miniature electronic equipment
 onboard equipment
 peripheral equipment (computers)
 photographic equipment
 pneumatic equipment
 portable equipment
 radar equipment
 rigging
 safety devices

self erecting devices
 service life
 spacecraft equipment
 survival equipment
 syringes
 television equipment
 ∞ test equipment
 wind tunnel apparatus
 x ray apparatus

equipment specifications

GS specifications
 . **equipment specifications**
 RT aircraft production
 commonality
 ∞ design
 dynamic range
 functional design specifications
 maintenance
 procurement

equipotentials

GS fluid flow
 . potential flow
 . . **equipotentials**
 RT ∞ flow graphs
 flow nets

equivalence

GS mathematical logic
 . set theory
 . . **equivalence**
 RT parity
 partitions (mathematics)

equivalent circuits

GS circuits
 . **equivalent circuits**
 RT duality principle
 network analysis
 network synthesis
 superposition (mathematics)

ER fluids

USE **electrorheological fluids**

ER-2 aircraft

USE **U-2 aircraft**

ERBE

USE **Earth radiation budget experiment**

erbium

GS chemical elements
 . rare earth elements
 . . **erbium**
 . . . erbium isotopes
 metals
 . rare earth elements
 . . **erbium**
 . . . erbium isotopes

erbium 169

USE **erbium isotopes**

erbium 171

USE **erbium isotopes**

erbium alloys

GS alloys
 . rare earth alloys
 . . **erbium alloys**

erbium compounds

GS rare earth compounds
 . **erbium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds

erbium isotopes

UF *erbium 169*
erbium 171
 GS chemical elements
 . nuclides
 . . isotopes

. . . **erbium isotopes**
 . rare earth elements
 . . erbium
 . . . **erbium isotopes**
 metals
 . rare earth elements
 . . erbium
 . . . **erbium isotopes**

erection

USE **construction**

EREP

UF *Earth Resources Experiment Package*

GS packages
 . instrument packages

. . **EREP**

RT ∞ instruments

Skylab 1
 Skylab 2
 Skylab 3
 Skylab 4

ergodic process

RT information theory
 probability theory
 stochastic processes
 thermodynamics

ergometers

DEF Instruments for measuring muscular work.

GS measuring instruments

. **ergometers**

RT dynamometers

ergonomics

USE **human factors engineering**

ergotamine

GS amines
 . **ergotamine**
 bases (chemical)
 . alkaloids
 . . **ergotamine**
 drugs
 . **ergotamine**
 nitrogen compounds
 . alkaloids
 . . **ergotamine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **ergotamine**

EROS (satellites)

UF *Earth Resources Observation Satellites*

GS artificial satellites
 . **EROS (satellites)**

RT Earth resources
 oceanography
 remote sensors
 satellite observation
 scanning
 terrain analysis

EROS asteroid

(added March 1996)

GS celestial bodies
 . asteroids

. . **EROS asteroid**

RT Near Earth Asteroid Rendezvous Mission

EROS project

USE **Experimental Reflector Orbital Shot Proj**

erosion

DEF Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multi-component fluid, or impinging liquid or solid

particles. Used for scars (geology).

UF *scars (geology)*

GS **erosion**

. rain erosion
 . soil erosion
 . water erosion
 . wind erosion

RT

ablation
 abrasion
 arroyos
 atmospheric effects
 cavitation corrosion
 cavitation flow
 corrosion
 degradation
 deterioration
 erosive burning
 etching
 fretting
 hot corrosion
 hydrogeology
 impingement
 inliers (landforms)
 metal surfaces
 metal-water reactions
 pitting
 plateaus
 rain impact damage
 ravines
 rivers
 soil science
 space weathering
 spark machining
 surface reactions
 tribology
 valleys
 wave resistance
 wear
 wear tests
 weathering
 wind effects

erosive burning

DEF Combustion of solid propellants accompanied with nonsteady, high velocity flows of product gases across burning propellant surfaces.

GS combustion

. **erosive burning**

RT

burnout
 combustion temperature
 deterioration
 erosion
 exhaust gases
 fuel combustion
 hypersonic combustion
 oxidation
 pitting
 propellant combustion
 smoldering
 solid propellant combustion
 tribology

error analysis

GS analysis (mathematics)
 . numerical analysis

. . **error analysis**

RT ∞ analyzing

∞ applications of mathematics
 backpropagation (artificial intelligence)
 bit error rate
 boresight error
 censored data (mathematics)
 fault tolerance
 ill-conditioned problems (mathematics)
 mean square values
 probability theory
 range errors
 Rayleigh distribution
 root-mean-square errors
 sensitivity analysis
 systematic errors

error band

USE **accuracy**

error correcting codes

DEF Codes in which each telegraph or data

signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic correction, at the received terminal, of some or all of the errors. Note: Such codes require more signal elements than are necessary to convey the basic information.

GS **error correcting codes**

. Reed-Solomon codes
 RT automatic repeat request
 bit error rate
 ∞ codes
 concatenated codes
 digital techniques
 redundancy encoding

error correcting devices

RT BCH codes
 correction
 ∞ devices
 instrument compensation
 redundancy encoding

error detection codes

DEF Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental information.

RT bit error rate

∞ codes
 coding
 computer programs
 computer systems programs
 digital techniques
 fault detection
 fault tolerance
 information theory
 parity
 proving
 quality control
 redundancy
 redundancy encoding

error functions

GS functions (mathematics)

. **error functions**

RT statistical distributions

error signals

DEF Voltages the magnitude of which are proportional to the difference between an actual and a desired position.

RT automatic repeat request

bit error rate
 comparators
 compensators
 differential amplifiers
 discriminators
 errors
 false alarms
 loop transfer recovery
 phase error
 position errors
 range errors
 signal mixing
 ∞ signals
 slewing

errors

DEF In mathematics, the difference between the true value and a calculated or observed value. Use for invalidity.

UF *invalidity*

GS **errors**

. instrument errors
 . phase error
 . pilot error
 . position errors
 . . boresight error
 . random errors
 . range errors

- . root-mean-square errors
- . systematic errors
- . truncation errors
- . velocity errors
- RT accuracy
 - bias
 - ∞ compensation
 - computer program integrity
 - confidence
 - consistency
 - correction
 - drift (instrumentation)
 - dynamic characteristics
 - error signals
 - hysteresis
 - linearity
 - malfunctions
 - median (statistics)
 - optical correction procedure
 - precision
 - quality control
 - range (extremes)
 - reliability
 - resolution
 - response bias
 - ∞ scaling
 - ∞ tests
 - tolerances (mechanics)
- ERS 17**
 - GS artificial satellites
 - . scientific satellites
 - . . Environmental Research Satellites
 - . . . **ERS 17**
 - RT Atlas Agena launch vehicles
- ERS 18**
 - GS artificial satellites
 - . scientific satellites
 - . . Environmental Research Satellites
 - . . . **ERS 18**
 - RT Atlas Agena launch vehicles
- ERS-1 (ESA satellite)**
 - DEF A European Space Agency remote sensing satellite designed to monitor global oceans, coastal zones and polar regions. It is scheduled for launch on an Ariane 4 expendable launch vehicle in 1990.
 - GS artificial satellites
 - . ESA satellites
 - . . **ERS-1 (ESA satellite)**
 - . maritime satellites
 - . . **ERS-1 (ESA satellite)**
 - ESA spacecraft
 - . ESA satellites
 - . . **ERS-1 (ESA satellite)**
 - RT European Space Agency
- ERS-2 (esa satellite)**
(added February 1996)
 - GS artificial satellites
 - . ESA satellites
 - . . **ERS-2 (esa satellite)**
 - ESA spacecraft
 - . ESA satellites
 - . . **ERS-2 (esa satellite)**
 - RT Envisat-1 satellite
 - European Space Agency
- ERTS**
 - USE **Landsat satellites**
- ERTS-A**
 - USE **Landsat 1**
- ERTS-B**
 - USE **Landsat 2**
- ERTS-C**
 - USE **Landsat 3**
- ERTS-D**
 - USE **Landsat 4**
- ERTS-E**
 - USE **Landsat E**
- ERTS-F**
 - USE **Landsat F**
- eruptions (volcanology)*
- GS cells (biology)
 - . blood cells
 - . . **erythrocytes**
 - . . . reticulocytes
- RT bone marrow
 - carboxyhemoglobin
 - hematocrit
 - hematocrit ratio
 - hemoglobin
 - hemolysis
 - leukocytes
 - oxyhemoglobin
- ES-3A aircraft*
 - USE **S-3 aircraft**
- ESA**
 - USE **European Space Agency**
- ESA satellites**
 - SN (EUROPEAN SPACE AGENCY SATELLITES)
 - UF *ESRO satellites*
European Space Research Organization sat
 - GS artificial satellites
 - . **ESA satellites**
 - . . Aerosat satellites
 - . . COS-B satellite
 - . . ERS-1 (ESA satellite)
 - . . ERS-2 (esa satellite)
 - . . ESRO 1 satellite
 - . . ESRO 2 satellite
 - . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
- . Marots (ESA)
- . . METEOSAT satellite
- . . OTS (ESA)
- . . TD satellites
- . . . TD-1 satellite
- . . Envisat-1 satellite
- . . XMM-Newton telescope
- ESA spacecraft
 - . **ESA satellites**
 - . . Aerosat satellites
 - . . COS-B satellite
 - . . ERS-1 (ESA satellite)
 - . . ERS-2 (esa satellite)
 - . . ESRO 1 satellite
 - . . ESRO 2 satellite
 - . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . METEOSAT satellite
 - . . OTS (ESA)
- RT Earthnet
 - European Space Agency
 - European space programs
 - international cooperation
 - SOHO Mission
- ESA spacecraft**
 - DEF Spacecraft of the European Space Agency.
 - GS **ESA spacecraft**
 - . Columbus space station
 - . ESA satellites
 - . . Aerosat satellites
 - . . COS-B satellite
 - . . ERS-1 (ESA satellite)
 - . . ERS-2 (esa satellite)
 - . . ESRO 1 satellite
 - . . ESRO 2 satellite
 - . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . METEOSAT satellite
 - . . OTS (ESA)

escalators

- . . TD satellites
 - . . . TD-1 satellite
 - . . . Envisat-1 satellite
 - . . . XMM-Newton telescope
 - . Giotto mission
 - . Huygens probe
 - RT ∞ spacecraft
- Esaki diodes*
- USE **tunnel diodes**
- escalators**
- RT elevators (lifts)
 - ladders
 - ∞ lifts
 - stairways
- ∞ **escape**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Of a particle or larger body: to achieve an escape velocity and a flightpath outward from a primary body so as neither to fall back to the body nor to orbit it.
 - RT escape (abandonment)
 - escape capsules
 - escape rockets
 - escape systems
 - escape velocity
 - leakage
- escape (abandonment)**
- RT bailout
 - ejection
 - ejection training
 - entrapment
 - ∞ escape
 - escape rockets
 - escape systems
 - jettison systems
 - jettisoning
 - parachute descent
- escape capsules**
- GS safety devices
 - . **escape capsules**
 - space capsules
 - . **escape capsules**
 - RT abort apparatus
 - aborted missions
 - Assured Crew Return Vehicle
 - ejection seats
 - emergency life sustaining systems
 - ∞ escape
 - flying ejection seats
 - high altitude environments
 - launch escape systems
 - lunar escape devices
 - paracone
 - pressurized cabins
 - X-38 crew return vehicle
- escape rockets**
- DEF Small rocket engines attached to the leading end of an escape tower, which may be used to provide additional thrust to the capsule to obtain separation of the capsule from the booster vehicle in an emergency.
 - GS safety devices
 - . **escape rockets**
 - RT abort apparatus
 - aborted missions
 - ∞ escape
 - escape (abandonment)
 - launch escape systems
 - lunar escape devices
 - ∞ rockets
 - ∞ spacecraft
- escape systems**
- GS **escape systems**
 - . launch escape systems
 - RT bailout
 - ejection
 - ejection seats
 - ∞ escape
- escape (abandonment)
 - jettison systems
 - paracone
 - ∞ systems
- escape velocity**
- DEF The radial speed which a particle or larger body must attain in order to escape from the gravitational field of a planet, satellite, or star. Used for parabolic velocity.
 - UF *parabolic velocity*
 - GS rates (per time)
 - . **escape velocity**
 - velocity
 - . **escape velocity**
 - RT ∞ escape
 - high speed
 - hyperbolic trajectories
 - ∞ hypervelocity
 - orbital velocity
 - planetary gravitation
 - Schwarzschild metric
 - velocity errors
- escarpments**
- DEF Long, more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by erosion or by faulting. Used for scarps.
 - UF *scarps*
 - GS landforms
 - . **escarpments**
 - RT cliffs
 - slopes
 - topography
- Escherichia**
- GS microorganisms
 - . bacteria
 - . . **Escherichia**
- ESG (gyroscopes)*
- USE **electrostatic gyroscopes**
- eskers*
- USE **glacial drift**
- Eskimos**
- RT anthropology
 - culture (social sciences)
- ESO (observatory)*
(added June 1996)
- USE **European Southern Observatory**
- esophagus**
- GS anatomy
 - . digestive system
 - . . **esophagus**
- ESRO*
- USE **European Space Agency**
- ESRO 1 satellite**
- GS artificial satellites
 - . ESA satellites
 - . . **ESRO 1 satellite**
 - ESA spacecraft
 - . ESA satellites
 - . . **ESRO 1 satellite**
 - RT European Space Agency
 - European space programs
- ESRO 2 satellite**
- GS artificial satellites
 - . ESA satellites
 - . . **ESRO 2 satellite**
 - ESA spacecraft
 - . ESA satellites
 - . . **ESRO 2 satellite**
 - RT European Space Agency
- European space programs
- ESRO 4 satellite**
- GS artificial satellites
 - . ESA satellites
 - . . **ESRO 4 satellite**
 - ESA spacecraft
 - . ESA satellites
 - . . **ESRO 4 satellite**
 - RT auroras
 - European Space Agency
 - European space programs
 - particle density (concentration)
 - scientific satellites
- ESRO satellites*
- USE **ESA satellites**
- ESSA 1 satellite**
- UF *OT-3*
 - GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 1 satellite**
 - RT Delta launch vehicle
- ESSA 2 satellite**
- UF *OT-2*
 - GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 2 satellite**
 - RT Delta launch vehicle
- ESSA 3 satellite**
- UF *TOS-A*
 - GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 3 satellite**
 - RT Delta launch vehicle
- ESSA 4 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 4 satellite**
 - RT Delta launch vehicle
- ESSA 5 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 5 satellite**
 - RT Delta launch vehicle
- ESSA 6 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 6 satellite**
 - RT Delta launch vehicle
- ESSA 7 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 7 satellite**
 - RT Delta launch vehicle
- ESSA 8 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 8 satellite**
 - RT Delta launch vehicle
- ESSA 9 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . ESSA satellites
 - . . . **ESSA 9 satellite**

RT Delta launch vehicle

ESSA satellites
 DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS; those funded by NOAA are called ESSA.
 GS artificial satellites
 . meteorological satellites
 . . **ESSA satellites**
 . . . ESSA 1 satellite
 . . . ESSA 2 satellite
 . . . ESSA 3 satellite
 . . . ESSA 4 satellite
 . . . ESSA 5 satellite
 . . . ESSA 6 satellite
 . . . ESSA 7 satellite
 . . . ESSA 8 satellite
 . . . ESSA 9 satellite
 RT cloud photography
 Nimbus satellites
 satellite observation
 TIROS satellites

essentially non-oscillatory schemes
(added September 1990)
 UF *ENO schemes*
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **essentially non-oscillatory schemes**
 RT finite difference theory
 hyperbolic differential equations
 TVD schemes

esters
 GS **esters**
 . acrylates
 . alkylates
 . aspartates
 . Carbamates (tradename)
 . . urethanes
 . carboxylates
 . chloroformate
 . cobalt acetates
 . cyanurates
 . glutamates
 . glycerides
 . isocyanates
 . . diisocyanates
 . . fulminates
 . lactates
 . lead acetates
 . maleates
 . meprobamate
 . nitrate esters
 . . isopropyl nitrate
 . . propyl nitrate
 . octoates
 . organic nitrates
 . . cellulose nitrate
 . . nitroforms
 . . . hydrazine nitroform
 . . nitroglycerin
 . . PETN
 . phthalates
 . polycarbonates
 . . Lexan (trademark)
 . polyesters
 . polyethylene terephthalate
 . sodium chlorodifluoroacetates
 . sodium salicylates
 . stearates
 . sulfonates
 . triacetin
 RT acetates
 acetyl compounds
 citrates
 cyanates
 lipids
 nitrosyls
 organic compounds
 plasticizers
 salicylates

Skydrol (trademark)

estimates
 GS **estimates**
 . cost estimates
 RT allocations
 comparison
 confidence limits
 contingency
 contracts
 damage assessment
 estimating
 evaluation
 forecasting
 likelihood ratio
 management methods
 management planning
 noise prediction (aircraft)
 parameter identification
 predictions
 production management
 project planning
 quality control
 reliability
 reserves
 risk
 statistical analysis
 statistical tests
 ∞ statistics
 subcontracts
 system identification
 value

estimating
 DEF A procedure for making a statistical inference about the numerical values of one or more unknown population parameters from the observed values in a sample.
 GS **estimating**
 . orbital position estimation
 . parameter identification
 . system identification
 RT autoregressive moving average
 budgeting
 contracts
 costs
 counting
 critical path method
 Delphi method (forecasting)
 ∞ design
 estimates
 ∞ estimators
 evaluation
 feasibility
 forecasting
 ∞ measurement
 mission planning
 numerical differentiation
 pattern method (forecasting)
 probe method (forecasting)
 profile method (forecasting)
 projects
 quality control
 reserves
 risk
 sampling
 standard deviation
 statistical analysis
 statistical tests
 ∞ statistics
 technological forecasting
 value

∞ **estimators**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT correlation
 cost estimates
 estimating
 parameterization
 personnel

Estonia
 GS nations
 . **Estonia**
 RT Baltic sea

Europe

estrogens
 GS organic compounds
 . lipids
 . . steroids
 . . . **estrogens**
 secretions
 . endocrine secretions
 . . hormones
 . . . **estrogens**
 RT endocrine glands
 sex glands

estuaries
 DEF (A) The seaward end or the widened funnel-shaped tidal mouth of a river valley where fresh water comes into contact with seawater and where tidal effects are evident. Icy due to the rise of sea level.
 UF *outlets (geology)*
 RT bays (topographic features)
 Chesapeake Bay (US)
 coasts
 fisheries
 geography
 harbors
 oceanography
 rivers
 tidal flats
 tides
 tributaries

etalons
 DEF Two adjustable parallel mirrors mounted so that either one may serve as one of the mirrors in a Michelson interferometer; used to measure distance in terms of wavelengths of spectral lines.
 GS measuring instruments
 . interferometers
 . . **etalons**
 . optical measuring instruments
 . . **etalons**
 mirrors
 . **etalons**
 optical equipment
 . optical measuring instruments
 . . **etalons**
 RT astronomical interferometry
 diffractometers
 Fabry-Perot interferometers
 flatness
 goniometers
 optical measurement
 photogoniometers
 reflectors
 Ronchi test
 Sagnac effect
 specular reflection
 telescopes
 very long base interferometry

eta-mesons
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **eta-mesons**
 . . . fermions
 . . . **eta-mesons**
 . . . hadrons
 . . . mesons
 **eta-mesons**
 . nuclear particles
 . . bosons
 . . . mesons
 **eta-mesons**
 RT baryons
 charged particles
 omega-mesons
 rho-mesons
 sigma-mesons

etchants
 RT corrosion

etching

etching

etching

GS **etching**

- . plasma etching

RT corrosion

- engraving
- erosion
- etchants
- metallography
- photoresists
- pitting
- ultrasonic cleaning

ethane

GS organic compounds

- . hydrocarbons
- . . . aliphatic hydrocarbons
- alkanes
- **ethane**

RT hydrocarbon fuels

ethane nitrile

USE **acetonitrile**

ethanol

USE **ethyl alcohol**

Ethernet

(added January 2000)

DEF Computer network protocol originally developed in the 1970s for local area network technology; uses carrier sense multiple access with collision detection (CSMA/CD), coaxial cable, and broadcast transmission.

GS protocol (computers)

- . **Ethernet**

RT carrier sense multiple access

- computer networks
- local area networks

ethers

GS **ethers**

- . acetals
- . anisole
- . diethyl ether
- . gallamine triethiodide
- . polyphenyl ether

RT anesthetics

- drugs
- epoxy compounds
- organic compounds
- PEEK
- propargyl groups

ethics

DEF The standards of conduct and moral judgment of a group, religion, profession, etc.

RT ∞ methodology

- norms
- research

Ethiopia

GS nations

- . **Ethiopia**

RT Africa

ethnic factors

DEF The complex patterns of behavior which distinguish an ethnic group.

GS sociology

- . social factors
- . . **ethnic factors**

RT American Indians

- communities
- culture (social sciences)
- group dynamics
- race factors

ethoxy ethylene

GS ethylene compounds

- . **ethoxy ethylene**

ethyl alcohol

UF *ethanol*

GS hydroxyl compounds

- . alcohols
- . . **ethyl alcohol**

RT atmospheric energy sources

- carbohydrates

ethyl compounds

RT ∞ chemical compounds

- diethyl compounds
- diethyl hydrogen phosphite (DEHP)
- tetraethyl orthosilicate
- triethyl compounds

ethylene

GS organic compounds

- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkenes
- **ethylene**
- vinylidene

RT hydrocarbon fuels

- polyethylenes

ethylene compounds

GS **ethylene compounds**

- . chloroethylene
- . . trichloroethylene
- . ethoxy ethylene
- . ethylene dihydrazine
- . ethylenediamine
- . ethylenediaminetetraacetic acids

RT ∞ chemical compounds

ethylene dihydrazine

GS ethylene compounds

- . **ethylene dihydrazine**
- hydrazines
- . **ethylene dihydrazine**

ethylene oxide

GS epoxy compounds

- . **ethylene oxide**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **ethylene oxide**

RT bactericides

- chemical sterilization
- decontamination
- oxides
- spacecraft sterilization

ethylenediamine

GS amines

- . diamines
- . . **ethylenediamine**
- ethylene compounds
- . **ethylenediamine**

ethylenediaminetetraacetic acids

UF *EDTA*

GS acids

- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **ethylenediaminetetraacetic acids**
- ethylene compounds
- . **ethylenediaminetetraacetic acids**
- organic compounds
- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **ethylenediaminetetraacetic acids**

RT acetates

- detergents

etiology

DEF The doctrine of causes, particularly the causes and reasons for diseases.

RT case histories

- causes
- diseases

- prevention

ETR (reactors)

USE **engineering test reactors**

ETS series satellites

(added October 1997)

USE **Engineering Test Satellites**

Ettingshausen coolers

USE **Ettingshausen effect**

- thermoelectric cooling**

Ettingshausen effect

UF *Ettingshausen coolers*

RT cooling systems

∞ effects

- temperature effects
- thermoelectric cooling
- thermoelectricity
- thermomagnetic cooling
- thermomagnetic effects

Euclidean geometry

UF *Euclidean space*

GS geometry

- . **Euclidean geometry**
- . . analytic geometry
- . . . catenaries
- . . . circumferences
- . . . conics
- ellipses
- hyperbolas
- parabolas
- . . . cycloids
- . . . epicycloids
- . . . loci
- . . . Mercator projection
- . . . quadrants
- . . . S curves
- Gompertz curves
- . . . spheroids
- oblate spheroids
- prolate spheroids
- . . . tangents
- . . . toruses
- . . . trigonometry
- . . angles (geometry)
- . . . angle of attack
- zero angle of attack
- . . . Bragg angle
- . . . Brewster angle
- . . . dihedral angle
- . . . elevation angle
- . . . look angles (electronics)
- . . . look angles (tracking)
- . . . sweep angle
- sweepback
- leading edge sweep
- . . Cartesian coordinates
- . . circles (geometry)
- . . . great circles
- . . descriptive geometry
- . . lines (geometry)
- . . . chords (geometry)
- . . . geodesic lines
- . . . points (mathematics)
- . . . fixed points (mathematics)
- . . . inflection points
- . . . polygons
- . . . hexagons
- . . . tetragons
- parallelograms
- rhomboids
- rectangles
- squares (mathematics)
- trapezoids
- . . . triangles
- . . polyhedrons
- . . . cubes (mathematics)
- . . . icosahedrons
- . . . octahedrons
- . . . parallelepipeds
- . . . pyramids
- . . . rhombohedrons
- . . . tetrahedrons

- .. projective geometry
 - ... Mercator projection
 - .. radii
 - ... Larmor radius
 - RT coordinates
 - curves (geometry)
 - phase-space integral
 - polytopes
 - Riemann manifold
 - Sobolev space
 - spheres
- Euclidean space*
- USE **Euclidean geometry**
- eudiometers**
- GS measuring instruments
 - eudiometers**
 - RT gas mixtures
 - spark ignition
- Euglena**
- GS animals
 - protozoa
 - .. Flagellata
 - ... **Euglena**
 - microorganisms
 - protozoa
 - .. Flagellata
 - ... **Euglena**
 - RT algae
- eukaryotes**
- GS cells (biology)
 - eukaryotes**
 - RT bacteria
 - biological evolution
 - cytology
 - molecular biology
 - prokaryotes
- Euler buckling**
- GS buckling
 - Euler buckling**
 - RT stress analysis
- Euler equations of motion**
- GS equations of motion
 - Euler equations of motion**
 - RT ∞ equations
 - Godunov method
 - hydrodynamics
 - moments of inertia
 - primitive equations
 - rigid structures
 - upwind schemes (mathematics)
- Euler-Bernoulli beam theory*
(added April 1998)
- USE **Euler-Bernoulli beams**
- Euler-Bernoulli beams**
(added April 1998)
- UF *Euler-Bernoulli beam theory*
 - GS structural members
 - beams (supports)
 - ... **Euler-Bernoulli beams**
 - RT axial strain
 - bending
 - bending vibration
 - dynamic structural analysis
 - elastic properties
 - mathematical models
 - partial differential equations
 - structural analysis
 - Timoshenko beams
- Euler-Cauchy equations**
- GS analysis (mathematics)
 - real variables
 - .. differential equations
 - ... partial differential equations
 - ... **Euler-Cauchy equations**
 - RT complex variables
 - conformal mapping
 - ∞ equations
- vector analysis
- Eulerian nutation*
- USE **Chandler wobble**
- Euler-Lagrange equation**
- UF *Lagrange equations of motion*
 - GS equations of motion
 - Euler-Lagrange equation**
 - RT calculus of variations
 - Castigliano variational theorem
 - classical mechanics
 - ∞ equations
 - extremum values
 - Lagrangian function
- Euler-Lambert equation**
- RT elliptical orbits
 - ∞ equations
- Eureca (ESA)**
- DEF A Space Shuttle launched retrievable autonomous space platform being developed by the European Space Agency. First launch is scheduled for 1991 with first retrieval 6 months later. Used for European Retrievable Carrier.
 - UF *European Retrievable Carrier*
 - GS space platforms
 - Eureca (ESA)**
 - RT space shuttles
- Europa**
- DEF A satellite of Jupiter orbiting at a mean distance of 671,000 kilometers. Also called Jupiter II.
 - GS celestial bodies
 - natural satellites
 - .. icy satellites
 - ... **Europa**
 - .. Jupiter satellites
 - ... Galilean satellites
 - ... **Europa**
 - RT Charon
 - extraterrestrial oceans
 - Jupiter (planet)
- Europa 1 launch vehicle**
- GS launch vehicles
 - Europa launch vehicles
 - .. **Europa 1 launch vehicle**
- Europa 2 launch vehicle**
- GS launch vehicles
 - Europa launch vehicles
 - .. **Europa 2 launch vehicle**
 - RT COS-B satellite
- Europa 3 launch vehicle**
- GS launch vehicles
 - Europa launch vehicles
 - .. **Europa 3 launch vehicle**
- Europa 4 launch vehicle**
- GS launch vehicles
 - Europa launch vehicles
 - .. **Europa 4 launch vehicle**
- Europa launch vehicles**
- GS launch vehicles
 - Europa launch vehicles**
 - .. Europa 1 launch vehicle
 - .. Europa 2 launch vehicle
 - .. Europa 3 launch vehicle
 - .. Europa 4 launch vehicle
 - RT Ariane launch vehicle
 - Eldo launch vehicle
 - European Space Agency
 - European space programs
 - ∞ vehicles
- Europe**
- GS continents
 - Europe**
 - .. Central Europe
 - RT Albania
 - Alps Mountains (Europe)
- Andorra
 - Armenia
 - Austria
 - Azerbaijan
 - Baltic Shield (Europe)
 - Belarus
 - Belgium
 - Bosnia and Herzegovina
 - Bulgaria
 - Carpathian Mountains (Europe)
 - Commonwealth of Independent States
 - Croatia
 - Czech Republic
 - Czechoslovakia
 - Denmark
 - East Germany
 - England
 - Estonia
 - Finland
 - France
 - Georgia (Eurasia)
 - Germany
 - Gibraltar
 - Greece
 - Hungary
 - Iceland
 - Italy
 - Latvia
 - Liechtenstein
 - Lithuania
 - Luxembourg
 - Middle East
 - Moldova
 - Monaco
 - nations
 - Netherlands
 - Northern Ireland
 - Norway
 - Poland
 - Portugal
 - Romania
 - Russian Federation
 - San Marino
 - Scotland
 - Serbska Republic
 - Slovakia
 - Spain
 - Sweden
 - Switzerland
 - Turkey
 - U. S. S. R.
 - Ukraine
 - United Kingdom
 - Vatican City
 - Wales
 - West Germany
 - Yugoslavia
- European 1 spacecraft**
- GS artificial satellites
 - European 1 spacecraft**
 - RT Eldo launch vehicle
- European Airbus**
- UF *Airbus*
 - GS commercial aircraft
 - European Airbus**
 - .. A-300 aircraft
 - .. A-310 aircraft
 - .. A-320 aircraft
 - .. A-330 aircraft
 - .. A-340 aircraft
 - jet aircraft
 - European Airbus**
 - .. A-300 aircraft
 - .. A-310 aircraft
 - .. A-320 aircraft
 - .. A-330 aircraft
 - .. A-340 aircraft
 - passenger aircraft
 - European Airbus**
 - .. A-300 aircraft
 - .. A-310 aircraft
 - .. A-320 aircraft
 - .. A-330 aircraft
 - .. A-340 aircraft

transport aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 RT ∞ aircraft
 international cooperation

European Communications Satellite
 UF *ECS*
 GS artificial satellites
 . communication satellites
 . . **European Communications Satellite**
 . . ESA satellites
 . . **European Communications Satellite**
 . . ESA spacecraft
 . . ESA satellites
 . . **European Communications Satellite**
 RT European space programs
 OTS (ESA)

European Incoherent Scatter Radar
 USE **EISCAT radar system (Europe)**

European Large Telecomm Satellite
 USE **L-Sat**

European Retrievable Carrier
 USE **Eureca (ESA)**

European Southern Observatory
 (added June 1996)
 DEF An astronomical observatory with several telescopes at La Silla, Chile. It was established by and is jointly operated by Belgium, Denmark, France, Germany, Italy, the Netherlands, Sweden, and Switzerland.
 UF *ESO (observatory)*
 GS observatories
 . astronomical observatories
 . . **European Southern Observatory**
 RT Chile
 international cooperation

European Space Agency
 DEF An international organization acting on behalf of its member states (Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom).
 UF *ESA*
ESRO
European Space Research Organization
 GS organizations
 . **European Space Agency**
 RT Ariane launch vehicle
 Cassini mission
 Eldo launch vehicle
 ERS-1 (ESA satellite)
 ERS-2 (esa satellite)
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European space programs
 EXPOS (Spacelab payload)
 Geosari project
 ICL computers
 LIRTS (telescope)
 Marots (ESA)
 Mars Express
 METEOSAT satellite
 space programs

European space programs
 GS programs
 . space programs
 . . **European space programs**
 . . . Austrian space program
 . . . Belgian space program

. . . Czechoslovakian space program
 . . . Danish space program
 . . . Finnish space program
 . . . French space program
 . . . German space program
 . . . Greek space program
 . . . Hungarian space program
 . . . Icelandic space program
 . . . Italian space program
 . . . Luxembourg space program
 . . . Netherlands space program
 . . . Norwegian space program
 . . . Portuguese space program
 . . . Spanish space program
 . . . Swedish space program
 . . . Swiss space program
 . . . Turkish space program
 . . . UK space program
 RT Aerosat satellites
 AMPTE (satellites)
 Ariane 4 launch vehicle
 Ariane 5 launch vehicle
 Ariane launch vehicle
 Azur satellite
 Cassini mission
 Cluster Mission
 Committee on Space Research
 COS-B satellite
 DIAL satellite
 Earthnet
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European Communications Satellite
 European Space Agency
 Exosat satellite
 foreign policy
 French satellites
 GEOS satellites (ESA)
 HEOS satellites
 Hipparcos satellite
 Infrared Space Observatory (ISO)
 International Magnetospheric Study
 International Satellite Geodesy Experiment
 IRIS satellites
 man tended free flyers
 Marecs maritime satellites
 Mars Express
 METEOSAT satellite
 OTS (ESA)
 Quasat
 SOHO Mission
 space missions
 Symphonie satellites

European Space Research Organization
 USE **European Space Agency**

European Space Research Organization sat
 USE **ESA satellites**

euporium
 GS chemical elements
 . rare earth elements
 . . **euporium**
 . . . europium isotopes
 metals
 . rare earth elements
 . . **euporium**
 . . . europium isotopes

euporium compounds
 GS rare earth compounds
 . **euporium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds

euporium isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **euporium isotopes**
 . rare earth elements

. . europium
 . . . **europium isotopes**
 metals
 . rare earth elements
 . . europium
 . . . **europium isotopes**

eustachian tubes
 GS anatomy
 . sense organs
 . . ear
 . . . **eustachian tubes**
 RT eardrums
 ∞ tubes

eutectic alloys
 GS alloys
 . **eutectic alloys**
 binary systems (materials)
 . binary mixtures
 . . eutectics
 . . . **eutectic alloys**
 mixtures
 . binary mixtures
 . . eutectics
 . . . **eutectic alloys**
 RT alloying
 bismuth alloys
 lamella (metallurgy)
 superplasticity
 whisker composites

eutectic composites
 DEF Composite materials with a metal matrix of a mixture of solids including eutectoids.
 GS composite materials
 . metal matrix composites
 . . **eutectic composites**
 RT alloys
 directional solidification (crystals)
 eutectics
 fracture strength
 ∞ matrices
 metals
 mixtures
 precipitation hardening

eutectic diagrams
 USE **phase diagrams**

eutectics
 GS binary systems (materials)
 . binary mixtures
 . . **eutectics**
 . . . eutectic alloys
 mixtures
 . binary mixtures
 . . **eutectics**
 . . . eutectic alloys
 RT alloying
 alloys
 eutectic composites
 liquid phases
 phase diagrams
 solid phases
 solutions
 syntectic alloys

eutrophication
 DEF The process by which waters become more eutrophic; especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of aquatic plants such as algae that are vital for fish and animal life.
 RT environment effects
 lakes
 ∞ nutrients

EUVE
 USE **Extreme Ultraviolet Explorer satellite**

euxenite
 GS minerals
 . **euxenite**
 RT niobates

oxides
titanates

EVA
USE **extravehicular activity**

∞ **evacuating**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT evacuating (transportation)
evacuating (vacuum)

evacuating (transportation)
SN (LIMITED TO CLEARANCE OF PERSONNEL, ANIMALS, OR MATERIAL FROM A GIVEN LOCALITY)
DEF The organized withdrawal or removal of people from a place or area as a protective measure.
RT C-9 aircraft
casualties
civil defense
ejection
elimination
∞ evacuating
hospitals
mobile quarantine facility
removal
transportation
unloading

evacuating (vacuum)
UF *gas evacuating*
RT drainage
ejection
elimination
∞ evacuating
exhausting
gas pockets
purging
removal
suction
vacuum
vacuum pumps
venting
vents

EVAL
USE **Earth Viewing Applications Laboratory**

evaluation
DEF The process of determining whether an item or activity meets the specified criteria.
GS **evaluation**
. training evaluation
RT accelerated life tests
acceptability
∞ analyzing
approach and landing tests (STS)
assessments
certification
∞ classifying
comparison
computer systems performance
correlation
costs
criteria
crop identification
∞ discussion
economics
estimates
estimating
examination
feasibility
figure of merit
forecasting
∞ indication
inspection
management
∞ measurement
normalizing (statistics)
observation
∞ performance
performance prediction
position (title)

proving
quality
ranking
ratings
rejection
reserves
reviewing
selection
statistical correlation
technology assessment
∞ tests
timber identification
value

evanescence
RT evanescent waves
evaporation
surface properties
transpiration

evanescent waves
(added March 1998)
GS surface waves
. **evanescent waves**
RT acoustic impedence
evanescence
fiber optics
internal waves
plane waves
propagation modes
reflected waves
wave propagation
∞ waves

evaporation
DEF The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of condensation.
GS phase transformations
. vaporizing
. . . **evaporation**
. . . . evapotranspiration
. . . . propellant evaporation
. . . . transpiration
RT boiling
concentrating
condensing
dehydration
diffusion
distillation
drying
evanescence
evaporative cooling
evaporography
flashing (vaporizing)
gas-liquid interactions
gas-metal interactions
hydrological cycle
liquid-vapor interfaces
perspiration
reservoirs
respiratory system
∞ separation
skin (anatomy)
sublimation
volatility
water loss

evaporation rate
DEF The mass of material evaporated per unit time from unit surface of a liquid or solid. The number of molecules of a given substance evaporated per second per square centimeter from the free surface of the condensed phase.
GS rates (per time)
. **evaporation rate**
RT heat transfer coefficients

evaporative cooling
GS cooling
. **evaporative cooling**
. . film cooling
. . sweat cooling
RT capillary pumped loops
cooling systems
cryogenic fluid storage

evaporation
propellant evaporation
surface cooling

evaporators
GS heating equipment
. vaporizers
. . **evaporators**
separators
. **evaporators**
RT air conditioning equipment
atomizers
concentrators
condensers (liquefiers)
cooling systems
drying apparatus
heat exchangers
refrigerating machinery

evaporography
RT evaporation
images
infrared radiation
photography

evapotranspiration
DEF Loss of water from a land area through transpiration of plants and evaporation from the soil and surface-water bodies. Also, the volume of water lost through evapotranspiration.
GS phase transformations
. vaporizing
. . evaporation
. . . **evapotranspiration**
RT transpiration
vadose water

evasive actions
GS maneuvers
. **evasive actions**
RT electronic warfare
obstacle avoidance
pursuit-evasion games
tactics
terrain following
warfare

evasive satellites
GS artificial satellites
. **evasive satellites**
maneuverable spacecraft
. **evasive satellites**
RT military spacecraft

evection
USE **lunar orbits**
orbit perturbation
solar gravitation

even-even nuclei
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **even-even nuclei**
. corpuscular radiation
. energetic particles
. . . nuclei (nuclear physics)
. . . . **even-even nuclei**
RT nuclear structure
odd-even nuclei
odd-odd nuclei

evening
RT daytime
night
sunset

event horizon
(added August 1990)
DEF The smallest radius of observable events around a black hole.
GS horizon
. **event horizon**
RT black holes (astronomy)
cosmology

events

gravitation theory
 naked singularities
 relativity
 Schwarzschild metric
 white holes (astronomy)

events

GS **events**
 . consecutive events
 RT occurrences
 probability density functions
 probability theory
 statistical analysis
 statistical distributions
 stochastic processes

Everglades (FL)

RT Florida

evoked response (psychophysiology)

RT physiological responses
 psychophysiology

∞ evolution

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT biogeny
 chemical evolution
 evolution (development)
 evolution (liberation)
 existence

evolution (development)

GS **evolution (development)**
 . biological evolution
 . . abiogenesis
 . chemical evolution
 . galactic evolution
 . lunar evolution
 . planetary evolution
 . solar system evolution
 . stellar evolution
 . . star formation
 . . stellar mass accretion
 RT ∞ biology
 ∞ development
 ∞ evolution
 extinction
 gene expression
 genetics
 growth
 heredity
 interstellar extinction
 ontogeny
 species diffusion

evolution (liberation)

GS **evolution (liberation)**
 . gas evolution
 RT boiling
 desorption
 ∞ evolution
 outgassing
 transpiration
 vaporizing

evolvable hardware

(added September 2001)
 DEF Reconfigurable hardware devices that can be dynamically changed by evolutionary algorithms or other adaptive processes.
 UF *EHW (computers)*
 GS reconfigurable hardware
 . **evolvable hardware**
 RT design optimization
 field-programmable gate arrays
 genetic algorithms
 ∞ hardware
 integrated circuits
 logic circuits
 logic design
 neural nets

self repairing devices

EVS

USE **enhanced vision**

exactness

USE **precision**

examination

GS **examination**
 . eye examinations
 RT acceptability
 ∞ analyzing
 characterization
 clinical medicine
 comparison
 conical scanning
 detection
 diagnosis
 ∞ discussion
 evaluation
 exploration
 inspection
 investigation
 ∞ measurement
 observation
 ∞ performance
 proving
 reviewing
 scanning
 ∞ tests
 training evaluation
 ultrasonic flaw detection

excavation

DEF The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation)

UF *ditching (excavation)*

GS excavation

. tunneling (excavation)
 RT boreholes
 construction
 ∞ ditching
 drainage
 exploration
 foundations
 lunar excavation equipment
 materials handling
 mineral deposits
 mineral exploration
 mining
 pits (excavations)
 strip mining
 underground structures

∞ exchangers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT heat exchangers

exchanging

GS **exchanging**
 . charge exchange
 . . resonance charge exchange
 . gas exchange
 . ion exchanging
 . spin exchange
 RT ∞ conversion
 deionization
 ∞ separation
 ∞ shift
 transferring

excimer lasers

DEF Molecular lasers using vibronic transitions whose lasing medium is a dimer that exists in the excited state and dissociates in the ground state.

GS stimulated emission devices
 . lasers

. . . gas lasers
 . . . **excimer lasers**
 RT electron pumping
 fluorides
 halogens
 laser deposition
 laser outputs
 lasing
 optical pumping
 pulsed laser deposition
 ∞ rare gas compounds
 xenon chloride lasers
 xenon fluoride lasers

excimers

DEF Molecules characterized by repulsive or very weakly bound ground electronic states.
 RT electron orbitals
 electron states
 electron transitions
 intermolecular forces
 molecular energy levels
 ∞ rare gas compounds

excitation

DEF Addition of energy to a nuclear, atomic or molecular system transferring it to another energy state. Used for excited states.

UF *excited states*

GS excitation

. atomic excitations
 . molecular excitation
 . photoexcitation
 . self excitation
 . wave excitation
 . . acoustic excitation
 . . harmonic excitation
 RT activation
 actuation
 atomic energy levels
 auroral ionization
 auroral irradiation
 electromagnetic absorption
 electron states
 electron transitions
 emission
 energy levels
 frequency response
 ionization
 irradiation
 laser induced fluorescence
 metastable state
 radiation trapping
 relaxation time
 rotons
 starting
 transition probabilities

excited states

USE **excitation**

excitons

GS elementary excitations
 . **excitons**
 RT carrier mobility
 electrical insulation
 electrons
 energy bands
 holes (electron deficiencies)
 ionic crystals
 light (visible radiation)
 optical properties
 photoelectromagnetic effects
 plasmons
 positronium
 semiconductors (materials)
 spectra
 Suhl effect

exclusion

RT elimination
 isolation
 Pauli exclusion principle
 rejection

∞ separation

excretion

RT expulsion
feces
human wastes
perspiration
urine

executive aircraft

USE **general aviation aircraft**
passenger aircraft

executive systems (computers)

USE **operating systems (computers)**

exercise

USE **physical exercise**

exercise physiology

GS physiology
. **exercise physiology**
RT circulatory system
human body
locomotion
muscular tonus
physical exercise
physical fitness
physiochemistry
physiological effects
respiratory physiology
sports medicine
stress (biology)
stress (physiology)

exergic energy

(added December 2000)

USE **exergy**

exergy

(added December 2000)

DEF The maximum amount of external energy that could be drawn from a system or form of energy in relation to a certain reference environment. Exergy is not considered to be a form of energy but a designation of the quality of energy.

UF *exergic energy*
RT ∞ energy
energy budgets
energy conservation
energy conversion efficiency
energy dissipation
entropy
power efficiency
thermodynamic efficiency
thermodynamic properties
thermodynamics
waste energy utilization

exertion

USE **physical work**

exhalation

RT alveolar air
expired air
respirometers

exhaust clouds

DEF Clouds formed from the exhaust aerosols of launch vehicle engines and boosters at liftoff. Used for ground clouds and launch clouds.

UF *ground clouds*
launch clouds
RT aerosols
∞ clouds
exhaust gases
launch vehicles
launching
launching sites
rocket exhaust
rocket launching

exhaust diffusers

RT conical nozzles

∞ diffusers
ejectors
∞ jet nozzles
supersonic diffusers
vaneless diffusers

exhaust emission

DEF The movement of gaseous or other particles and radiation from the nozzle of a rocket or other reaction engine.

GS emission
. **exhaust emission**
RT gas-gas interactions
gas-metal interactions
high temperature gases
infrared radiation
jet exhaust
particle emission
pollution transport
releasing
thermal emission
volatile organic compounds

exhaust flow simulation

GS simulation
. **exhaust flow simulation**
RT flow distribution
mathematical models
wind tunnels

exhaust gases

UF *exhaust jets*
GS gases
. **exhaust gases**
. flue gases
RT air pollution
∞ blasts
combustion efficiency
combustion products
diluents
effluents
environment effects
erosive burning
exhaust clouds
exhausting
fumes
gas mixtures
gas recovery
infrared suppression
jet blast effects
jet exhaust
nozzle flow
odors
particulates
pollution transport
propulsion
reaction products
rocket exhaust
smog
smoke
smoke abatement
vapors
waste disposal
waste energy utilization
wastes

exhaust jets

USE **exhaust gases**

exhaust nozzles

GS **exhaust nozzles**
. convergent-divergent nozzles
. plug nozzles
. spike nozzles
. turbine exhaust nozzles
RT air ducts
annular nozzles
base heating
conical nozzles
divergent nozzles
ejectors
∞ flow
infrared suppression
inlet nozzles
jet engines
jet nozzles
∞ jet nozzles

nozzle flow
nozzle inserts
∞ nozzles
openings
outlets
rocket engines
skirts

exhaust systems

RT afterburning
air conditioning
air pollution
blowers
chimneys
condensers (liquefiers)
cooling systems
ducts
dust collectors
ejectors
elimination
engines
exhausting
flues
fuel tank pressurization
intake systems
internal combustion engines
manifolds
mufflers
openings
outlets
pipe nozzles
plenum chambers
ports (openings)
rocket exhaust
∞ systems
temperature control
ventilation
ventilators
vents
waste disposal

exhaust velocity

DEF The velocity of gases or particles (exhaust stream) that exhaust through the nozzle or a reaction engine, relative to the nozzle.

GS rates (per time)
. **exhaust velocity**
velocity
. **exhaust velocity**
RT acoustic velocity
critical velocity
expulsion
flow velocity

exhausting

RT blowing
breathing vibration
consumption
decontamination
∞ discharge
dispersing
disposal
dissipation
ejection
elimination
evacuating (vacuum)
exhaust gases
exhaust systems
relieving
removal
ventilation
venting

exhaustion

RT consumption
depletion
fatigue (biology)
hyperkinesia

existence

RT cosmology
∞ evolution
life span

existence theorems

validity

existence theorems

GS analysis (mathematics)

- . real variables
- . . . **existence theorems**

theorems

. **existence theorems**

RT problem solving

- roots of equations

exits (doors)

USE **doors**

exobiology

DEF Field of biology that deals with the search for extraterrestrial life and the conditions that may give rise to life on other planets or elsewhere in the Universe. May also be defined to include the study of effects of extraterrestrial environments on living organisms. Used for astrobiology and space biology.

UF *astrobiology*

- space biology*

RT aerospace environments

- Apollo extension system
- bioastronautics

∞ biology

- biomarkers
- carbonaceous meteorites
- chemical evolution
- environment models
- extraterrestrial life
- life support systems
- lunar environment
- Mars Pathfinder
- panspermia
- planetary environments
- planetary protection
- spacecraft contamination
- spacecraft environments
- spacecraft sterilization
- terraforming

exophoria

USE **heterophoria**

exoplanet detection

(added January 2003)

USE **planet detection**

exoplanets

(added April 2001)

USE **extrasolar planets**

EXOS satellites

GS artificial satellites

- . scientific satellites
- . . . **EXOS satellites**
- EXOS-A satellite
- EXOS-B satellite
- EXOS-C satellite
- EXOS-D satellite
- Japanese spacecraft
- . **EXOS satellites**
- . . EXOS-A satellite
- . . EXOS-B satellite
- . . EXOS-C satellite
- . . EXOS-D satellite

EXOS sounding rocket

GS rocket vehicles

- . multistage rocket vehicles
- . . **EXOS sounding rocket**
- . . . sounding rockets
- . . . **EXOS sounding rocket**

RT Honest John rocket vehicle

- Nike-Ajax missile
- solid propellant rocket engines
- XM-33 engine

EXOS-A satellite

(added February 1992)

UF *Kyokko satellite*

GS artificial satellites

- . scientific satellites

- . . EXOS satellites
- . . . **EXOS-A satellite**
- Japanese spacecraft
- . EXOS satellites
- . . **EXOS-A satellite**

Exosat satellite

UF *HELOS (satellite)*

- High Eccentric Lunar Occultation Satellite*

GS artificial satellites

- . ESA satellites
- . . **Exosat satellite**
- . . . scientific satellites
- . . . **Exosat satellite**
- ESA spacecraft
- . ESA satellites
- . . **Exosat satellite**

RT eccentric orbits

- European space programs
- lunar occultation
- x ray astronomy
- x ray sources

EXOS-B satellite

UF *Jikiken satellite*

GS artificial satellites

- . scientific satellites
- . . EXOS satellites
- . . . **EXOS-B satellite**
- Japanese spacecraft
- . EXOS satellites
- . . **EXOS-B satellite**

EXOS-C satellite

UF *Ohzora satellite*

GS artificial satellites

- . scientific satellites
- . . EXOS satellites
- . . . **EXOS-C satellite**
- Japanese spacecraft
- . EXOS satellites
- . . **EXOS-C satellite**

EXOS-D satellite

(added February 1992)

UF *Akebono satellite*

GS artificial satellites

- . scientific satellites
- . . EXOS satellites
- . . . **EXOS-D satellite**
- Japanese spacecraft
- . EXOS satellites
- . . **EXOS-D satellite**

exoskeletons

RT anatomy

- arthropods
- body composition (biology)
- bones
- connective tissue
- musculoskeletal system

exosolar planets

(added April 2001)

USE **extrasolar planets**

exosphere

SN (ALTITUDES ABOVE APPROXIMATELY 500 KM)

DEF The outermost, or topmost, portion of the atmosphere. Its lower boundary is the critical level of escape, variously estimated at 500 to 1000 kilometers above the Earth's surface.

GS Earth atmosphere

- . upper atmosphere
- . . **exosphere**

RT Earth ionosphere

- Earth magnetosphere
- heterosphere
- planetary magnetotails
- radiation belts
- thermosphere

exothermic reactions

GS chemical reactions

- . **exothermic reactions**

RT association reactions

- combustion
- combustion chemistry
- combustion synthesis
- endothermic reactions
- incendiary ammunition
- pyrolysis
- thermal decomposition

expandable structures

GS **expandable structures**

- . bellows
- . inflatable structures
- . . air bag restraint devices
- . . balloons
- . . . high altitude balloons
- jimsphere balloons
- skyhook balloons
- superpressure balloons
- . . . meteorological balloons
- jimsphere balloons
- ROBIN balloons
- . . . microballoons
- . . . tethered balloons
- . . ballutes
- . . gas bags
- . . inflatable gliders
- . . inflatable spacecraft
- . . . Beacon satellites
- Beacon Explorer A
- Explorer 22 satellite

RT expulsion bladders

- folding structures
- large space structures
- orbital assembly
- space erectable structures

∞ spacecraft

∞ structures

- variable geometry structures

expansion

UF *enlarging*

GS **expansion**

- . gas expansion
- . . Karhunen-Loeve expansion
- . . Prandtl-Meyer expansion
- . . series expansion
- . . thermal expansion

RT adiabatic conditions

- distortion
- elongation
- extensions
- inflating
- rarefaction
- relaxation (mechanics)
- swelling
- thermal buckling

expansion waves

USE **elastic waves**

expectancy hypothesis

GS hypotheses

- . **expectancy hypothesis**

RT Monte Carlo method

- probability density functions
- statistical analysis
- statistical distributions

expectation

RT contingency

- decision theory
- forecasting
- reliability

expeditions

RT exploration

∞ missions

- space flight

expellants

RT cough

∞ discharge

- expulsion

flushing

expendable stages (spacecraft)
 RT booster recovery
 booster rocket engines
 engines
 multistage rocket vehicles
 recoverable spacecraft
 reusable spacecraft
 rocket engines
 space shuttles
 stage separation

experience
 RT education
 qualifications
 upgrading

experiment design
 SN (LIMITED TO DESIGN OF EXPERIMENTS--EXCLUDES PROTOTYPES)
 UF *design of experiments*
 GS **experiment design**
 . factorial design
 RT covariance
 degrees of freedom
 ∞ design
 factor analysis
 laboratories
 mathematical models
 operations research
 orthogonality
 quality control
 regression analysis
 statistical analysis
 systems engineering
 Taguchi methods
 variance (statistics)

experimental aircraft
 USE **research aircraft**

experimental boiling water reactors
 UF *EBWR (reactor)*
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . boiling water reactors
 **experimental boiling water reactors**
 . nuclear research and test reactors
 . . **experimental boiling water reactors**
 . water moderated reactors
 . . **experimental boiling water reactors**

Experimental Breeder Reactor 1
 UF *EBR-1 reactor*
 GS nuclear reactors
 . breeder reactors
 . . **Experimental Breeder Reactor 1**
 . fast nuclear reactors
 . . **Experimental Breeder Reactor 1**
 . liquid cooled reactors
 . . liquid metal cooled reactors
 . . . **Experimental Breeder Reactor 1**
 . nuclear research and test reactors
 . . **Experimental Breeder Reactor 1**

Experimental Breeder Reactor 2
 UF *EBR-2 reactor*
 GS nuclear reactors
 . breeder reactors
 . . **Experimental Breeder Reactor 2**
 . fast nuclear reactors
 . . **Experimental Breeder Reactor 2**
 . liquid cooled reactors
 . . liquid metal cooled reactors
 . . . **Experimental Breeder Reactor 2**
 . nuclear research and test reactors

. . **Experimental Breeder Reactor 2**

experimental gas cooled reactors
 UF *EGCR (reactor)*
 GS nuclear reactors
 . gas cooled reactors
 . . **experimental gas cooled reactors**
 . nuclear research and test reactors
 . . **experimental gas cooled reactors**

experimental organic cooled reactors
 UF *EOCR (reactor)*
 GS nuclear reactors
 . liquid cooled reactors
 . . organic cooled reactors
 . . . **experimental organic cooled reactors**
 . nuclear research and test reactors
 . . **experimental organic cooled reactors**
 . organic moderated reactors
 . . **experimental organic cooled reactors**

Experimental Reflector Orbital Shot Proj
 UF *EROS project*
 GS programs
 . projects
 . . **Experimental Reflector Orbital Shot Proj**

experimental STOL transport rsch airplane
 USE **Questol aircraft**

experimentation
 GS **experimentation**
 . Physics and Chemistry Experiment in Space
 RT critical experiments
 exploration
 investigation
 laboratories
 phenomenology
 spaceborne experiments

expert systems
(added August 1990)
 DEF Computer programs that manipulate symbolic information to produce the same results as human experts would. They deal with uncertain data and make decisions on that data. Input and design relies on human experts. Used for knowledge based systems.
 GS information systems
 . knowledge based systems
 . . **expert systems**
 RT artificial intelligence
 belief networks
 C (programming language)
 computer programming
 decision support systems
 knowledge bases (artificial intelligence)
 knowledge representation
 ∞ logic
 logic programming
 natural language processing
 pilot support systems
 Prolog (programming language)
 systems health monitoring

expiration
 RT ∞ breathing
 death
 expired air
 expulsion
 mortality
 respiration

expired air
 GS gases
 . gas mixtures
 . . air
 . . . **expired air**

mixtures
 . solutions
 . . gas mixtures
 . . . air
 **expired air**
 RT alveolar air
 exhalation
 expiration
 gas composition
 metabolic wastes
 rebreathing
 respiration

exploding conductor circuits
 USE **circuits**
exploding wires

exploding conductors
 USE **exploding wires**

exploding wires
 UF *exploding conductor circuits*
exploding conductors
 GS explosive devices
 . initiators (explosives)
 . . **exploding wires**
 igniters
 . initiators (explosives)
 . . **exploding wires**
 wire
 . **exploding wires**
 RT boosters (explosives)
 caps (explosives)
 conductors
 detonators
 electric wire
 plasma generators
 primers (explosives)
 radiation transport
 shock waves
 wire bridge circuits

exploitation
 RT beneficiation
 depletion
 ∞ development
 exploration
 geology
 land use
 mines (excavations)
 mining
 reserves
 strip mining

exploration
 DEF The search for deposits of useful minerals or fossil fuels; prospecting, including under the oceans. It may include geologic reconnaissance, e. g. , remote sensing, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for discovering and prospecting.
 UF *discovering*
prospecting
 GS **exploration**
 . mineral exploration
 . natural gas exploration
 . oil exploration
 . space exploration
 . . lunar exploration
 . . Mars exploration
 RT boreholes
 detection
 drilling
 examination
 excavation
 expeditions
 experimentation
 exploitation
 geological surveys
 geology
 geothermal technology
 investigation
 mines (excavations)
 OSS-1 payload
 research

Explorer 1 satellite

- reserves
- sampling
- space flight
- surveys
- underground acoustics

Explorer 1 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 1 satellite**

Explorer 2 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 2 satellite**

Explorer 3 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 3 satellite**

Explorer 4 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 4 satellite**

Explorer 5 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 5 satellite**

Explorer 6 satellite

- GS artificial satellites
- . geophysical satellites
- . . **Explorer 6 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 6 satellite**

- RT Thor Able rocket vehicle

Explorer 7 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 7 satellite**

Explorer 8 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 8 satellite**

Explorer 9 satellite

- GS artificial satellites
- . meteorological satellites
- . . **Explorer 9 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 9 satellite**

- RT Scout launch vehicle

Explorer 10 satellite

- GS artificial satellites
- . geophysical satellites
- . . **Explorer 10 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 10 satellite**

- RT Delta launch vehicle

Explorer 11 satellite

- UF *Gamma Ray Astronomy Explorer*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 11 satellite**

- RT Juno 2 launch vehicle

Explorer 12 satellite

- UF *Energetic Particle Explorer A*

EPE-A

S-3 satellite

- GS artificial satellites
- . geophysical satellites
- . . **Explorer 12 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 12 satellite**

- RT Delta launch vehicle

Explorer 14 satellite

- UF *Energetic Particle Explorer B*
- EPE-B*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 14 satellite**

- RT Delta launch vehicle

Explorer 15 satellite

- UF *Energetic Particle Explorer C*
- EPE-C*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 15 satellite**

- RT Delta launch vehicle

Explorer 16 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 16 satellite**

- RT Scout launch vehicle

Explorer 17 satellite

- UF *AE-A satellite*
- Atmosphere Explorer A*
- S-6 satellite*
- GS artificial satellites
- . meteorological satellites
- . . **Explorer 17 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 17 satellite**

- RT Delta launch vehicle

Explorer 18 satellite

- UF *IMP-1*
- IMP-A*
- Interplanetary Explorer*
- S-74 satellite*
- GS artificial satellites
- . lunar satellites
- . . **Explorer 18 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 18 satellite**

- interplanetary spacecraft
- . **Explorer 18 satellite**
- lunar spacecraft
- . lunar satellites
- . . **Explorer 18 satellite**
- unmanned spacecraft
- . space probes
- . . **Explorer 18 satellite**

- RT Delta launch vehicle

Explorer 19 satellite

- UF *AD-A satellite*
- Air Density Explorer A*
- GS artificial satellites
- . meteorological satellites
- . . **Explorer 19 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 19 satellite**

- RT Scout launch vehicle

Explorer 20 satellite

- UF *Ionosphere Explorer A*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 20 satellite**

- RT Scout launch vehicle

Explorer 21 satellite

- UF *IMP-2*
- IMP-B*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 21 satellite**

- RT Delta launch vehicle

Explorer 22 satellite

- UF *BE B*
- Beacon Explorer B*
- GS artificial satellites
- . navigation satellites
- . . **Explorer 22 satellite**
- . . passive satellites
- . . Beacon satellites
- . . . **Explorer 22 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 22 satellite**

- expandable structures
- . inflatable structures
- . . inflatable spacecraft
- . . . Beacon satellites
- . . . **Explorer 22 satellite**
- inflatable space structures
- . inflatable spacecraft
- . . Beacon satellites
- . . . **Explorer 22 satellite**
- space erectable structures
- . inflatable spacecraft
- . . Beacon satellites
- . . . **Explorer 22 satellite**

- RT Scout launch vehicle

Explorer 23 satellite

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 23 satellite**

- RT Scout launch vehicle

Explorer 24 satellite

- UF *AD/I satellite*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 24 satellite**

- RT Scout launch vehicle

Explorer 25 satellite

- UF *AD/I B*
- Air Density/Injun Explorer B*
- Injun Explorer*
- GS artificial satellites
- . Injun satellites
- . . **Explorer 25 satellite**
- . . scientific satellites
- . . Explorer satellites
- . . . **Explorer 25 satellite**

- RT Scout launch vehicle

Explorer 26 satellite

- UF *Energetic Particle Explorer D*
- EPE-D*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 26 satellite**

- RT Delta launch vehicle

Explorer 27 satellite

- UF *BE C*
- Beacon Explorer C*
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Explorer 27 satellite**

- RT Scout launch vehicle

Explorer 28 satellite

- UF *IMP-3*
- IMP-C*

- GS artificial satellites
 - . lunar satellites
 - . . . **Explorer 28 satellite**
 - . scientific satellites
 - . . . Explorer satellites
 - . . . **Explorer 28 satellite**
 - . lunar spacecraft
 - . lunar satellites
 - . . **Explorer 28 satellite**
- RT Delta launch vehicle
- Explorer 29 satellite**
 - GS artificial satellites
 - . geodetic satellites
 - . . **Explorer 29 satellite**
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 29 satellite**
 - RT active satellites
 - ANNA satellites
 - celestial geodesy
 - Delta launch vehicle
 - GEOS 1 satellite
 - LARGOS satellite
 - PAGEOS satellite
- Explorer 30 satellite**
 - UF *SE-A*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 30 satellite**
 - RT Scout launch vehicle
- Explorer 31 satellite**
 - UF *DME-A satellite*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 31 satellite**
 - RT Thor Agena launch vehicle
- Explorer 32 satellite**
 - UF *AE-B satellite*
 - Atmosphere Explorer B*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 32 satellite**
 - RT Delta launch vehicle
- Explorer 33 satellite**
 - UF *AIMP-1*
 - AIMP-D*
 - IMP-D*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 33 satellite**
 - RT Delta launch vehicle
- Explorer 34 satellite**
 - UF *IMP-4*
 - IMP-F*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 34 satellite**
 - RT Thor Agena launch vehicle
- Explorer 35 satellite**
 - UF *AIMP-2*
 - AIMP-E*
 - IMP-E*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 35 satellite**
 - RT Thor Agena launch vehicle
- Explorer 36 satellite**
 - GS artificial satellites
 - . geodetic satellites
 - . . **Explorer 36 satellite**
 - . scientific satellites
 - . . Explorer satellites
- . . . **Explorer 36 satellite**
- RT active satellites
 - ANNA satellites
 - celestial geodesy
 - GEOS 2 satellite
 - LARGOS satellite
 - PAGEOS satellite
 - Thor Agena launch vehicle
- Explorer 37 satellite**
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 37 satellite**
 - RT Scout launch vehicle
- Explorer 38 satellite**
 - UF *RAE-1*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 38 satellite**
 - RT Delta launch vehicle
- Explorer 39 satellite**
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 39 satellite**
 - RT Scout launch vehicle
- Explorer 40 satellite**
 - UF *Injun 5 satellite*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 40 satellite**
 - RT Scout launch vehicle
- Explorer 41 satellite**
 - UF *IMP-5*
 - IMP-G*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 41 satellite**
- Explorer 42 satellite*
- USE *Uhuru satellite*
- Explorer 43 satellite**
 - UF *IMP-6*
 - IMP-I*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 43 satellite**
 - RT Delta launch vehicle
- Explorer 44 satellite**
 - DEF The tenth in a series of solar radiation monitoring satellites launched from Wallops Island, VA on July 8, 1971, to measure x rays and ultraviolet radiation from the sun. It was operational until June 3, 1978. Used for Solrad 10 satellite.
 - UF *Solrad 10 satellite*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 44 satellite**
- Explorer 45 satellite**
 - DEF One in a long series of NASA scientific satellites used to study the atmosphere, ionosphere, magnetosphere, interplanetary space, etc.
 - GS artificial satellites
 - . geophysical satellites
 - . . **Explorer 45 satellite**
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 45 satellite**
- Explorer 46 satellite**
 - DEF A satellite designed to study meteoroid
- protective ability of spacecraft launched from Wallops Island, VA on August 13, 1972. Two scientific experiments also on board were to determine the size and the velocity of meteoroids. The velocity experiment failed to work due to excessive heat. Used for Meteoroid Technology Satellite.
- UF *Meteoroid Technology Satellite*
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 46 satellite**
- Explorer 47 satellite**
 - UF *IMP-7*
 - IMP-H*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 47 satellite**
- Explorer 48 satellite**
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 48 satellite**
 - RT SAS
 - SAS-2
- Explorer 49 satellite**
 - UF *Radio Astronomy Explorer 2*
 - Radio Astronomy Explorer B*
 - RAE 1*
 - RAE 2*
 - RAE B*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 49 satellite**
 - RT Delta launch vehicle
- Explorer 50 satellite**
 - UF *IMP-8*
 - IMP-J*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 50 satellite**
- Explorer 51 satellite**
 - UF *AE-C satellite*
 - Atmosphere Explorer C*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 51 satellite**
- Explorer 52 satellite**
 - DEF The Hawkeye 1 satellite in the Explorer series. Used for Hawkeye 1 satellite.
 - UF *Hawkeye 1 satellite*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Explorer 52 satellite**
- Explorer 53 satellite**
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . SAS
 - . . . **Explorer 53 satellite**
 - . . Explorer satellites
 - . . . **Explorer 53 satellite**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . SAS
 - . . . **Explorer 53 satellite**
 - RT SAS-3
- Explorer 54 satellite**
 - UF *AE-D satellite*
 - Atmosphere Explorer D*
 - GS artificial satellites
 - . scientific satellites

Explorer 55 satellite

.. Explorer satellites
... **Explorer 54 satellite**

Explorer 55 satellite

UF *AE-E satellite*
Atmosphere Explorer E
GS artificial satellites
. scientific satellites
.. Explorer satellites
... **Explorer 55 satellite**
RT Delta launch vehicle

Explorer 71 satellite

(added November 2000)

USE **Advanced Composition Explorer**

Explorer 73 satellite

(added November 2000)

USE **Transition Region and Coronal Explorer**

Explorer 74 satellite

(added November 2000)

USE **Submillimeter Wave Astronomy Satellite**

Explorer 77 satellite

(added November 2000)

USE **Far UV Spectroscopic Explorer**

Explorer 78 satellite

(added November 2000)

USE **IMAGE satellite**

Explorer satellites

GS artificial satellites
. scientific satellites
.. **Explorer satellites**
... Applications Explorer Satellites
... Cosmic Background Explorer satellite
... Dual Air Density Explorer
... Dynamics Explorer satellites
... Dynamics Explorer 1 satellite
... Dynamics Explorer 2 satellite
... Explorer 1 satellite
... Explorer 2 satellite
... Explorer 3 satellite
... Explorer 4 satellite
... Explorer 5 satellite
... Explorer 6 satellite
... Explorer 7 satellite
... Explorer 8 satellite
... Explorer 9 satellite
... Explorer 10 satellite
... Explorer 11 satellite
... Explorer 12 satellite
... Explorer 14 satellite
... Explorer 15 satellite
... Explorer 16 satellite
... Explorer 17 satellite
... Explorer 18 satellite
... Explorer 19 satellite
... Explorer 20 satellite
... Explorer 21 satellite
... Explorer 22 satellite
... Explorer 23 satellite
... Explorer 24 satellite
... Explorer 25 satellite
... Explorer 26 satellite
... Explorer 27 satellite
... Explorer 28 satellite
... Explorer 29 satellite
... Explorer 30 satellite
... Explorer 31 satellite
... Explorer 32 satellite
... Explorer 33 satellite
... Explorer 34 satellite
... Explorer 35 satellite
... Explorer 36 satellite
... Explorer 37 satellite
... Explorer 38 satellite
... Explorer 39 satellite
... Explorer 40 satellite
... Explorer 41 satellite
... Explorer 43 satellite

... Explorer 44 satellite
... Explorer 45 satellite
... Explorer 46 satellite
... Explorer 47 satellite
... Explorer 48 satellite
... Explorer 49 satellite
... Explorer 50 satellite
... Explorer 51 satellite
... Explorer 52 satellite
... Explorer 53 satellite
... Explorer 54 satellite
... Explorer 55 satellite
... Extreme Ultraviolet Explorer satellite
... Far UV Spectroscopic Explorer
... IMP
... International Magnetospheric Explorer
... International Sun Earth Explorers
... International Sun Earth Explorer 1
... International Sun Earth Explorer 2
... International Sun Earth Explorer 3
... Advanced Composition Explorer
... IMAGE satellite
... Micrometeoroid Explorer satellites
... Radio Astronomy Explorer satellite
... Solar Mesosphere Explorer
... Submillimeter Wave Astronomy Satellite
... Transition Region and Coronal Explorer
... Uhuru satellite
... X Ray Timing Explorer

RT IUE
Juno 1 launch vehicle
Jupiter C rocket vehicle
meteoroid dust clouds
micrometeoroids
outer planets explorers
Scout project
Thor Delta launch vehicle
zodiacal dust

explosion suppression

DEF Any method used to confine or suppress an explosion.

RT fire prevention
foams
retardants

explosions

DEF The sudden production of large quantities of gases, usually hot, from much smaller amounts of gases, liquids, or solids.

GS **explosions**
. aerial explosions
. chemical explosions
. gas explosions
. propellant explosions
. nuclear explosions
. thermonuclear explosions
. underground explosions
. underwater explosions

RT accidents
backfire
blast loads
∞ blasts
bursts
combustion
detonation
∞ discharge
explosive decompression
explosives
fires
flame propagation
∞ flash
flashback
hazards
hydrocarbon combustion
implosions
reactor safety
Riemann waves
safety

shock waves
sound pressure
spontaneous combustion
warning systems

explosive decompression

GS pressure reduction
. **explosive decompression**
RT explosions
implosions
pressure recovery
pressurized cabins

explosive devices

UF *cartridge actuated devices*
GS **explosive devices**
. bombs (ordnance)
. initiators (explosives)
. boosters (explosives)
. caps (explosives)
. detonators
. exploding wires
. primers (explosives)
. nuclear devices
. shaped charges
. torpedoes
RT actuators
ammunition
∞ charging
∞ devices
explosives detection
igniters
∞ propellant actuated devices
warheads

explosive forming

GS forming techniques
. cold working
.. **explosive forming**
metal working
. **explosive forming**
RT bulging
deep drawing
electrohydraulic forming
extruding
shaped charges

explosive gases

USE **flammable gases**

explosive welding

GS bonding
. **explosive welding**
welding
. pressure welding
.. **explosive welding**
RT cladding
metal bonding
metal joints
metal working
metal-metal bonding

explosives

GS **explosives**
. BSX
. cellulose nitrate
. dynamite
. HMX
. hydrazine nitroform
. hydrogen azides
. nitrasol explosives
. octol (explosive)
. pentolite
. RDX
. stypnates
. TATB
. tetryl
. trinitrotoluene
RT ammonium picrates
ammunition
azides (organic)
bombs (ordnance)
burning rate
case bonded propellants
∞ charging
chemical explosions

- chemical fuels
 composite propellants
 detonators
 double base propellants
 double base rocket propellants
 explosions
 fires
 flammable gases
 fulminates
 gun propellants
 guns (ordnance)
 hazardous materials
 nitroglycerin
 nitroguanidine
 nitromethane
 nuclear weapons
 ordnance
 PETN
 plastic propellants
 potassium perchlorates
 powder (particles)
 propellants
 pyrophoric materials
 pyrotechnics
 shaped charges
 sodium azides
 TAGN
 torpedoes
 warheads
- explosives detection**
(added September 1995)
 GS detection
 . **explosives detection**
 RT airport security
 explosive devices
 ion mobility spectroscopy
 terrorism
- exponential functions**
 GS analysis (mathematics)
 . complex variables
 . . **exponential functions**
 . . . logarithms
 functions (mathematics)
 . transcendental functions
 . . **exponential functions**
 . . . logarithms
 RT Fourier analysis
 hyperbolic functions
 orthogonal functions
 Poisson density functions
 probability density functions
 statistical analysis
 Weibull density functions
- exponents**
 GS number theory
 . **exponents**
 RT arithmetic
 fractals
 logarithms
- exports*
 USE **international trade**
- EXPOS (Spacelab payload)**
 DEF X ray spectropolarimetry payload for Spacelab. Used for X Ray Spectropolarimetry Payload.
 UF *X Ray Spectropolarimetry Payload*
 GS payloads
 . **EXPOS (Spacelab payload)**
 RT European Space Agency
 Spacelab
- exposure**
 GS **exposure**
 . weathering
 . . space weathering
 RT atmospheric effects
 bearing (direction)
 bioavailability
 cold tolerance
 dosimeters
 irradiation
- photography
 position (location)
 positioning
 radiation dosage
 time
 trinitrotoluene
- expressions (mathematics)*
 USE **formulas (mathematics)**
- expulsion**
 RT acceleration (physics)
 circuit protection
 disposal
 dumping
 ejection
 emptying
 excretion
 exhaust velocity
 expellants
 expiration
 fluid flow
 gravity gradient satellites
 jettisoning
 particle emission
 pressurizing
 removal
 unloading
- expulsion bladders**
 GS diaphragms (mechanics)
 . **expulsion bladders**
 RT bellows
 ejection
 emptying
 expandable structures
 fuel tank pressurization
 fuel tanks
 pressurizing
 propellant storage
 propellant tanks
 storage tanks
- extars*
 USE **x ray stars**
- extended duration space flight*
 USE **long duration space flight**
- extensions**
 GS **extensions**
 . prolongation
 RT accessories
 adapters
 contracts
 decontamination
 expansion
 filling
 fittings
 insurance (contracts)
 revisions
 supplements
- extensometers**
 DEF Devices for determining the elongation of a specimen as it is strained. Used for dilatometers.
 UF *dilatometers*
 GS measuring instruments
 . **extensometers**
 RT deformeters
 dilatometry
 elastometers
 mechanical measurement
 strain gages
 stress measurement
 tensometers
 thermal expansion
 transducers
- external combustion engines**
 GS engines
 . **external combustion engines**
 . . Stirling engines
 RT automobile engines
 boilers
- gas turbine engines
 internal combustion engines
 piston engines
- external store separation**
 UF *store release*
 RT nacelles
 pods (external stores)
 protuberances
 ∞ separation
 ∞ storage
 wing tanks
 wing-fuselage stores
- external stores**
 GS **external stores**
 . pods (external stores)
 RT nacelles
 protuberances
 ∞ storage
 wing tanks
 wing-fuselage stores
- external surface currents**
 GS electric current
 . **external surface currents**
 RT ∞ currents
 electric fields
 electromagnetic fields
 electromagnetic missiles
 electromagnetic pulses
 levitation melting
 photoelectric emission
 spacecraft charging
 ∞ surfaces
 system generated electromagnetic pulses
- external tanks**
 UF *Shuttle Superlightweight Tank*
SLWT (propellant tank)
 GS tanks (containers)
 . **external tanks**
 RT fuel tanks
 nacelles
 propellant tanks
 Space Shuttle Ascent Stage
 storage tanks
 wing tanks
- externally blown flaps**
 UF *blown flaps*
EBF
 GS airfoils
 . flaps (control surfaces)
 . . **externally blown flaps**
 . . . upper surface blown flaps
 control surfaces
 . flaps (control surfaces)
 . . **externally blown flaps**
 . . . upper surface blown flaps
 RT blowing
 jet flaps
 lift
 lift devices
 powered lift aircraft
 short takeoff aircraft
 spanwise blowing
 wing flaps
 wing nacelle configurations
- extinction**
 GS **extinction**
 . interstellar extinction
 RT Cenozoic Era
 Cretaceous-Tertiary boundary
 evolution (development)
 extinguishing
 fading
 fluorescence
 laser induced fluorescence

extinguishing

Nemesis (star)

extinguishers

USE **fire extinguishers**

extinguishing

UF *flame quenching*

GS **extinguishing**

. flameout

RT burnout

combustion

extinction

occultation

∞ quenching

quenching (cooling)

extraction

GS **extraction**

. geothermal energy extraction

. ion extraction

. solvent extraction

RT beds (process engineering)

beneficiation

centrifuges

centrifuging

columns (process engineering)

concentrating

dialysis

diffusion

dissolving

elution

filtration

furnaces

hydrolysis

leaching

material absorption

materials recovery

melting

osmosis

percolation

recycling

refining

removal

∞ separation

solvents

sorption

washers (cleaners)

extragalactic light

USE **extraterrestrial radiation**

extragalactic media

USE **intergalactic media**

extragalactic radio sources

GS celestial bodies

. radio sources (astronomy)

. . . **extragalactic radio sources**

. . . . radio galaxies

. . . . radio jets (astronomy)

RT BL Lacertae objects

blazars

extraterrestrial radiation

extraterrestrial radio waves

quasars

radiation sources

radio astronomy

radio emission

∞ sources

extrapolation

RT finite difference theory

forecasting

interpolation

periodic variations

quality control

statistical analysis

∞ tests

time series analysis

trends

extrasensory perception

UF *parapsychology*

GS perception

. sensory perception

. . **extrasensory perception**

extrasolar planet detection

(added January 2003)

USE **planet detection**

extrasolar planets

UF *exoplanets*

exosolar planets

GS celestial bodies

. planets

. . . **extrasolar planets**

RT gas giant planets

hypothetical planets

planet detection

planetary systems

extraterrestrial communication

GS telecommunication

. space communication

. . . **extraterrestrial communication**

RT information dissemination

interplanetary communication

radio telemetry

extraterrestrial environments

GS environments

. **extraterrestrial environments**

. . . cislunar space

. . . deep space

. . . . interplanetary space

. . . . interstellar space

. . . Earth orbital environments

. . . lunar environment

. . . . lunar atmosphere

. . . planetary environments

. . . . Mars environment

. Mars atmosphere

. planetary atmospheres

. helium hydrogen atmospheres

. Jupiter atmosphere

. Mars atmosphere

. Mercury atmosphere

. Neptune atmosphere

. planetary ionospheres

. Pluto atmosphere

. Saturn atmosphere

. Uranus atmosphere

. Venus atmosphere

. Venus clouds

. . . planetary magnetospheres

. . . . planetary magnetotails

. . . satellite atmospheres

. . . lunar atmosphere

. . . stellar atmospheres

. . . chromosphere

. . . solar atmosphere

. . . . solar transition region

RT aerospace environments

high gravity environments

long duration space flight

Mars bases

Mercury surface

space exploration

space weathering

spacecraft environments

Venus surface

extraterrestrial intelligence

DEF Intelligent life existing elsewhere than on Earth.

GS intelligence

. **extraterrestrial intelligence**

RT interstellar communication

interstellar travel

Project SETI

space communication

unidentified flying objects

extraterrestrial life

DEF Life forms evolved and existing outside the terrestrial biosphere.

GS life sciences

. **extraterrestrial life**

RT aerospace environments

biofilms

biomarkers

biosatellites

exobiology

life detectors

panspermia

planetary protection

extraterrestrial matter

GS **extraterrestrial matter**

. cosmic gases

. . . interplanetary gas

. . . interstellar gas

. cosmic plasma

. interstellar matter

. . . cosmic dust

. . . . interplanetary dust

. meteoroid dust clouds

. zodiacal dust

. . . dark matter

. . . interstellar gas

RT cosmochemistry

degenerate matter

matter (physics)

negative matter

Venus fly trap rocket vehicle

extraterrestrial oceans

(added June 2001)

SN (EXCLUDES MAGMA OCEANS)

DEF Extensive bodies of water on planets and moons.

UF *planetary oceans*

satellite oceans

GS oceans

. **extraterrestrial oceans**

RT Callisto

Europa

planetary surfaces

satellite surfaces

extraterrestrial radiation

DEF Electromagnetic or particle radiation emitted from a source beyond the Earth atmosphere. Used for extragalactic light and space radiation.

UF *extragalactic light*

space radiation

GS **extraterrestrial radiation**

. extraterrestrial radio waves

. . . galactic radio waves

. . . North Polar Spur (astronomy)

. . . radio bursts

. . . . solar radio bursts

. type 2 bursts

. type 3 bursts

. type 4 bursts

. type 5 bursts

. . . solar radio emission

. . . . solar radio bursts

. type 2 bursts

. type 3 bursts

. type 4 bursts

. type 5 bursts

. . . cosmic microwave background

radiation

. galactic radiation

. . . galactic cosmic rays

. . . galactic radio waves

. . . North Polar Spur (astronomy)

. . . galactic winds

. gamma ray bursts

. gegenschein

. interstellar radiation

. lunar radiation

. planetary radiation

. primary cosmic rays

. . . solar cosmic rays

. . . solar radiation

. . . circumsolar radiation

. . . solar corpuscular radiation

. . . . solar electrons

. . . . solar neutrinos

. . . . solar neutrons

. . . . solar protons

. . . solar cosmic rays

. . . solar radio emission

. . . solar radio bursts

- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar wind
- . . solar x-rays
- . . sunlight
- . stellar radiation
- . stellar winds
- . zodiacal light
- RT aerospace environments
- ∞ aerospace sciences
- atmospheric radiation
- background radiation
- corpuscular radiation
- cosmic rays
- cosmic x rays
- CRRES (satellite)
- Earth orbital environments
- electromagnetic noise
- electromagnetic radiation
- electron acceleration
- extragalactic radio sources
- light (visible radiation)
- Lyman alpha radiation
- Lyman beta radiation
- microwave emission
- polarized electromagnetic radiation
- polarized radiation
- ∞ radiation
- radiation belts
- radiative transfer
- radio jets (astronomy)
- radio waves
- ∞ rays
- relic radiation
- synchrotron radiation
- system generated electromagnetic pulses
- terrestrial radiation
- x rays
- extraterrestrial radio waves**
- UF *cosmic radio waves*
- GS electromagnetic radiation
 - . radio waves
 - . . **extraterrestrial radio waves**
 - . . . galactic radio waves
 - North Polar Spur (astronomy)
 - . . . radio bursts
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . . solar radio emission
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . . cosmic microwave background radiation
 - extraterrestrial radiation
 - . **extraterrestrial radio waves**
 - . . galactic radio waves
 - . . . North Polar Spur (astronomy)
 - . . radio bursts
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . solar radio emission
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . cosmic microwave background radiation
- RT centimeter waves
- extragalactic radio sources
- microwave emission
- microwaves
- millimeter waves
- radio astronomy
- radio emission
- radio frequency interference
- radio jets (astronomy)
- radio sources (astronomy)
- extraterrestrial resources**
- GS resources
- . **extraterrestrial resources**
- . . lunar resources
- RT in situ resource utilization
- lunar exploration
- planetary bases
- space exploration
- space logistics
- extraterrestrial roving vehicles*
- USE **roving vehicles**
- extravehicular activity**
- SN (ACTIVITY OUTSIDE THE SPACECRAFT)
- DEF Activities by crew members conducted outside the spacecraft pressure hull or within the cargo bay when the cargo bay doors are open.
- UF *EVA*
- spacewalks*
- RT ∞ activity
- AEPS
- aerospace environments
- Apollo extension system
- astronaut locomotion
- astronaut maneuvering equipment
- Crew Equipment Translation Aid (ISS)
- extravehicular mobility units
- IMLSS
- intravehicular activity
- man operated propulsion systems
- manned maneuvering units
- manned space flight
- orbital workers
- self maneuvering units
- space flight
- space maintenance
- Space Shuttle payloads
- umbilical connectors
- weightlessness
- extravehicular mobility units**
- SN (LIMITED TO SPACE SUIT UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM)
- DEF Independent anthropometric space suit systems that provide crew members with environmental protection, life support, mobility, communications, and visibility while performing various extravehicular activities.
- GS clothing
 - . protective clothing
 - . . pressure suits
 - . . . space suits
 - **extravehicular mobility units**
 - . . . suits
 - . . . pressure suits
 - . . . space suits
 - **extravehicular mobility units**
- RT astronaut locomotion
- astronaut maneuvering equipment
- Crew Equipment Translation Aid (ISS)
- extravehicular activity
- IMLSS
- life support systems
- self maneuvering units
- space transportation system
- extrema*
- USE **range (extremes)**
- Extreme Ultraviolet Explorer satellite**
- DEF An Explorer satellite carrying scientific instruments for scanning the sky in the 100-900 Angstrom region of the spectrum to study the very hot celestial bodies (white dwarfs, for example). Used for EUVE.
- UF *EUVE*
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
- . . . **Extreme Ultraviolet Explorer satellite**
- RT IUE
- ultraviolet astronomy
- extreme ultraviolet radiation**
- DEF Ultraviolet emission in the 100-1000 Angstrom range.
- GS electromagnetic radiation
 - . ultraviolet radiation
 - . . **extreme ultraviolet radiation**
- RT beams (radiation)
- ionizing radiation
- Magellan ultraviolet astronomy satellite
- ∞ radiation
- solar radiation
- extremely high frequencies**
- SN (30 TO 300 GHz)
- UF *K band*
- KA band*
- V band*
- GS frequencies
 - . radio frequencies
 - . . microwave frequencies
 - . . . **extremely high frequencies**
- RT ACTS
- millimeter waves
- extremely low frequencies**
- SN (BELOW 300 HZ)
- UF *ultralow frequencies*
- GS frequencies
 - . radio frequencies
 - . . **extremely low frequencies**
- RT audio frequencies
- low frequencies
- Seafarer project
- extremum values**
- DEF In statistics, the upper or lower bound of the random variable which is not expected to be exceeded by a specified percentage of the population within a given confidence interval.
- GS analysis (mathematics)
 - . real variables
 - . . **extremum values**
 - . . . limits (mathematics)
 - . . . maxima
 - . . . minima
 - Cramer-Rao bounds
- RT Euler-Lagrange equation
- functions (mathematics)
- optimization
- ∞ peaks
- probability theory
- extroversion**
- RT behavior
- human behavior
- psychology
- extruding**
- UF *hot extruding*
- GS forming techniques
 - . **extruding**
 - . . pultrusion
- RT casting
- cladding
- cold working
- dies
- ∞ drawing
- explosive forming
- injection molding
- intrusion
- metal spinning
- metal working
- piercing
- pressing (forming)
- squeeze casting
- wet spinning
- eye (anatomy)**
- GS anatomy
 - . sense organs

eye diseases

- . . **eye (anatomy)**
- . . . choroid membranes
- . . . conjunctiva
- . . . cornea
- . . . oculomotor nerves
- . . . pupils
- . . . retina
- fovea
- RT accommodation
- color vision
- face (anatomy)
- head (anatomy)
- lenses
- miosis
- nystagmus
- ophthalmodynamometry
- ophthalmology
- optometry
- photoreceptors
- vestibular nystagmus
- vision

eye diseases

- GS diseases
- . **eye diseases**
- . . asthenopia
- . . astigmatism
- . . cataracts
- . . conjunctivitis

- . . glaucoma
- . . keratitis
- . . phoria
- RT blindness
- hyperopia
- ophthalmology

eye dominance

- GS dominance
- . **eye dominance**
- RT vision

eye examinations

- GS examination
- . **eye examinations**
- RT electronystagmography
- haplosopes
- ophthalmology

eye movements

- GS **eye movements**
- . nystagmus
- . . vestibular nystagmus
- . Saccadic eye movements
- RT blinking
- electronystagmography
- head movement
- oculometers
- rapid eye movement state

visual tasks

eye protection

- GS protection
- . **eye protection**
- RT flash blindness
- goggles
- sunglasses
- visors

eyepieces

- GS optical equipment
- . **eyepieces**
- RT binoculars
- contact lenses
- lenses
- microscopes
- periscopes
- reticles
- sunglasses
- telescopes

Eyring theory

- GS kinetic theory
- . transport theory
- . . **Eyring theory**
- RT equilibrium flow
- fluid dynamics
- ∞ theories

F

F 1 region

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - F region
 - **F 1 region**
- regions
 - . F region
 - .. **F 1 region**

F 2 region

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - F region
 - **F 2 region**
- regions
 - . F region
 - .. **F 2 region**
- RT spread F
 - transequatorial propagation

F centers

- USE **color centers**

F displays

- USE **F region**

F layer

- USE **F region**

F region

- SN (ALTITUDES ABOVE APPROXIMATELY 160 KM)
- DEF A portion of the ionosphere extending from about 150 to 1000 km. The F region is subdivided into the F1 (150 to 250 km) and the F2 (250 to 1000 km) regions. The F2 region generally has the largest electron density and it persists throughout the night. The F region is the one most commonly used for long range high frequency propagation.

- UF *F displays*
 - F layer*
 - night F layer*
- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - **F region**
 - F 1 region
 - F 2 region
- regions
 - . **F region**
 - .. F 1 region
 - .. F 2 region
- RT plasma bubbles
 - radio transmission

F stars

- GS celestial bodies
 - . stars
 - .. **F stars**
- RT blue stars
 - dwarf stars
 - G stars
 - giant stars
 - main sequence stars
 - stellar spectra

F-1 rocket engine

- GS engines
 - . rocket engines
 - .. liquid propellant rocket engines
 - ... **F-1 rocket engine**
- RT booster rocket engines
 - Nova launch vehicles

Saturn launch vehicles

F-2 aircraft

- UF *Hawker Hunter aircraft*
 - Hunter F-2 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-2 aircraft**
- Hawker Siddeley aircraft
 - . **F-2 aircraft**
 - jet aircraft
 - . **F-2 aircraft**
 - monoplanes
 - . **F-2 aircraft**
- RT ∞ aircraft

F-4 aircraft

- UF *F-110 aircraft*
 - F4H aircraft*
 - Phantom aircraft*
 - RF-4 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-4 aircraft**
- jet aircraft
 - . **F-4 aircraft**
- McDonnell Douglas aircraft
 - . McDonnell aircraft
 - .. **F-4 aircraft**
 - monoplanes
 - . **F-4 aircraft**
 - supersonic aircraft
 - . **F-4 aircraft**
- RT ∞ aircraft
 - J-79 engine

F4H aircraft

- USE **F-4 aircraft**

F-5 aircraft

- UF *Freedom Fighter aircraft*
 - N-156 aircraft*
- GS attack aircraft
 - . COIN aircraft
 - .. **F-5 aircraft**
 - . fighter aircraft
 - .. **F-5 aircraft**
- jet aircraft
 - . turbofan aircraft
 - .. **F-5 aircraft**
- monoplanes
 - . **F-5 aircraft**
- Northrop aircraft
 - . **F-5 aircraft**
 - supersonic aircraft
 - . **F-5 aircraft**
- RT ∞ aircraft

F-8 aircraft

- UF *Crusader aircraft*
 - F8U aircraft*
 - RF-8 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-8 aircraft**
- jet aircraft
 - . **F-8 aircraft**
- Ling-Temco-Vought aircraft
 - . **F-8 aircraft**
 - monoplanes
 - . **F-8 aircraft**
 - single engine aircraft
 - . **F-8 aircraft**
 - supersonic aircraft
 - . **F-8 aircraft**

RT ∞ aircraft

F8U aircraft

- USE **F-8 aircraft**

F-9 aircraft

- UF *Cougar aircraft*
 - F9F aircraft*
 - Panther aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-9 aircraft**
- Grumman aircraft
 - . **F-9 aircraft**
 - jet aircraft
 - . **F-9 aircraft**
 - monoplanes
 - . **F-9 aircraft**
 - single engine aircraft
 - . **F-9 aircraft**
- RT ∞ aircraft

F9F aircraft

- USE **F-9 aircraft**

F-14 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-14 aircraft**
- Grumman aircraft
 - . **F-14 aircraft**
 - jet aircraft
 - . **F-14 aircraft**
 - supersonic aircraft
 - . **F-14 aircraft**
- RT ∞ aircraft

F-15 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-15 aircraft**
- jet aircraft
 - . **F-15 aircraft**
 - supersonic aircraft
 - . **F-15 aircraft**
- RT ∞ aircraft

F-16 aircraft

- UF *YF-16 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-16 aircraft**
- jet aircraft
 - . **F-16 aircraft**
- single engine aircraft
 - . **F-16 aircraft**
 - supersonic aircraft
 - . **F-16 aircraft**
- RT ∞ aircraft

F-17 aircraft

- UF *YF-17 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - .. **F-17 aircraft**
- jet aircraft
 - . **F-17 aircraft**
- monoplanes
 - . **F-17 aircraft**
 - supersonic aircraft
 - . **F-17 aircraft**
- RT ∞ aircraft
 - F-18 aircraft

F-18 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-18 aircraft**
- jet aircraft
 - . **F-18 aircraft**

F-20 aircraft

- McDonnell Douglas aircraft
 - . **F-18 aircraft**
 - Northrop aircraft
 - . **F-18 aircraft**
 - RT ∞ aircraft
 - F-17 aircraft
 - F-20 aircraft**
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-20 aircraft**
 - jet aircraft
 - . **F-20 aircraft**
 - Northrop aircraft
 - . **F-20 aircraft**
 - F-22 aircraft**
 - (added August 1993)
 - UF *advanced tactical fighter ATF*
 - YF-22 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-22 aircraft**
 - jet aircraft
 - . **F-22 aircraft**
 - supersonic aircraft
 - . **F-22 aircraft**
 - RT ∞ aircraft
 - F-27 aircraft**
 - UF *Fokker F 27 aircraft*
 - Fokker Friendship aircraft*
 - GS Fokker aircraft
 - . **F-27 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **F-27 aircraft**
 - monoplanes
 - . **F-27 aircraft**
 - passenger aircraft
 - . **F-27 aircraft**
 - transport aircraft
 - . **F-27 aircraft**
 - RT ∞ aircraft
 - F-28 helicopter**
 - GS light aircraft
 - . **F-28 helicopter**
 - passenger aircraft
 - . **F-28 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . rigid rotor helicopters
 - **F-28 helicopter**
 - F-28 transport aircraft**
 - UF *Fellowship aircraft*
 - Fokker F 28 aircraft*
 - GS commercial aircraft
 - . **F-28 transport aircraft**
 - Fokker aircraft
 - . **F-28 transport aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **F-28 transport aircraft**
 - monoplanes
 - . **F-28 transport aircraft**
 - passenger aircraft
 - . **F-28 transport aircraft**
 - transport aircraft
 - . **F-28 transport aircraft**
 - RT ∞ aircraft
 - F-80 aircraft*
 - USE **T-33 aircraft**
 - F-84 aircraft**
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-84 aircraft**
 - jet aircraft
 - . **F-84 aircraft**
 - monoplanes
 - . **F-84 aircraft**
 - Republic aircraft
 - . **F-84 aircraft**
 - single engine aircraft
 - . **F-84 aircraft**
 - RT ∞ aircraft
 - F-86 aircraft**
 - UF *Sabre aircraft*
 - attack aircraft
 - . fighter aircraft
 - . . **F-86 aircraft**
 - jet aircraft
 - . **F-86 aircraft**
 - monoplanes
 - . **F-86 aircraft**
 - North American aircraft
 - . **F-86 aircraft**
 - single engine aircraft
 - . **F-86 aircraft**
 - RT ∞ aircraft
 - F-89 aircraft**
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-89 aircraft**
 - jet aircraft
 - . **F-89 aircraft**
 - monoplanes
 - . **F-89 aircraft**
 - Northrop aircraft
 - . **F-89 aircraft**
 - RT ∞ aircraft
 - F-94 aircraft**
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-94 aircraft**
 - jet aircraft
 - . **F-94 aircraft**
 - Lockheed aircraft
 - . **F-94 aircraft**
 - monoplanes
 - . **F-94 aircraft**
 - single engine aircraft
 - . **F-94 aircraft**
 - RT ∞ aircraft
 - F-100 aircraft**
 - UF *Super Sabre aircraft*
 - attack aircraft
 - . fighter aircraft
 - . . **F-100 aircraft**
 - jet aircraft
 - . **F-100 aircraft**
 - monoplanes
 - . **F-100 aircraft**
 - North American aircraft
 - . **F-100 aircraft**
 - single engine aircraft
 - . **F-100 aircraft**
 - supersonic aircraft
 - . **F-100 aircraft**
 - RT ∞ aircraft
 - F-101 aircraft**
 - UF *JF 101 aircraft*
 - Voodoo aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-101 aircraft**
 - jet aircraft
 - . **F-101 aircraft**
 - McDonnell Douglas aircraft
 - . McDonnell aircraft
 - . . **F-101 aircraft**
 - single engine aircraft
 - . **F-101 aircraft**
 - supersonic aircraft
 - . **F-101 aircraft**
 - RT ∞ aircraft
 - F-102 aircraft**
 - UF *Delta Dagger aircraft*
 - YF-102 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-102 aircraft**
 - General Dynamics aircraft
 - . **F-102 aircraft**
 - jet aircraft
 - . **F-102 aircraft**
 - monoplanes
 - . **F-102 aircraft**
 - single engine aircraft
 - . **F-102 aircraft**
 - supersonic aircraft
 - . **F-102 aircraft**
 - tailless aircraft
 - . **F-102 aircraft**
 - RT ∞ aircraft
- F-104 aircraft**
 - UF *Canadair CF-104 aircraft*
 - CF-104 aircraft*
 - Starfighter aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-104 aircraft**
 - jet aircraft
 - . **F-104 aircraft**
 - Lockheed aircraft
 - . **F-104 aircraft**
 - monoplanes
 - . **F-104 aircraft**
 - single engine aircraft
 - . **F-104 aircraft**
 - supersonic aircraft
 - . **F-104 aircraft**
 - RT ∞ aircraft
- F-105 aircraft**
 - UF *Thunderchief aircraft*
 - attack aircraft
 - . fighter aircraft
 - . . **F-105 aircraft**
 - jet aircraft
 - . **F-105 aircraft**
 - monoplanes
 - . **F-105 aircraft**
 - Republic aircraft
 - . **F-105 aircraft**
 - single engine aircraft
 - . **F-105 aircraft**
 - RT ∞ aircraft
- F-106 aircraft**
 - UF *Delta Dart aircraft*
 - attack aircraft
 - . fighter aircraft
 - . . **F-106 aircraft**
 - General Dynamics aircraft
 - . **F-106 aircraft**
 - jet aircraft
 - . **F-106 aircraft**
 - monoplanes
 - . **F-106 aircraft**
 - single engine aircraft
 - . **F-106 aircraft**
 - supersonic aircraft
 - . **F-106 aircraft**
 - tailless aircraft
 - . **F-106 aircraft**
 - RT ∞ aircraft
- F-110 aircraft*
 - USE **F-4 aircraft**
- F-111 aircraft**
 - UF *LASV*
 - TFX aircraft*
 - GS attack aircraft
 - . bomber aircraft
 - . . **F-111 aircraft**
 - General Dynamics aircraft
 - . **F-111 aircraft**
 - Grumman aircraft
 - . **F-111 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **F-111 aircraft**
 - supersonic aircraft
 - . **F-111 aircraft**

- RT ∞ aircraft
mission adaptive wings
variable sweep wings
- F-117A aircraft**
(added April 1991)
GS attack aircraft
. fighter aircraft
. . . **F-117A aircraft**
jet aircraft
. **F-117A aircraft**
RT ∞ aircraft
aircraft detection
bomber aircraft
- FAB (programming language)*
USE **FORTRAN**
- fabrication**
GS **fabrication**
. nanofabrication
. space manufacturing
RT assemblies
assembling
construction
low gravity manufacturing
manufacturing
production management
rapid prototyping
resin film infusion
resin transfer molding
self assembly
squeeze casting
- fabrics**
UF *cloth*
GS **fabrics**
. crepe
. Dacron (trademark)
. felts
. Fortisan (trademark)
. gauze
. linen
. parachute fabrics
. silk
. wool
RT clothing
coatings
cotton
fibers
∞ films
flame retardants
geotechnical fabrics
gores
interlayers
laminates
mesh
micarta
multilayer insulation
reinforcing materials
ribbons
∞ sheets
socks
textiles
weaving
webbing
webs (sheets)
wire cloth
woven composites
- Fabry-Perot interferometers**
GS measuring instruments
. interferometers
. . . **Fabry-Perot interferometers**
RT etalons
microwave interferometers
plasma diagnostics
- Fabry-Perot lasers*
USE **lasers**
- Fabry-Perot spectrometers**
GS measuring instruments
. radiation measuring instruments
. . . **Fabry-Perot spectrometers**
. spectrometers
- . . **Fabry-Perot spectrometers**
RT actinometers
airglow
auroral spectroscopy
optical equipment
optical measuring instruments
- face (anatomy)**
GS anatomy
. **face (anatomy)**
. . chin
. . forehead
. . mouth
. . . lips (anatomy)
. . nose (anatomy)
RT eye (anatomy)
head (anatomy)
- face centered cubic lattices**
UF *FCC lattices*
GS crystal lattices
. cubic lattices
. . **face centered cubic lattices**
RT body centered cubic lattices
close packed lattices
cluster variation method
crystals
- facets*
USE **flat surfaces**
- ∞ **facilities**
SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT airports
electric power plants
ground handling
industrial areas
industrial plants
land use
launching bases
logistics
logistics management
military air facilities
mobile quarantine facility
research facilities
roads
site selection
sites
Solar Cell Calibration Facility
stations
terminal facilities
test facilities
X Ray Astrophysics Facility
- facsimile communication**
(added September 1992)
UF *facsimile transmission*
fax
GS telecommunication
. communication
. . **facsimile communication**
. . . automatic picture transmission
RT interplanetary communication
Iridium network
lunar communication
satellite communication
spacecraft communication
teletypewriter systems
television systems
transoceanic communication
wireless communication
- facsimile transmission*
USE **facsimile communication**
- factor analysis**
GS statistical analysis
. **factor analysis**
RT autoregressive processes
correlation
covariance
degrees of freedom
experiment design
factorization
matrices (mathematics)
- orthogonality
regression analysis
statistical tests
variability
variance (statistics)
- factorial design**
GS experiment design
. **factorial design**
RT ∞ design
mathematical models
sensitivity analysis
statistical analysis
- factorials**
GS analysis (mathematics)
. combinatorial analysis
. . **factorials**
RT binomial coefficients
gamma function
- factories*
USE **industrial plants**
- factorization**
DEF Process or instance of factoring.
GS **factorization**
. Cholesky factorization
RT algorithms
factor analysis
finite element method
real variables
- factors*
USE **variable**
- faculae**
DEF Large patches of bright material forming a veined network in the vicinity of sunspots. They appear to be more permanent than sunspots and are probably due to elevated clouds of luminous gas. Used for plages (faculae) and solar faculae.
UF *plages (faculae)*
solar faculae
GS stellar activity
. solar activity
. . **faculae**
RT ∞ activity
chromosphere
photosphere
sunspots
starspots
- Faddeev equations**
RT ∞ equations
particle collisions
scattering amplitude
wave scattering
- fading**
GS **fading**
. signal fading
. . Rayleigh fading
. . selective fading
RT attenuation
bleaching
color
discoloration
electromagnetic absorption
extinction
reception diversity
signal fading rate
wave dispersion
- fahrenheit temperature scale*
USE **temperature scales**
- fail-safe systems**
DEF Systems used to minimize risk in case of malfunction.
RT ∞ automation
emergencies
fault tolerance
safety devices
safety management

failure

self tests
∞ systems

failure

GS

failure

. burnthrough (failure)
. engine failure
. structural failure
. system failures

RT

aborted missions
∞ breakdown
buckling
burn-in
collapse
corrosion
cracking (fracturing)
cumulative damage
deformation
destruction
deterioration
distortion
downtime
electrical faults
failure analysis
fatigue (materials)
flashover
fractures (materials)
malfunctions
Mills ratio
rupturing
shearing
short circuits
structural strain
temperature inversions
wear

failure analysis

DEF Subsequent to failure, the logical, systematic examination of an item, its construction, application, and documentation to identify the failure mode and determine the failure mechanism and its basic cause.

RT

acoustic emission
∞ analyzing
burn-in
burst tests
failure
fatigue life
fault detection
fault tolerance
fiber pullout
life (durability)
Mills ratio
MTBF
preventive maintenance
probability density functions
reliability
statistical analysis
trend analysis

failure modes

GS

modes

. failure modes

RT

buckling
cracks
elastic buckling
fault detection
fiber pushout
kink bands
kinking
∞ mode
mode (statistics)
MTBF
shearing

faint object camera

DEF One of the five components of the first scientific payload of the Hubble Space Telescope. The faint object camera will be used to observe extremely faint astronomical objects with wavelengths between 120 and 700 nm.

GS

optical equipment
. cameras
. . faint object camera
photographic equipment
. cameras

. . faint object camera
RT astronomical photography
Hubble Space Telescope
infrared photography
optical measuring instruments
spaceborne astronomy
spaceborne telescopes
ultraviolet photography

faint objects

GS

celestial bodies
. faint objects
RT galaxies
stars

fainting

USE

syncope

Fairchild military aircraft

USE

Fairchild-Hiller aircraft

Fairchild-Hiller aircraft

UF

Fairchild military aircraft

GS

Fairchild-Hiller aircraft

. C-119 aircraft
. C-123 aircraft
. OH-5 helicopter
. OH-23 helicopter
. XC-142 aircraft

RT

∞ aircraft

Fairey aircraft

GS

Fairey aircraft

. FD 2 aircraft

RT

∞ aircraft

Fairey Delta 2 aircraft

USE

FD 2 aircraft

fairings

GS

symmetrical bodies
. streamlined bodies
. . fairings

RT

aerodynamic configurations
aircraft structures
canopies
cowlings
fillets
housings
landing gear
nacelles
ogives
perforated shells
protectors
protuberances
sheaths
shells (structural forms)
∞ spinners
streamlining
wing roots

Faith 7

GS

manned spacecraft
. Mercury spacecraft
. . Faith 7
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . Faith 7
soft landing spacecraft
. Mercury spacecraft
. . Faith 7
space capsules
. Mercury spacecraft
. . Faith 7
RT Mercury MA-2 flight
Mercury MA-9 flight

Falcon missile

GS

missiles
. air to air missiles
. . Falcon missile
. . . antiaircraft missiles
. . . Falcon missile

RT

M-46 engine

solid propellant rocket engines

Falkner-Skan equation

GS

analysis (mathematics)
. real variables
. . differential equations
. . . Falkner-Skan equation

RT

Blasius equation
boundary layer separation
∞ equations
laminar flow
Prandtl-Meyer expansion
wedge flow

falling

RT

atmospheric entry
descent trajectories
particle motion
∞ precipitation
sinking
vertical motion

falling spheres

GS

symmetrical bodies
. bodies of revolution
. . spheres
. . . falling spheres

RT

balls
drop towers
free fall
globules
raindrops
spheroids

fallout

UF

washout (radioactivity)

RT

air pollution
fission products
fission weapons
nuclear explosion effect
nuclear explosions
nuclear meteorology
post-blast nuclear radiation
∞ radiation
radiation effects
radiation hazards
radioactive contaminants
∞ radioactive debris
radioactivity

false alarms

DEF In general, the unwanted detection of input noise. In radar, an indication of a detected target even though one does not exist, due to noise or interference levels exceeding the set threshold of detection.

RT

error signals
signal to noise ratios
warning systems

fan blades

DEF One or more revolving vanes attached to a rotary hub and operated by a motor.

RT

compressor blades
ducted fans
∞ fans
propeller blades
rotary wings
turbine blades
turbomachine blades
ventilation fans

fan in wing aircraft

GS

fan in wing aircraft

. XV-5 aircraft

RT

∞ aircraft
lift fans
research aircraft
short takeoff aircraft
tilt wing aircraft
V/STOL aircraft

- vertical takeoff aircraft
- fanlift devices*
- USE **lift fans**
- ∞ **fans**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT actuator disks
air conditioning equipment
air ducts
antenna radiation patterns
blowers
compressor rotors
compressors
ducted fans
fan blades
propeller fans
turbofans
ventilation fans
wind tunnel drives
- fans (landforms)**
- DEF Gently sloping, fan-shaped masses of detritus forming sections of very low shaped cones commonly at places where there is a notable decrease in gradient; specifically, alluvial fans. Also fan-shaped masses of congealed lava that formed on steep slopes by the continual changing direction of flow. Used for bajadas.
- UF *bajadas*
- GS landforms
- . **fans (landforms)**
- RT alluvium
canyons
clays
deltas
gravels
mud
sands
sediments
- far fields**
- DEF (1- antennas) Those regions of the field of an antenna where the angular field distribution is essentially independent of the distance from a specified point in the antenna region. (2-fiber optics) The regions, far from source, where the diffraction pattern is substantially the same as that at infinity. (mobile communication) The regions of the field of an antenna where the angular field distance is essentially independent of the distance from the antenna. Used for Fraunhofer region.
- UF *Fraunhofer region*
- GS electromagnetic fields
- . **far fields**
- RT antenna radiation patterns
electromagnetic radiation
field theory (physics)
Fresnel region
laser arrays
near fields
noise propagation
radiant flux density
- far infrared radiation**
- SN (30 MICRONS TO ABOUT 1000 MICRONS)
- GS electromagnetic radiation
. infrared radiation
. . **far infrared radiation**
- RT long wave radiation
near infrared radiation
- ∞ radiation
radio waves
short wave radiation
submillimeter waves
terrestrial radiation
- far ultraviolet radiation**
- SN (200 TO 2000 ANGSTROMS)
- UF *vacuum ultraviolet radiation*
- GS electromagnetic radiation
. ultraviolet radiation
. . **far ultraviolet radiation**
- . . . Lyman alpha radiation
. . . Lyman beta radiation
- RT bremsstrahlung
Magellan ultraviolet astronomy
satellite
near ultraviolet radiation
- ∞ radiation
ultraviolet telescopes
x rays
- Far UV Spectroscopic Explorer**
- DEF High-orbit, ultraviolet space observatory covering the wavelength range of 90.5-119.5 nm. The primary objective of FUSE is to use high-resolution spectroscopy at far ultraviolet wavelengths to study the origin and evolution of the lightest elements (hydrogen and deuterium) created shortly after the Big Bang, and the forces and processes involved in the evolution of galaxies, stars, and planetary systems.
- UF *Explorer 77 satellite*
FUSE (satellite)
- GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Far UV Spectroscopic Explorer**
- Faraday dark space**
- RT gas discharge tubes
glow discharges
- Faraday effect**
- UF *Faraday rotation*
- GS electromagnetic properties
. **Faraday effect**
- RT circulators (phase shift circuits)
- ∞ effects
Hall generators
Kerr magneto-optical effect
magneto-optics
optical measurement
optical properties
polarization (waves)
polarized electromagnetic radiation
rotation
- Faraday rotation*
- USE **Faraday effect**
- farm crops**
- GS **farm crops**
. alfalfa
. coffee
. cotton
. fruits
. grains (food)
. . barley
. . corn
. . millet
. . oats
. . rice
. . sorghum
. . wheat
. hay
. leguminous plants
. . soybeans
. potatoes
. spinach
. sugar beets
. sugar cane
. sunflowers
. tomatoes
- RT agriculture
AgRISTARS project
botany
crop calendars
crop dusting
crop growth
crop inventories
crop vigor
- ∞ crops
curing
Earth resources
farmlands
frost damage
grasses
- grasslands
irrigation
Large Area Crop Inventory
Experiment
locusts
orchards
planting
plants (botany)
plowing
seeds
vineyards
- farmlands**
- UF *croplands*
plowed fields
- GS land
- . **farmlands**
- RT agriculture
agrophysical units
crop growth
crop identification
crop inventories
crop vigor
- ∞ crops
Earth resources
farm crops
grasses
grasslands
hay
irrigation
land use
plains
planting
plowing
regional planning
rural areas
rural land use
sod
sugar beets
sugar cane
- fast Fourier transformations**
- UF *FFT*
- GS analysis (mathematics)
. functional analysis
. . integral transformations
. . . Fourier transformation
. . . . **fast Fourier transformations**
functions (mathematics)
. Fourier transformation
. . **fast Fourier transformations**
transformations (mathematics)
. integral transformations
. . Fourier transformation
. . . **fast Fourier transformations**
- RT vortex in cell technique
Walsh function
- fast neutrons**
- DEF Neutrons of energy exceeding some threshold that must be specified (typically 0.1 or MeV); often associated with those neutrons predominantly responsible for displacement damage of materials in neutron radiation fields.
- GS nuclear radiation
. **fast neutrons**
particles
. elementary particles
. . fermions
. . . neutrons
. . . . **fast neutrons**
. neutral particles
. . neutrons
. . . **fast neutrons**
- RT baryons
nucleons
thermal neutrons
- fast nuclear reactors**
- GS nuclear reactors
. **fast nuclear reactors**
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . fast oxide reactors
. . fast test reactors
. . gas cooled fast reactors

fast oxide reactors

- . . liquid metal fast breeder reactors
- RT Enrico Fermi atomic power plant nuclear power reactors

fast oxide reactors

- GS nuclear reactors
 - . fast nuclear reactors
 - . . **fast oxide reactors**
- RT nuclear power reactors

fast test reactors

- GS nuclear reactors
 - . fast nuclear reactors
 - . . **fast test reactors**
- RT ∞ reactors

fasteners

- GS **fasteners**
 - . anchors (fasteners)
 - . bolts
 - . . rock bolts
 - . . tiebolts
 - . locks (fasteners)
 - . nuts (fasteners)
 - . pins
 - . rivets
 - . screws
 - . washers (spacers)
 - . zippers
- RT adhesives
 - ∞ bands
 - ∞ belts
 - brackets
 - cables (ropes)
 - chains
 - clamps
 - clips
 - closures
 - connectors
 - couplings
 - fittings
 - holders
 - hooks
 - inserts
 - interference fit
 - joints (junctions)
 - latches
 - linkages
 - locking
 - lugs
 - mooring
 - ribbons
 - sleeves
 - spacers
 - ∞ spikes
 - splicing
 - splines
 - straps
 - structural members
 - studs (structural members)
 - ∞ tapes
 - unions (connectors)
 - wire

fasting

- RT aerospace medicine
- diets
- food intake
- hypoxia

fat embolisms

- GS diseases
 - . **fat embolisms**
 - embolisms
 - . **fat embolisms**
- RT aeroembolism
- blood vessels
- cardiovascular system
- heart diseases

fatigue (biology)

DEF State of the human organism after exposure to any time of physical or psychological stress (e. g. , pilot fatigue).

- GS **fatigue (biology)**
 - . auditory fatigue

- . flight fatigue
- . muscular fatigue
- RT asthenopia
 - ∞ biology
 - damage
 - effort
 - ∞ endurance
 - exhaustion
 - human factors engineering
 - hyperkinesia
 - massaging
 - ∞ performance
 - physical exercise
 - sleep deprivation
 - stress (biology)
 - stress (physiology)
 - stress (psychology)
 - workloads (psychophysiology)
 - work-rest cycle

fatigue (materials)

DEF A weakening or deterioration of metal or other material occurring under load, especially under repeated cyclic, or continued loading. Used for strain fatigue and structural fatigue.

- UF *strain fatigue*
- structural fatigue*
- GS **fatigue (materials)**
 - . acoustic fatigue
 - . bending fatigue
 - . metal fatigue
 - . thermal fatigue
 - . volumetric strain
- RT Bauschinger effect
- crack closure
- crack geometry
- crack propagation
- cracking (fracturing)
- cracks
- creep properties
- crystal dislocations
- cycles
- damage
- destruction
- ductility
- ∞ endurance
- failure
- fractography
- fretting
- fretting corrosion
- hardness
- ∞ materials
 - mechanical properties
 - notch sensitivity
 - plastic properties
 - residual strength
 - shear properties
 - shot peening
 - S-N diagrams
 - stress concentration
 - stress cycles
 - stress ratio
 - stress relaxation
 - stress relieving
 - stresses
 - structural failure
 - surface defects
 - system failures
 - temperature inversions
 - thermal stresses
 - vibration

fatigue diagrams

USE **S-N diagrams**

fatigue life

DEF The number of cycles of stress or strain of a specified character that a given specimen sustains before failure of a specified nature occurs.

- GS life (durability)
 - . **fatigue life**
 - mechanical properties
 - . **fatigue life**
- RT accelerated life tests
- blowouts

- Coffin-Manson law
- combined stress
- failure analysis
- interference fit
- Palmgren-Miner rule
- retirement for cause
- service life
- short cracks
- S-N diagrams
- stress cycles

fatigue testing machines

- RT acoustic emission
- ∞ machinery
- ∞ test equipment

fatigue tests

- RT bending
- Coffin-Manson law
- creep tests
- destructive tests
- ferrography
- impact testing machines
- impact tests
- load tests
- ∞ materials tests
- notch strength
- notch tests
- resonance testing
- S-N diagrams
- specimen geometry
- static tests
- stress concentration
- stress cycles
- stress ratio
- tensile tests
- testing time
- ∞ tests
 - thermal cycling tests
 - Weibull density functions
 - weld tests

fats

- GS organic compounds
 - . lipids
 - . . **fats**
- RT adipose tissues
- ∞ food
- greases
- myelin
- ∞ nutrients
- oils
- palmitic acid
- synthetic food

fatty acids

- GS acids
 - . carboxylic acids
 - . . **fatty acids**
 - . . . acetic acid
 - ethylenediaminetetraacetic acids
 - iodoacetic acid
 - acetylsalicylic acid
 - . . . benzilic acid
 - . . . benzoic acid
 - . . . lipoic acid
 - . . . oleic acid
 - . . . palmitic acid
 - . . . propionic acid
 - . . . sebacic acid
 - . . . valeric acid
 - organic compounds
 - . carboxylic acids
 - . . **fatty acids**
 - . . . acetic acid
 - ethylenediaminetetraacetic acids
 - iodoacetic acid
 - acetylsalicylic acid
 - . . . benzilic acid
 - . . . benzoic acid
 - . . . lipoic acid
 - . . . oleic acid
 - . . . palmitic acid
 - . . . propionic acid
 - . . . sebacic acid
 - . . . valeric acid

RT ∞ aliphatic compounds
 castor oil
 ∞ nutrients

fault detection

(added September 1993)

GS detection
 . **fault detection**
 RT electronic equipment tests
 engine monitoring instruments
 error detection codes
 failure analysis
 failure modes
 fault tolerance
 maintenance
 reliability engineering
 system failures
 systems health monitoring

fault mechanics

USE **fracture mechanics**

fault tolerance

DEF The capability of systems to function despite one or more critical failures, by use of redundant circuits or functions and/or reconfigurable elements.

RT error analysis
 error detection codes
 fail-safe systems
 failure analysis
 fault detection
 reliability engineering

fault trees

DEF Acyclic directed graphs used in the analysis or prediction of faults and defects.

GS trees (mathematics)
 . **fault trees**
 RT graphs (charts)
 topology

∞ **faults**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT electrical faults
 geological faults
 landforms
 massifs
 seamounts
 test pattern generators

fauna

USE **animals**

fax

USE **facsimile communication**

fayalite

GS iron compounds
 . **fayalite**
 minerals
 . **fayalite**
 silicon compounds
 . silicates
 . . **fayalite**

FBFM (modulation)

USE **feedback frequency modulation**

FBL control

USE **fly by light control**

FBM (missiles)

USE **fleet ballistic missiles**

FCC lattices

USE **face centered cubic lattices**

FD 2 aircraft

UF *Fairey Delta 2 aircraft*
 GS *Fairey aircraft*
 . **FD 2 aircraft**
 jet aircraft
 . **FD 2 aircraft**

monoplanes
 . **FD 2 aircraft**
 research vehicles
 . research aircraft
 . . **FD 2 aircraft**
 tailless aircraft
 . **FD 2 aircraft**

RT ∞ aircraft
 delta wings

FDL-5 reentry vehicle

GS lifting bodies
 . lifting reentry vehicles
 . . **FDL-5 reentry vehicle**
 reentry vehicles
 . maneuverable reentry bodies
 . . lifting reentry vehicles
 . . . **FDL-5 reentry vehicle**

FDMA

USE **frequency division multiple access**

FDTD (mathematics)

(added April 1999)

USE **finite difference time domain method**

fear

GS phobias
 . **fear**
 . . fear of flying
 RT anxiety
 emotions
 neuroses
 panic
 psychoses

fear of flying

GS phobias
 . fear
 . . **fear of flying**
 RT anxiety
 emotions
 neuroses

feasibility

RT cost analysis
 costs
 efficiency
 estimating
 evaluation

feasibility analysis

RT cost analysis
 economic factors
 management planning
 research management
 systems analysis
 technology assessment

Feather River Basin (CA)

GS landforms
 . structural basins
 . . river basins
 . . . **Feather River Basin (CA)**
 RT California
 rivers

feathering

RT propeller blades
 propellers

feature extraction

USE **pattern recognition**

Feature Identification and Location Experiment

SN (FEATURE IDENTIFICATION AND LOCATION EXPERIMENT)
 RT Earth observations (from space)
 image processing
 pattern recognition
 remote sensing
 remote sensors
 scene analysis

Space Shuttle payloads

feces

GS wastes
 . metabolic wastes
 . . human wastes
 . . . **feces**
 RT excretion
 perspiration
 urine

federal budgets

RT allocations
 appropriations
 ∞ budgets
 contracts
 cost estimates
 financial management
 government procurement
 procurement management

Federal Republic of Germany

USE **West Germany**

federations

GS organizations
 . **federations**
 . . bureaus (organizations)
 RT institutions
 international cooperation
 nations
 teams
 unionization
 United Nations

feed systems

RT cold flow tests
 feeding (supplying)
 fuel tanks
 intake systems
 pumps
 ∞ systems

feedback

DEF The return of a portion of the output of a device to the input; positive feedback adds to the input, negative feedback subtracts from the input. Information such as progress or results, returned to an originating source. In aeronautics, the transmittal of forces initiated by aerodynamic action on control surfaces or rotor blades to the cockpit controls; the forces so transmitted.

GS **feedback**

. biofeedback
 . . sensory feedback
 . negative feedback
 . nonlinear feedback
 . positive feedback

RT compensators
 complexity
 control theory
 cybernetics
 electromagnetic interference
 emotional factors
 oscillations
 oscillators
 screech tones
 ∞ systems
 transfer functions

feedback amplifiers

GS amplifiers
 . **feedback amplifiers**
 RT distributed feedback lasers
 nonlinear feedback
 operational amplifiers
 oscillators
 phantastrons
 positive feedback
 power amplifiers
 self oscillation
 servoamplifiers
 transistor amplifiers

feedback circuits

voltage amplifiers

feedback circuits

GS circuits
 . **feedback circuits**
 RT feedforward control
 transfer functions

feedback control

DEF A control system in which the controlled quantity is measured and compared with a standard representing the desired performance. Any deviation from the standard is fed back into the control system in such a sense that it will reduce the deviation of the controlled quantity from the standard.

UF *closed loop systems*

GS automatic control
 . **feedback control**
 . . cascade control

RT adaptive control
 adaptive optics
 automatic frequency control
 automatic gain control
 ∞ automation
 biofeedback
 ∞ control
 control equipment
 control systems design
 control theory
 distributed feedback lasers
 dynamic control
 electronic control
 H-2 control
 H-infinity control
 inverse kinematics
 Kalman-Schmidt filtering
 linear parameter-varying control
 linear quadratic Gaussian control
 linear quadratic regulator
 loop transfer functions
 loop transfer recovery
 machine learning
 MIMO (control systems)
 model reference adaptive control
 multivariable control
 negative feedback
 nonlinear feedback
 observability (systems)
 optical control
 optimal control
 proportional control
 robot control
 robustness (mathematics)
 sampled data systems
 servocontrol
 servomechanisms
 SISO (control systems)
 stability augmentation
 Terminal Configured Vehicle Program
 tracking problem

feedback frequency modulation

UF *FBFM (modulation)*
 GS coding
 . signal encoding
 . . frequency modulation
 . . . **feedback frequency modulation**
 modulation
 . frequency modulation
 . . **feedback frequency modulation**
 RT phase locked systems

feeders

SN (FOR FLUID AND PARTICULATE MATERIALS)
 RT conveyors
 dispensers
 distributors
 feeding (supplying)
 fuel systems
 injectors
 intake systems
 loading operations
 materials handling

mixers

feedforward control

GS automatic control
 . **feedforward control**
 RT adaptive control
 ∞ automation
 ∞ control
 control theory
 feedback circuits
 model reference adaptive control
 optimal control

feeding (supplying)

RT feed systems
 feeders
 injection
 input
 ∞ loading
 materials handling

feelings

USE **sensory feedback**

feet (anatomy)

DEF The lower, pedal extremities of the legs.

GS anatomy
 . limbs (anatomy)
 . . leg (anatomy)
 . . . **feet (anatomy)**
 appendages
 . leg (anatomy)
 . . **feet (anatomy)**

feldspars

DEF A group of abundant rock-forming minerals of the family of anhydrous silicates.

GS aluminum compounds
 . **feldspars**
 minerals
 . **feldspars**
 silicon compounds
 . silicates
 . . **feldspars**
 RT andesite
 anorthosite
 felsite
 igneous rocks

Fellowship aircraft

USE **F-28 transport aircraft**

felsite

DEF A light colored, fine grained igneous rock composed chiefly of quartz or feldspar.

GS rocks
 . igneous rocks
 . . **felsite**
 RT feldspars
 minerals
 quartz

felts

GS fabrics
 . **felts**
 RT wool

females

UF *women*
 RT children
 gynecology
 human beings
 males
 menstruation
 sex
 sex factor

femur

GS anatomy
 . musculoskeletal system
 . . bones
 . . . **femur**
 RT knee (anatomy)

leg (anatomy)

∞ fences

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT airfoil fences
 fences (barriers)
 tracking stations

fences (barriers)

RT ∞ barriers
 boundaries
 ∞ fences
 gates (openings)

Fermat principle

DEF The principle which states that the path along which electromagnetic radiation travels between any two points will be that path for which the elapsed time for the travel is a minimum.

RT electromagnetic wave transmission
 light transmission
 multipath transmission
 optical thickness
 velocity

fermentation

GS chemical reactions
 . **fermentation**
 metabolism
 . enzyme activity
 . . **fermentation**
 RT bioconversion
 butyric acid

Fermi liquids

GS liquids
 . cryogenic fluids
 . . **Fermi liquids**
 RT cryogenics
 electronic structure

Fermi surfaces

RT Brillouin zones
 cyclotron resonance
 energy levels
 magnetoresistivity
 ∞ surfaces
 transition probabilities

Fermi-Dirac statistics

DEF The statistics of an assembly of identical half-integer spin particles; such particles have wave functions antisymmetrical with respect to particle interchange and satisfy the Pauli exclusion principle.

RT bosons
 degenerate matter
 fermions
 quantum mechanics
 quantum statistics
 ∞ statistics

fermions

GS particles
 . elementary particles
 . . **fermions**
 . . . baryons
 hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 eta-mesons
 . . . leptons
 antineutrinos
 electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons

- pi-electrons
 - polarons
 - solar electrons
 - muons
 - neutrinos
 - solar neutrinos
 - positrons
 - meson resonance
 - X mesons
 - neutrons
 - cold neutrons
 - fast neutrons
 - photoneutrons
 - solar neutrons
 - thermal neutrons
 - protons
 - recoil protons
 - solar protons
 - RT Fermi-Dirac statistics
 - heavy fermion systems
 - particle decay
 - Pauli exclusion principle
 - quantum statistics
 - supersymmetry
- fermium**
- GS chemical elements
 - actinide series
 - transuranium elements
 - fermium**
 - nuclides
 - isotopes
 - radioactive isotopes
 - transuranium elements
 - fermium**
 - metals
 - actinide series
 - transuranium elements
 - fermium**
- Ferranti Mercury computer**
- GS data processing equipment
 - computers
 - digital computers
 - Ferranti Mercury computer**
- ferrates**
- GS iron compounds
 - ferrates**
 - barium ferrates
- ferric ions**
- GS ions
 - metal ions
 - ferric ions**
 - RT iron
- ferrimagnetic materials**
- GS magnetic materials
 - ferrimagnetic materials**
 - RT ferromagnetic materials
 - ∞ materials
- ferrimagnetism**
- GS magnetic properties
 - ferrimagnetism**
 - RT ferrimagnets
 - magnons
- ferrimagnets**
- GS magnets
 - ferrimagnets**
 - RT ferrimagnetism
 - permanent magnets
- ferrites**
- DEF Solid solutions of carbon in alpha-iron.
 - GS iron compounds
 - ferrites**
 - RT austenite
 - ferritic stainless steels
 - gadolinium-gallium garnet
 - gyrators
 - iron alloys
 - magnetic cores
 - microstructure
- pearlite
 - spinel
 - steels
 - yttrium-aluminum garnet
 - yttrium-iron garnet
- ferritic stainless steels**
- GS alloys
 - iron alloys
 - steels
 - stainless steels
 - ferritic stainless steels**
 - RT chromium steels
 - ferrites
 - heat treatment
 - magnetic properties
 - mechanical properties
- ferroalloys*
- USE **iron alloys**
- ferrocenes**
- GS iron compounds
 - ferrocenes**
 - alkylferrocene
 - organometallic compounds
 - ferrocenes**
 - alkylferrocene
- ferroelastic materials**
- (added June 1998)*
- GS **ferroelastic materials**
 - shape memory alloys
 - nitinol alloys
 - RT ceramics
 - ferroelasticity
 - ferroelectric materials
 - ∞ materials
 - smart materials
- ferroelasticity**
- (added June 1998)*
- GS mechanical properties
 - elastic properties
 - ferroelasticity**
 - RT crystal structure
 - domain wall
 - ferroelastic materials
 - ferroelectricity
 - phase transformations
 - shape memory alloys
 - smart materials
- ferroelectric materials**
- (added March 1997)*
- RT barium titanates
 - ceramics
 - ferroelastic materials
 - ferroelectricity
 - ferromagnetic materials
 - lead zirconate titanates
 - liquid crystals
 - ∞ materials
 - ∞ polymers
 - smart materials
 - thin films
- ferroelectricity**
- GS electrical properties
 - ferroelectricity**
 - RT antiferroelectricity
 - Curie temperature
 - dielectric properties
 - ferroelasticity
 - ferroelectric materials
 - microwave switching
- ferrofluids**
- GS liquids
 - ferrofluids**
 - magnetic materials
 - ferromagnetic materials
 - ferrofluids**
 - RT dispersions
 - ∞ fluids
 - magnetorheological fluids
- microparticles
 - suspending (mixing)
 - ∞ suspensions
 - working fluids
- ferrography**
- DEF A technique for the isolation and analysis of wear particles in a lubricant.
 - RT fatigue tests
 - metallography
 - wear tests
- ferromagnetic films**
- GS magnetic materials
 - ferromagnetic materials
 - ferromagnetic films**
 - thin films
 - ferromagnetic films**
- ferromagnetic materials**
- GS magnetic materials
 - ferromagnetic materials**
 - ferrofluids
 - ferromagnetic films
 - magnetite
 - Permalloys (trademark)
 - RT ferrimagnetic materials
 - ferroelectric materials
 - magnetorheological fluids
 - magnets
 - ∞ materials
 - permanent magnets
 - smart materials
 - yokes
- ferromagnetic resonance**
- GS resonance
 - magnetic resonance
 - ferromagnetic resonance**
 - RT magnetic fields
 - paramagnetic resonance
- ferromagnetism**
- GS magnetic properties
 - ferromagnetism**
 - RT antiferromagnetism
 - Curie temperature
 - Curie-Weiss law
 - diamagnetism
 - Ising model
 - Langevin formula
 - magnetic cores
 - magnetic dispersion
 - magnets
 - magnons
- ferrous metals**
- GS metals
 - ferrous metals**
 - RT alloys
 - chemical elements
 - iron
 - iron isotopes
 - ∞ metallurgy
- ferry spacecraft**
- UF *space buses*
 - GS maneuverable spacecraft
 - ferry spacecraft**
 - manned spacecraft
 - ferry spacecraft**
 - RT Astro vehicle
 - cargo spacecraft
 - Columbus space station
 - MARS (Manned Reusable Spacecraft)
 - reentry vehicles
 - rendezvous spacecraft
 - reusable spacecraft
 - soft landing spacecraft
 - space stations
- fertility**
- RT breeding (reproduction)
 - fertilization
 - reproduction (biology)

fertilization

reproductive systems

fertilization

RT birth
fertility
in vitro methods and tests
recombination reactions
∞ reproduction
spermatozoa

fertilizers

RT ammonia
ammonium nitrates
ashes
cultivation
planting
ureas
vegetation growth

FET (*transistors*)

USE **field effect transistors**

fetuses

UF *foetuses*
RT birth
eggs
embryology
embryos
reproduction (biology)
reproductive systems

fever

RT body temperature
hyperthermia
skin temperature (biology)

Feynman diagrams

GS diagrams
. **Feynman diagrams**
RT electromagnetic interactions
Minkowski space
particle interactions
quantum electrodynamics

FFAR *rocket vehicle*

USE **Folding Fin aircraft rocket vehicle**

FFT

USE **fast Fourier transformations**

FGM (*materials*)

USE **functionally gradient materials**

FH-1100 *helicopter*

USE **OH-5 helicopter**

Fiat aircraft

GS **Fiat aircraft**
. G-91 aircraft
. G-95/4 aircraft
. G-222 aircraft
RT ∞ aircraft

Fiat G-91 aircraft

USE **G-91 aircraft**

Fiat G-95/4 aircraft

USE **G-95/4 aircraft**

Fiat G-222 aircraft

USE **G-222 aircraft**

fiber bridging

USE **crack bridging**

fiber composites

DEF Structural materials consisting of combinations of metals or alloys or plastics reinforced with one or more types of fibers.

GS composite materials
. **fiber composites**
. . . aramid fiber composites
. . . braided composites
. . . carbon fiber reinforced plastics
. . . carbon-phenolic composites

. . . glass fiber reinforced plastics
. . . woven composites
RT aluminum boron composites
aluminum graphite composites
aramid fibers
boron fibers
boron reinforced materials
boron-epoxy composites
Borsic (tradename)
carbon fibers
carbon-carbon composites
ceramic fibers
chemical vapor infiltration
composite wrapping
crack bridging
debonding (materials)
fiber pullout
fiber pushout
fiber volume fraction
fiber-matrix interfaces
filament winding
functionally gradient materials
graphite
graphite-epoxy composites
hybrid composites
kink bands
kinking
laminates
matrix materials
metal fibers
metal matrix composites
micarta
polymer matrix composites
pultrusion
reinforced plastics
reinforcing fibers
reinforcing materials
resin transfer molding
sheet molding compounds
stacking sequence (composite materials)
superhybrid materials
three dimensional composites

fiber lasers

(*added October 1997*)

GS electronic equipment
. solid state devices
. . . solid state lasers
. . . **fiber lasers**
stimulated emission devices
. lasers
. . . solid state lasers
. . . **fiber lasers**
. . . waveguide lasers
. . . **fiber lasers**

RT

fiber optics
laser materials
laser pumping
light amplifiers
optical fibers
optical pumping
semiconductor lasers

fiber optics

DEF The technique of transmitting light through long thin, flexible fibers of glass, plastic, or other transparent materials.

RT Cassegrain optics
crystal optics
electron tubes
evanescent waves
fiber lasers
fly by light control
geometrical optics
gradient index optics
light emitting diodes
light transmission
numerical aperture
optical fibers
∞ optics
∞ optoelectronic devices
photonics
physical optics
plastic fibers
Sagnac effect
scintillating fibers

smart structures
vidicons

fiber orientation

RT aramid fibers
boron fibers
ceramic fibers
composite materials
dynamic response
epoxy matrix composites
fiber volume fraction
glass fiber reinforced plastics
impact loads
lay-up
mechanical properties
∞ orientation
reinforcing fibers
stacking sequence (composite materials)

fiber pullout

UF *fiber release*
GS releasing
. **fiber pullout**
RT adhesive bonding
carbon fibers
ceramic matrix composites
composite materials
failure analysis
fiber composites
fiber pushout
fibers
interfacial energy
∞ materials tests
metal matrix composites
reinforcing fibers

fiber pushout

(*added September 1999*)

GS releasing
. **fiber pushout**
RT ceramic matrix composites
composite materials
debonding (materials)
destructive tests
failure modes
fiber composites
fiber pullout
fiber-matrix interfaces
fibers
interfacial energy
∞ materials tests
metal matrix composites
reinforcing fibers

fiber release

USE **fiber pullout**

fiber strength

GS mechanical properties
. **fiber strength**
RT aramid fibers
bending
boron fibers
ceramic fibers
compressive strength
fiber volume fraction
Hookes law
Poisson ratio
shear strength
∞ strength
tensile strength

fiber volume fraction

(*added April 1992*)

GS composition (property)
. concentration (composition)
. . . **fiber volume fraction**
ratios
. **fiber volume fraction**
RT composite materials
fiber composites
fiber orientation
fiber strength

- reinforcing fibers
- fiberboard**
USE **boards (paper)**
- fiberglass**
USE **glass fibers**
- fiber-matrix interfaces**
(added July 1994)
GS interfaces
 . **fiber-matrix interfaces**
RT composite materials
 fiber composites
 fiber pushout
 interfacial energy
 matrix materials
 reinforcing fibers
- fibers**
UF *fibrous materials*
 Refrasil (trademark)
GS **fibers**
 . cotton fibers
 . hair
 . linen
 . metal fibers
 . microfibers
 . optical fibers
 . . . scintillating fibers
 . plastic fibers
 . reinforcing fibers
 . . . aramid fibers
 . . . Kevlar (trademark)
 . . . boron fibers
 . . . carbon fibers
 . . . silk
 . synthetic fibers
 . . . aramid fibers
 . . . Kevlar (trademark)
 . . . ceramic fibers
 . . . Dacron (trademark)
 . . . Fortisan (trademark)
 . . . glass fibers
 . . . Nylon (trademark)
 . . . rayon
 . . . Vycor
 . wool
RT boron reinforced materials
 carbon fiber reinforced plastics
 composite materials
 cordage
 cotton
 fabrics
 fiber pullout
 fiber pushout
∞ filaments
 glass fiber reinforced plastics
 metal matrix composites
 netting (materials/structures)
 papers
 polymeric films
 reinforcing materials
 slivers
 strands
 textiles
 wet spinning
 whiskers (crystals)
 yarns
- fibers (mathematics)**
RT canonical forms
 dimensional analysis
 function space
 group theory
 homotopy theory
 manifolds (mathematics)
 topology
- Fibonacci numbers**
RT number theory
∞ numbers
 set theory
- fibriation**
GS heart function
- . **fibriation**
RT heart diseases
 muscles
 seismocardiography
- fibrin**
GS biopolymers
 . proteins
 . . **fibrin**
 body fluids
 . blood
 . . **fibrin**
 organic compounds
 . proteins
 . . **fibrin**
RT blood coagulation
 coagulation
 fibrinogen
 thrombin
- fibrinogen**
GS biopolymers
 . proteins
 . . globulins
 . . . **fibrinogen**
 body fluids
 . blood
 . . **fibrinogen**
 organic compounds
 . proteins
 . . globulins
 . . . **fibrinogen**
RT fibrin
 hemostatics
 homeostasis
 thrombin
- fibroblasts**
GS cells (biology)
 . **fibroblasts**
RT cytoplasm
 osteoblasts
 tendons
 tissues (biology)
- fibrosis**
GS diseases
 . **fibrosis**
 . . cystic fibrosis
RT tissues (biology)
- fibrous materials*
USE **fibers**
- Ficks equation**
RT diffusion
 diffusion coefficient
∞ equations
 reaction-diffusion equations
 Tafel law
- fidelity*
USE **accuracy**
- fiduciaries**
RT economics
 finance
 management
- field aligned currents**
(added September 1988)
DEF Electric currents aligned along magnetic fields.
GS electric current
 . **field aligned currents**
 . . Birkeland currents
RT aeronomy
 atmospheric electricity
 Earth ionosphere
 Earth magnetosphere
 geoelectricity
 geomagnetic tail
 geomagnetism
 geophysics
 ionospheric currents
 lines of force
- magnetic field reconnection
Pedersen currents
plasma currents
telluric currents
upper atmosphere
- field army ballistic missiles**
GS missiles
 . ballistic missiles
 . . **field army ballistic missiles**
RT intermediate range ballistic missiles
 short range ballistic missiles
- field coils**
GS electric coils
 . magnetic coils
 . . **field coils**
RT electromagnets
 helical inducers
 magnet coils
- field effect transistors**
UF *cascode MOSFET*
 FET (transistors)
 IGFET
 MESFETs
 MISFETs
 MOSFET
 unipolar transistors
GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . transistors
 **field effect transistors**
 charge flow devices
 JFET
 MODFETS
RT cascode devices
∞ effects
 high electron mobility transistors
 indium aluminum arsenides
 ion implantation
 SOI (semiconductors)
- field emission**
GS emission
 . particle emission
 . . electron emission
 . . . **field emission**
RT electric fields
 electron microscopes
 electron microscopy
 magnetic fields
 scanning electron microscopy
 secondary emission
 transmission electron microscopy
 Zener effect
- field intensity meters**
SN (EMPLOY THIS TERM WHEN TYPE OF FIELD INVOLVED IS NOT SPECIFIED—OTHERWISE USE A MORE SPECIFIC TERM)
GS measuring instruments
 . **field intensity meters**
RT actinometers
 flux density
 magnetometers
 noise meters
- field mode theory**
RT cavity resonators
 dielectrics
 electromagnetic fields
 laser modes
 optical resonators
 propagation modes
∞ theories
- field of view**
DEF The area or solid angle that can be viewed through or scanned by an optical instrument.
GS viewing
 . **field of view**
RT bearing (direction)
 conical scanning

field strength

- elevation angle
- ∞ fields
- look angles (tracking)
- visual fields

field sails

USE **magnetic sails**

field strength

DEF For any physical field, the flux density, intensity, or gradient of the field at the point in question.

- GS **field strength**
 - . electric field strength
 - . magnetic flux
- RT acoustic properties
- directivity
- electric fields
- electrical properties
- electromagnetic fields
- flux density
- gravitational fields
- isotropy
- magnetic diffusion
- magnetic fields
- magnetic properties
- ∞ orientation
- permittivity
- ∞ strength

field tests

(added November 1998)

- SN (EXCLUDES TESTS OF ELECTRIC, MAGNETIC, OR ELECTROMAGNETIC FIELDS)
- DEF Tests carried out in the actual setting in which the subject device is intended to operate.
- RT environmental tests
- performance tests
- ∞ tests

field theory (algebra)

- GS **field theory (algebra)**
 - . cubic equations
 - . quadratic equations
- RT ∞ fields
- Green's functions
- homomorphisms
- nonlinear equations
- ∞ theories

field theory (physics)

- UF *ambit*
- force fields*
- Wightman theory*
- GS **field theory (physics)**
 - . crystal field theory
 - . gauge theory
 - . . quantum chromodynamics
 - . . unified field theory
 - . . . electroweak model
 - . . . standard model (particle physics)
 - . grand unified theory
- RT antenna radiation patterns
- attraction
- boson fields
- closure law
- crossed fields
- Dirac equation
- distribution (property)
- ∞ dynamics
- electromagnetic fields
- far fields
- ∞ fields
- flow distribution
- flux (rate)
- flux density
- function space
- geomagnetism
- gravitational fields
- Green's functions
- light-cone expansion
- magnetic field inversions
- magnetic fields
- magnetostatic fields
- many body problem
- multipolar fields

- nuclear physics
- null zones
- ∞ physics
- Pomeranchuk theorem
- potential fields
- pressure distribution
- quantum electrodynamics
- quantum theory
- radiation distribution
- relativity
- self consistent fields
- sound fields
- string theory
- strong interactions (field theory)
- supergravity
- supersymmetry
- temperature distribution
- tensors
- ∞ theories
- traveling charge
- weak interactions (field theory)
- Yang-Mills fields
- Yang-Mills theory
- zero point energy

field-programmable gate arrays

(added April 2000)

- GS circuits
 - . gates (circuits)
 - . . **field-programmable gate arrays**
 - . integrated circuits
 - . . **field-programmable gate arrays**
 - reconfigurable hardware
 - . programmable logic devices
 - . . **field-programmable gate arrays**
- RT evolvable hardware
- ∞ fields
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boson fields
- electric fields
- field of view
- field theory (algebra)
- field theory (physics)
- gravitational fields
- magnetic fields
- military air facilities
- self consistent fields
- visual fields

fighter aircraft

- UF *Interceptor aircraft*
- GS attack aircraft
- . **fighter aircraft**
 - . . Alpha jet aircraft
 - . . DH 112 aircraft
 - . . F-2 aircraft
 - . . F-4 aircraft
 - . . F-5 aircraft
 - . . F-8 aircraft
 - . . F-9 aircraft
 - . . F-14 aircraft
 - . . F-15 aircraft
 - . . F-16 aircraft
 - . . F-17 aircraft
 - . . F-18 aircraft
 - . . F-20 aircraft
 - . . F-22 aircraft
 - . . F-84 aircraft
 - . . F-86 aircraft
 - . . F-89 aircraft
 - . . F-94 aircraft
 - . . F-100 aircraft
 - . . F-101 aircraft
 - . . F-102 aircraft
 - . . F-104 aircraft
 - . . F-105 aircraft
 - . . F-106 aircraft
 - . . F-117A aircraft
 - . . FV-12A aircraft
 - . . G-91 aircraft
 - . . G-95/4 aircraft
 - . . GA-5 aircraft
 - . . Harrier aircraft
 - . . Jaguar aircraft

- . . JAS-39 aircraft
- . . jet provost aircraft
- . . MiG aircraft
- . . Mirage aircraft
- . . . Mirage 3 aircraft
- . . P-51 aircraft
- . . P-1127 aircraft
- . . P-1154 aircraft
- . . Saab 37 aircraft
- . . Scimitar aircraft
- . . Vampire MK 35 aircraft
- . . YF-12 aircraft

- RT ∞ aircraft
- highly maneuverable aircraft
- ∞ interceptors
- jet aircraft
- ∞ military aircraft
- ∞ military aviation
- MRCA aircraft
- single engine aircraft
- STOVL aircraft
- supersonic aircraft
- training aircraft
- V/STOL aircraft
- X-31 aircraft

figure of merit

- RT acceptability
- ∞ analyzing
- criteria
- efficiency
- evaluation
- modulation transfer function
- optical transfer function
- ∞ performance
- Q factors
- quality
- selection
- value

filament winding

- UF *filament wound construction*
- GS winding
- . **filament winding**
- RT ceramic fibers
- composite wrapping
- fiber composites
- isotensoid structures
- laminates
- metal fibers
- netting (materials/structures)
- preimpregnation

filament wound construction

USE **filament winding**

∞ filaments

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boron fibers
- carbon fibers
- cathodes
- ceramic fibers
- cordage
- fibers
- ionizers
- reinforcing materials
- resistors
- strands
- vortex filaments
- wet spinning
- whiskers (crystals)
- wire

filaments (solar physics)

USE **solar prominences**

file maintenance (computers)

- GS maintenance
- . **file maintenance (computers)**
- RT checkout
- computer programming
- computers
- program verification (computers)
- programmers

- ∞ programming
- ∞ **files**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT document storage files (tools)
- files (tools)**
 - GS tools
 - . **files (tools)**
 - RT abrasion
 - ∞ files
 - scrapers
- fillers**
 - RT additives
 - ∞ cells
 - dopes
 - opacifiers
 - paints
 - pigments
 - primers (coatings)
 - reinforcement (structures)
 - resins
 - sealers
 - sizing materials
 - varnishes
- fillets**
 - RT fairings
 - joints (junctions)
 - seams (joints)
 - welding
- filling**
 - GS **filling**
 - . refilling
 - RT accumulations
 - ∞ charging
 - extensions
 - injection
 - input
 - ∞ loading
 - replenishment
 - supplying
- film boiling**
 - GS phase transformations
 - . vaporizing
 - . . boiling
 - . . . **film boiling**
 - RT heat transfer
 - Leidenfrost phenomenon
 - nucleate boiling
- film condensation**
 - GS condensing
 - . **film condensation**
 - RT condensers (liquefiers)
 - cooling
 - heat transfer
- film cooling**
 - DEF The cooling of a body or surface, such as the inner surface of a rocket combustion chamber, by maintaining a thin fluid layer over the affected area.
 - GS cooling
 - . evaporative cooling
 - . . **film cooling**
 - . liquid cooling
 - . . **film cooling**
 - RT liquid injection
 - surface cooling
 - sweat cooling
- film thickness**
 - GS dimensions
 - . **film thickness**
 - RT ellipsometry
- thickness
- ∞ **films**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT biofilms
 - coatings
 - corrosion prevention
 - electrode film barriers
 - fabrics
 - fluid films
 - helium film
 - Kapton (trademark)
 - laminates
 - Langmuir-Blodgett films
 - magnetic films
 - membranes
 - metal films
 - monomolecular films
 - oxide films
 - papers
 - photographic film
 - polymeric films
 - semiconducting films
 - silicon films
 - squeeze films
 - superconducting films
 - thermoplastic films
 - thick films
 - thin films
 - video tapes
 - webs (sheets)
- filter wheel infrared spectrometers**
 - GS measuring instruments
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - . radiation measuring instruments
 - . . actinometers
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . . infrared instruments
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . spectrometers
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - optical equipment
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - RT Ebert spectrometers
 - ∞ filters
 - infrared spectrophotometers
 - solar spectrometers
- filtergrams**
 - RT optical filters
 - solar instruments
 - solar physics
 - solar spectra
- filtering*
- USE **filtration**
- ∞ **filters**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT absorbers (materials)
 - adaptive filters
 - air filters
 - attenuators
 - bandpass filters
 - bandstop filters
 - birefringent filters
 - crystal filters
 - digital filters
 - electric filters
 - electromagnetic wave filters
 - electronic filters
- filter wheel infrared spectrometers
 - FIR filters
 - fluid filters
 - Gabor filters
 - high pass filters
 - image filters
 - Kalman filters
 - linear filters
 - low pass filters
 - matched filters
 - monochromatic radiation
 - nonlinear filters
 - optical filters
 - radar filters
 - radio filters
 - reduced order filters
 - separators
 - spatial filtering
 - tunable filters
- filtration**
 - UF *filtering*
 - GS **filtration**
 - . spatial filtering
 - RT activated carbon
 - beds (process engineering)
 - beneficiation
 - concentrating
 - ∞ concentration
 - ∞ concentrators
 - effluents
 - extraction
 - fluid filters
 - hydrometallurgy
 - materials recovery
 - percolation
 - precipitation (chemistry)
 - ∞ screening
 - ∞ separation
 - sewage treatment
 - size separation
 - water treatment
- finance**
 - RT accounting
 - commerce
 - fiduciaries
 - gross national product
 - investments
 - management planning
 - marketing
 - risk
 - wage surveys
- financial management**
 - GS management
 - . **financial management**
 - RT aircraft production costs
 - allocations
 - budgeting
 - cost analysis
 - cost estimates
 - costs
 - economy
 - federal budgets
 - launch costs
 - life cycle costs
 - procurement management
- ∞ **fine**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT fine structure
 - fineness
 - fineness ratio
 - finis
- fine structure**
 - UF *multiplets*
 - RT alpha decay
 - atomic structure
 - ∞ fine
 - hyperfine structure
 - line spectra
 - spectral energy distribution

∞ structures

fineness

- RT coarseness
- ∞ fine
- fineness ratio
- particle size distribution
- purity
- quality
- size (dimensions)
- textures

fineness ratio

DEF The ratio of the length of a body to its maximum diameter or to some equivalent dimension -- said especially of a body such as an airship hull or rocket.

- GS ratios
 - . aspect ratio
 - . . **fineness ratio**
- RT dimensional analysis
- dimensions
- ∞ fine
- fineness
- oblate spheroids
- shape optimization
- slender bodies
- thickness ratio

finest

- GS particles
 - . powder (particles)
 - . . **finest**
- RT ∞ fine
- ∞ flour
- fractions
- particle size distribution
- ∞ screening

fingers

- GS anatomy
 - . limbs (anatomy)
 - . . hand (anatomy)
 - . . . **fingers**
 - appendages
 - . hand (anatomy)
 - . . **fingers**
- RT sense organs

fingers (robotics)

USE **end effectors**

finishes

- GS **finishes**
 - . enamels
 - . glazes
 - . lacquers
- RT ceramic coatings
- coatings
- corrosion
- dopes
- impregnating
- luster
- machining
- metallizing
- paints
- plating
- polishing
- primers (coatings)
- protective coatings
- sizing (surface treatment)
- sprayed coatings
- surface finishing
- surface properties
- varnishes
- veneers
- waxes

finite difference theory

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite difference theory**
 - finite difference time domain method
- RT Crank-Nicholson method

- difference equations
- differences
- essentially non-oscillatory schemes
- extrapolation
- flux difference splitting
- flux vector splitting
- Godunov method
- grid generation (mathematics)
- interpolation
- multigrid methods
- perfectly matched layers
- significance
- ∞ theories
 - time marching
 - TVD schemes
 - upwind schemes (mathematics)
 - vortex in cell technique

finite difference time domain method

- (added April 1999)
- UF *FDTD (mathematics)*
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . finite difference theory
 - **finite difference time domain method**
 - time domain analysis
 - **finite difference time domain method**
- RT computational electromagnetics
- electromagnetic scattering

finite element method

- UF *hybrid-Trefftz finite element method*
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite element method**
 - procedures
 - . **finite element method**
- RT ∞ applications of mathematics
- boundary value problems
- Cholesky factorization
- computational fluid dynamics
- conjugates
- Crank-Nicholson method
- factorization
- fracture mechanics
- grid generation (mathematics)
- isoparametric finite elements
- iterative solution
- matrices (mathematics)
- ∞ methodology
 - Mindlin plates
 - minimal surfaces
 - multigrid methods
 - NASTRAN
 - panel method (fluid dynamics)
 - patch tests
 - perfectly matched layers
 - shape functions
 - solid mechanics
 - Trefftz method
 - unstructured grids (mathematics)

finite impulse response filters

USE **FIR filters**

finite volume method

- DEF A moving mesh method for analyzing transonic flow over airfoils.
- GS analysis (mathematics)
 - . numerical analysis
 - . . **finite volume method**
 - . . . Godunov method
 - procedures
 - . **finite volume method**
 - . . Godunov method
- RT boundary value problems
- ∞ methodology
 - TVD schemes

unstructured grids (mathematics)

finite-state machines

USE **Turing machines**

Finland

- GS nations
 - . **Finland**
- RT Europe
 - Finnish space program
 - Scandinavia

finned bodies

- RT aerodynamic configurations
- ∞ bodies
 - bodies of revolution
 - cooling fins
 - fins
 - heat exchangers
 - missile bodies
 - nose fins
 - projectiles
 - symmetrical bodies

Finnish space program

- (added November 1990)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Finnish space program**
- RT Finland

fins

DEF Fixed or adjustable airfoils or vanes attached longitudinally to an aircraft, rocket, or a similar body to provide a stabilizing effect. Also, a flat plate of structure, as a cooling fin. Used for vertical fins.

- UF *vertical fins*
- GS **fins**
 - . cooling fins
 - . nose fins
- RT aerial rudders
- airfoils
- airframes
- ∞ blades
 - control surfaces
 - finned bodies
 - hydrofoils
 - missile components
 - rudders
 - sails
 - stabilizers (fluid dynamics)
 - tail assemblies
 - vanes
 - winglets

fiords

DEF Arms of the sea having steep sides, deep bottoms, and shallow sills separating them from the sea.

- GS landforms
 - . **fiords**
- RT cliffs
- geology
- inlets (topography)
- Norway
- oceanography
- water

FIR filters

DEF Physically unrealizable nonrecursive digital filters. Used for finite impulse response filters.

- UF *finite impulse response filters*
- GS electromagnetic wave filters
 - . electric filters
 - . . digital filters
 - . . . **FIR filters**
- RT bandpass filters
- electronic filters
- ∞ filters
 - IIR filters
 - microwave filters
 - radar filters

recursive functions

FIRE (climatology)

(added August 1991)

UF *First ISCCP Regional Experiment*

GS programs

. projects

. . FIRE (climatology)

RT climatology

cloud cover

clouds (meteorology)

remote sensing

satellite observation

fire control

SN (LIMITED TO CONTROL OF THE FIRING OF WEAPONS--EXCLUDES FIRE PREVENTION AND FIRE FIGHTING)

RT bombing equipment

∞ control

firing (igniting)

gunfire

gunnery training

range finders

weapon systems

weapons

fire control circuits

GS circuits

. fire control circuits

RT ∞ control

fire damage

GS damage

. fire damage

RT ashes

charring

combustion

fires

flames

fumes

smoke

soot

fire extinguishers

UF *chemical extinguishers*

extinguishers

RT fire fighting

fire prevention

firebreaks

fires

flammability

foams

halon

fire fighting

SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)

RT breathing apparatus

fire extinguishers

fire prevention

firebreaks

fires

flammability

foams

fire point

RT flammability

flash point

spontaneous combustion

fire prevention

SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)

GS prevention

. fire prevention

RT accident prevention

explosion suppression

fire extinguishers

fire fighting

firebreaks

fireproofing

fires

flame retardants

forest fires

high pressure oxygen

safety

safety devices

safety management

smoke detectors

spontaneous combustion

warning

warning systems

fire resistance

USE **flammability**

fire retardants

USE **flame retardants**

∞ **fireballs**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bolides

nuclear explosions

Firebee 2 target drone aircraft

GS drone vehicles

. drone aircraft

. . target drone aircraft

. . . **Firebee 2 target drone aircraft**

light aircraft

. **Firebee 2 target drone aircraft**

pilotless aircraft

. drone aircraft

. . target drone aircraft

. . . **Firebee 2 target drone aircraft**

research vehicles

. research aircraft

. . **Firebee 2 target drone aircraft**

Ryan aircraft

. **Firebee 2 target drone aircraft**

supersonic aircraft

. **Firebee 2 target drone aircraft**

RT ∞ aircraft

∞ military aircraft

targets

∞ winged vehicles

firebreaks

GS clearings (openings)

. **firebreaks**

RT

combustion

conservation

fire extinguishers

fire fighting

fire prevention

fires

flames

forest fires

forests

fireflies

DEF Flying insects which produce light by bioluminescence.

GS animals

. invertebrates

. . arthropods

. . . insects

. . . . **fireflies**

fireproofing

RT fire prevention

nonflammable materials

safety

fires

GS **fires**

. forest fires

RT

accidents

backfire

burns (injuries)

combustion

control surfaces

deflagration

explosions

explosives

fire damage

fire extinguishers

fire fighting

fire prevention

firebreaks

firing (igniting)

flames

flashback

hazards

safety

Saint Elmo fire

smoldering

warning systems

firewalls (computers)

(added January 2003)

DEF Computers, routers, and/or communications devices that filter access to a protected network. They may also consist of a collaboration of such components geared toward protecting networks from intrusion from the Internet while allowing users inside the network access to services on the Internet, such as Web and e-mail services.

GS security

. computer security

. . **firewalls (computers)**

RT

access control

computer information security

computer networks

computer systems design

intrusion detection (computers)

fireworks

USE **pyrotechnics**

firing (igniting)

GS **firing (igniting)**

. rocket firing

. . retrofiring

. test firing

. . static firing

RT

burning time

detonable gas mixtures

detonation

drying

fire control

fires

flammable gases

gunfire

ignition

pulsejet engines

starting

firing time

USE **burning time**

firmware

DEF Hardwired software which often encompasses microcodes.

RT computer components

computer programming

∞ hardware

microprocessors

microprogramming

RISC processors

first aid

RT accidents

chemical defense

cures

disasters

kits

medical equipment

medical science

medical services

resuscitation

splints

stretchers

tourniquets

transfusion

First ISCCP Regional Experiment

USE **FIRE (climatology)**

Fischer-Tropsch process

RT catalysis

catalytic activity

reaction kinetics

synthesis (chemistry)

Fishbowl Operation

synthetic fuels

fish

USE **fishes**

Fishbowl Operation

RT high altitude tests
nuclear explosions
∞ operations
Vela satellites

fisheries

DEF Place for harvesting fish or other aquatic life, especially in sea waters.

RT aquaculture
estuaries
fishes
fishing
marine biology
marine resources
sea water
shallow water
tidal flats
wetlands

fishes

UF *fish*
GS animals
. vertebrates
. . . **fishes**
. . . schools (fish)
. . . sharks
RT aquaculture
Earth resources
fisheries
fishing
∞ food
∞ ichthyology
∞ nutrients
poikilothermia
red tide
squama
wildlife

fishing

(added November 1992)
RT fisheries
fishes
industries
schools (fish)

fishtailing

USE **yaw**

fissile fuels

GS fissionable materials
. **fissile fuels**
fuels
. nuclear fuels
. . . **fissile fuels**
RT fissium
gaseous fission reactors
nuclear fission
nuclear reactors
radioactive materials

fissile materials

USE **fissionable materials**

fission

DEF The splitting of an atomic nucleus into two more-or-less equal fragments.
RT blankets (fission reactors)
fuel production
nuclear fuels
splitting

fission electric cells

GS auxiliary power sources
. nuclear auxiliary power units
. . . SNAP
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A

. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. nuclear power reactors
. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
RT ∞ electric cells
radioisotope batteries
space power unit reactors

fission products

DEF The large variety of smaller atoms, including cesium and strontium, left over by the splitting of uranium and plutonium, usually caused by the absorption of a neutron.

GS products
. **fission products**
RT chain reactions (nuclear physics)
fallout
high energy interactions
nuclear fission
nuclear particles
nuclear pumping
nuclear radiation
radioactive materials
radioactive wastes
radioactivity

fission weapons

UF *atomic bombs*
GS weapons
. nuclear weapons
. . **fission weapons**
RT fallout
nuclear devices
thermonuclear explosions

fissionable materials

DEF Materials containing nuclides capable of undergoing fission only by fast neutrons with energy greater than 1MeV, e. g. , thorium-232 and uranium-238. Used for fissile materials.

UF *fissile materials*
GS **fissionable materials**
. fissile fuels
RT gaseous fission reactors
∞ materials
nozzle flow
nuclear fuels
plutonium
radioactive materials
uranium

fissium

GS fuels
. nuclear fuels
. . **fissium**

RT fissile fuels

fissures (geology)

DEF Extensive cracks in rocks.
RT folds (geology)
geological faults
structural properties (geology)
tectonics

fitness

GS **fitness**
. flight fitness
. physical fitness
RT qualifications

fitting

RT adaptation
adjusting
alignment
assembling
fittings
goodness of fit
interference fit
∞ joining
matching
positioning

fittings

RT accessories
adapters
closures
connectors
couplings
extensions
fasteners
fitting
inserts
joints (junctions)
linkages
sleeves
U bends
unions (connectors)

Fitzgerald-Lorentz contraction

USE **Lorentz contraction**

fix

USE **fixing**

fixed point arithmetic

GS number theory
. arithmetic
. . **fixed point arithmetic**
RT computer programs
computers
data processing

fixed points (mathematics)

DEF Positional notation in which corresponding places in different quantities are occupied by coefficients of the same power of the base. Notation in which the base point is assumed to remain fixed with respect to one end of the numeric expressions.

GS geometry
. Euclidean geometry
. . points (mathematics)
. . . **fixed points (mathematics)**
. topology
. . **fixed points (mathematics)**
RT manifolds (mathematics)
mapping

fixed wings

UF *fixed-wing aircraft*
GS airfoils
. wings
. . **fixed wings**
RT cambered wings
cruciform wings
flexible wings
low aspect ratio wings
rigid wings
slender wings
swept wings
thin wings

twisted wings
uncambered wings
unswept wings

fixed-wing aircraft

USE **aircraft configurations**
fixed wings

∞ **fixing**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *fix*
RT maintenance
navigation
position (location)
positioning

fixtures

RT brackets
∞ hardware
jigs
luminaires
tools

Fizeau effect

RT Doppler effect
Doppler-Fizeau effect
∞ effects

Flagellata

GS animals
. protozoa
. . . **Flagellata**
. . . . Euglena
. . . . trypanosome
microorganisms
. protozoa
. . . **Flagellata**
. . . . Euglena
. . . . trypanosome

flakes

GS particles
. **flakes**
RT flaking
metal powder
powder (particles)

flaking

RT atomizing
chipping
comminution
cutting
disintegration
flakes
fracturing
peeling
∞ separation
spalling
splitting
wear

flame calorimeters

GS measuring instruments
. calorimeters
. . . **flame calorimeters**
RT bomb calorimeters
drop calorimeters
heat measurement
high temperature tests
temperature measuring instruments

flame deflectors

DEF In a vertical launch, any of variously designed obstructions that intercept hot gases of rocket engines so as to deflect them away from the ground or from a structure. In captive tests, elbows in the exhaust conduits or flame buckets that deflect the flame into the open.

GS deflectors
. **flame deflectors**
RT backfire
baffles
blast deflectors
diverters

flashback
launching pads
safety devices
shielding
test stands

flame fronts

USE **flame propagation**

flame holders

GS holders
. **flame holders**
RT combustion chambers
dump combustors
flameout
flames

flame interaction

USE **chemical reactions**
flame propagation

flame ionization

GS ionization
. gas ionization
. . . **flame ionization**

flame plating

GS plating
. **flame plating**
RT coating
welding

flame probes

GS measuring instruments
. **flame probes**
RT gas analysis
manometers
temperature measuring instruments

flame propagation

UF *Chapman-Jouget flame*
combustion waves
flame fronts
flame interaction
GS propagation (extension)
. **flame propagation**
RT backfire
boundary layer combustion
burning rate
combustible flow
combustion
combustion physics
Damkohler number
detonation
detonation waves
explosions
flames
flammability
flashback
gas explosions
gas-metal interactions
ignition
premixed flames
pressure oscillations
pressure pulses
∞ propagation
reacting flow
turbulent combustion
turbulent flames

flame quenching

USE **extinguishing**
quenching (cooling)

flame retardants

UF *fire retardants*
GS retardants
. **flame retardants**
RT antimisting fuels
fabrics
fire prevention
flammability
halon
ignition limits
inorganic compounds
polybrominated biphenyls

synthetic fibers

flame spectroscopy

GS spectroscopy
. **flame spectroscopy**
spectrum analysis
. **flame spectroscopy**
RT emission spectra
gas spectroscopy
line spectra
optogalvanic spectroscopy
qualitative analysis
spectroscopic analysis

flame spraying

GS spraying
. **flame spraying**
. . . HVOF thermal spraying
RT coating
coatings
metal spraying
metallizing
plasma spraying

flame stability

GS dynamic characteristics
. dynamic stability
. . . combustion stability
. . . . **flame stability**
. . . . motion stability
. . . . flow stability
. **flame stability**
. . . . flow characteristics
. . . . flow stability
. . . . **flame stability**
stability
. dynamic stability
. . . combustion stability
. . . . **flame stability**
. . . . motion stability
. . . . flow stability
. **flame stability**
RT flameout
turbulent flames

flame temperature

GS temperature
. **flame temperature**
RT combustion chemistry
combustion temperature

flameout

DEF Unintended loss of combustion in turbine engines resulting in the loss of engine power.
UF *blowoff (combustion)*
GS extinguishing
. **flameout**
RT combustion
combustion chambers
flame holders
flame stability
gas turbine engines
jet engines

flames

UF *jet flames*
laminar flames
GS **flames**
. diffusion flames
. premixed flames
. turbulent flames
RT combustion
fire damage
firebreaks
fires
flame holders
flame propagation
∞ flares
forest fires
fuels
smog
turbulent combustion

flammability

DEF Those characteristics of a material that

flammable gases

pertain to its relative ease of ignition and relative ability to sustain combustion. Used for combustibility and fire resistance.

- UF *combustibility*
- fire resistance*
- RT burning rate
- combustion
- detonable gas mixtures
- fire extinguishers
- fire fighting
- fire point
- flame propagation
- flame retardants
- flammable gases
- flash point
- ignition
- ignition limits
- ignition temperature
- pyrophoric materials
- ∞ resistance
- smoldering
- spontaneous combustion

flammable gases

- UF *explosive gases*
- GS gases
 - . flammable gases
 - . . gaseous fuels
 - . . . natural gas
 - . . . liquefied natural gas
 - . . liquefied natural gas
 - . . pyrogen
- RT chemical explosions
- detonable gas mixtures
- explosives
- firing (igniting)
- flammability
- gas explosions
- hazards

flange wrinkling

- GS wrinkling
 - . flange wrinkling
- RT buckling

flanges

- RT connectors
- metal plates

flap control

- USE **aircraft control flaps (control surfaces)**

flaperons

- DEF Airplane control surfaces that serve the function of both aileron and flap.
- GS airfoils
 - . ailerons
 - . . flaperons
 - . flaps (control surfaces)
 - . . flaperons
 - control surfaces
 - . ailerons
 - . . flaperons
 - . flaps (control surfaces)
 - . . flaperons
- RT aerodynamic brakes

flapping

- RT airfoil oscillations
- flutter
- resonant vibration
- rotor aerodynamics
- shaking
- undamped oscillations
- vibration
- wing oscillations

flapping hinges

- GS hinges
 - . flapping hinges
- RT rotary wings
- rotor aerodynamics

flaps (control surfaces)

- UF *flap control*

- GS airfoils
 - . flaps (control surfaces)
 - . . externally blown flaps
 - . . . upper surface blown flaps
 - . . flaperons
 - . . jet flaps
 - . . split flaps
 - . . wing flaps
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - control surfaces
 - . flaps (control surfaces)
 - . . externally blown flaps
 - . . . upper surface blown flaps
 - . . flaperons
 - . . jet flaps
 - . . split flaps
 - . . wing flaps
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps

- RT aerodynamic brakes
- brakes (for arresting motion)
- ∞ control
- drag devices
- GAW-2 airfoil
- lift devices
- spoilers
- ∞ surfaces

flare stars

DEF Members of a class of dwarf stars that show sudden intensive outbursts of energy. Used for UV Ceti stars.

- UF *UV Ceti stars*
- GS celestial bodies
 - . stars
 - . . late stars
 - . . . cool stars
 - flare stars
 - . . main sequence stars
 - . . . dwarf stars
 - flare stars
 - . . variable stars
 - . . . flare stars
- RT cataclysmic variables
- M stars
- solar flares
- stellar activity
- stellar flares
- symbiotic stars

flared bodies

- RT afterbodies
- aircraft configurations
- ∞ flares
- spacecraft configurations
- symmetrical bodies

∞ flares

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flames
 - flared bodies
 - illuminating
 - lighting equipment
 - luminaires
 - pyrotechnics
 - runway lights
 - solar flares
 - Solar Maximum Mission
 - solar terrestrial interactions
 - stellar activity
 - stellar flares

∞ flash

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *light duration*
- RT electric discharges
- explosions
- flash welding
- flashing (vaporizing)

- light (visible radiation)
- radiography
- solar flares

flash blindness

- GS blindness
 - . flash blindness
- RT eye protection
- light adaptation
- vision

flash lamps

- UF *flash tubes*
- GS lighting equipment
 - . luminaires
 - . . flash lamps
 - . . . alkali vapor lamps
- RT light sources
- xenon lamps

flash point

DEF The temperature at which a substance, such as fuel oil, will give off a vapor that will flash or burn momentarily when ignited.

- GS temperature
 - . ignition temperature
 - . . flash point
- RT combustion temperature
- fire point
- flammability
- ignition
- spontaneous combustion
- vapor pressure
- volatility

flash tubes

- USE **flash lamps**

flash welding

- GS welding
 - . fusion welding
 - . . electric welding
 - . . . flash welding
- RT ∞ flash
- pressure welding

flashback

DEF Backward burning of a flame into the lip of a burner or torch.

- RT backfire
- combustion
- deflagration
- explosions
- fires
- flame deflectors
- flame propagation

flashing (vaporizing)

DEF The evaporation of a heated liquid as a consequence of rapid pressure reduction.

- GS phase transformations
 - . vaporizing
 - . . flashing (vaporizing)
- RT distillation
- evaporation
- ∞ flash
- prevaporization
- ∞ separation

flashover

- GS electric current
 - . electric discharges
 - . . flashover
- RT electric arcs
- electric sparks
- electrical faults
- failure

flasks

- RT bottles

glassware

flat coaxial transmission lines

USE **microstrip transmission lines**

flat conductors

GS conductors
 . **flat conductors**
 . . beam leads
 RT bus conductors
 circuits
 connectors
 electric connectors
 electric contacts
 electric wire
 wire
 wiring

flat layers

RT flatness
 ∞ layers
 planar structures
 strata
 stratification

flat panel displays

(added September 1994)

GS display devices
 . **flat panel displays**
 RT avionics
 consoles
 human factors engineering
 imaging techniques
 indicating instruments

flat patterns

DEF Shape of a part or parts put in 3 space in its undefined condition.

RT castings
 molds

flat plates

GS structural members
 . plates (structural members)
 . . **flat plates**
 RT annular plates
 Blasius equation
 Blasius flow
 circular plates
 dynamic structural analysis
 end plates
 flatness
 fluid mechanics
 heat transfer
 metal plates
 panels
 parallel plates
 planar structures
 plate theory
 ∞ plates
 rectangular plates
 ∞ sheets
 slabs
 thick plates
 thin plates

flat surfaces

UF *facets*
 RT Cosserat surfaces
 flatness
 planar structures
 ∞ surface geometry
 surface properties
 ∞ surfaces

flatness

GS shapes
 . **flatness**
 RT concavity
 contours
 convexity
 etalons
 flat layers
 flat plates
 flat surfaces
 flattening

interferometers
 mechanical properties
 planar structures
 roughness
 ∞ surface geometry

flats (landforms)

DEF A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for adobe flats and salt flats.

UF *adobe flats*
salt flats
 GS landforms
 . **flats (landforms)**
 . . tidal flats
 RT Earth resources
 marshlands
 mesas
 plains
 salt beds

flattening

RT ductility
 ellipticity
 flatness
 leveling
 metal working
 oblate spheroids
 ∞ rolling
 smoothing

flatworms

GS animals
 . invertebrates
 . . worms
 . . . **flatworms**
 RT infestation

flavor (particle physics)

DEF The specific identifiers of quarks which distinguish various combinations of electric charge and mass.

RT hadrons
 particle interactions
 particle theory
 ∞ physics
 quantum theory
 quark models
 quarks
 theoretical physics

flaw detection

USE **nondestructive tests**

flaws

USE **defects**

fleet ballistic missiles

UF *FBM (missiles)*
 GS missiles
 . surface to surface missiles
 . . **fleet ballistic missiles**
 . . . Polaris A1 missile
 . . . Polaris A2 missile
 . . . Polaris A3 missile
 . . . Poseidon missiles
 . . . Subroc missile
 RT ballistic missile submarines
 guided missile submarines
 intercontinental ballistic missiles
 intermediate range ballistic missiles
 sea launching

Fleet Satellite Communication System

DEF Global communication system utilizing satellites. Used for FLEETSATCOM and FLT-SATCOM.

UF *Fleetsatcom*
Fltsatcom
 GS telecommunication
 . Defense Communications Satellite System
 . . **Fleet Satellite Communication System**

RT communication satellites
 Marisat satellites
 microwave transmission
 military technology
 NASCOM network
 navy
 radio communication
 ∞ systems
 ultrahigh frequencies

Fleetsatcom

USE **Fleet Satellite Communication System**

flexibility

DEF That property of a material by virtue of which it may be bowed repeatedly without undergoing rupture. That property of a material by virtue of which it may be flexed or bowed repeatedly without undergoing rupture. Used for nonrigidity.

UF *nonrigidity*
 GS mechanical properties
 . **flexibility**
 RT bending
 elastic properties
 flexing
 nonuniformity
 plastic properties
 ∞ rigidity
 softness
 stiffness
 versatility

flexible bodies

GS **flexible bodies**
 . flexible spacecraft
 RT ∞ bodies
 hybrid structures
 inflatable structures

flexible spacecraft

DEF Space vehicles (usually space structures or rotating satellites) whose surfaces and/or appendages may be subject to elastic flexural deformations (vibrations).

GS aerospace vehicles
 . **flexible spacecraft**
 flexible bodies
 . **flexible spacecraft**
 RT artificial satellites
 displacement
 elastic deformation
 flexing
 large space structures
 satellite control
 satellite orientation
 satellite rotation
 shape control
 ∞ spacecraft
 spacecraft control
 spacecraft motion
 structural vibration
 vibration damping

flexible wings

UF *Fogallo wings*
 GS airfoils
 . wings
 . . **flexible wings**
 . . . parawings
 RT fixed wings
 gliders
 hang gliders
 infinite span wings
 inflatable structures
 rigid wings
 thin wings
 twisted wings
 XV-8A aircraft

flexing

UF *flexure*
 RT bending
 camber
 ∞ chambers

flexors

curvature
deflection
deformation
distortion
flexibility
flexible spacecraft
folding
heaving
loading moments

flexors

GS anatomy
. musculoskeletal system
. . muscles
. . . **flexors**
RT joints (anatomy)

Flexowriters (trademark)

USE **automatic typewriters**

flexural strength

(added September 1995)

DEF DEF The bending load that a material can withstand without fracturing - it's resistance to fracture.

UF *bending strength*
GS mechanical properties
. fracture strength
. . **flexural strength**
RT bend tests
bending fatigue
static loads
∞ strength

flexure

USE **flexing**

flicker

RT critical flicker fusion
light transmission

flicker fusion frequency

USE **critical flicker fusion**

∞ flight

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The movement of an object through the atmosphere or through space, sustained by aerodynamic, aerostatic, or reaction forces, or by orbital speed; especially the movement of a man-operated or man-controlled device, such as a rocket, a space probe, a space vehicle, or an aircraft. Used for flying, high altitude flight, and high speed flight.

UF *flying*
high altitude flight
high speed flight
RT aerodynamics
∞ aeronautics
balloon flight
climbing flight
coasting flight
cruising flight
flight altitude
flight control
flight mechanics
flight optimization
flight paths
flight safety
flight tests
flight time
formation flying
free flight
gliding
horizontal flight
hypersonic flight
long duration space flight
lunar flight
meteorological flight
parabolic flight
rocket flight
soaring
space flight
steering
suborbital flight

supersonic flight
trajectories
transition flight
transoceanic flight
transonic flight
turning flight
vertical flight
visual flight

flight altitude

GS altitude
. **flight altitude**
RT air traffic control
ceiling (aircraft capability)
∞ flight
midaltitude

flight characteristics

DEF Characteristics exhibited by an aircraft, rocket, or the like in flight, such as a tendency to stall or to yaw, or an ability to remain stable at certain speeds. Used for flight performance and flying qualities.

UF *flight performance*
flying qualities
GS **flight characteristics**
. flight envelopes
. pilot ratings
. . Cooper-Harper ratings
RT aerodynamics
aircraft maneuvers
aircraft performance
aircraft specifications
airspeed
buffeting
ceiling (aircraft capability)
∞ characteristics
controllability
flight control
flutter
helicopter performance
highly maneuverable aircraft
in-flight simulation
low speed stability
maneuverability
∞ performance
quality

flight clothing

GS clothing
. **flight clothing**
RT coveralls
garments
goggles
helmets
pressure suits
protective clothing

flight computers

USE **airborne/spaceborne computers**

flight conditions

GS conditions
. **flight conditions**
RT aircraft icing
aviation meteorology
cloud cover
cockpit weather information systems
instrument flight rules
meteorological services
storms (meteorology)
visual flight
weather forecasting

flight control

GS **flight control**
. automatic flight control
. . automatic landing control
. fly by light control
. fly by tube control
. fly by wire control
. thrust vector control
RT aerobatics
air traffic control
aircraft control
aircraft instruments

aircraft survivability
attitude control
attitude indicators
automated en route ATC
automatic control
automatic pilots
∞ control
control configured vehicles
control stability
control sticks
control surfaces
display devices
entry guidance (STS)
∞ flight
flight characteristics
flight management systems
formation flying
ground based control
ground support equipment
guidance (motion)
helicopter control
in-flight monitoring
in-flight simulation
instrument approach
instrument landing systems
maneuverability
maneuvers
missile control
navigation
navigation aids
navigation instruments
pointing control systems
radio navigation
remote control
rocket engine control
solar compasses
spacecraft control
stability augmentation
turbojet engine control

flight crews

UF *aircrews*
GS personnel
. crews
. . **flight crews**
. . . spacecrews
. flying personnel
. . **flight crews**
. . . spacecrews
RT aircraft pilots
crew procedures (inflight)
crew procedures (preflight)
crew size
flight fatigue
navigators
pilots (personnel)

flight envelopes

DEF The bounds within which a certain flight system can operate, especially a graphic representation of these bounds showing interrelationships of operational parameters.

GS flight characteristics
. **flight envelopes**
RT aerodynamic characteristics
aerodynamic stability
aircraft control
aircraft maneuvers
aircraft performance
aircraft stability
∞ envelopes
flight tests
helicopter performance
maneuverability
terrain following

flight fatigue

GS fatigue (biology)
. **flight fatigue**
RT aerospace medicine
flight crews
∞ flight stress
flight stress (biology)

pilot performance

flight fitness

- GS fitness
 - . **flight fitness**
- RT ∞ flight stress
 - flying personnel
 - physical examinations
 - physical fitness

flight hazards

- GS hazards
 - . **flight hazards**
 - . . meteoroid hazards
- RT air piracy
 - air traffic
 - aircraft accidents
 - aircraft hazards
 - aircraft icing
 - aircraft safety
 - aircraft spin
 - aviation meteorology
 - bird-aircraft collisions
 - birds
 - collisions
 - crash landing
 - crashes
 - destruction
 - downbursts
 - microbursts (meteorology)
 - midair collisions
 - noise (sound)
 - operational hazards
 - toxic hazards
 - weather

flight instruments

- GS **flight instruments**
 - . approach indicators
 - . attitude indicators
 - . . gyro horizons
 - . automatic pilots
 - . flight test instruments
 - . horizon scanners
 - . radio altimeters
- RT air navigation
 - airborne equipment
 - aircraft control
 - aircraft equipment
 - aircraft instruments
 - altimeters
 - bubble technique
 - cockpit weather information systems
 - compasses
 - display devices
 - engine control
 - engine monitoring instruments
 - head-up displays
 - instrument approach
 - instrument flight rules
 - instrument landing systems
- ∞ instruments
 - landing instruments
 - Light Airborne Multipurpose System
 - measuring instruments
 - navigation instruments
 - night flights (aircraft)
 - onboard equipment
 - position indicators
 - radar
 - radio direction finders
 - rate of climb indicators
 - recording instruments
 - satellite instruments
 - solar compasses
 - spacecraft instruments
 - spacecraft position indicators
 - speed indicators
 - star trackers
 - TERCOM

flight load recorders

- GS aircraft instruments
 - . flight recorders
 - . . **flight load recorders**
 - data recorders

- . flight recorders
- . . **flight load recorders**
- measuring instruments
- . flight recorders
- . . **flight load recorders**
- recording instruments
- . flight recorders
- . . **flight load recorders**
- RT strain gages

flight management systems

- GS management systems
 - . **flight management systems**
- RT air navigation
 - air traffic control
 - airborne/spaceborne computers
 - automatic flight control
 - automatic landing control
 - avionics
 - computer techniques
 - flight control
 - ground based control
 - navigation aids
 - onboard data processing
 - pilot support systems
 - situational awareness
 - systems engineering

flight mechanics

- RT aerodynamics
 - ascent trajectories
 - descent trajectories
- ∞ flight
 - ∞ mechanics (physics)
 - missile trajectories
 - orbit calculation
 - orbit decay
 - orbital mechanics
- ∞ platforms
 - reentry trajectories
 - rendezvous
 - rendezvous trajectories
 - space flight
 - space mechanics
 - spacecraft reentry
 - spacecraft trajectories
 - thrust programming
 - trajectories
 - trajectory measurement
 - trajectory optimization

flight nurses

- GS personnel
 - . medical personnel
- . . **flight nurses**
- RT crews

flight operations

- DEF Collective term for ground support operations by flight crew or support personnel preparatory to space flight, or tasks performed by crew during flight.
- GS **flight operations**
 - . crew procedures (inflight)
- RT aircraft maintenance
 - crew procedures (preflight)
 - ground handling
 - onboard equipment
 - preflight operations
 - refueling

flight optimization

- GS optimization
 - . **flight optimization**
- RT burning time
 - Earth-Venus trajectories
- ∞ flight
 - great circles
 - orbital mechanics
 - orbits
 - parking orbits
 - space flight
 - thrust programming
 - trajectories

trajectory optimization

flight paths

DEF Paths made or followed in the air or in space by an aircraft or rocket; the continuous series of positions occupied by a flying body; more strictly, the path of the center of gravity of the flying body, referred to the Earth or other fixed reference.

GS **flight paths**

- . glide paths
- RT air navigation
 - air traffic
 - air traffic control
 - aircraft instruments
 - aircraft maneuvers
 - airspace
 - approach
 - approach control
 - area navigation
 - caustic lines
 - climbing flight
 - collision avoidance
 - collisions
 - descent
- ∞ drift
- ∞ flight
 - gliding
 - Global Positioning System
 - great circles
 - ground tracks
 - guidance (motion)
 - horizontal flight
 - missile trajectories
 - National Airspace Utilization System
 - navigation
 - navigation aids
 - orbits
- ∞ paths
 - reentry
 - rocket flight
 - satellite ground tracks
 - solar compasses
 - swath width
 - Tacan
 - trajectories
 - turning flight
 - uncontrolled reentry (spacecraft)
 - vertical flight
 - visual flight

flight performance

USE **flight characteristics**

flight plans

- RT air navigation
 - air traffic
 - air traffic control
 - approach
 - instrument flight rules
 - National Airspace Utilization System
- ∞ plans
 - routes
 - thrust programming
 - weather

flight recorders

- GS aircraft instruments
 - . **flight recorders**
 - . . flight load recorders
 - data recorders
 - . **flight recorders**
 - . . flight load recorders
 - measuring instruments
 - . **flight recorders**
 - . . flight load recorders
 - recording instruments
 - . **flight recorders**
 - . . flight load recorders

flight rules

- GS rules
 - . **flight rules**
 - . . instrument flight rules
 - . . visual flight rules
- RT air navigation

flight safety

air traffic control
collision avoidance
National Airspace Utilization System
National Aviation System
noise reduction

flight safety

GS safety
. **flight safety**
RT aerospace safety
air piracy
air traffic control
aircraft accidents
aircraft approach spacing
aircraft hazards
aircraft icing
aircraft safety
aircraft spin
all-weather landing systems
aviation meteorology
collision avoidance
crashes
crashworthiness
destruction
emergency landing
∞ flight
∞ flight stress
flying ejection seats
midair collisions
onboard equipment
safety devices
self sealing
terrorism
visual flight

flight simulation

GS simulation
. **flight simulation**
. . in-flight simulation
RT acoustic simulation
altitude simulation
analog simulation
computerized simulation
control simulation
environment simulation
landing simulation
motion simulation
scene generation
space environment simulation
space flight
systems simulation
training simulators
virtual reality
weightlessness simulation

flight simulators

DEF Training devices or apparatus that simulate certain conditions of flight or of flight operations.

GS simulators
. training simulators
. . **flight simulators**
. . . cockpit simulators
training devices
. training simulators
. . **flight simulators**
. . . cockpit simulators
RT atmospheric entry simulation
centrifuges
control simulation
cryogenic wind tunnels
in-flight simulation
Langley complex coordinator
lunar orbit and landing simulators
∞ missile simulators
motion simulation
motion simulators
pilot training
space environment simulation
space simulators
test facilities
training devices
wind tunnels

flight stability tests

GS flight tests

. **flight stability tests**
stability tests
. **flight stability tests**
RT aerodynamic stability
∞ tests

∞ flight stress

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT flight fatigue
flight fitness
flight safety
human factors engineering
space flight stress
stress analysis
stresses

flight stress (biology)

SN (EXCLUDES MECHANICAL STRESS AND AND STRAIN)
GS stress (biology)
. **flight stress (biology)**
. . space flight stress
RT acceleration (physics)
biological effects
∞ biology
flight fatigue
jet lag
physiological factors
psychological factors
stress (physiology)
stress (psychology)
weightlessness

flight surgeons

GS personnel
. medical personnel
. . surgeons
. . . **flight surgeons**

flight technical error

USE **pilot error**

flight termination systems

USE **abort apparatus**

flight test instruments

GS flight instruments
. **flight test instruments**
RT aircraft instruments
rocket-borne instruments
spacecraft instruments

flight test vehicles

DEF Test vehicles for the conduct of flight tests either to test its own capabilities or to carry equipment requiring flight tests.

GS test vehicles
. **flight test vehicles**
RT ∞ aircraft
launch vehicles
missiles
research aircraft
∞ spacecraft
∞ vehicles
X-36 aircraft

flight tests

DEF Tests by means of actual or attempted flight to see how an aircraft, spacecraft, space-air vehicle, or missile flies. Tests of a component part of a flying vehicle, or of an object carried in such a vehicle, to determine its suitability or reliability in terms of its intended function by making it endure actual flight.

GS **flight tests**
. flight stability tests
RT air start
aircraft design
altitude tests
certification
DAST program
downrange
dynamic tests
engine tests
∞ flight

flight envelopes
free flight test apparatus
full scale tests
ground tests
high altitude tests
highly maneuverable aircraft
in-flight monitoring
in-flight simulation
missile design
missile tests
postmission analysis (spacecraft)
space electric rocket tests
stability tests
∞ tests
vibration tests
wing flow method tests

flight time

DEF The time from the moment an aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.

GS time
. **flight time**
RT air traffic control
burning time
∞ flight
testing time
trajectories
transit time
turnaround (STS)
windows (intervals)

flight training

GS education
. **flight training**
. . pilot training
. . space flight training
. . . astronaut training
RT ejection training
flying personnel
training simulators

∞ flight vehicles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft configurations
ground effect machines
hypersonic vehicles
lunar flying vehicles
missiles
reentry vehicles
research vehicles
rocket vehicles
∞ vehicles

flint

GS chalcogenides
. oxides
. . dioxides
. . . **flint**
silicon compounds
. **flint**
RT quartz

flip-flops

DEF Devices having two stable states and two input terminals (or types of input signals) each of which corresponds with one of the two states. The circuits remain in either state until caused to change to the other state by application of the corresponding signal. Similar bistable devices with an input which allows it to act as a single-stage binary counter. Used for bistable amplifiers.

UF *bistable amplifiers*
GS circuits
. bistable circuits
. . **flip-flops**
. . multivibrators
. . **flip-flops**
RT computer storage devices
data storage
fluid switching elements
fluidic circuits

- oscillators
- FLIR detectors**
 DEF Forward-looking infrared detectors for sensing all emissions of heat or light. Used for forward looking infrared detectors.
 UF *forward looking infrared detectors*
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 infrared detectors
 **FLIR detectors**
 . . infrared instruments
 . . . infrared detectors
 **FLIR detectors**
 RT ∞ detectors
 infrared radar
 ∞ sensors
- float zones**
 RT crystal growth
 melts (crystal growth)
 silicon
 solar cells
 space processing
 zone melting
- floating**
 RT ballast (mass)
 buoyancy
 floats
- floating point arithmetic**
 GS number theory
 . arithmetic
 . . **floating point arithmetic**
 RT computer programs
 computers
 data processing
- floats**
 UF *flotation systems*
 RT ballast (mass)
 buoys
 emergency life sustaining systems
 floating
 inflatable structures
 landing gear
 life rafts
 rafts
 separators
- flocculating**
 RT agglomeration
 coagulation
 coalescing
 colloid
 concentrating
 flotation
 micelles
 precipitation (chemistry)
 settling
 water treatment
- flood control**
 DEF The prevention or reduction of damage caused by flooding, as by containing water in reservoirs removed from areas where it would do damage, improving channel capacity to convey water past or through critical areas with the least amount of damage, and diverting excess water into bypasses or floodways.
 RT canals
 ∞ control
 dams
 drainage
 hydrology
 rainstorms
 storm damage
 storms (meteorology)
 watersheds
- flood damage**
 GS damage
 . **flood damage**
- RT drainage patterns
 hydrology
 landslides
 precipitation (meteorology)
 seepage
 storms
 storms (meteorology)
 tides
 water erosion
 water flow
- flood plains**
 DEF The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with water when the rivers overflow.
 GS land
 . plains
 . . **flood plains**
 landforms
 . plains
 . . **flood plains**
 RT floods
 hydrogeology
 hydrology
- flood predictions**
 GS predictions
 . **flood predictions**
 RT floods
 hydrogeology
 hydrology
 precipitation (meteorology)
 rain
 rainstorms
 ∞ showers
 storms (meteorology)
 weather forecasting
- floods**
 DEF Rising bodies of water (as in streams, lakes, seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by gage height of discharge quantity.
 RT alluvium
 drought
 flood plains
 flood predictions
 hydrology
 hydrology models
 Mississippi River (US)
 precipitation (meteorology)
 storm damage
 storms
 storms (meteorology)
 tides
 water flow
 water management
 watersheds
- floors**
 UF *decks (floors)*
 RT basements
 buildings
 ceilings (architecture)
 doors
 ∞ platforms
 substructures
 tiles
 walls
- Floquet theorem**
 GS theorems
 . **Floquet theorem**
 RT differential equations
 linear equations
- periodic functions
- flora*
 USE **plants (botany)**
- Florida**
 GS nations
 . United States
 . . **Florida**
 RT Everglades (FL)
 Gulf of Mexico
 Merritt Island (FL)
- flotation**
 RT activation
 beneficiation
 classifiers
 coagulation
 concentrating
 flocculating
 fluid rotor gyroscopes
 foaming
 levitation
 ∞ separation
 settling
 size separation
 suspension systems (vehicles)
 water treatment
- flotation systems*
 USE **floats**
- ∞ **flour**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT fines
 flour (food)
- flour (food)**
 RT ∞ flour
 ∞ food
 millet
 powder (particles)
- ∞ **flow**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF A stream or movement of air or other fluid, or the rate of fluid movement, in the open or in a duct, pipe, or passage; specifically, an airflow.
 RT aerodynamics
 annular flow
 Brillouin flow
 cavity flow
 circulation
 corner flow
 creep properties
 cross flow
 exhaust nozzles
 flow equations
 flow velocity
 fluid flow
 grazing flow
 heat transmission
 information flow
 interactional aerodynamics
 inviscid flow
 low density flow
 mass flow
 orifice flow
 outlet flow
 panel method (fluid dynamics)
 plastic flow
 reacting flow
 shear flow
 solids flow
 steady flow
 transonic flow
 unsteady flow

flow chambers

viscous flow

flow chambers

RT ∞ chambers

flow characteristics

GS dynamic characteristics

. flow characteristics

. . flow distribution

. . flow stability

. . . boundary layer stability

. . . flame stability

. . . magnetohydrodynamic stability

. . . Weibel instability

. . . Goertler instability

. . . Taylor instability

. . flow velocity

. . . solar wind velocity

RT barotropic flow

∞ characteristics

critical flow

cross flow

eddy viscosity

inviscid flow

laminar flow

nonuniform flow

outlet flow

reattached flow

separated flow

steady flow

Strouhal number

subcritical flow

supercritical flow

turbulence

turbulent flow

viscosity

viscous flow

flow charts

DEF Graphical representations of sequences of operations using symbols to represent the operations. Flow charts are more detailed representations than diagrams.

GS charts

. flow charts

RT block diagrams

computer programming

data flow analysis

∞ flow graphs

mathematical models

flow coefficients

GS coefficients

. flow coefficients

. . discharge coefficient

RT aerodynamic coefficients

attenuation coefficients

mass flow factors

nozzle thrust coefficients

reflectance

transport properties

flow deflection

RT computational fluid dynamics

deflectors

flow distribution

flow velocity

Prandtl-Meyer expansion

flow direction indicators

GS display devices

. flow direction indicators

. . wind vanes

measuring instruments

. indicating instruments

. . flow direction indicators

. . . wind vanes

flow distortion

GS distortion

. flow distortion

RT aerodynamic coefficients

fluid flow

horseshoe vortices

multiphase flow

Orr-Sommerfeld equations

oscillating flow

small perturbation flow

vortices

wing tip vortices

flow distribution

UF *flow fields*

flow patterns

GS distribution (property)

. flow distribution

dynamic characteristics

. flow characteristics

. . flow distribution

RT boundary layer flow

boundary layer separation

boundary layer thickness

cavitation flow

Chapman-Enskog theory

exhaust flow simulation

field theory (physics)

flow deflection

∞ flow graphs

hydrodynamic coefficients

isothermal flow

method of characteristics

numerical flow visualization

particle image velocimetry

reattached flow

rheoelectrical simulation

separated flow

stagnation point

Strouhal number

three dimensional bodies

trapped vortices

velocity distribution

vortex sheets

water tunnel tests

wind tunnel tests

flow equations

GS flow equations

. boundary layer equations

. . Blasius equation

. Chaplygin equation

. Navier-Stokes equation

. Reynolds equation

. Von Karman equation

. vorticity equations

. . Helmholtz vorticity equation

. Burnett equations

RT Baldwin-Lomax turbulence model

Bernoulli theorem

computational fluid dynamics

convection-diffusion equation

∞ equations

∞ flow

fluid flow

k-epsilon turbulence model

particle in cell technique

Percus method

Rayleigh equations

Reynolds averaging

space-time CE/SE method

turbulence models

flow fields

USE flow distribution

flow geometry

GS geometry

. flow geometry

RT annular flow

axial flow

axisymmetric flow

backward facing steps

bypass ratio

channel flow

coaxial flow

core flow

cross flow

ducted flow

helical flow

horseshoe vortices

inlet airframe configurations

inlet flow

laminar flow

meridional flow

nozzle flow

one dimensional flow

parallel flow

radial flow

steady flow

stratified flow

three dimensional flow

two dimensional flow

wedge flow

∞ flow graphs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT equipotentials

flow charts

flow distribution

signal flow graphs

flow measurement

GS mechanical measurement

. flow measurement

. . particle image velocimetry

RT anemometers

annuli

drag force anemometers

drag measurement

flowmeters

fluid flow

gas meters

hot-film anemometers

hot-wire anemometers

laser doppler velocimeters

∞ measurement

multiphase flow

nonintrusive measurement

∞ nozzles

orifices

pitot tubes

pneumatic probes

pressure measurement

pressure sensitive paints

rheology

solids flow

velocity measurement

Venturi tubes

water flow

wind velocity

flow nets

RT equipotentials

seepage

flow noise

(added March 2000)

DEF Noise produced by the flow of fluids around or through a body; the pressure variations associated with a turbulent flow field.

GS elastic waves

. sound waves

. . noise (sound)

. . . flow noise

. . . . aerodynamic noise

. blade slap noise

. propeller noise

. screech tones

RT aeroacoustics

ducted flow

nozzle flow

pipe flow

underwater acoustics

flow patterns

USE flow distribution

flow rate

USE flow velocity

flow regulators

GS control equipment

. regulators

. . flow regulators

. . . fuel flow regulators

RT flowmeters

oxygen regulators

- pressure regulators
- flow resistance**
- GS friction
 - . flow resistance
 - . . friction drag
 - . . . aerodynamic drag
 - supersonic drag
 - . . . viscous drag
 - RT eddy viscosity
 - ∞ high resistance
 - ∞ low resistance
 - ∞ resistance
 - skin friction
 - viscosity
- flow separation*
- USE **boundary layer separation**
separated flow
- flow stability**
- UF *hydrodynamic stability*
 - GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . **flow stability**
 - boundary layer stability
 - flame stability
 - magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - Taylor instability
 - . flow characteristics
 - . . **flow stability**
 - . . . boundary layer stability
 - . . . flame stability
 - . . . magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - Taylor instability
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . **flow stability**
 - boundary layer stability
 - flame stability
 - magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - Taylor instability
 - RT aerodynamic stability
 - baroclinic instability
 - directional stability
 - fluid flow
 - hydrodynamic equations
 - hydrofoil oscillations
 - Kelvin-Helmholtz instability
 - laminar flow
 - lateral stability
 - longitudinal stability
 - low speed stability
 - Orr-Sommerfeld equations
 - rotary stability
 - steady flow
 - Strouhal number
 - supersonic diffusers
 - systems stability
 - turbulent flow
 - unsteady flow
 - viscous fluids
 - Von Karman equation
 - vortex breakdown
 - vortex filaments
 - vortices
 - vorticity
- flow theory**
- GS **flow theory**
 - . mixing length flow theory
 - RT aerodynamics
 - boundary layer equations
 - continuum mechanics
 - convection-diffusion equation
 - dislocations (materials)
 - fluid flow
 - fluid mechanics
- hydrodynamic equations
- hydrodynamics
- Lighthill method
- mass flow
- Navier-Stokes equation
- Orr-Sommerfeld equations
- panel method (fluid dynamics)
- pneumatics
- rheology
- solids flow
- ∞ theories
- flow velocity**
- DEF The volume per time unit given to the flow of gasses or other fluid substances which emerge from an orifice, pump, turbine, or passes along a conduit or channel. Used for flow rate.
- UF *flow rate*
 - GS dynamic characteristics
 - . flow characteristics
 - . . **flow velocity**
 - . . . solar wind velocity rates (per time)
 - . . **flow velocity**
 - . . . solar wind velocity
 - velocity
 - . **flow velocity**
 - . . solar wind velocity
 - RT Biot-Savart law
 - choked flow
 - discharge coefficient
 - dump combustors
 - exhaust velocity
 - ∞ flow
 - flow deflection
 - hydrodynamic coefficients
 - hypersonic flow
 - hypervelocity flow
 - laser anemometers
 - low speed
 - mass flow rate
 - parallel flow
 - particle image velocimetry
 - subsonic flow
 - supersonic flow
 - transonic flow
 - unsteady flow
 - velocity distribution
 - velocity measurement
 - vortex lattice method
 - vortex precession
- flow visualization**
- UF *visualization of flow*
 - GS **flow visualization**
 - . numerical flow visualization
 - RT differential interferometry
 - fluid flow
 - hydraulic analogies
 - particle image velocimetry
 - pressure sensitive paints
 - Schlieren photography
 - shadowgraph photography
 - water tunnel tests
 - wind tunnel models
- flowmeters**
- GS measuring instruments
 - . **flowmeters**
 - . . gas meters
 - . . hot-wire flowmeters
 - . . rheometers
 - RT electrical measurement
 - flow measurement
 - flow regulators
 - fluid flow
 - fuel gages
 - hot-wire anemometers
 - mechanical measurement
 - orifices
 - pitot tubes
 - pressure gages
 - pressure measurement
 - sonic anemometers
 - speed indicators
 - turbine instruments
- velocity measurement
- Venturi tubes
- vortex precession
- FLOX**
- UF *fluorine-liquid oxygen*
 - GS liquids
 - . cryogenic fluids
 - . . **FLOX**
 - . oxidizers
 - . . rocket oxidizers
 - . . **FLOX**
 - RT fluorine
 - liquid oxygen
- Fitsatcom*
- USE **Fleet Satellite Communication System**
- fluctuation*
- USE **variations**
- fluctuation theory**
- RT homogeneous turbulence
 - squeezed states (quantum theory)
 - statistical mechanics
 - ∞ theories
- flue gases**
- DEF Gaseous combustion products from a furnace.
 - GS gases
 - . exhaust gases
 - . . **flue gases**
 - RT air pollution
 - combustion products
 - desulfurizing
 - electric power plants
 - flues
 - pollution control
 - scrubbers
- fluence**
- RT health physics
 - ionizing radiation
 - radiation counters
- fluierics**
- GS fluidics
 - . **fluierics**
 - RT fluid amplifiers
 - fluid switching elements
 - fluidic circuits
 - hydraulic analogies
- flues**
- RT chimneys
 - draft (gas flow)
 - ducts
 - exhaust systems
 - flue gases
 - vents
- fluid amplification*
- USE **fluid amplifiers**
- fluid amplifiers**
- UF *fluid amplification*
 - fluid jet amplifiers*
 - GS amplifiers
 - . **fluid amplifiers**
 - . . jet amplifiers
 - RT amplification
 - automatic control valves
 - boundary layer control
 - Coanda effect
 - convergent nozzles
 - fluierics
 - fluidic circuits
 - fluidics
 - hydraulic equipment
 - pneumatic equipment
 - pressure recovery
 - turbulent flow
 - turbulent jets

fluid boundaries

- wall jets
- tanks (containers)
- ∞ vessels
- fluid boundaries**
- GS boundaries
 - . **fluid boundaries**
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - interfaces
 - . **fluid boundaries**
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
- RT backward facing steps
- boundary layers
- cavity flow
- free boundaries
- heat transfer
- interface stability
- liquid levels
- liquid surfaces
- pressure gradients
- fluid dynamics**
- UF *cascades (fluid dynamics)*
- GS fluid mechanics
 - . **fluid dynamics**
 - . . computational fluid dynamics
 - . . gas dynamics
 - . . . aerodynamics
 - aerothermodynamics
 - hypersonics
 - rotor aerodynamics
 - supersonics
 - unsteady aerodynamics
 - . . . interactional aerodynamics
 - . . . rarefied gas dynamics
 - . . hydrodynamics
 - . . . elasto-hydrodynamics
 - . . . electrohydrodynamics
 - . . . magnetohydrodynamics
 - rotons
 - . . . vortex shedding
- RT continuity equation
- convection
- ∞ dynamics
- Eyring theory
- fluid management
- flux vector splitting
- gas-solid interactions
- geophysical fluids
- Glimm method
- ∞ hydraulics
- hydromechanics
- kinetics
- Magnus effect
- ∞ mechanics (physics)
- ocean dynamics
- panel method (fluid dynamics)
- piston theory
- primitive equations
- quasi-steady states
- ∞ science
- slamming
- stagnation point
- steady state
- streamlining
- thermohydraulics
- turbulence
- unsteady state
- vortex filaments
- fluid filled shells**
- DEF Shells of revolution containing a gas or liquid.
- GS shells (structural forms)
 - . **fluid filled shells**
 - . . liquid filled shells
- RT hydrodynamic ram effect
- propellant tanks
- reinforced shells
- shell stability
- ∞ storage
- fluid films**
- GS **fluid films**
 - . squeeze films
- RT ∞ films
 - . gas bearings
 - . liquid-solid interfaces
- fluid filters**
- UF *mass filters*
- particulate filters*
- GS separators
 - . **fluid filters**
 - . . air filters
- RT centrifuges
- concentrators
- ∞ filters
- filtration
- fluidized bed processors
- sieves
- sizing screens
- fluid flow**
- UF *induced fluid flow*
- rotational flow*
- GS **fluid flow**
 - . adiabatic flow
 - . axial flow
 - . axisymmetric flow
 - . . annular flow
 - . . Karman-Bodewadt flow
 - . barotropic flow
 - . base flow
 - . Beltrami flow
 - . blood flow
 - . capillary flow
 - . cascade flow
 - . choked flow
 - . coaxial flow
 - . compressible flow
 - . . Ringleb flow
 - . . transonic flow
 - . conical flow
 - . convective flow
 - . . Rayleigh-Benard convection
 - . . . Benard cells
 - . . buoyancy-driven flow
 - . core flow
 - . corner flow
 - . counterflow
 - . critical flow
 - . cross flow
 - . free flow
 - . fuel flow
 - . . propellant transfer
 - . gas flow
 - . . air flow
 - . . . air currents
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
 - . . continuum flow
 - . . cooling flows (astrophysics)
 - . . equilibrium flow
 - . . . frozen equilibrium flow
 - . . . shifting equilibrium flow
 - . . free molecular flow
 - . . Knudsen flow
 - . . molecular flow
 - . . . slip flow
 - . . . transition flow
 - . . nonequilibrium flow
 - . . pipe flow
 - . head (fluid mechanics)
 - . . head flow
 - . . pressure heads
 - . helical flow
 - . hypersonic flow
 - . hypervelocity flow
 - . incompressible flow
 - . . Stokes flow
 - . internal flow
 - . . cavity flow
 - . . channel flow
 - . . . open channel flow
- . ducted flow
- . . Knudsen flow
- . . inlet flow
- . . nozzle flow
- . . pipe flow
- . inviscid flow
- . . stagnation flow
- . isothermal flow
- . jet flow
- . . air jets
- . . jet mixing flow
- . . peripheral jet flow
- . . supersonic jet flow
- . laminar flow
- . . Blasius flow
- . . Hartmann flow
- . . stratified flow
- . liquid flow
- . . open channel flow
- . . water flow
- . low density flow
- . magnetohydrodynamic flow
- . mass flow
- . multiphase flow
- . . two phase flow
- . nonNewtonian flow
- . nonuniform flow
- . one dimensional flow
- . orifice flow
- . outlet flow
- . parallel flow
- . wedge flow
- . . pipe flow
- . . three dimensional flow
- . . . Karman-Bodewadt flow
- . . . secondary flow
- . plastic flow
- . . Tresca flow
- . potential flow
- . . equipotentials
- . radial flow
- . reacting flow
- . . combustible flow
- . recirculative fluid flow
- . reversed flow
- . shear flow
- . single-phase flow
- . small perturbation flow
- . solids flow
- . steady flow
- . . Couette flow
- . . Hartmann flow
- . . Ringleb flow
- . steam flow
- . subcritical flow
- . subsonic flow
- . . supercritical flow
- . supersonic flow
- . . supersonic jet flow
- . turbulent flow
- . . cavitation flow
- . . . supercavitating flow
- . two dimensional flow
- . . Couette flow
- . . Ringleb flow
- . uniform flow
- . . Blasius flow
- . unsteady flow
- . . oscillating flow
- . viscous flow
- . . boundary layer flow
- . . . reattached flow
- . . . secondary flow
- . . . separated flow
- . . . boundary layer separation
- . . Couette flow
- . . . Karman-Bodewadt flow
- . . Stokes flow
- . wall flow
- RT acoustic streaming
- annular ducts
- Bernoulli theorem
- boundary layers
- canals
- Cartan space
- chemical engineering
- circulation

- coaxial nozzles
 - ∞ conductivity
 - convection currents
 - ∞ currents
 - dimensional analysis
 - dimensionless numbers
 - drag reduction
 - duct geometry
 - expulsion
 - ∞ flow
 - flow distortion
 - flow equations
 - flow measurement
 - flow stability
 - flow theory
 - flow visualization
 - flowmeters
 - fluidics
 - ∞ fluids
 - friction
 - Froude number
 - geophysical fluid flow cells
 - heat transmission
 - ∞ hydraulics
 - hydrodynamics
 - hydromechanics
 - injection
 - labyrinth seals
 - leakage
 - Lewis numbers
 - Magnus effect
 - Manning theory
 - materials handling
 - mechanical engineering
 - ocean currents
 - ocean surface
 - pipes (tubes)
 - planetary waves
 - pressure gradients
 - Rayleigh waves
 - Reynolds number
 - skin friction
 - solar convection (astronomy)
 - stellar convection
 - streams
 - supersonic boundary layers
 - surges
 - syringes
 - thermohydraulics
 - ultrasonic cleaning
 - vortices
 - wing flow method tests
- fluid injection**
- GS injection
 - . fluid injection
 - .. gas injection
 - .. liquid injection
 - ... deep well injection (wastes)
 - ... water injection
 - RT channel flow
 - fuel injection
 - inlet flow
 - laminar mixing
 - nozzle flow
 - secondary injection
- fluid jet amplifiers*
- USE **fluid amplifiers**
jet amplifiers
- fluid jets**
- GS **fluid jets**
 - . air jets
 - . free jets
 - . gas jets
 - . hydraulic jets
 - . vapor jets
 - RT jet amplifiers
 - jet flow
 - jet mixing flow
 - jet streams (meteorology)
 - ∞ jets
- plasma jets
- fluid logic**
- RT computer design
 - fluidic circuits
 - fluidics
 - ∞ logic
 - logic circuits
- fluid management**
- DEF The isolation and separation of liquids from gas in a storage vessel which operates in a reduced or zero gravity environment using liquid acquisition devices such as those used in the Space Shuttle RCS tankage.
- RT cryogenic fluid storage
 - cryogenic fluids
 - cryogenic rocket propellants
 - fluid dynamics
 - fuel control
 - microgravity
- fluid mechanics**
- DEF The experimental and mathematical study of the mechanical properties of gases and liquids at rest and in motion.
- GS **fluid mechanics**
 - . fluid dynamics
 - .. computational fluid dynamics
 - .. gas dynamics
 - ... aerodynamics
 - ... aerothermodynamics
 - ... hypersonics
 - ... rotor aerodynamics
 - ... supersonics
 - ... unsteady aerodynamics
 - ... interactional aerodynamics
 - ... rarefied gas dynamics
 - .. hydrodynamics
 - ... elasto-hydrodynamics
 - ... electrohydrodynamics
 - ... magnetohydrodynamics
 - .. rotors
 - .. vortex shedding
 - .. hydromechanics
 - .. hydrodynamics
 - ... elasto-hydrodynamics
 - ... electrohydrodynamics
 - ... magnetohydrodynamics
 - .. hydrostatics
 - .. magnetohydrostatics
 - .. pneumatics
 - RT aerostatics
 - ∞ bleeding
 - continuum mechanics
 - diffusivity
 - ∞ dynamics
 - flat plates
 - flow theory
 - fluidics
 - ∞ hydraulics
 - hydrodynamic equations
 - incompressibility
 - kinetics
 - Maxwell fluids
 - ∞ mechanics (physics)
 - micropolar fluids
 - ∞ science
 - statics
 - supercritical fluids
 - thermodynamics
- fluid power**
- RT compressible fluids
 - fluid pressure
 - fluidic circuits
 - fluidics
 - hydraulic control
 - hydraulic equipment
 - ∞ hydraulics
 - hydrodynamics
 - incompressible fluids
 - pneumatic control
 - pneumatic equipment
 - pneumatics
 - ∞ power
- ∞ pressure drop
- working fluids
- fluid pressure**
- GS pressure
 - . fluid pressure
 - .. water pressure
 - RT beta factor
 - fluid power
 - fluidics
 - ∞ fluids
 - hydraulic fluids
- fluid rotor gyroscopes**
- GS gyroscopes
 - . rotary gyroscopes
 - .. fluid rotor gyroscopes
 - RT flotation
 - gimbals
- fluid switching elements**
- GS circuits
 - . switching circuits
 - .. fluid switching elements
 - switches
 - . switching circuits
 - .. fluid switching elements
 - RT acoustic streaming
 - automatic control valves
 - flip-flops
 - fluierics
 - fluidic circuits
 - fluidics
 - hydraulic equipment
 - pneumatic equipment
- fluid transmission lines**
- GS transmission lines
 - . fluid transmission lines
 - RT hydraulic fluids
 - transmission fluids
 - working fluids
- fluid transpiration*
- USE **transpiration**
- fluidic circuits**
- GS circuits
 - . fluidic circuits
 - RT flip-flops
 - fluierics
 - fluid amplifiers
 - fluid logic
 - fluid power
 - fluid switching elements
 - fluidics
 - fly by tube control
 - microfluidic devices
- fluidics**
- GS **fluidics**
 - . fluierics
 - RT amplification
 - ∞ control
 - fluid amplifiers
 - fluid flow
 - fluid logic
 - fluid mechanics
 - fluid power
 - fluid pressure
 - fluid switching elements
 - fluidic circuits
 - hydraulic analogies
 - hydraulic control
 - internal flow
 - ∞ logic
 - microfluidic devices
 - pneumatic circuits
 - pneumatic control
 - pneumatic equipment
 - pneumatics
- fluidized bed processors**
- RT beds (process engineering)
 - chemical reactors
 - fluid filters

fluids

furnaces
separators

∞ fluids

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT anisotropic fluids
binary fluids
body fluids
cerebrospinal fluid
compressible fluids
conducting fluids
cryogenic fluids
ferrofluids
fluid flow
fluid pressure
gases
gyroscope fluids
high temperature fluids
hydraulic fluids
ideal fluids
incompressible fluids
liquids
magnetorheological fluids
Maxwell fluids
micropolar fluids
Newtonian fluids
nonequilibrium flow
nonNewtonian fluids
rheology
rotating fluids
serums
siphoning
solids
supercritical fluids
superfluidity
transmission fluids
viscous fluids
weightless fluids
working fluids

fluid-solid interactions

DEF The interactions of a rigid or elastic structure with an incompressible or compressible fluid. Airblast loading and response, acoustic interaction, aeroelasticity, and hydroelasticity comprise its major divisions.

GS fluid-solid interactions

. gas-solid interactions
. . gas-metal interactions

RT gas-solid interfaces

∞ interactions
liquid-solid interfaces
surface reactions

fluorescence

DEF Emission of light or other radiant energy as a result of and only during absorption of radiation of a different wavelength from some other source. Used for fluorescent emission.

UF fluorescent emission

GS emission

. light emission
. . luminescence
. . . **fluorescence**
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence

RT electromagnetic absorption

extinction
Mossbauer effect
phosphors
photoexcitation
photoluminescence
plasma radiation
rhodamine
temperature sensitive paints
triboluminescence

fluorescent emission

USE **fluorescence**

fluorides

GS halogen compounds
. fluorine compounds

. . fluorides

. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitril fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. . . halides
. . **fluorides**
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitril fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides

. . . sulfur hexafluoride

RT . . . technetium fluorides
excimer lasers

fluorination

GS chemical reactions

. halogenation

RT **fluorination**

defluorination

fluorine

GS chemical elements

. halogens

. **fluorine**

. . . fluorine isotopes

. . . liquid fluorine

RT FLOX

oxidizers

fluorine compounds

GS halogen compounds

. **fluorine compounds**

. . fluorides

. . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

. . . . protactinium fluorides

. . . . sodium fluorides

. . . . strontium fluorides

. . . . thorium fluorides

. . . . tungsten fluorides

. . . . uranium fluorides

. . . . zinc fluorides

. . . nitrogen fluorides

. . . nitril fluorides

. . . oxyfluorides

. . . oxygen fluorides

. . . ozone fluoride

. . . perchloryl fluorides

. . . polyvinyl fluoride

. . . sulfur fluorides

. . . . sulfur hexafluoride

. . . technetium fluorides

. . . fluorite

. . . fluoro compounds

. . . cryolite

. . . difluoro compounds

. . . . perfluoroalkane

. . . . polytetrafluoroethylene

. teflon (trademark)

. . . . fluorine organic compounds

. . . . fluoroamines

. nitrofluoroamines

. trifluoroamine oxide

. . . . fluorocarbons

. . . . fluorohydrocarbons

. carbon tetrafluoride

. chlorofluoromethane

. polytetrafluoroethylene

. teflon (trademark)

. fluoropolymers

. polytetrafluoroethylene

. teflon (trademark)

. KEL-F

. polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 fluorosilicates
 tetrafluorohydrazine
 RT ∞ chemical compounds
 halocarbons

fluorine isotopes

GS chemical elements
 . halogens
 . fluorine
 . . . **fluorine isotopes**
 . nuclides
 . isotopes
 . . . **fluorine isotopes**

fluorine organic compounds

UF *organic fluorine compounds*
 GS halogen compounds
 . fluorine compounds
 . fluoro compounds
 . . . **fluorine organic compounds**
 fluoroamines
 nitrofluoramines
 trifluoroamine oxide
 fluorocarbons
 fluorohydrocarbons
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 fluoropolymers
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 organic compounds
 . **fluorine organic compounds**
 . . . fluoroamines
 nitrofluoramines
 trifluoroamine oxide
 fluorocarbons
 fluorohydrocarbons
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 fluoropolymers
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 RT ∞ chemical compounds

fluorine-liquid oxygen

USE **FLOX**

fluorite

GS calcium compounds
 . **fluorite**
 halogen compounds
 . fluorine compounds
 . . **fluorite**
 minerals
 . **fluorite**

fluoro compounds

GS halogen compounds
 . fluorine compounds
 . . **fluoro compounds**
 . . . cryolite
 . . . difluoro compounds
 perfluoroalkane
 polytetrafluoroethylene
 teflon (trademark)
 fluorine organic compounds
 fluoroamines
 nitrofluoramines
 trifluoroamine oxide
 fluorocarbons
 fluorohydrocarbons

. carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 fluoropolymers
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 fluorosilicates
 tetrafluorohydrazine
 RT ∞ chemical compounds
 halocarbons

fluoroamines

GS amines
 . **fluoroamines**
 . . nitrofluoroamines
 . . trifluoroamine oxide
 halogen compounds
 . fluorine compounds
 . fluoro compounds
 . . . fluorine organic compounds
 **fluoroamines**
 nitrofluoroamines
 trifluoroamine oxide
 organic compounds
 . fluorine organic compounds
 . . **fluoroamines**
 . . . nitrofluoroamines
 . . . trifluoroamine oxide

fluorocarbons

DEF All compounds containing fluorine and carbon (including other elements).
 GS carbon compounds
 . halocarbons
 . . **fluorocarbons**
 halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . fluorine organic compounds
 **fluorocarbons**
 halocarbons
 **fluorocarbons**
 organic compounds
 . fluorine organic compounds
 . . **fluorocarbons**
 RT chlorofluorocarbons
 fluorohydrocarbons
 fluoropolymers
 halon

fluorohydrocarbons

GS halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . fluorine organic compounds
 **fluorohydrocarbons**
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 organic compounds
 . fluorine organic compounds
 . . **fluorohydrocarbons**
 . . . carbon tetrafluoride
 . . . chlorofluoromethane
 . . . polytetrafluoroethylene
 . . . teflon (trademark)
 . hydrocarbons
 . . **fluorohydrocarbons**
 . . . carbon tetrafluoride
 . . . chlorofluoromethane
 . . . polytetrafluoroethylene
 . . . teflon (trademark)
 RT fluorocarbons
 freon
 refrigerants
 Viton rubber (trademark)

fluoromica

USE **fluorosilicates**
mica

fluorophlogopite

GS minerals

. mica
 . . **fluorophlogopite**

fluoroplastics

USE **fluoropolymers**

fluoropolymers

DEF A family of polymers based on fluorine replacement of hydrogen atoms in hydrocarbon molecules. Compounds are characterized by chemical inertness, thermal stability, and low coefficient of friction. Used for fluoroplastics.

UF *fluoroplastics*

GS halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . fluorine organic compounds
 **fluoropolymers**
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 organic compounds
 . fluorine organic compounds
 . . **fluoropolymers**
 . . . polytetrafluoroethylene
 . . . teflon (trademark)
 . . . KEL-F
 . . . polyvinyl fluoride
 RT fluorocarbons
 plastics
 ∞ polymers

fluoroscopy

RT medical equipment
x ray analysis

fluorosilicates

UF *fluoromica*
 GS halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . **fluorosilicates**
 silicon compounds
 . silicates
 . . **fluorosilicates**
 RT minerals

fluorspar

GS calcium compounds
 . calcium fluorides
 . . **fluorspar**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 halides
 fluorides
 difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 metal halides
 metal fluorides
 calcium fluorides
 **fluorspar**
 minerals
 . **fluorspar**

flushing

RT cleaning
ejection
elution
expellants
leaching
purging
purification
∞ separation
venting

flutter

washing
waste water

fluting
USE **grooving**

flutter

DEF An aeroelastic self excited vibration in which the external source of energy is the airstream and which depends on the elastic, inertial and dissipative forces of the system in addition to the aerodynamic forces. Used for aerodynamic buzz and aeromagneto flutter.

UF *aerodynamic buzz*
aeromagneto flutter
GS vibration
. structural vibration
. . . **flutter**
. . . . panel flutter
. . . . subsonic flutter
. . . . supersonic flutter
. . . . transonic flutter
RT aerodynamic noise
aerodynamic stability
aeroelastic research wings
aeroelasticity
aeroservoelasticity
airfoil oscillations
bending
bending vibration
boundary layer control
buffeting
compressibility effects
DAST program
flapping
flight characteristics
forced vibration
hovering
hydrofoil oscillations
influence coefficient
missile vibration
random vibration
resonant vibration
self induced vibration
shaking
spacecraft motion
turbulence effects
undamped oscillations
unsteady aerodynamics
vibration simulators
vibration tests
vibrational stress
wing oscillations

flutter analysis

GS structural analysis
. dynamic structural analysis
. . . **flutter analysis**
RT aeroelastic research wings
airfoil oscillations
structural vibration
unsteady aerodynamics

∞ flux

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The rate of flow of some quantity, often used in reference to the flow of some form of energy. In nuclear physics generally, the number of radioactive particles per unit volume times their mean velocity.

RT flux (rate)
flux density
flux difference splitting
flux quantization
fluxes
level (quantity)

flux (rate per unit area)

USE **flux density**

flux (rate)

SN (LIMITED TO THE TOTAL EMANATION OF ENERGY, MATERIAL OR PARTICLES FROM A SINGLE SOURCE PER UNIT TIME--SEE FLUX DENSITY FOR ENERGY,

MATERIAL OR PARTICLE RATE PER UNIT AREA)

DEF The total emanation of energy, material or particles from a single source per unit time. Used for electron flux, neutron flux, and particle flux.

UF *electron flux*
neutron flux
particle flux
GS rates (per time)
. **flux (rate)**
. . heat flux
. . magnetic flux
. . solar flux
RT beta particles
brightness
corpuseular radiation
dosimeters
electromagnetic radiation
emittance
∞ energy
field theory (physics)
∞ flux
flux density
gamma rays
∞ intensity
level (quantity)
luminous intensity
magnetic circuits
magnetic induction
magnetostatics
particle beams
particle diffusion
∞ power
radiant flux density
∞ radiation
Stefan-Boltzmann law

flux density

SN (LIMITED TO ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA, THE QUANTITY USUALLY MEASURED--SEE FLUX (RATE) FOR TOTAL EMANATION FROM A SINGLE SOURCE PER UNIT TIME)

DEF The flux (rate of flow) of any quantity, usually a form of energy, through a unit area of specified surface. (Note that this is not a volumetric density like radiant density.) Used for density (rate/area), energy density, flux (rate per unit area), and flux mapping.

UF *density (rate/area)*
energy density
flux (rate per unit area)
flux mapping
GS rates (per time)
. **flux density**
. . current density
. . photon density
. . radiant flux density
. . . irradiance
. . . . illuminance
. . . . solar constant
. . . lumens
. . . luminous intensity
. . . . illuminance
. . . . luminance
. . . particle flux density
. . . . electron flux density
. . . . neutron flux density
. . . . proton flux density
. . . radiance
. . . radiancy
. . . solar flux density
. . . . solar constant
. . sound intensity
. . . zero sound
RT alpha particles
angular distribution
atom concentration
∞ density
dosimeters
electromagnetic radiation
∞ energy
energy distribution
field intensity meters
field strength
field theory (physics)
∞ flux

flux (rate)
gamma rays
heat flux
∞ intensity
irradiation
level (quantity)
loudness
mass distribution
meteoroid concentration
Onsager phenomenological coefficient
∞ power
power spectra
protons
∞ radiation
radiation distribution
radiation hazards
remanence
scattering functions
Solar Maximum Mission
sound pressure
spectra
x ray density measurement

flux difference splitting

(added May 1995)

UF *Roe flux difference splitting scheme*
GS analysis (mathematics)
. numerical analysis
. . . **flux difference splitting**
splitting
. **flux difference splitting**
RT computational fluid dynamics
finite difference theory
∞ flux
flux vector splitting

flux mapping

USE **flux density**
mapping

flux pinning

DEF In superconductors, the interaction between the magnetic and the metallurgical microstructures. It controls the critical current density in a given superconducting material.

GS pinning
. **flux pinning**
RT lines of force
magnetic flux
superconductivity
trapped magnetic fields
trapping

flux pumps

DEF Cryogenic DC generators.
RT magnetic coils
magnetic fields
superconducting magnets
superconductivity

flux quantization

RT ∞ flux
magnetic flux
superconductors (materials)

flux transfer events

(added July 1989)

GS magnetic properties
. magnetoactivity
. . . **flux transfer events**
RT aeronomy
geomagnetism
interplanetary magnetic fields
lines of force
magnetic effects
magnetic field configurations
magnetic field reconnection
magnetic fields
magnetic flux
magnetopause
magnetosphere-ionosphere coupling
space plasmas

flux vector splitting

DEF The splitting of the nonlinear flux vectors of the conservation law form of the inviscid

gasdynamic equations into subvectors by similarity transformations so that each subvector has associated with it a specified eigenvalue spectrum.

- GS analysis (mathematics)
 - . numerical analysis
 - . . **flux vector splitting**
- splitting
 - . **flux vector splitting**
- RT computation
 - computational fluid dynamics
 - eigenvalues
 - finite difference theory
 - fluid dynamics
 - flux difference splitting
 - panel method (fluid dynamics)
 - vector analysis
 - vectors (mathematics)
 - vortex lattice method

fluxes

- RT brazing
- ∞ flux
- limestone
- soldering
- welding

fluxmeters

- USE **magnetic measurement measuring instruments**

fly ash

DEF Fine particulate, essentially noncombustible refuse, carried in a gas stream from a furnace.

- GS ashes
 - . **fly ash**
- RT air pollution
 - coal
 - combustion products
 - electric power plants
 - electrostatic precipitators
 - particulates
 - pollution control

fly by light control

(added December 1992)

- UF *FBL control*
- GS flight control
 - . **fly by light control**
- RT aircraft control
 - fiber optics
 - optical fibers

fly by tube control

DEF A fluidic flight control for aircraft in which a hydraulic control signal link connects the pilot's controls to the control surface actuators.

- GS flight control
 - . **fly by tube control**
- RT aircraft control
 - ∞ control
 - fluidic circuits
 - hydraulic equipment
 - servoamplifiers

fly by wire control

- UF *electric aircraft*
- GS flight control
 - . **fly by wire control**
- RT aircraft control
 - ∞ control
 - ground based control
 - spacecraft control

flyby missions

DEF Interplanetary missions in which the vehicle passes close to the target planet but does not impact it or go into orbit around it.

- GS space missions
 - . **flyby missions**
 - . . Giotto mission
 - . . Grand Tours
 - . . . Mariner Jupiter-Saturn flyby
 - . . . Mariner Jupiter-Uranus flyby
 - . . . Voyager 1977 mission

- . . Comet Nucleus Tour
- . . Comet Rendezvous Asteroid Flyby Mission
- . . Mariner Venus-Mercury 1973
- . . Mariner-Mercury 1973
- . . Near Earth Asteroid Rendezvous Mission
- . . Stardust Mission
- RT asteroid missions
- Clementine spacecraft
- Deep Space 1 Mission
- Galileo project
- Galileo spacecraft
- interplanetary flight
- long duration space flight
- lunar flight
- Mariner Mark 2 Spacecraft
- Mariner program
- ∞ missions
- outer planets explorers
- space flight
- swingby technique
- TOPS (spacecraft)
- Vega project
- Voyager 1 spacecraft
- Voyager 2 spacecraft

flying

- USE **flight**

Flying Bedstead aircraft

- USE **flying platforms**

Flying Crane helicopter

- USE **H-17 helicopter**

flying ejection seats

- GS onboard equipment
 - . aircraft equipment
 - . . ejection seats
 - . . . **flying ejection seats**
 - . . . safety devices
 - . . . ejection seats
 - . . . **flying ejection seats**
 - . . . seats
 - . . . ejection seats
 - . . . **flying ejection seats**
- RT abort apparatus
 - aircraft safety
 - bailout
 - cockpits
 - ejectors
 - escape capsules
 - flight safety
 - jet engines
 - protection

flying in formation

(added October 2001)

- USE **formation flying**

flying personnel

- GS personnel
 - . **flying personnel**
 - . . astronauts
 - . . . orbital workers
 - . . . cosmonauts
 - . . . flight crews
 - . . . spacecrews
 - . . . pilots (personnel)
 - . . . aircraft pilots
 - test pilots
- RT flight fitness
- flight training
- navigators

flying platform stability

- USE **aerodynamic stability flying platforms**

flying platforms

- UF *Flying Bedstead aircraft flying platform stability*
- GS V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **flying platforms**

- RT ∞ aircraft
 - ground effect machines
 - jet aircraft
 - observation aircraft
 - ∞ platforms
 - reconnaissance aircraft
 - research aircraft
 - ∞ subsonic aircraft
 - VZ-8 aircraft

flying qualities

- USE **flight characteristics**

flying spot scanners

- GS optical equipment
 - . optical scanners
 - . . **flying spot scanners**
 - . . . scanners
 - . . . optical scanners
 - . . . **flying spot scanners**
- RT display devices
 - electron guns
 - electron optics
 - image tubes
 - oscilloscopes
 - phototubes
 - picture tubes
 - television equipment
 - video equipment

flying wing aircraft

- USE **tailless aircraft**

flying wing configurations

(added April 2001)

- USE **blended-wing-body configurations**

flywheels

- GS rotating bodies
 - . rotors
 - . . **flywheels**
 - . . . wheels
 - . . . **flywheels**
- RT balancing
 - counter-rotating wheels
 - energy storage
 - engine parts
 - mechanical engineering
 - reaction wheels

FM (modulation)

- USE **frequency modulation**

FM/PM (modulation)

DEF Phase modulation of a carrier by sub-carrier(s) which is (are) frequency modulated by information.

- GS coding
 - . signal encoding
 - . . frequency modulation
 - . . . **FM/PM (modulation)**
 - . . . phase modulation
 - . . . **FM/PM (modulation)**
 - . . . modulation
 - . . . frequency modulation
 - . . . **FM/PM (modulation)**
 - . . . phase modulation
 - . . . **FM/PM (modulation)**
- RT data transmission

foaming

- RT beneficiation
- flotation
- foams
- metal foams
- ∞ separation
 - surface properties
 - swirling
 - wetting

foams

- UF *cellular materials (non biological)*
- GS **foams**
 - . metal foams
- RT aerogels
- bubbles

focal plane devices

colloids
 explosion suppression
 fire extinguishers
 fire fighting
 foaming
 low density materials
 ∞ materials
 polyurethane foam
 styrofoam (trademark)

focal plane arrays

USE **focal plane devices**

focal plane devices

DEF Radiation sensitive devices positioned at the focal area of electromagnetic detectors. Used for focal plane arrays.

UF *focal plane arrays*

RT arrays
 charge coupled devices
 infrared detectors
 linear arrays
 mosaics
 photodiodes

foci

GS **foci**
 . plasma focus
 RT ∞ centers
 focusing
 geometry
 loci
 ∞ optics
 points (mathematics)
 resolution

focusing

GS **focusing**
 . defocusing
 . prefocusing
 . self focusing
 RT accommodation
 adjusting
 astigmatism
 cameras
 distance
 foci
 Fresnel lenses
 geometrical optics
 gravitational lenses
 image contrast
 image enhancement
 laser cutting
 laser drilling
 lenses
 panoramic cameras
 solar reflectors
 steering
 stigmatism
 thermal lensing
 vignetting

foetuses

USE **fetuses**

fog

DEF A loose term applied to visible aerosols in which the dispersed phase is liquid. Formation by condensation is usually implied. In meteorology, a dispersion of water or ice.

GS mixtures
 . dispersions
 . . colloids
 . . . aerosols
 **fog**
 . . liquid-gas mixtures
 . . . aerosols
 **fog**
 particles
 . aerosols
 . . **fog**

RT anvil clouds
 aviation meteorology
 cirrocumulus clouds
 cirrostratus clouds
 clouds (meteorology)

drop size
 haze
 haze detection
 hydrometeors
 mist
 precipitation (meteorology)
 smog
 smoke
 steam
 stratus clouds
 visibility

fog dispersal

GS weather modification
 . **fog dispersal**
 RT aerosols
 climatology
 cloud physics
 clouds (meteorology)
 dispersing
 dispersions
 mist
 precipitation (meteorology)

foil bearings

GS bearings
 . **foil bearings**
 RT gas bearings
 journal bearings

∞ **foils**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT THE TERMS LISTED BELOW)
 RT airfoils
 foils (materials)
 hydrofoils
 multilayer insulation

foils (materials)

GS **foils (materials)**
 . metal foils
 RT airfoils
 ∞ foils
 hydrofoils
 ∞ materials
 multilayer insulation
 thin plates

Fokker aircraft

GS **Fokker aircraft**
 . F-27 aircraft
 . F-28 transport aircraft
 RT ∞ aircraft

Fokker bond testers

USE **adhesion tests**

Fokker F 27 aircraft

USE **F-27 aircraft**

Fokker F 28 aircraft

USE **F-28 transport aircraft**

Fokker Friendship aircraft

USE **F-27 aircraft**

Fokker-Planck equation

GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **Fokker-Planck equation**
 RT Boltzmann transport equation
 Brownian movements
 density distribution
 diffusion theory
 ∞ equations
 ionized gases
 stochastic processes

folding

UF *crimping*
 RT bending
 binding
 curl (materials)

distortion
 flexing
 kinking

Folding Fin aircraft rocket vehicle

UF *FFAR rocket vehicle*
 GS rocket vehicles
 . **Folding Fin aircraft rocket vehicle**
 RT ∞ aircraft
 solid propellant rocket engines

folding structures

UF *Rogallo wings*
telescoping structures
 GS **folding structures**
 . sailwings
 RT antennas
 balloons
 ballutes
 expandable structures
 furlable antennas
 inflatable space structures
 inflatable structures
 paddles
 parachutes
 paragliders
 parawings
 rotary wings
 space erectable structures
 spacecraft structures
 ∞ structures
 variable geometry structures
 variable sweep wings

folds (geology)

DEF Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of deformation, although their definition is descriptive and not genetic and may include primary structures. Used for nappes.

UF *nappes*
 RT Earth crust
 fissures (geology)
 geological faults
 Great Basin (US)
 ∞ layers
 outcrops
 rocks
 seamounts
 strata
 stratification

foliage

RT brown wave effect
 canopies (vegetation)
 deciduous trees
 defoliant
 green wave effect
 herbicides
 leaves
 locusts
 plants (botany)
 timber vigor

folic acid

UF *vitamin M*
 GS acids
 . amino acids
 . . **folic acid**
 . . carboxylic acids
 . . . **folic acid**
 nitrogen compounds
 . **folic acid**
 organic compounds
 . amino acids
 . . **folic acid**
 . . carboxylic acids
 . . . **folic acid**
 . cyclic compounds
 . . heterocyclic compounds
 . . . **folic acid**
 vitamins

- . **foliac acid**
- ∞ **food**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT alfalfa
barley
beverages
broths
caloric requirements
canning
carbohydrates
citrus trees
consumables (spacecrew supplies)
corn
decontamination
dehydrated food
diets
digesting
distributing
Earth resources
eating
eggs
fats
fishes
flour (food)
food chain
food production (in space)
frozen foods
fruits
gelatins
hay
leguminous plants
milk
millet
nutrition
oats
orchards
peppers
potatoes
preserving
proteins
provisioning
rations
services
soybeans
space flight feeding
space rations
spinach
starches
sugar cane
sugars
synthetic food
tomatoes
vegetables
vineyards
vitamins
yeast
- food chain**
DEF The scheme of feeding relationships by trophic levels which unites member species of a biological community.
RT animals
ecosystems
∞ food
plants (botany)
- food intake**
RT fasting
space flight feeding
synthetic food
- food processing**
DEF The transformation of foodstuffs into forms for easy packaging, greater palatability, longer storage, etc.
GS **food processing**
. canning
. preserving
RT dehydrated food
frozen foods
∞ processing
- food production (in space)**
RT closed ecological systems
- consumables (spacecrew supplies)
∞ food
∞ production
space flight feeding
space rations
- footprints**
DEF Ground patterns or contours of an acoustical or microwave nature that are predictable and measurable.
RT aircraft noise
antenna radiation patterns
mathematical models
- forbidden bands**
GS energy bands
. **forbidden bands**
RT band structure of solids
∞ bands
electron energy
free electrons
lattice vibrations
wave equations
- forbidden transitions**
RT electron transitions
Franck-Condon principle
quantum theory
selection rules (nuclear physics)
∞ solid state physics
∞ transition
wave functions
- Forbush decreases**
DEF The observed decreases in cosmic ray activity in the Earth's atmosphere about a day after a solar flare. Used for Forbush effect.
UF *Forbush effect*
RT cosmic rays
∞ effects
magnetic storms
solar flares
solar furnaces
solar storms
- Forbush effect*
USE **Forbush decreases**
- ∞ **force**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The cause of the acceleration of material bodies measured by the rate of change of momentum produced on a free body. Used for repulsion.
UF *repulsion*
RT acceleration (physics)
aerodynamic forces
attraction
centrifugal force
centripetal force
electric field strength
high impulse
inertia
kinetics
lines of force
loads (forces)
Lorentz force
newton
nonconservative forces
null zones
ponderomotive forces
pressure
pulling
pushing
thrust
thrust measurement
torque
torsion
Van der Waals forces
weight (mass)
zero force curves
- force distribution**
UF *lift distribution*
normal force distribution
- GS distribution (property)
. **force distribution**
- RT aerodynamic coefficients
aerodynamic loads
angular distribution
charge distribution
energy distribution
influence coefficient
lift drag ratio
loads (forces)
mass distribution
moment distribution
scale effect
stress concentration
stress distribution
stress intensity factors
sweep effect
thrust distribution
transverse loads
wing loading
- force fields*
USE **field theory (physics)**
- force vector recorders**
DEF Instrumentation for recording force displacements in a variety of disciplines.
GS measuring instruments
. **force vector recorders**
recording instruments
. **force vector recorders**
RT ∞ instruments
- forced convection**
GS convection
. **forced convection**
RT blowing
convective heat transfer
free convection
heat transfer
laminar flow
Prandtl number
Rayleigh-Benard convection
Stanton number
- forced oscillation*
USE **forced vibration**
- forced vibration**
DEF An oscillation of a system in which the response is imposed by the excitation. If the excitation is periodic and continuing, the oscillation is steady state. Used for forced oscillation and forced vibratory motion equations.
UF *forced oscillation*
forced vibratory motion equations
GS vibration
. **forced vibration**
RT flutter
free vibration
random vibration
self excitation
self induced vibration
- forced vibratory motion equations*
USE **equations**
forced vibration
- force-free magnetic fields**
GS magnetic fields
. **force-free magnetic fields**
RT magnetic field configurations
magnetic flux
magnetohydrodynamic stability
solar flares
solar magnetic field
- forearm**
GS anatomy
. limbs (anatomy)
. . arm (anatomy)
. . . **forearm**
appendages
. arm (anatomy)

forebodies

. . forearm

forebodies

GS **forebodies**
 . noses (forebodies)
 . . nose cones
 . . . ablative nose cones
 . . . rocket nose cones
 RT afterbodies
 aircraft structures
 bluff bodies
 blunt bodies
 blunt leading edges
 ∞ bows
 centerbodies
 cylindrical bodies
 hammerhead configuration
 leading edges
 sharp leading edges

forecasting

UF *forecasts*
 GS **predictions**
 . **forecasting**
 . . technological forecasting
 . . . Delphi method (forecasting)
 . . . pattern method (forecasting)
 . . . probe method (forecasting)
 . . . profile method (forecasting)
 . . weather forecasting
 . . . long range weather forecasting
 . . . nowcasting
 . . . numerical weather forecasting
 . . . statistical weather forecasting
 RT ∞ analyzing
 budgeting
 confidence limits
 correlation
 curve fitting
 estimates
 estimating
 evaluation
 expectation
 extrapolation
 hindcasting
 management
 management methods
 management planning
 mathematical models
 maximum likelihood estimates
 mission planning
 noise prediction (aircraft)
 operations research
 planning
 probability theory
 project planning
 ∞ projection
 regression analysis
 regression coefficients
 reliability
 reserves
 risk
 scheduling
 statistical analysis
 statistical distributions
 systems engineering
 time series analysis
 trends

forecasts

USE **forecasting**

forehead

GS anatomy
 . face (anatomy)
 . . **forehead**
 RT head (anatomy)
 skull

foreign bodies

RT aircraft hazards
 ∞ bodies
 injuries

meteorites

foreign policy

GS policies
 . **foreign policy**
 . . international relations
 . . . international cooperation
 outer space treaty
 RT ∞ budgets
 European space programs
 International Hydrological Decade

foreign trade

USE **international trade**

forensic sciences

USE **law (jurisprudence)**

forest fire detection

GS detection
 . **forest fire detection**
 RT aerial photography
 ∞ detectors
 haze detection
 infrared detectors
 infrared instruments
 infrared photography
 infrared radiometers
 infrared scanners
 measuring instruments
 observation
 radiometers
 satellite-borne photography
 surveillance

forest fires

GS fires
 . **forest fires**
 RT air pollution
 ashes
 biomass burning
 combustion
 fire prevention
 firebreaks
 flames
 forests
 smoke
 wastes

forest management

GS management
 . resources management
 . . **forest management**
 . . . reforestation
 RT conservation
 Earth resources
 forests
 land use
 regional planning
 timber inventory

forests

UF *lumbering areas*
 GS resources
 . Earth resources
 . . **forests**
 . . . rain forests
 RT Amazon region (South America)
 canopies (vegetation)
 clearings (openings)
 conifers
 conservation
 deciduous trees
 defoliants
 defoliation
 deforestation
 firebreaks
 forest fires
 forest management
 herbicides
 logging (industry)
 plants (botany)
 reforestation
 regional planning
 silviculture
 timber identification

timber inventory
 timber vigor
 timberline
 trees (plants)
 wilderness

forging

UF *metal forging*
 GS forming techniques
 . **forging**
 metal working
 . **forging**
 RT ausforming
 billets
 bulging
 casting
 coining
 cold working
 heat treatment
 hot isostatic pressing
 hot pressing
 hot working
 piercing
 pressing (forming)
 rheocasting
 ∞ rolling
 squeeze casting
 stamping

forks

RT conveyors
 hooks

form

USE **shapes**

form factors

RT approximation
 coupling coefficients
 functional analysis
 harmonic analysis
 rectifiers
 scattering coefficients
 series (mathematics)
 square waves
 transducers
 ∞ variable
 waveforms
 x ray scattering

form perception

USE **space perception**

formaldehyde

GS aldehydes
 . **formaldehyde**
 RT phenol formaldehyde

formalism

RT computer programming
 dynamic programming
 hardware description languages
 linear programming
 ∞ logic
 nonlinear programming
 parameterization
 programming languages

format

RT computer programming
 documents
 editing
 frames (data processing)
 printouts
 records
 syntax
 texts

formates

GS **formates**
 . chloroformate
 . nitroformates
 RT formic acid

formyl ions

∞ formation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)

RT formations
growth
nucleation
stratigraphy

formation flying

(added October 2001)

DEF Coordinated and closely synchronized flight of two or more aircraft or spacecraft in a relatively close spatial configuration.

UF *flying in formation*GS positioning
. formation flyingRT aerobatics
air navigation
aircraft maneuvers

∞ flight

flight control
orbital maneuvers
satellite constellations
satellite control
satellite networks
space navigation
spacecraft control
spacecraft guidance
spacecraft maneuvers
stationkeeping

formation heat

USE **heat of formation**

formations

RT contacts (geology)
∞ formation
fracturing
gas injection
geological faults
geology
geophysics
Great Basin (US)
∞ layers
mountains
outcrops
outliers (landforms)
paleontology
perforating
permeability
petrology
porosity
rocks
shatter cones
soils
stairsteps
stratigraphy
terraces (landforms)
wettability

formhydroxamic acid

GS acids
. carboxylic acids
. . formhydroxamic acid
nitrogen compounds
. amides
. . formhydroxamic acid
organic compounds
. carboxylic acids
. . formhydroxamic acid

formic acid

GS acids
. carboxylic acids
. . formic acid
organic compounds
. carboxylic acids
. . formic acid
RT formates
formyl ions

formica

RT laminates
∞ polymers

thermosetting resins

forming techniques

SN (TECHNIQUES OF SHAPING ITEM)

UF *metal forming*GS **forming techniques**. casting
. . centrifugal casting
. . investment casting
. . propellant casting
. . rheocasting
. . sand casting
. . slip casting
. . squeeze casting
. . cold working
. . cold rolling
. . electrohydraulic forming
. . explosive forming
. electroforming
. extruding
. . pultrusion
. forging
. hot working
. . ausforming
. injection molding
. magnetic forming
. metal drawing
. metal spinning
. . hydrospinning
. pressing (forming)
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
. resin transfer molding
. roll formingRT ∞ blanking
cutting
deposition
electromagnetic hammers
hot machining
laser cutting
machining
metal grinding
metal working
spraying
upsetting

forms (paper)

RT blanks
data acquisition

∞ formulas

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT computation
formulas (mathematics)
formulations
Kramers-Kronig formula

formulas (mathematics)

UF *expressions (mathematics)*
GS mathematical logic
. formulas (mathematics)
. . Bethe-Heitler formula
RT ∞ formulas
∞ mathematics

formulations

RT admixtures
∞ composition
∞ formulas
ingredients
mixtures
parameterization
stoichiometry

formyl ions

GS ions
. molecular ions
. . formyl ions
. positive ions
. . cations
. . . formyl ions
radicals. formyl ions
RT atmospheric chemistry
formates
formic acid
hydroxyl radicals
interstellar chemistry
interstellar matter

forsterite

GS magnesium compounds
. forsterite
minerals
. olivine
. . forsterite
silicon compounds
. silicates
. . forsterite
RT refractories

Forth (programming language)

(added December 1992)

GS languages
. programming languages
. . Forth (programming language)
RT computer programming

Fortisan (trademark)

GS biopolymers
. polysaccharides
. . cellulose
. . . Fortisan (trademark)
fabrics
. Fortisan (trademark)
fibers
. synthetic fibers
. . Fortisan (trademark)
organic compounds
. carbohydrates
. . polysaccharides
. . . cellulose
. . . . Fortisan (trademark)
RT parachute fabrics

FORTRAN

UF *FAB (programming language)*
GS languages
. programming languages
. . FORTRAN
RT Cobol
compilers
computer programming
PL/1

forward facing steps

(added December 1995)

RT backward facing steps
boundary layer flow
separated flow

forward looking infrared detectors

USE **FLIR detectors**

forward scattering

DEF The scattering of radiant energy into the hemisphere of space bounded by a plane normal to the direction of the incident radiation and lying on the side toward which the incident radiation was advancing; the opposite of backward scatter.

GS scattering
. forward scattering
RT backscattering
inverse scattering
light scattering
nuclear scattering
scatter propagation

fossil fuels

DEF A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal.

GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . coal

fossils

- anthracite
- lignite
- solvent refined coal
- crude oil
- natural gas
- liquefied natural gas
- peat
- shale oil
- resources
- . Earth resources
- . . **fossil fuels**
- . . . coal
- anthracite
- lignite
- solvent refined coal
- . . . crude oil
- . . . natural gas
- liquefied natural gas
- . . . peat
- . . . shale oil
- RT carbonaceous materials
- underwater resources

fossil meteorite craters

USE **fossils**
meteorite craters

fossils

DEF Remains, traces, or imprints of an organism preserved in the Earth's crust sometime in the geologic past. Used for fossil meteorite craters.

UF *fossil meteorite craters*

RT archaeology
paleobiology
paleontology
particle tracks
radioactive age determination

Foster theory

RT network analysis
reactance
resonance

∞ theories

fouling

GS **fouling**

- . antifouling

RT biofilms
contamination
corrosion
deposition
ice formation
plugging
retarding

foundations

UF *bases (foundations)*
structural foundations

GS **foundations**

- . pile foundations

RT basements

∞ bases

- caissons
- concrete structures
- excavation
- geotechnical engineering
- overconsolidation

∞ pad

- pavements
- skirts
- structural members

∞ structures

- substructures
- supports
- underground structures

foundries

GS industrial plants

- . **foundries**

RT furnaces

∞ metallurgy

- molds

four body problem

RT celestial mechanics

many body problem
orbits
perturbation

∞ problems

- three body problem

Fourier analysis

DEF The representation of physical or mathematical data by the use of the Fourier series of Fourier integral.

GS analysis (mathematics)

- . **Fourier analysis**
- . . Fourier series

RT autocorrelation
data compression
differential equations
divergence
exponential functions
frequency distribution
harmonic analysis
harmonic excitation
harmonic functions
harmonic generations
harmonic oscillation
harmonics
information theory
kurtosis
linear transformations
measure and integration
operational calculus
periodic functions
periodic variations
real variables
simple harmonic motion
time series analysis
wavelet analysis

Fourier law

GS laws

- . **Fourier law**

RT thermal conductivity

Fourier series

GS analysis (mathematics)

- . calculus
- . . series (mathematics)
- . . . **Fourier series**
- . . Fourier analysis
- . . **Fourier series**
- . . real variables
- . . series (mathematics)
- . . . **Fourier series**

RT Gibbs phenomenon

Fourier transformation

GS analysis (mathematics)

- . functional analysis
- . . integral transformations
- . . . **Fourier transformation**
- fast Fourier transformations
- functions (mathematics)
- . **Fourier transformation**
- . . fast Fourier transformations
- transformations (mathematics)
- . integral transformations
- . . **Fourier transformation**
- . . . fast Fourier transformations

RT BBGKY hierarchy
Gabor transformation
holographic spectroscopy
maximum entropy method
Walsh function
wavelet analysis

Fourier-Bessel transformations

GS analysis (mathematics)

- . calculus
- . . **Fourier-Bessel transformations**
- . . functional analysis
- . . . integral transformations
- **Fourier-Bessel transformations**
- . . real variables
- . . **Fourier-Bessel transformations**
- . . functions (mathematics)
- . . **Fourier-Bessel transformations**
- . . transformations (mathematics)

. integral transformations

. . **Fourier-Bessel transformations**

RT differential equations
series (mathematics)

four-wave mixing

(added April 1992)

GS conjugation

- . phase conjugation
- . . **four-wave mixing**

RT atom optics
coherent light
collimation
laser beams
light amplifiers
light beams
nonlinear optics
optical bistability
phase coherence
signal mixing
wave interaction

fovea

DEF The central part of the retina, which contains a high concentration of the color sensitive receptors known as cones.

GS anatomy

- . sense organs
- . . eye (anatomy)
- . . . retina
- **fovea**

RT Saccadic eye movements

FR-1 satellite

GS artificial satellites

- . French satellites
- . . **FR-1 satellite**

fractals

DEF Highly irregular geometrical figures such as snowflakes or the boundary of a cloud whose capacity dimension is not an integer. The capacity dimension characterizes the measuring of the number of different size superimposed squares needed to cover the geometric shape. By the use of differing size boxes, one is able to determine the capacity dimension.

GS dimensions

- . **fractals**
- geometry
- . **fractals**

RT ∞ applications of mathematics

- coordinates
- exponents
- half spaces
- ∞ mathematics
- ratios
- set theory
- ∞ space
- strange attractors

fractionation

GS **fractionation**

- . chemical fractionation
- . hydrocracking

RT refining
retort processing

∞ separation

- solvent refined coal

fractions

SN (EXCLUDES MATHEMATICAL CONCEPTS)

RT ∞ components

- finer
- particle size distribution
- ratios

fractography

GS imagery

- . photography
- . . **fractography**

RT brittleness
crack closure
crack geometry
crack propagation

- ductility
Elber equation
fatigue (materials)
fractures (materials)
∞ metallurgy
- fracture mechanics**
UF *fault mechanics*
Mohr circles
RT bend tests
burst tests
caustics (optics)
crack bridging
crack closure
crack initiation
crack opening displacement
crack propagation
Elber equation
finite element method
fracturing
Griffith crack
hole geometry (mechanics)
isoparametric finite elements
J integral
∞ mechanics (physics)
micromechanics
plane strain
residual strength
rock mechanics
rupturing
short cracks
soil mechanics
strain distribution
stress distribution
stress intensity factors
stress tensors
time temperature parameter
- fracture resistance*
USE **fracture strength**
- fracture strength**
DEF The normal stress at the beginning of fracture. Fracture strength is calculated from the load at the beginning of fracture during a tension test and the original cross-sectional area of the specimen. Used for fracture resistance and fracture toughness.
UF *fracture resistance*
fracture toughness
GS mechanical properties
. **fracture strength**
. . flexural strength
RT bend tests
brittle materials
brittleness
burst tests
carbon-carbon composites
crack closure
crack initiation
crack opening displacement
crack propagation
creep rupture strength
ductile-brittle transition
ductility
earthquake resistance
eutectic composites
hardness
J integral
load carrying capacity
residual strength
∞ resistance
retirement for cause
∞ strength
toughness
yield strength
- fracture toughness*
USE **fracture strength**
- fractures (materials)**
GS **fractures (materials)**
. cracks
. . crack tips
. . edge cracks
. . microcracks
- . . short cracks
. . surface cracks
RT crack opening displacement
damage
deformation
failure
fractography
∞ materials
- fracturing**
GS **fracturing**
. cracking (fracturing)
. . stress corrosion cracking
. crustal fractures
RT brittleness
chipping
crack closure
crack opening displacement
crack propagation
cutting
flaking
formations
fracture mechanics
fragmentation
fragments
metal fatigue
perforating
∞ separation
spalling
splitting
stress functions
structural failure
- fragmentation**
UF *shattering*
RT acoustic streaming
breaking
bursts
chipping
comminution
fracturing
fragments
penetration
Sabot projectiles
shrapnel
spalling
terminal ballistics
- fragments**
RT chips
debris
ejecta
fracturing
fragmentation
shrapnel
- frame photography**
GS imagery
. photography
. . **frame photography**
RT black and white photography
framing cameras
high speed cameras
- frames**
GS **frames**
. airframes
. chassis
. undercarriages
RT carriages
springs (elastic)
∞ structures
struts
supports
trusses
- frames (data processing)**
RT data management
data processing
format
image processing
- framing cameras**
GS optical equipment
. cameras
. . high speed cameras
- . . . **framing cameras**
photographic equipment
. cameras
. . high speed cameras
. . . **framing cameras**
RT frame photography
rotating mirrors
- France**
GS nations
. **France**
. . French Guiana
. . Guadeloupe
. . Martinique
RT Andorra
English Channel
Europe
French space program
Pyrenees Mountains (Europe)
Rhône Delta (France)
- francium**
GS chemical elements
. alkali metals
. . **francium**
metals
. alkali metals
. . **francium**
- Franck-Condon principle**
RT Born-Oppenheimer approximation
color centers
conduction bands
electron transitions
forbidden transitions
optical transition
- Fraunhofer line discriminators**
GS circuits
. discriminators
. . **Fraunhofer line discriminators**
RT absorption spectra
luminescence
measuring instruments
spectroscopic analysis
spectroscopy
- Fraunhofer lines**
DEF Dark lines in the absorption spectrum of solar radiation due to absorption by gases in the outer portions of the sun and in the Earth's atmosphere.
GS spectra
. radiation spectra
. . absorption spectra
. . . **Fraunhofer lines**
. . electromagnetic spectra
. . . line spectra
. . . . **Fraunhofer lines**
. spectral bands
. . absorption spectra
. . . **Fraunhofer lines**
RT absorption spectroscopy
optogalvanic spectroscopy
solar spectra
- Fraunhofer region*
USE **far fields**
- Fredholm equations**
UF *Fredholm operators*
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Fredholm equations**
RT ∞ equations
ill-posed problems (mathematics)
Pomeranchuk theorem
- Fredholm operators*
USE **Fredholm equations operators (mathematics)**
- free atmosphere**
DEF That portion of the Earth's atmosphere, above the planetary boundary layer, in

free boundaries

which the effect of the Earth's surface friction on the air is negligible, and in which the air is usually treated (dynamically) as an ideal fluid. The base of the free atmosphere is usually taken as the geostrophic wind level.

- GS Earth atmosphere
 - . **free atmosphere**
- RT biosphere
 - middle atmosphere
 - primitive Earth atmosphere

free boundaries

- GS boundaries
 - . **free boundaries**
- RT fluid boundaries
 - interfaces
 - jet flow
 - jet mixing flow
 - jet streams (meteorology)
 - liquid surfaces
 - liquid-liquid interfaces
 - liquid-vapor interfaces

free convection

- UF *natural convection*
 - thermal convection*
- GS convection
 - . **free convection**
 - . . . Rayleigh-Benard convection
 - . . . Benard cells
- RT convection currents
 - convective flow
 - convective heat transfer
 - forced convection
 - laminar flow
 - Marangoni convection
 - porous boundary layer control
 - solar convection (astronomy)
 - stellar convection
 - temperature
 - thermosiphons
 - turbulent flow

free electron lasers

DEF Multifrequency lasers utilizing optical radiation amplification by a beam of free electrons passing through a vacuum in a transverse periodic magnetic field, as opposed to conventional lasers in which the oscillating electrons are bound to atoms and molecules and have a specific wavelength.

- GS stimulated emission devices
 - . lasers
 - . . . **free electron lasers**
- RT diffraction radiation
 - wiggler magnets

free electrons

DEF Electrons which are not bound to an atom.

- GS charge carriers
 - . **free electrons**
 - particles
 - . charged particles
 - . . . energetic particles
 - electrons
 - **free electrons**
 - . corpuscular radiation
 - . . . energetic particles
 - electrons
 - **free electrons**
 - . elementary particles
 - . . fermions
 - . . . leptons
 - electrons
 - **free electrons**
- RT Brillouin zones
 - conduction electrons
 - electron avalanche
 - electron density (concentration)
 - electron gas
 - forbidden bands
 - plasma frequencies

recombination coefficient

free energy

- GS thermodynamic properties
 - . **free energy**
 - . . Gibbs free energy
- RT chemical energy
 - ∞ energy
 - energy of formation
 - enthalpy
 - Gibbs-Helmholtz equations
 - internal energy
 - ∞ level
 - molecular energy levels
 - thermal energy
 - thermodynamics

free fall

DEF The fall or drop of a body, such as a rocket, not guided, not under thrust, and not retarded by a parachute or a braking device. The free and unhampered motion of a body along a Keplerian trajectory, in the force of gravity is counterbalanced by the force of inertia.

- RT air drop operations
 - ballistic trajectories
 - falling spheres
 - parachute descent
 - parafoils
 - weightlessness

free flight

DEF Unconstrained or unassisted flight, as in the flight of a rocket after consumption of its propellant or after motor shutoff, in the flight of an unguided projectile, and in the flight in certain kinds of wind tunnels of unmounted models.

- RT ∞ flight
 - gliders
 - gliding
 - hang gliders

free flight test apparatus

- RT flight tests
 - ∞ test equipment

free flow

- UF *free stream effects*
 - free streams*
- GS fluid flow
 - . **free flow**
- RT void ratio

free jets

DEF Fluid jets without solid boundaries, such as a jet discharging into the open.

- GS fluid jets
 - . **free jets**
- RT jet boundaries
 - jet flow
- ∞ jets

free molecular flow

- GS fluid flow
 - . gas flow
 - . . **free molecular flow**
- RT continuum flow
 - kinetic theory
 - Knudsen flow
 - molecular beams
 - rarefied gas dynamics
 - rarefied gases
 - slip flow
 - transition flow

free oscillations

- USE **free vibration**

free radicals

DEF Atoms or groups of atoms broken away from stable compounds by application of external energy, and, although containing unpaired electrons, remaining free for transitory or longer periods.

- GS radicals
 - . **free radicals**

- . . hydroxyl radicals
- RT amino radical
 - atoms
 - carbenes
 - ions
 - negative ions
 - oxygen ions
 - trivalent ions
 - vinyl radical

free stream effects

- USE **free flow**

free streams

- USE **free flow**

free vibration

DEF Oscillation of a system in the absence of external forces. Used for free oscillations.

- UF *free oscillations*
- GS vibration
 - . **free vibration**
- RT forced vibration
 - linear vibration
 - Mindlin plates
 - proton precession
 - self excitation
 - self induced vibration
 - vibration mode

free wing aircraft

- RT aerodynamics
 - ∞ aircraft
 - aircraft design
 - control surfaces

Freedom Fighter aircraft

- USE **F-5 aircraft**

Freedom Space Station

- USE **Space Station Freedom**

free-piston engines

DEF Engines in which the pistons are not connected to the crank.

- GS engines
 - . piston engines
 - . . **free-piston engines**
- RT AC generators
 - linear alternators
 - pistons
 - spacecraft power supplies
 - Stirling engines

free-space optical communication

- (added June 1998)
- GS telecommunication
 - . communication
 - . . optical communication
 - . . . **free-space optical communication**
- RT high power lasers
 - laser beams
 - satellite communication
 - space communication

free-space optical interconnects

- (added June 1998)
- UF *FSOI (integrated optics)*
- GS optical interconnects
 - . **free-space optical interconnects**
- RT integrated optics
 - interprocessor communication
 - optical computers
 - optical switching
 - optoelectronic devices
 - photonics

freeze drying

- GS drying
 - . **freeze drying**
- RT dehydrated food
 - dehydration
 - freezing
 - frozen foods

- preserving
- freezing**
- GS phase transformations
 . **freezing**
 . . vibrational freezing
 . . zone melting
- RT antifreezes
 bay ice
 cloud glaciation
 cold traps
 cooling
 cryogenic cooling
 crystallization
 freeze drying
 frost
 ice formation
 ice nuclei
 low temperature
 melting
 preserving
 pressure ice
 refrigerating
 sea ice
 solidification
 solidified gases
- freezing points*
 USE **melting points**
- freight*
 USE **cargo**
- freight costs**
- GS costs
 . **freight costs**
- RT cargo
 freighters
 transportation
- freighters**
- RT freight costs
 harbors
 transportation
 wharves
- French Equatorial Congo*
 USE **Congo (Brazzaville)**
- French Guiana**
- GS nations
 . France
 . . **French Guiana**
- RT Caribbean region
 South America
- French satellites**
- GS artificial satellites
 . **French satellites**
 . . D-1 satellite
 . . D-2 satellites
 . . EOLE satellites
 . . FR-1 satellite
 . . GEOLE satellites
 . . PEOLE satellites
 . . Poseidon satellite
 . . SPOT (French satellite)
 . . SRET satellites
 . . . SRET 1 satellite
 . . . SRET 2 satellite
- RT European space programs
 METEOSAT satellite
 Symphonie satellites
- French space program**
(added December 1990)
- GS programs
 . space programs
 . . European space programs
 . . . **French space program**
- RT EOLE satellites
 France
 GEOLE satellites
 Granat satellite
 Hermes manned spaceplane
 international cooperation
- METEOSAT satellite
- ∞ research projects
 space exploration
 space missions
- ∞ spacecraft
 SRET 1 satellite
 SRET satellites
- Frenkel defects**
- GS defects
 . crystal defects
 . . point defects
 . . . vacancies (crystal defects)
 **Frenkel defects**
- freon**
- RT air conditioning
 coolants
 cooling
 cooling systems
 fluorohydrocarbons
 gas cooling
 refrigerants
 refrigerating
- frequencies**
- DEF Of a function periodic in time, the reciprocals of primitive periods. The unit is the cycle per unit time and must be specified. Used for frequency bands.
- UF *frequency bands*
- GS **frequencies**
 . acoustic frequencies
 . . audio frequencies
 . . . quefrequencies
 . . screech tones
 . beat frequencies
 . broadband
 . Brunt-Vaisala frequency
 . carrier frequencies
 . critical frequencies
 . cyclotron frequency
 . infrasonic frequencies
 . ionization frequencies
 . maximum usable frequency
 . Nyquist frequencies
 . plasma frequencies
 . radio frequencies
 . . extremely low frequencies
 . . high frequencies
 . . intermediate frequencies
 . . low frequencies
 . . . very low frequencies
 . . microwave frequencies
 . . . C band
 . . . extremely high frequencies
 . . . P band
 . . . superhigh frequencies
 . . ultrahigh frequencies
 . . . P band
 . . very high frequencies
 . . . P band
 . resonant frequencies
 . subaudible frequencies
 . sweep frequency
- RT aeolian tones
 amplitudes
- ∞ bands
 bandwidth
 broadband amplifiers
 channel capacity
- ∞ channels
 frequency distribution
 frequency ranges
 frequency reuse
 harmonics
 line spectra
 longitudinal waves
 microchannels
 millimeter waves
 narrowband
- ∞ pitch
 radio waves
 spectral bands
 standing waves
 submillimeter waves
- superharmonics
- frequency analyzers**
- RT harmonic analysis
 intermodulation
 oscilloscopes
 selective fading
 signal analysis
 spectrum analysis
 sweep frequency
- ∞ test equipment
 vibration measurement
- frequency assignment**
- DEF The specific frequency or frequencies authorized by competent authority; expressed for each channel by: (a) the authorized carrier frequency, the frequency tolerance, and the authorized emission bandwidth, (b) the authorized emission bandwidth in reference to a specific assigned frequency (when a carrier does exist), or (c) the authorized frequency band (when a carrier does not exist).
- RT communicating
 frequency reuse
 maximum usable frequency
 orbit spectrum utilization
- frequency bands*
 USE **frequencies**
- FREQUENCY COMPRESSION DEMODULATORS**
- GS demodulators
 . **frequency compression demodulators**
- frequency control**
- UF *frequency regulation*
- GS **frequency control**
 . automatic frequency control
- RT autodynes
- ∞ control
 crystal oscillators
 frequency pulling
 quartz crystals
 signal stabilization
- frequency conversion*
 USE **frequency converters**
- frequency converters**
- UF *frequency conversion*
frequency translation
- GS **frequency converters**
 . down-converters
 . frequency dividers
 . frequency multipliers
 . frequency synthesizers
 . parametric frequency converters
 . up-converters
- RT ∞ conversion
 ∞ converters
 harmonic generators
 mixing circuits
 parametric amplifiers
 pulse width amplitude converters
- frequency discriminators**
- DEF Electronic circuits which deliver output voltages proportional to the deviations of signals from predetermined frequency values.
- GS circuits
 . discriminators
 . . **frequency discriminators**
- frequency distribution**
- SN (OF CYCLIC VARIATIONS)
- GS distribution (property)
 . **frequency distribution**
 . . kurtosis
- RT cycles
 Fourier analysis
 frequencies

frequency dividers

subaudible frequencies

frequency dividers

GS frequency converters
. **frequency dividers**
RT down-converters

frequency division multiple access

DEF A method of providing multiple access to communication satellites in which the transmissions from a particular Earth station occupy a particular assigned frequency band. In the satellite, the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The Earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for FDMA.

UF *FDMA*
GS telecommunication
. multiple access
. . . **frequency division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **frequency division multiple access**
RT Aloha system
code division multiple access
code division multiplexing
multiplexing
radio communication
time division multiple access

frequency division multiplexing

DEF The combining of a number of signals to share a medium by dividing it into different frequency bands for each signal.

GS transmission
. multiplexing
. . **frequency division multiplexing**
RT carrier frequencies
communication networks
data transmission
demultiplexing
multiple access
pulse communication
radio communication
satellite transmission
telecommunication
time division multiplexing
wavelength division multiplexing

frequency domain analysis

(added April 1999)
GS analysis (mathematics)
. **frequency domain analysis**
RT control systems design
dynamic response
frequency response
parameter identification
signal processing

frequency hopping

DEF Random changing of frequencies in transmission to mislead or prevent interception by unauthorized equipment.

RT frequency reuse
frequency shift keying
jamming
spread spectrum transmission
transmission efficiency

frequency measurement

RT acoustic measurement
∞ measurement
time measurement
vibration measurement

frequency modulation

DEF Angle modulation of a sine wave carrier in which the instantaneous frequency of the modulated wave differs from the carrier frequency by an amount proportional to the instan-

aneous value of the modulating wave.

UF *FM (modulation)*
GS coding
. signal encoding
. . . **frequency modulation**
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation modulation
. **frequency modulation**
. . feedback frequency modulation
. . FM/PM (modulation)
. . frequency shift keying
. . pulse frequency modulation
RT amplitude modulation
automatic frequency control
capture effect
carrier to noise ratios
companding
demodulation
demodulators
intermodulation
light modulation
line of sight communication
modulators
phase modulation
pulse frequency modulation telemetry
pulse modulation
vocoders
voltage controlled oscillators

frequency modulation photomultipliers

GS amplifiers
. current amplifiers
. . photomultiplier tubes
. . . **frequency modulation photomultipliers**
electron tubes
. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . **frequency modulation photomultipliers**
RT cathodes
vacuum tube oscillators

frequency multipliers

GS frequency converters
. **frequency multipliers**
RT phase matching

frequency pulling

(added July 1991)
UF *pulling (frequency stability)*
RT distortion
frequency control
frequency shift
frequency stability
laser outputs
laser stability
oscillators
stable oscillations
tuning

frequency ranges

DEF Specifically designated parts of the frequency spectrum.
GS range (extremes)
. **frequency ranges**
. . octaves
. . radio range
. . subaudible frequencies
RT acoustic frequencies
bandwidth
dynamic range
frequencies
frequency response
frequency reuse

frequency regulation

USE **frequency control**

frequency response

UF *phase response*
GS responses

. frequency response

RT acuity
broadband
distributed amplifiers
dynamic characteristics
dynamic range
dynamic response
equalizers (circuits)
excitation
frequency domain analysis
frequency ranges
linear filters
linear receivers
log periodic antennas
logarithmic receivers
perception
pulse repetition rate
ramp functions
sensitivity
smear
spectral sensitivity
step functions
stroking tests
thresholds (perception)

frequency reuse

DEF A digital satellite communication technique which features the reuse of frequency bands in a downlink transmission to provide high power utilization and flexible accommodation of dynamic source destination traffic patterns.

RT data links
downlinking
frequencies
frequency assignment
frequency hopping
frequency ranges
maximum usable frequency
microwave transmission
radio transmission
satellite transmission
uplinking

frequency scanning

GS scanning
. **frequency scanning**
RT panoramic scanning
radar scanning
spectrum analysis
sweep circuits
sweep frequency

frequency shift

RT Brillouin effect
Doppler effect
Doppler-Fizeau effect
frequency pulling
gyrotropism
∞ shift

frequency shift keying

DEF That form of frequency modulation in which the modulating wave shifts the output frequency between predetermined values, and the output wave is coherent with no phase discontinuity.

GS coding
. signal encoding
. . frequency modulation
. . . **frequency shift keying**
keying
. **frequency shift keying**
modulation
. frequency modulation
. . **frequency shift keying**
RT frequency hopping
radio transmission

frequency stability

UF *acoustic stability*
GS dynamic characteristics
. dynamic stability
. . **frequency stability**
stability
. dynamic stability
. . **frequency stability**

RT crystal oscillators
frequency pulling
laser stability
oscillators
quartz crystals
stable oscillations
voltage controlled oscillators

frequency standards
GS standards
. **frequency standards**
RT atomic clocks
gas masers
ion storage
masers
resonators
time signals
time synchronization

frequency synchronization
GS synchronism
. **frequency synchronization**
RT bit synchronization
capture effect
homodyne reception
sweep frequency
synchronized oscillators
syntony
time synchronization

frequency synthesizers
GS frequency converters
. **frequency synthesizers**
signal generators
. **frequency synthesizers**
RT mixing circuits
oscillators
synthesizers

frequency translation
USE **frequency converters**

fresh water
DEF Water in rivers, lakes, springs, etc. containing no significant amounts of dissolved salts.
GS water
. **fresh water**
RT AgRISTARS project
aquifers
ground water
limnology
potable water
reservoirs
springs (water)

Fresnel diffraction
GS diffraction
. **Fresnel diffraction**
RT gratings (spectra)
interferometry
speckle interferometry

Fresnel integrals
UF *Fresnel-Kirchhoff integrals*
GS functions (mathematics)
. **Fresnel integrals**
RT diffraction patterns
trigonometric functions
wave diffraction

Fresnel lenses
DEF Thin lenses constructed with stepped setbacks so as to have the optical properties of much thicker lenses.
GS lenses
. **Fresnel lenses**
RT focusing
 ∞ optics

Fresnel reflectors
DEF Devices characterized by a set of mirrors with varying orientation arranged so as to have the optical properties of a smooth reflector, e. g. , parabolic reflector.
GS mirrors

. **Fresnel reflectors**
reflectors
. **Fresnel reflectors**
RT interferometry
slits
speckle interferometry

Fresnel region
DEF The region between the antenna and the Fraunhofer region.
GS regions
. **Fresnel region**
RT antenna radiation patterns
diffraction patterns
far fields

Fresnel-Kirchhoff integrals
USE **Fresnel integrals**

fretting
RT erosion
fatigue (materials)
tribology
wear tests

fretting corrosion
GS corrosion
. **fretting corrosion**
RT fatigue (materials)
stress corrosion
wear

friction
DEF The resistance to the relative motion of one body sliding, rolling, or flowing over another body with which it is in contact.

GS **friction**
. dry friction
. flow resistance
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. internal friction
. kinetic friction
. . sliding friction
. skin friction
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. static friction

RT abrasion
coefficient of friction
drag
drag reduction
energy dissipation
fluid flow
mechanical impedance
 ∞ pressure drop
scoring
stiction
surface properties
surface roughness
traction
tribology
triboluminescence
tribometers
wear
wear tests
wheel brakes

friction coefficient
USE **coefficient of friction**

friction drag
UF *nonequilibrium drag*
GS dynamic characteristics
. drag
. . **friction drag**
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
friction
. flow resistance
. . **friction drag**

. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. skin friction
. . **friction drag**
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
RT minimum drag
pressure drag
riblets
satellite drag
surface roughness effects
wave drag

friction factor
UF *friction loss coefficient*
RT coefficient of friction
pressure gradients
skin friction

friction loss coefficient
USE **friction factor**

friction measurement
UF *tribometry*
GS mechanical measurement
. **friction measurement**
RT elastohydrodynamics
kinetic friction
 ∞ measurement
static friction
tribometers

friction pressure drop
USE **skin friction**

friction reduction
RT antifriction bearings
coefficient of friction
lubrication
 ∞ reduction
streamlining

friction stir welding
(added August 2002)
DEF Solid state welding technique where a frictionally heated metal seam is stirred by a rotating pin tool to create a bond. The process involves no melting and the weld occurs via extreme plastic deformation associated with frictional straining.

UF *FSW (welding)*
GS welding
. pressure welding
. . friction welding
. . . **friction stir welding**
RT aluminum alloys
plastic deformation
stirring
welded joints

friction welding
GS welding
. pressure welding
. . **friction welding**
. . . friction stir welding

frictionless environments
GS environments
. **frictionless environments**
RT deep space
levitation

Friedel-Craft reaction
GS chemical reactions
. **Friedel-Craft reaction**
RT acylation
alkylation

Friendship 7
GS manned spacecraft
. Mercury spacecraft
. . **Friendship 7**
reentry vehicles
. recoverable spacecraft

fringe multiplication

. . Mercury spacecraft
. . . **Friendship 7**
soft landing spacecraft
. Mercury spacecraft
. . **Friendship 7**
space capsules
. Mercury spacecraft
. . **Friendship 7**
RT Mercury MA-6 flight

fringe multiplication

DEF The duplicating effect of a family of curves superimposed on another family of curves so that the curves intersect at angles less than 45 degrees. A new family of curves appears which pass through intersections of the original curves.

RT diffraction patterns
interference grating
Moire effects
Moire fringes
multiplication
photoelastic analysis
stress analysis
stress concentration

fringe patterns

USE **diffraction patterns**

frit

DEF A powdered ceramic prepared by fusing a physical mixture of oxides into a uniform melt, which is then quenched and milled into a fine, homogeneous powder.

RT ceramics
fusion (melting)
glazes
vitreous materials

frogs

GS animals
. vertebrates
. . amphibia
. . . **frogs**

frontal areas (meteorology)

USE **fronts (meteorology)**

frontal waves

RT ocean currents
oceanography
tsunami waves
water waves
∞ waves

∞ fronts

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cold fronts
fronts (meteorology)
shock fronts
warm fronts
wave fronts

fronts (meteorology)

DEF The contacts at the Earth's surface between two different air masses commonly cold and warm, that generally move in an easterly direction. Used for frontal areas (meteorology) and weather fronts.

UF *frontal areas (meteorology)*
weather fronts

GS fronts (meteorology)

. cold fronts
. warm fronts

RT air masses
arc clouds

∞ fronts

intertropical convergent zones
marine meteorology
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms

tornadoes

frost

RT bay ice
dew
freezing
ice
low temperature

frost damage

GS damage
. **frost damage**
RT cold weather
∞ crops
farm crops
fruits
low temperature
orchards
plants (botany)

frostbite

GS injuries
. **frostbite**
RT cold tolerance

Froude number

DEF The nondimensional ratio of the inertial force to the force of gravity for a given fluid flow; the reciprocal of the Reech number.

GS dimensionless numbers
. **Froude number**
ratios
. **Froude number**
RT fluid flow
inertia
kinetic energy
potential energy
Reynolds number
Strouhal number

frozen equilibrium flow

GS fluid flow
. gas flow
. . equilibrium flow
. . . **frozen equilibrium flow**
RT shifting equilibrium flow

frozen foods

RT ∞ food
food processing
freeze drying
preserving
refrigerating

frozen soils

USE **permafrost**

fruits

GS farm crops
. **fruits**
RT agriculture
bollworms
botany
∞ food
frost damage
orchards

frustration

RT disabilities
emotional factors
emotions
∞ inhibition
lethargy
psychological effects
psychology

frustums

RT cones
geometry
pyramids

volume

FSOI (integrated optics)

(added June 1998)

USE **free-space optical interconnects**

FSW (welding)

(added August 2002)

USE **friction stir welding**

fuel capsules

RT ∞ capsules
nuclear fuels
pellets
spent fuels

fuel cell catalysts

USE **electrocatalysts**

fuel cell power plants

DEF Power generating devices that directly produce electrical energy from chemical energy and consist of fuel processors, stacked fuel cells, and dc to ac converters. The main types, distinguished by electrolytes which are heated to different temperatures, are base, phosphoric acid, molten carbonate, and solid oxide.

GS electric power plants
. **fuel cell power plants**
RT coal gasification
energy technology
fuel cells

fuel cells

SN (EXCLUDES BATTERIES)

DEF Devices which convert chemical energy directly into electrical energy but differing from a storage battery in that the reacting chemicals are supplied continuously as needed to meet output requirements.

GS electric generators
. direct power generators
. . **fuel cells**
. . . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
electrochemical cells
. **fuel cells**
. . biochemical fuel cells
. . hydrogen oxygen fuel cells
. . molten carbonate fuel cells
. . phosphoric acid fuel cells
. . regenerative fuel cells
. . solid oxide fuel cells

RT ∞ cells

chemical auxiliary power units

∞ electric cells

electrocatalysts
electrochemistry
electrolytes
energy conversion efficiency
energy storage
fuel cell power plants
hydrogen fuels
hydrogen-based energy
ion exchange membrane electrolytes
magneto-hydrodynamic generators
solar cells
solar generators
thermionic converters
thermoelectric generators
wet cells

fuel combustion

GS combustion
. **fuel combustion**
. . nuclear fuel burnup
RT combustion efficiency
combustion stability
erosive burning
hydrocarbon combustion
hypersonic combustion
ignition

metal combustion
oxidation
propellant combustion
solid propellant combustion
spontaneous combustion
supersonic combustion
turbulent combustion

fuel conservation

USE **fuel consumption**

fuel consumption

DEF The using of fuel by an engine or power plant; the rate of this consumption, measured, e. g. , in gallons or pounds per minute.

UF *fuel conservation*

GS consumption

. **fuel consumption**

RT burning rate

combustion efficiency

energy consumption

energy requirements

engines

internal combustion engines

propellant consumption

refueling

fuel contamination

GS contamination

. **fuel contamination**

RT antiicing additives

contaminants

refueling

fuel control

RT combustion control

∞ control

engine control

fluid management

liquid sloshing

propellant transfer

refueling

rocket engine control

turbojet engine control

fuel corrosion

GS corrosion

. **fuel corrosion**

RT propellant decomposition

propellant storability

fuel elements (nuclear reactors)

USE **nuclear fuel elements**

fuel flow

GS fluid flow

. **fuel flow**

. . . propellant transfer

RT combustible flow

ducted flow

particle laden jets

reacting flow

fuel flow regulators

GS control equipment

. regulators

. . . flow regulators

. . . **fuel flow regulators**

fuel gages

GS measuring instruments

. **fuel gages**

. . . capacitive fuel gages

RT flowmeters

fuel injection

UF *injection carburetors*

GS injection

. **fuel injection**

RT burners

carburetors

fluid injection

gas injection

injectors

internal combustion engines

jet engines

jet mixing flow
∞ jet nozzles
liquid injection
piston engines
propellant sprays
spray nozzles

fuel oils

GS fuels

. chemical fuels

. . liquid fuels

. . . **fuel oils**

oils

. **fuel oils**

RT energy policy

kerogen

kerosene

shale oil

solvent refined coal

fuel production

DEF Producing of conventional and/or alternative fuels by various technologies.

GS **fuel production**

. hydrocarbon fuel production

RT chemical fuels

composite propellants

crude oil

fission

∞ fusion

hydrocarbon fuels

hydrogen fuels

in situ resource utilization

liquid fuels

nuclear fuels

∞ production

synthesis gas

fuel pumps

GS pumps

. **fuel pumps**

RT aircraft fuel systems

axial flow pumps

centrifugal pumps

electromagnetic pumps

internal combustion engines

jet engines

jet pumps

materials handling

turbine pumps

fuel sprays

RT liquid injection

propellant sprays

sprayers

fuel systems

GS **fuel systems**

. aircraft fuel systems

RT accumulators

automobiles

bunkers (fuel)

carburetors

chokes (fuel systems)

engines

feeders

fuels

injectors

inlet temperature

intake systems

internal combustion engines

manifolds

plenum chambers

propellant transfer

refueling

self sealing

spray nozzles

∞ systems

fuel tank pressurization

GS pressurizing

. **fuel tank pressurization**

RT aircraft fuel systems

exhaust systems

expulsion bladders

liquid rocket propellants

pressure
pressure regulators
pressure vessels
propellant storage
propellant tanks
propulsion
relief valves
ullage
vapor pressure

fuel tanks

GS tanks (containers)

. **fuel tanks**

. . wing tanks

RT aircraft fuel systems

∞ containers

corrosion prevention

cryogenic fluid storage

cylindrical tanks

expulsion bladders

external tanks

feed systems

fuels

heating equipment

liquid sloshing

Pods (external stores)

pressure vessels

propellant storage

propellant tanks

propellants

propulsion

protuberances

spacecraft structures

spherical tanks

storage tanks

tanker aircraft

ullage

fuel tests

GS **fuel tests**

. reactor startup tests

RT chemical analysis

corrosion tests

engine tests

∞ materials tests

missile tests

propellant tests

stability tests

test firing

∞ tests

fuel valves

GS valves

. **fuel valves**

RT aircraft fuel systems

gas valves

relief valves

fuel-air ratio

GS ratios

. **fuel-air ratio**

RT burning rate

combustion efficiency

compression ratio

gas mixtures

ignition limits

premixing

pressure ratio

volumetric efficiency

fueling

USE **refueling**

fuels

GS **fuels**

. chemical fuels

. . endothermic fuels

. . high energy fuels

. . hydrocarbon fuels

. . . diesel fuels

. . . fossil fuels

. . . . coal

. anthracite

. lignite

. solvent refined coal

. crude oil

Fujita method

- ... natural gas
 - ... liquefied natural gas
 - ... peat
 - ... shale oil
 - ... gasoline
 - ... jet engine fuels
 - ... JP-4 jet fuel
 - ... JP-5 jet fuel
 - ... JP-6 jet fuel
 - ... JP-7 jet fuel
 - ... JP-8 jet fuel
 - ... synthane
 - ... liquid fuels
 - ... antimisting fuels
 - ... diesel fuels
 - ... gasoline
 - ... hydrogen fuels
 - ... jet engine fuels
 - ... JP-4 jet fuel
 - ... JP-5 jet fuel
 - ... JP-6 jet fuel
 - ... JP-7 jet fuel
 - ... JP-8 jet fuel
 - ... fuel oils
 - ... kerosene
 - ... metal fuels
 - ... synthetic fuels
 - ... gasohol (fuel)
 - ... synthane
 - ... clean fuels
 - ... coke
 - ... gaseous fuels
 - ... natural gas
 - ... liquefied natural gas
 - ... nuclear fuels
 - ... ceramic nuclear fuels
 - ... fissile fuels
 - ... fission
 - ... spent fuels
 - ... aircraft fuels
 - RT bioconversion
 - burning rate
 - charcoal
 - energy policy
 - energy storage
 - flames
 - fuel systems
 - fuel tanks
 - hydrogen
 - hydrogen production
 - kerogen
 - liquid ammonia
 - liquid hydrogen
 - nuclear fuel elements
 - oils
 - oxidizers
 - premixing
 - propellants
 - rocket propellants
 - shale oil
 - transportation energy
 - Fujita method**
 - RT coordinates
 - ∞ methodology
 - tornadoes
 - ∞ transformations
 - transformations (mathematics)
 - wind velocity
 - full scale tests**
 - RT altitude tests
 - engine tests
 - flight tests
 - ground tests
 - high altitude tests
 - ∞ tests
 - fullerenes**
 - (added August 1991)
 - DEF Molecules whose structure is similar to the shape of a soccer ball (polyhedron). The geodesic-dome-like molecular structure causes these molecules to be named after Buckminster Fuller, hence, 'fullerene.'
 - GS **fullerenes**
 - ... buckminsterfullerene
 - atomic clusters
 - carbon
 - carbon nanotubes
 - fullerides
 - graphite
 - molecular clusters
 - nanoparticles
 - nanosstructure growth
 - nanotubes
 - polyatomic molecules
 - polyhedrons
 - fullerides**
 - (added February 1998)
 - GS carbon compounds
 - ... **fullerides**
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - doped crystals
 - fullerenes
 - superconductors (materials)
 - fulminates**
 - GS esters
 - ... isocyanates
 - ... **fulminates**
 - nitrogen compounds
 - ... cyano compounds
 - ... isocyanates
 - ... **fulminates**
 - RT detonators
 - explosives
 - propellants
 - fumes**
 - RT aerosols
 - dispersions
 - dust
 - exhaust gases
 - fire damage
 - gas mixtures
 - gases
 - haze detection
 - reaction products
 - smoke
 - smoke detectors
 - vapors
 - wastes
 - fumigation**
 - RT antiseptics
 - bactericides
 - spraying
 - sterilization
 - function generators**
 - GS signal generators
 - ... **function generators**
 - RT ∞ generators
 - pulse generators
 - voltage generators
 - wave generation
 - function space**
 - GS analysis (mathematics)
 - ... **function space**
 - ... Banach space
 - ... Hilbert space
 - ... Sobolev space
 - RT fibers (mathematics)
 - field theory (physics)
 - functions (mathematics)
 - orthogonal functions
 - quantum mechanics
 - series (mathematics)
 - ∞ space
 - statistical mechanics
 - vectors (mathematics)
 - functional analysis**
 - GS analysis (mathematics)
 - ... **functional analysis**
 - ... Banach space
 - ... Hilbert space
 - ... Sobolev space
 - ... convolution integrals
 - ... harmonic analysis
 - ... tesseral harmonics
 - ... zonal harmonics
 - ... integral equations
 - ... Fredholm equations
 - ... J integral
 - ... singular integral equations
 - ... Volterra equations
 - ... Wiener Hopf equations
 - ... integral transformations
 - ... Fourier transformation
 - ... fast Fourier transformations
 - ... Fourier-Bessel transformations
 - ... Hilbert transformation
 - ... Laplace transformation
 - RT complex variables
 - form factors
 - functions (mathematics)
 - series (mathematics)
 - Walsh function
- functional design specifications**
 - DEF Those levels of design in which all subtasks are specified and their relationships defined so that the total collection of subsystems will perform the intended task of the entire system.
 - GS specifications
 - ... **functional design specifications**
 - RT aeronautical engineering
 - ∞ design
 - equipment specifications
 - missile design
 - product development
 - systems engineering
- functional integration**
 - GS analysis (mathematics)
 - ... real variables
 - ... measure and integration
 - ... **functional integration**
 - RT analog computers
 - differential equations
 - digital integrators
 - partial differential equations
- functionally gradient materials**
 - (added September 1992)
 - DEF Composite materials that consist of a gradual compositional variation from ceramic to metal from one surface to the other. These continuous changes result in property gradients which can be adjusted by controlling the composition. Used for FGM (materials).
 - UF *FGM (materials)*
 - GS composite materials
 - ... **functionally gradient materials**
 - RT aircraft construction materials
 - airframe materials
 - anisotropic media
 - bimetals
 - ceramic matrix composites
 - combustion synthesis
 - composite structures
 - fiber composites
 - matrix materials
 - metal matrix composites
 - prepregs
 - spacecraft construction materials
- functionals**
 - RT ∞ functions
 - functions (mathematics)
 - integrals
- ∞ **functions**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT contralateral functions
 - functionals
 - functions (mathematics)
 - muscular function
 - parenteral functions
 - penalty function
 - pulmonary functions

- renal function
scattering functions
work functions
- functions (mathematics)**
GS **functions (mathematics)**
. Abel function
. Airy function
. analytic functions
. . . entire functions
. aperiodic functions
. asymptotes
. Boolean functions
. composite functions
. conformal mapping
. coordinate transformations
. delta function
. discrete functions
. discriminant analysis (statistics)
. distribution functions
. . . probability distribution functions
. disturbing functions
. error functions
. Fourier transformation
. . . fast Fourier transformations
. Fourier-Bessel transformations
. Fresnel integrals
. gamma function
. Green's functions
. Hamiltonian functions
. Hankel functions
. harmonic functions
. hyperbolic functions
. hypergeometric functions
. kernel functions
. Lagrangian function
. Laguerre functions
. Lamé functions
. Laplace transformation
. Legendre functions
. Liapunov functions
. linear transformations
. Lorentz transformations
. Mathieu function
. Maxwell-Boltzmann density function
. Mellin transforms
. meromorphic functions
. . . elliptic functions
. . . rational functions
. monotone functions
. orthogonal functions
. . . Walsh function
. orthonormal functions
. penalty function
. point spread functions
. Poisson density functions
. probability density functions
. . . normal density functions
. . . Pearson distributions
. . . Rayleigh distribution
. . . Weibull density functions
. ramp functions
. recursive functions
. Schwarz-Christoffel transformation
. shape functions
. space-time functions
. spherical harmonics
. spline functions
. step functions
. stress functions
. time functions
. transcendental functions
. . . exponential functions
. . . . logarithms
. . . . periodic functions
. . . . trigonometric functions
. cosine series
. sine series
. tangents
. transfer functions
. . . loop transfer functions
. . . modulation transfer function
. . . optical transfer function
. membership functions
. weighting functions
. Whittaker functions
- RT algebra
- ∞ applications of mathematics
branching (mathematics)
calculus
continuity (mathematics)
divergence
extremum values
function space
functional analysis
functionals
∞ functions
infinity
inflection points
linearity
mapping
mathematical logic
mathematical models
∞ mathematics
nonlinearity
number theory
numerical differentiation
operations research
operators (mathematics)
random variables
range (extremes)
∞ transformations
transformations (mathematics)
wavelet analysis
- fungus diseases**
SN (EXCLUDES PLANT DISEASES)
GS diseases
. infectious diseases
. . . **fungus diseases**
RT dermatitis
fungi
respiratory diseases
- fungi**
GS plants (botany)
. **fungi**
. . Aspergillus
. . Coccomyces
. . gibberellins
. . neurospora
. . rhizopus
. . rust fungi
. . saccharomyces
. . yeast
RT blight
fungus diseases
lichens
microspores
mitra
∞ mold
panspermia
plant diseases
spores
thermophiles
- fungicides**
GS **fungicides**
. xanthines
. . caffeine
. . guanines
. . uric acid
RT antiinfectives and antibacterials
toxicology
- funnels**
RT conical inlets
∞ nozzles
- uran resins**
GS plastics
. synthetic resins
. . thermosetting resins
. . . **uran resins**
. . . . polyamide resins
. Kevlar (trademark)
. Nylon (trademark)
resins
. synthetic resins
. . thermosetting resins
. . . **uran resins**
. . . . polyamide resins
. Kevlar (trademark)
- Nylon (trademark)
RT adhesives
coatings
- furans**
DEF Organic heterocyclic compounds containing diunsaturated rings of four carbon atoms and one oxygen atom; also known as furfuran or tetrol.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **furans**
. . . . tetrahydrofuran
RT ∞ chemical compounds
plastics
solvents
thiophenes
- furfuryl alcohol**
RT aldehydes
∞ aromatic compounds
- furlable antennas**
GS antennas
. **furlable antennas**
RT communication equipment
folding structures
satellite antennas
space communication
spacecraft antennas
- furnaces**
SN (EXCLUDES DOMESTIC HEATING EQUIPMENT)
GS heating equipment
. **furnaces**
. . electric furnaces
. . image furnaces
. . solar furnaces
. . vacuum furnaces
RT boilers
burners
chemical engineering
chemical reactors
chimneys
combustion chambers
controlled atmospheres
∞ cupolas
drying apparatus
extraction
fluidized bed processors
foundries
hearths
heat treatment
incinerators
induction heating
mechanical engineering
melting
∞ metallurgy
mufflers
ovens
refractories
separators
sintering
waste energy utilization
- FUSE (satellite)*
(added November 2000)
USE **Far UV Spectroscopic Explorer**
- fuselage mounting*
USE **aircraft production**
- fuselages**
GS aircraft structures
. **fuselages**
RT aircraft construction materials
aircraft parts
airframes
bays (structural units)
body-wing and tail configurations
camber
centerbodies
cockpits
cylindrical bodies

fuses

hulls (structures)
wing-fuselage stores

fuselage-wing stores
(added August 1998)

USE **wing-fuselage stores**

∞ fuses

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT circuit breakers
circuit protection
electric fuses
fuses (ordnance)
warheads

fuses (ordnance)

RT ammunition
caps (explosives)
detonators

∞ fuses

initiators (explosives)
warheads
wicks

fusibility

GS thermodynamic properties
. thermophysical properties

. . . **fusibility**

RT ∞ physical properties
∞ resistance
welding

fusiform shapes

USE **cones**

∞ fusion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The combining of atoms and consequent release of energy.

RT fuel production
inertial fusion (reactor)
laser fusion
liquid-solid interfaces
nuclear fusion

fusion (melting)

GS phase transformations
. melting

. . . **fusion (melting)**

RT adhesion

frit
fusion welding
heat of fusion
∞ joining
phase change materials

fusion heat

USE **heat of fusion**

fusion propulsion

(added September 1999)

GS propulsion
. nuclear propulsion

. . . **fusion propulsion**

RT inertial confinement fusion
nuclear electric propulsion
nuclear fusion
nuclear rocket engines
plasma propulsion
spacecraft propulsion

fusion reactors

GS nuclear reactors

. **fusion reactors**

. . heliotrons

. . spheromaks

. . stellarators

RT beta factor
blankets (fusion reactors)
bumpy toruses
fusion-fission hybrid reactors
impact fusion
inertial fusion (reactor)
limiters (fusion reactors)
mirror fusion
nuclear fission
nuclear fusion
Q values (nuclear physics)
∞ reactors

tandem mirrors

thermal barriers (plasma control)

fusion weapons

UF *hydrogen bombs*

GS weapons

. nuclear weapons

. . **fusion weapons**

RT laser weapons
nuclear fusion

fusion welding

GS welding

. **fusion welding**

. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
. . . . plasma arc welding
. . . . electroslag welding
. . . flash welding
. . electron beam welding
. . gas welding
. . . brazing
. . . . low temperature brazing

RT fusion (melting)

pressure welding

spot welds

fusion-fission hybrid reactors

GS nuclear reactors

. **fusion-fission hybrid reactors**

RT fusion reactors

nuclear fission

nuclear fusion

∞ reactors

fuzzy sets

DEF Mathematical models coupled with a provision for the effect of human factors and construction process and experience.

RT algorithms

fuzzy systems

membership functions

set theory

fuzzy systems

DEF Systems that involve fuzzy sets.

RT algorithms

fuzzy sets

membership functions

multisensor fusion

probability theory

set theory

system identification

∞ systems

systems analysis

uncertain systems

FV-12A aircraft

GS attack aircraft

. fighter aircraft

. . **FV-12A aircraft**

V/STOL aircraft

. **FV-12A aircraft**

RT ∞ aircraft

∞ military aircraft

G

G force
USE **acceleration (physics)**

G stars

GS celestial bodies
. stars
. . . **G stars**
. . . sun
RT dwarf stars
F stars
giant stars
main sequence stars
stellar spectra

G-1 aircraft

UF *Navion G-1 aircraft*
Navion Rangemaster aircraft
Rangemaster aircraft
GS general aviation aircraft
. **G-1 aircraft**
light aircraft
. **G-1 aircraft**
monoplanes
. **G-1 aircraft**
Navion aircraft
. **G-1 aircraft**
passenger aircraft
. **G-1 aircraft**
transport aircraft
. **G-1 aircraft**
RT ∞ aircraft

G-91 aircraft

UF *Fiat G-91 aircraft*
GS attack aircraft
. fighter aircraft
. . . **G-91 aircraft**
Fiat aircraft
. **G-91 aircraft**
jet aircraft
. **G-91 aircraft**
monoplanes
. **G-91 aircraft**
RT ∞ aircraft

G-95/4 aircraft

UF *Fiat G-95/4 aircraft*
GS attack aircraft
. fighter aircraft
. . . **G-95/4 aircraft**
Fiat aircraft
. **G-95/4 aircraft**
jet aircraft
. **G-95/4 aircraft**
monoplanes
. **G-95/4 aircraft**
supersonic aircraft
. **G-95/4 aircraft**
V/STOL aircraft
. **G-95/4 aircraft**
RT ∞ aircraft

G-222 aircraft

UF *Fiat G-222 aircraft*
GS Fiat aircraft
. **G-222 aircraft**
jet aircraft
. turboprop aircraft
. . . **G-222 aircraft**
monoplanes
. **G-222 aircraft**
passenger aircraft
. **G-222 aircraft**
transport aircraft
. **G-222 aircraft**
V/STOL aircraft
. **G-222 aircraft**

RT ∞ aircraft

GA-5 aircraft

UF *Gloster GA-5 aircraft*
Javelin aircraft
GS attack aircraft
. fighter aircraft
. . . **GA-5 aircraft**
Hawker Siddeley aircraft
. **GA-5 aircraft**
jet aircraft
. **GA-5 aircraft**
monoplanes
. **GA-5 aircraft**
RT ∞ aircraft
delta wings

gabbro

GS rocks
. igneous rocks
. . . **gabbro**
RT anorthosite
lunar rocks

Gabon

GS nations
. **Gabon**
RT Africa

Gabor filters

(added February 1998)
GS image filters
. **Gabor filters**
RT computer vision
 ∞ filters
Gabor transformation
image analysis
image processing
low pass filters
neural nets
spatial filtering
textures

Gabor transformation

(added February 1998)
GS transformations (mathematics)
. **Gabor transformation**
RT Fourier transformation
Gabor filters
holography
image processing
signal analysis
wavelet analysis

gadolinium

GS chemical elements
. rare earth elements
. . . **gadolinium**
. . . gadolinium isotopes
metals
. rare earth elements
. . . **gadolinium**
. . . gadolinium isotopes
RT gadolinium-gallium garnet

gadolinium alloys

DEF Mixtures of gadolinium, a rare earth metal, with other metals.
GS alloys
. rare earth alloys
. . . **gadolinium alloys**
RT metals

gadolinium isotopes

GS chemical elements
. nuclides
. . . isotopes
. . . . **gadolinium isotopes**
. rare earth elements
. . . gadolinium

. . . **gadolinium isotopes**
metals
. rare earth elements
. . . gadolinium
. . . **gadolinium isotopes**

gadolinium-gallium garnet

(added August 1990)
DEF A semiconducting crystalline compound used primarily as a solid-state laser material.
UF *GGG (garnet)*
GS gallium compounds
. **gadolinium-gallium garnet**
minerals
. garnets
. . . **gadolinium-gallium garnet**
silicon compounds
. silicates
. . . garnets
. . . . **gadolinium-gallium garnet**
RT doped crystals
eclogite
ferrites
gadolinium
laser materials
lasers
magnetostatic amplifiers
semiconductor lasers
semiconductors (materials)

gages

USE **measuring instruments**

Gaia hypothesis

(added June 1990)
DEF The hypothesis that the Earth's atmosphere, biosphere, and its living organisms behave as a single system striving to maintain a stability conducive to the existence of life.
RT atmospheric composition
atmospheric temperature
biochemistry
biological evolution
biosphere
ecology
ecosystems
greenhouse effect

gain (amplification)

USE **amplification**

gait

(added September 2001)
DEF The pace or manner in which a legged animal or robot moves from one place to another.
GS locomotion
. **gait**
RT leg (anatomy)
robot dynamics
running
walking
walking machines

galactic bulge

(added August 1988)
UF *central bulge (galaxies)*
nuclear bulge (galaxies)
RT galactic nuclei
galactic structure
galaxies
Milky Way Galaxy
spiral galaxies
x ray sources

galactic clusters

SN (RESTRICTED TO CLUSTERS OF GALAXIES; EXCLUDES OPEN CLUSTERS)
UF *galaxy groups*

galactic cosmic rays

- GS celestial bodies
 - . **galactic clusters**
 - . . local group (astronomy)
 - . . Virgo galactic cluster
- RT agglomeration
 - ∞ clusters
 - cooling flows (astrophysics)
 - disk galaxies
 - elliptical galaxies
 - large-scale structure of the universe
 - metallicity
 - missing mass (astrophysics)
 - protogalaxies
 - star clusters
 - star distribution
 - stellar systems
 - Sunyaev-Zeldovich effect

galactic cosmic rays

DEF Energetic particles that come from outside the solar systems. They generally come from within our galaxy.

- GS extraterrestrial radiation
 - . galactic radiation
 - . . **galactic cosmic rays**
 - ionizing radiation
 - . cosmic rays
 - . . **galactic cosmic rays**
- RT Advanced Composition Explorer
- energetic particles
- galactic winds
- solar activity effects
- solar wind

galactic evolution

- UF *galaxy formation*
- GS evolution (development)
 - . **galactic evolution**
- RT astrophysics
 - big bang cosmology
 - cooling flows (astrophysics)
 - cosmology
 - dark matter
 - disk galaxies
 - galactic mass
 - gravitational instability
 - large-scale structure of the universe
 - protogalaxies
 - ring galaxies
 - star distribution
 - star formation rate
 - stellar evolution
 - stellar mass accretion

galactic halos

(added December 1992)

DEF The tenuous, spherical cloud surrounding spiral galaxies. It is the locus of old stars and globular clusters. Halos appear to be required, at least to some extent, for the stability of disk galaxies.

- RT dark matter
- disk galaxies
- galactic structure
- globular clusters
- halos
- intergalactic media
- interstellar gas
- massive compact halo objects
- missing mass (astrophysics)
- molecular clouds
- Population II stars
- spiral galaxies
- star distribution

galactic magnetic fields

USE **interstellar magnetic fields**

galactic mass

DEF The total amount of matter contained in a galaxy.

- GS mass
 - . **galactic mass**
- RT galactic evolution
- galactic structure
- mass distribution

stellar mass

galactic nuclei

- GS **galactic nuclei**
 - . active galactic nuclei
- RT absorption spectra
- accretion disks
- active galaxies
- disk galaxies
- galactic bulge
- radio jets (astronomy)
- radio sources (astronomy)
- Seyfert galaxies
- starburst galaxies

galactic radiation

- GS extraterrestrial radiation
 - . **galactic radiation**
 - . . galactic cosmic rays
 - . . galactic radio waves
 - . . . North Polar Spur (astronomy)
 - . . galactic winds
- RT active galactic nuclei
- active galaxies
- brightness distribution
- corpusecular radiation
- cosmic noise
- cosmic rays
- cosmic x rays
- electromagnetic radiation
- gamma ray astronomy
- gamma ray bursts
- gamma ray sources (astronomy)
- Hubble diagram
- infrared cirrus (astronomy)
- interstellar radiation
- irregular galaxies
- mass to light ratios
- nonthermal radiation
- ∞ radiation
- radiative transfer
- Solar Radiation 1 satellite
- Solar Radiation 3 satellite
- stellar radiation
- Uhuru satellite

Galactic Radiation Exp Background sats

USE **GREB satellites**

galactic radio waves

- DEF Radio waves emanating from our galaxy.
- GS electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . **galactic radio waves**
 - North Polar Spur (astronomy)
- extraterrestrial radiation
 - . extraterrestrial radio waves
 - . . **galactic radio waves**
 - . . . North Polar Spur (astronomy)
 - . galactic radiation
 - . . **galactic radio waves**
 - . . . North Polar Spur (astronomy)
- RT cosmic noise
- radio jets (astronomy)

galactic rotation

- GS gyration
 - . rotation
 - . . **galactic rotation**
- RT corotation
- disk galaxies
- hydrogen clouds
- irregular galaxies
- stellar motions
- stellar systems
- velocity distribution

galactic structure

- RT barred galaxies
- compact galaxies
- corotation
- density wave model
- disk galaxies
- galactic bulge

- galactic halos
- galactic mass
- galaxies
- interacting galaxies
- irregular galaxies
- missing mass (astrophysics)
- peculiar galaxies
- ring galaxies
- shell galaxies
- stellar systems
- ∞ structures

galactic winds

(added May 1994)

- GS extraterrestrial radiation
 - . galactic radiation
 - . . **galactic winds**
- RT galactic cosmic rays
- space plasmas
- stellar winds

galactose

- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . monosaccharides
 - hexoses
 - **galactose**

Galatea

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 62,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Galatea**
- RT Neptune (planet)

galaxies

DEF Vast assemblages of stars or nebulae, composing island universes separated from other such assemblages by great distances.

- GS celestial bodies
 - . **galaxies**
 - . . active galaxies
 - . . . Markarian galaxies
 - . . . radio galaxies
 - . . . Seyfert galaxies
 - . . compact galaxies
 - . . disk galaxies
 - . . dwarf galaxies
 - . . elliptical galaxies
 - . . interacting galaxies
 - . . irregular galaxies
 - . . Maffei galaxies
 - . . Magellanic clouds
 - . . peculiar galaxies
 - . . ring galaxies
 - . . shell galaxies
 - . . spiral galaxies
 - . . . Andromeda Galaxy
 - . . . barred galaxies
 - . . . Milky Way Galaxy
 - . . protogalaxies
 - . . starburst galaxies
 - . . Virgo galactic cluster
- RT BL Lacertae objects
- faint objects
- galactic bulge
- galactic structure
- Gum nebula
- Hubble constant
- Hubble diagram
- metallicity
- nebulae
- Orion nebula
- quasars
- radio sources (astronomy)
- red shift
- star clusters
- star formation rate
- stars

- stellar systems
- Galaxy aircraft*
- USE **C-5 aircraft**
- galaxy formation*
(added May 1997)
- USE **galactic evolution**
- galaxy groups*
- USE **galactic clusters**
- galaxy interaction*
- USE **interacting galaxies**
- Galerkin method**
- RT linearization
- ∞ methodology
- Galilean satellites**
- DEF The four largest and brightest satellites of Jupiter (Io, Europa, Ganymede, and Callisto).
- GS celestial bodies
 - . natural satellites
 - . . Jupiter satellites
 - . . . **Galilean satellites**
 - Callisto
 - Europa
 - Ganymede
 - Io
- RT Charon
 - Galileo project
 - Galileo spacecraft
 - icy satellites
 - Jupiter (planet)
 - Triton
- Galileo mission*
- USE **Galileo project**
- Galileo probe**
- DEF The NASA Jupiter atmospheric entry probe to be deployed from the Galileo spacecraft. The probe will make in situ measurements while descending from a parachute.
- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo probe**
 - . . . unmanned spacecraft
 - . . . space probes
 - . . . Jupiter probes
 - **Galileo probe**
- RT Jupiter (planet)
- ∞ probes
- ∞ spacecraft
- Galileo project**
- DEF A NASA program to probe Jupiter, its environment and natural satellites. The spacecraft was placed in Earth orbit by the Space Transportation System (STS) on October 18, 1989. Used for Galileo mission.
- UF *Galileo mission*
- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Galileo project**
 - . . . projects
 - . . . **Galileo project**
 - . . . space programs
 - . . . NASA space programs
 - . . . **Galileo project**
- RT Amphitrite asteroid
 - atmospheric entry
 - flyby missions
 - Galilean satellites
 - Jupiter atmosphere
 - Jupiter probes
- Galileo spacecraft**
- DEF A NASA orbiter spacecraft which will carry the Galileo probe and, following deployment at Jupiter, will become an orbiting platform for remote sensing of Jupiter and its satellites.
- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo spacecraft**
 - . . . unmanned spacecraft
 - . . . space probes
 - . . . Jupiter probes
 - **Galileo spacecraft**
- RT flyby missions
 - Galilean satellites
 - Gaspra asteroid
 - Ida asteroid
 - Jupiter (planet)
 - ∞ missions
 - ∞ spacecraft
- gall**
- RT digestive system
 - gastrointestinal system
 - secretions
- gallamine triethiodide**
- GS amines
 - . **gallamine triethiodide**
 - . ethers
 - . **gallamine triethiodide**
 - . halogen compounds
 - . iodine compounds
 - . . iodides
 - . . . **gallamine triethiodide**
- gallates**
- GS gallium compounds
 - . **gallates**
 - . . sodium gallates
- gallium**
- GS chemical elements
 - . **gallium**
 - . . gallium isotopes
 - . metals
 - . **gallium**
 - . . gallium isotopes
- gallium alloys**
- GS alloys
 - . **gallium alloys**
- RT aluminum alloys
 - indium alloys
 - superconductivity
- gallium antimonides**
- GS antimony compounds
 - . antimonides
 - . . **gallium antimonides**
 - . gallium compounds
 - . **gallium antimonides**
- gallium arsenide lasers**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **gallium arsenide lasers**
 - . . . solid state lasers
 - . . . **gallium arsenide lasers**
 - . . . stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **gallium arsenide lasers**
 - . . . solid state lasers
 - . . . **gallium arsenide lasers**
- RT aluminum gallium arsenide lasers
 - injection lasers
 - stimulated emission
 - waveguide lasers
- gallium arsenides**
- GS arsenic compounds
 - . arsenides
 - . . **gallium arsenides**
 - . . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - . gallium compounds
 - . **gallium arsenides**
 - . . aluminum gallium arsenides
 - . . . indium gallium arsenides
- RT antiseite defects
 - Bragg reflectors
- Gunn diodes
- heterojunction devices
- injection lasers
- MODFETS
- negative conductance
- negative electron affinity
- negative resistance devices
- Schottky diodes
- semiconductor lasers
- superlattices
- transferred electron devices
- gallium compounds**
- GS **gallium compounds**
 - . gadolinium-gallium garnet
 - . gallates
 - . . sodium gallates
 - . gallium antimonides
 - . gallium arsenides
 - . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - . gallium nitrides
 - . gallium oxides
 - . gallium phosphides
 - . gallium selenides
 - RT ∞ chemical compounds
 - ∞ Group 3A compounds
 - ∞ metal compounds
- gallium isotopes**
- GS chemical elements
 - . gallium
 - . . **gallium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **gallium isotopes**
 - . metals
 - . gallium
 - . . **gallium isotopes**
- gallium nitrides**
- GS gallium compounds
 - . **gallium nitrides**
 - . nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **gallium nitrides**
- RT semiconductors (materials)
- gallium oxides**
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **gallium oxides**
 - . gallium compounds
 - . **gallium oxides**
- gallium phosphides**
- GS gallium compounds
 - . **gallium phosphides**
 - . phosphorus compounds
 - . phosphides
 - . . **gallium phosphides**
- gallium selenides**
- GS chalcogenides
 - . selenides
 - . . **gallium selenides**
 - . gallium compounds
 - . **gallium selenides**
 - . selenium compounds
 - . selenides
 - . . **gallium selenides**
- galvanic cells*
- USE **electrolytic cells**
- galvanic skin response**
- UF *electrodermal response*
- GS responses
 - . **galvanic skin response**
- RT electrical resistance

galvanomagnetic effects

lies

galvanizing
USE **zinc coatings**

galvanomagnetic effects
UF *galvanomagnetism*
GS **galvanomagnetic effects**
. Hall effect
. Nernst-Ettingshausen effect
. quantum Hall effect
RT ∞ effects

galvanomagnetism
USE **galvanomagnetic effects**

galvanometers
GS measuring instruments
. **galvanometers**
RT ammeters
electrometers
micromilliammeters
millivoltmeters
thermocouple pyrometers

Gambia
GS nations
. **Gambia**
RT Africa

game theory
DEF Application of mathematics to a game, business situation, or other problem to maximize gain or minimize loss.
GS **game theory**
. saddle points (game theory)
RT decision theory
deployment
games
information theory
linear programming
martingales
mathematical models
mathematical programming
minimax technique
Monte Carlo method
operations research
probability theory
risk
saddle points
simulation
statistical analysis
statistical decision theory
stochastic processes
strategy
∞ theories
war games

games
(added October 1998)
GS **games**
. differential games
. pursuit-evasion games
. war games
. zero sum games
RT control theory
game theory
optimization

gametocytes
UF *oocytes*
spermatocytes
GS cells (biology)
. **gametocytes**
. . . eggs
. . . spermatozoa
RT spermatogenesis

gamma function
GS analysis (mathematics)
. complex variables
. . . **gamma function**
functions (mathematics)
. **gamma function**
RT factorials

statistical distributions

gamma globulin
GS antibodies
. **gamma globulin**
biopolymers
. proteins
. . . globulins
. . . **gamma globulin**
organic compounds
. proteins
. . . globulins
. . . **gamma globulin**

gamma radiation
USE **gamma rays**

gamma ray absorptiometry
GS density measurement
. **gamma ray absorptiometry**
RT absorption spectra
densitometers
electromagnetic absorption
energy absorption
∞ measurement
photon absorptiometry
radiation absorption

gamma ray absorption
GS energy absorption
. radiation absorption
. . . electromagnetic absorption
. . . **gamma ray absorption**
RT ∞ absorption
electromagnetic properties
electromagnetic radiation
ionizing radiation
nuclear radiation
photon absorptiometry

gamma ray astronomy
DEF Astronomy based on the detection of gamma ray emission and interactions from supernova remnants, neutron stars, flare stars, galactic core and disc, black holes, etc.
GS astronomy
. **gamma ray astronomy**
RT astrophysics
cosmic x rays
energy spectra
galactic radiation
gamma ray bursts
gamma ray sources (astronomy)
gamma ray telescopes
Granat satellite
HEAO 4
radio astronomy
soft gamma repeaters
x ray astronomy

Gamma Ray Astronomy Explorer
USE **Explorer 11 satellite**

gamma ray beams
GS beams (radiation)
. **gamma ray beams**
electromagnetic radiation
. **gamma ray beams**
ionizing radiation
. **gamma ray beams**
nuclear radiation
. **gamma ray beams**
RT photon beams
radioactive decay

gamma ray bursts
DEF Short (about 0. 1 - 4 sec.) intense low-energy (about 0. 1 - 1. 2 MeV) bursts recorded by the Vela satellite system in 1967. Their isotropic distribution suggests an extragalactic origin, but a galactic disk origin cannot be ruled out. Used for cosmic gamma ray bursts.
UF *cosmic gamma ray bursts*
GS bursts
. **gamma ray bursts**
electromagnetic radiation

. gamma rays
. . **gamma ray bursts**
extraterrestrial radiation
. **gamma ray bursts**
ionizing radiation
. cosmic rays
. . **gamma ray bursts**
. gamma rays
. . **gamma ray bursts**
nuclear radiation
. gamma rays
. . **gamma ray bursts**
RT big bang cosmology
bremsstrahlung
Cerenkov radiation
cosmic x rays
galactic radiation
gamma ray astronomy
interstellar radiation
nuclear particles
radiant flux density
soft gamma repeaters
starquakes
stellar radiation
x ray astronomy

gamma ray lasers
DEF Stimulated emission devices producing coherent gamma radiation.
GS stimulated emission devices
. lasers
. . **gamma ray lasers**
RT coherent light
light transmission
optical pumping
pulsed radiation

Gamma Ray Observatory
DEF A late 1980s NASA mission to explore the gamma ray window to the universe from 0. 06 MeV to 30 GeV.
UF *Compton Gamma Ray Observatory*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Gamma Ray Observatory**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Gamma Ray Observatory**
RT gamma ray telescopes
OGO
spaceborne astronomy
spaceborne telescopes

gamma ray sources (astronomy)
(added October 1997)
SN (LIMITED TO ASTRONOMICAL SOURCES; EXCLUDES RADIATION DEVICES)
GS **gamma ray sources (astronomy)**
. soft gamma repeaters
RT COS-B satellite
galactic radiation
gamma ray astronomy
pulsars
radio sources (astronomy)
x ray sources

gamma ray spectra
DEF The energy distribution of gamma rays emitted by nuclei.
GS spectra
. radiation spectra
. . . electromagnetic spectra
. . . **gamma ray spectra**
RT emission spectra
ionizing radiation

gamma ray spectrometers
DEF Instruments for deriving the physical constants of materials by using induced gamma radiation as the emission source.
GS measuring instruments
. spectrometers
. . **gamma ray spectrometers**
RT 2001 Mars Odyssey
anticoincidence detectors

- optical measurement
scintillating fibers
Solar Maximum Mission
spectra
spectrum analysis
- gamma ray telescopes**
DEF Special telescopes for the observation (and recording) of astronomical phenomena in the gamma ray spectrum.
GS telescopes
 . **gamma ray telescopes**
RT cosmic rays
 gamma ray astronomy
 Gamma Ray Observatory
 scintillating fibers
- gamma rays**
SN (EMITTED BY NUCLEI)
DEF Quanta of electromagnetic radiation emitted by nuclei, each such photon being emitted as the result of a quantum transition between two energy levels of the nucleus. Gamma rays have energies usually between 10 thousand electron volts and 10 million electron volts with correspondingly short wavelengths and high frequencies. Used for gamma radiation.
UF *gamma radiation*
GS electromagnetic radiation
 . **gamma rays**
 . . gamma ray bursts
 ionizing radiation
 . **gamma rays**
 . . gamma ray bursts
 nuclear radiation
 . **gamma rays**
 . . gamma ray bursts
RT bremsstrahlung
 Cerenkov radiation
 cosmic rays
 cosmic x rays
 decay
 emission spectra
 flux (rate)
 flux density
 monochromatic radiation
 Mossbauer effect
 photomagnetic effects
 photons
 ∞ radiation
 radiation effects
 radiation shielding
 radioactive decay
 radioactivity
 ∞ rays
 scintillating fibers
 transverse oscillation
 transverse waves
 Wind/GGS spacecraft
 x rays
- ganglia**
GS anatomy
 . nervous system
 . . nerves
 . . . **ganglia**
RT cells (biology)
 neuroglia
 neurophysiology
- gantries*
USE **gantry cranes**
- gantry cranes**
DEF Large cranes mounted on platforms that usually run back and forth on parallel tracks astride the work area. Used for gantries.
UF *gantries*
GS handling equipment
 . cranes
 . . **gantry cranes**
RT ground support equipment
 launching pads
 launching sites
- umbilical towers
- Ganymede**
DEF A satellite of Jupiter orbiting at a mean distance of 1,071,000 kilometers. Also called Jupiter III.
GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Ganymede**
 . . . Jupiter satellites
 . . . Galilean satellites
 **Ganymede**
RT Callisto
 Charon
 Io
 Jupiter (planet)
- GAP (propellants)*
USE **glycidyl azide polymer**
- gaps**
GS **gaps**
 . energy gaps (solid state)
 . spark gaps
RT ∞ arresters
 ∞ breakdown
 crack opening displacement
 ∞ holes
 openings
 orifices
 passageways
 quantum wells
 ∞ tunnels
- gaps (geology)**
DEF Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for cols and passes.
UF *cols*
 passes
GS geology
 . **gaps (geology)**
 landforms
 . **gaps (geology)**
RT mountains
 ∞ ridges
- garbage**
GS wastes
 . **garbage**
RT composting
 organic wastes (fuel conversion)
 sewers
 solid wastes
 utilities
 waste disposal
 waste treatment
- garments**
GS clothing
 . **garments**
RT flight clothing
 suits
 vests
- garnets**
DEF Groups of minerals that are silicates of cubic crystalline form.
GS minerals
 . **garnets**
 . . gadolinium-gallium garnet
 . . yttrium-aluminum garnet
 . . yttrium-iron garnet
 silicon compounds
 . silicates
 . . **garnets**
 . . . gadolinium-gallium garnet
 . . . yttrium-aluminum garnet
 . . . yttrium-iron garnet
RT eclogite
- lasers
- GARP*
USE **Global Atmospheric Research Program**
- GARP Atlantic Tropical Experiment**
UF *GATE (experiment)*
GS programs
 . Global Atmospheric Research Program
 . . **GARP Atlantic Tropical Experiment**
RT Atlantic Ocean
 intertropical convergent zones
 meteorology
 NASA programs
 oceanography
 tropical meteorology
 tropical regions
 weather forecasting
- gas analysis**
GS chemical tests
 . chemical analysis
 . . **gas analysis**
 . . . ozonometry
 . . . Van Slyke method
RT air sampling
 flame probes
 Hopcalite (trademark)
 mass spectrometers
 ∞ materials tests
 oxygen analyzers
 qualitative analysis
 quantitative analysis
 volumetric analysis
- gas atomization**
DEF Atomization of fluids by high velocity gas jets.
GS atomizing
 . **gas atomization**
RT aerosols
 collisions
 comminution
 liquid atomization
 particles
- gas bags**
GS bags
 . **gas bags**
 expandable structures
 inflatable structures
 . . **gas bags**
RT balloons
 high altitude balloons
- gas bearings**
UF *air bearings*
 gas lubricated bearings
GS bearings
 . **gas bearings**
RT antifriction bearings
 fluid films
 foil bearings
 high temperature lubricants
 squeeze films
 thrust bearings
 turbine engines
- gas chromatography**
DEF A method of chemical analysis involving the separation of volatile constituents of a mixture by means of gas flow entrainment, vapor pressure differences, and affinity of specific compounds for various liquids or solid materials.
GS chemical tests
 . chemical analysis
 . . chromatography
 . . . **gas chromatography**
RT adsorption
 paper chromatography
 sorption

gas composition

thin layer chromatography

gas composition

GS composition (property)
 . **gas composition**
 . . carbon dioxide concentration
RT atmospheric composition
atom concentration
chemical composition
Dalton law
expired air
ionospheric composition
plasma composition
polar gases

gas cooled fast reactors

GS nuclear reactors
 . fast nuclear reactors
 . . **gas cooled fast reactors**
 . gas cooled reactors
 . . **gas cooled fast reactors**

gas cooled reactors

UF *GCR (reactors)*
GS nuclear reactors
 . **gas cooled reactors**
 . . experimental gas cooled reactors
 . . gas cooled fast reactors
 . . high temperature nuclear reactors
 . . . high temperature gas cooled reactors
 . . KIWI reactors
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . . Tory 2 reactor
 . . Tory 2-A reactor
 . . Tory 2-C reactor
RT ∞ gas reactors

gas cooling

SN (COOLING WITH GAS)
GS cooling
 . **gas cooling**
RT coolants
 . freon
 . heat exchangers

gas density

GS density (mass/volume)
 . **gas density**
RT atom concentration
buoyancy
convective flow
gaseous diffusion
ideal gas
probability density functions
rarefied gases
real gases

gas detectors

RT detection
∞ detectors
 . haze detection
 . identifying
 . indicating instruments
 . monitors
∞ probes
∞ sensors
 . smoke detectors
 . warning systems

gas diffusion

USE **gaseous diffusion**

gas discharge counters

USE **counters**
gas discharge tubes

gas discharge tubes

DEF Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal electrodes, but one form permits an electrodeless discharge with induced

voltage. Used for discharge tubes and gas discharge counters.

UF *discharge tubes*
gas discharge counters
GS electron tubes
 . **gas discharge tubes**
 . . ignitrons
 . . thyratrons
RT Faraday dark space
∞ gas tubes
 . microwave equipment
 . microwave oscillators
 . microwave tubes
 . phototubes
 . radiation counters

gas discharges

GS electric current
 . electric discharges
 . . Townsend discharge
 . . . **gas discharges**
 toroidal discharge
 ring discharge
RT afterglows
cold cathode tubes
cold cathodes
electric arcs
electric sparks
electrodeless discharges
electron avalanche
glow discharges
lightning
polar gases

gas dissociation

GS dissociation
 . **gas dissociation**
RT thermal dissociation

gas dynamics

GS fluid mechanics
 . fluid dynamics
 . . **gas dynamics**
 . . . aerodynamics
 aerothermodynamics
 hypersonics
 rotor aerodynamics
 supersonics
 unsteady aerodynamics
 . . . interactional aerodynamics
 . . . rarefied gas dynamics

RT Dalton law
∞ dynamics
 . gas path analysis
 . gaseous diffusion
 . gaseous self-diffusion
 . gases
 . hydrodynamic equations
 . hydrodynamics
 . jet membrane process
 . kinetics
 . Lorentz gas
 . magnetohydrodynamics
∞ mechanics (physics)
 . molecular gases
 . polar gases
 . thermodynamics
 . wave rotors

gas evacuating

USE **evacuating (vacuum)**

gas evolution

GS evolution (liberation)
 . **gas evolution**
RT degassing
outgassing
transpiration

gas exchange

GS exchanging
 . **gas exchange**
RT oxygen production

gas expansion

GS expansion

. **gas expansion**
RT Joule-Thomson effect
pressure reduction

gas explosions

GS explosions
 . chemical explosions
 . . **gas explosions**
RT detonable gas mixtures
detonation waves
flame propagation
flammable gases
underground explosions

gas flow

UF *gaseous cavitation*
GS fluid flow
 . **gas flow**
 . . air flow
 . . . air currents
 jet streams (meteorology)
 meridional flow
 vertical air currents
 . . continuum flow
 . . cooling flows (astrophysics)
 . . equilibrium flow
 . . . frozen equilibrium flow
 . . . shifting equilibrium flow
 . . free molecular flow
 . . Knudsen flow
 . . molecular flow
 . . . slip flow
 . . . transition flow
 . . nonequilibrium flow
 . . pipe flow
RT air ducts
air jets
compressible flow
critical flow
Crocco-Lee theory
gas path analysis
gasdynamic lasers
gaseous diffusion
gases
geophysical fluid flow cells
hydraulic analogies
hypersonic flow
incompressible flow
inviscid flow
Joule-Thomson effect
laminar flow
liquid flow
magnetohydrodynamic flow
mass flow
molecular relaxation
molecular trajectories
multiphase flow
nonuniform flow
orifice flow
∞ pressure drop
radial flow
single-phase flow
steady flow
steam flow
streams
subcritical flow
subsonic flow
supercritical flow
supersonic flow
supersonic jet flow
transonic flow
turbulent flow
two phase flow
uniform flow
unsteady flow
vapor jets
viscous flow

gas generator engines

USE **engines**
gas generators

gas generators

DEF A device used to generate gases in the laboratory; a chemical plant for producing gas

from coal, for example, water gas. Used for gas generator engines.

- UF *gas generator engines*
- RT chemical reactors
- ∞ generators
- pneumatic equipment
- pressurizing
- vaporizers
- wave rotors

gas giant planets

- DEF The giant planets, Jupiter, Saturn, Uranus, and Neptune, of our solar system.
- GS celestial bodies
- . planets
- . . **gas giant planets**
- . . . Jupiter (planet)
- . . . Neptune (planet)
- . . . Saturn (planet)
- . . . Uranus (planet)
- RT extrasolar planets
- Jupiter red spot
- Neptune atmosphere
- planetary composition
- Saturn rings
- solar system
- Uranus atmosphere

gas guns

- GS **gas guns**
- . light gas guns
- RT atmospheric entry
- ballistics
- ∞ guns
- hypervelocity guns
- wind tunnels

gas heating

- GS heating
- . **gas heating**
- RT arc heating
- kinetic heating
- plasma heating
- radiant heating
- resistance heating
- thermal diffusion

gas injection

- GS injection
- . fluid injection
- . . **gas injection**
- RT formations
- fuel injection
- inflating
- perforating
- plasma pumping
- porosity
- pressurizing
- stimulation
- water injection

gas ionization

- GS ionization
- . **gas ionization**
- . . atmospheric ionization
- . . . auroral ionization
- . . flame ionization
- RT afterglows
- electron attachment
- helium afterglow
- ionized gases
- ionizers
- Penning discharge
- Penning effect
- photoionization
- plasma display devices
- ring discharge

gas jets

- GS fluid jets
- . **gas jets**
- RT air jets
- cold gas

∞ jets

gas lasers

- GS stimulated emission devices
- . lasers
- . . **gas lasers**
- . . . carbon dioxide lasers
- . . . carbon monoxide lasers
- . . . DF lasers
- . . . excimer lasers
- . . . HCL lasers
- . . . HCL argon lasers
- . . . HCN lasers
- . . . helium-neon lasers
- . . . HF lasers
- . . . nitrogen lasers
- . . . rare gas-halide lasers
- . . . krypton fluoride lasers
- . . . xenon chloride lasers
- . . . xenon fluoride lasers
- . . . TEA lasers
- . . . ultraviolet lasers
- RT carbon lasers
- chemical lasers
- electron pumping
- gasdynamic lasers
- infrared lasers
- Mach-Zehnder interferometers
- molecular oscillations
- nuclear pumping
- organic lasers
- polar gases
- pulsed lasers
- Q switched lasers
- stimulated emission
- water masers

gas liquefaction

USE **condensing**

gas lubricants

- GS lubricants
- . **gas lubricants**
- RT gaseous diffusion
- high temperature lubricants
- metal-gas systems
- solid lubricants
- squeeze films

gas lubricated bearings

USE **gas bearings**

gas masers

- GS stimulated emission devices
- . masers
- . . **gas masers**
- . . . hydrogen masers
- RT argon lasers
- atomic clocks
- carbon dioxide lasers
- frequency standards
- interstellar masers
- polar gases
- stimulated emission
- TEA lasers
- water masers

gas meters

- GS measuring instruments
- . flowmeters
- . . **gas meters**
- RT flow measurement
- Venturi tubes

gas mixtures

- GS gases
- . **gas mixtures**
- . . air
- . . . alveolar air
- . . . compressed air
- . . . expired air
- . . . high temperature air
- . . . liquid air
- . . detonable gas mixtures
- mixtures
- . solutions

. . **gas mixtures**

- . . . air
- alveolar air
- compressed air
- expired air
- high temperature air
- liquid air
- . . . detonable gas mixtures
- RT argon-oxygen atmospheres
- ∞ atmospheres
- binary fluids
- binary mixtures
- controlled atmospheres
- eudiometers
- exhaust gases
- fuel-air ratio
- fumes
- gaseous rocket propellants
- helium-oxygen atmospheres
- hydrogen-based energy
- ignition limits
- laminar mixing
- Lighthill gas model
- liquefied gases
- liquid-gas mixtures
- mixing ratios
- premixed flames
- premixing

gas path analysis

DEF Mathematical process of determining overall engine performance, individual module performances and sensor performances from any specific set of engine related measurements.

- RT gas dynamics
- gas flow

gas phases

USE **vapor phases**

gas pipes

- GS pipes (tubes)
- . **gas pipes**
- RT ∞ gas tubes

gas pockets

- RT cavities
- evacuating (vacuum)

gas pressure

- GS pressure
- . **gas pressure**
- RT atmospheric pressure
- compressed gas
- internal pressure
- partial pressure

∞ gas reactors

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chemical reactors
- gas cooled reactors
- gaseous fission reactors

gas recovery

- GS reclamation
- . materials recovery
- . . **gas recovery**
- RT energy technology
- exhaust gases
- gaseous diffusion
- gases
- ∞ recovery
- wastes

gas spectroscopy

- GS spectroscopy
- . **gas spectroscopy**
- RT chemical analysis
- chemical tests
- flame spectroscopy
- magnetic spectroscopy
- mass spectroscopy
- optogalvanic spectroscopy
- spectroscopic analysis

gaskets

∞ interactions

gaskets

DEF Prefomed deformable devices designed to be placed between two adjoining parts to prevent the passage of liquid or gas between the parts.

- GS seals (stoppers)
 - . **gaskets**
- RT labyrinth seals
 - O ring seals
 - pump seals

gas-liquid interactions

- GS **gas-liquid interactions**
 - . air water interactions
 - . . air sea ice interactions
- RT condensing
 - energy transfer
 - evaporation
 - gaseous diffusion
 - heat transfer
- ∞ interactions
 - interfacial tension
 - mass transfer
 - momentum transfer
 - noncondensable gases
 - surface reactions

gas-metal interactions

- GS fluid-solid interactions
 - . gas-solid interactions
 - . . **gas-metal interactions**
- RT ablation
 - adsorption
 - chemical reactions
 - chemisorption
- ∞ condensation
 - condensing
 - corrosion
 - diffusion
 - evaporation
 - exhaust emission
 - flame propagation
 - gas welding
 - gaseous diffusion
 - hot corrosion
 - hydrogen embrittlement
- ∞ interactions
 - metal combustion
 - metal vapors
 - metal-gas systems
 - occlusion
 - solid phases
 - sublimation
 - sulfidation
 - vapor phases

gasohol (fuel)

DEF Synthetic fuel consisting of a mixture of gasoline and grain alcohol (ethanol).

- GS fuels
 - . chemical fuels
 - . . synthetic fuels
 - . . . **gasohol (fuel)**
- RT alcohols
 - gasoline

gasoline

- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **gasoline**
 - . . liquid fuels
 - . . . **gasoline**
 - products
 - . petroleum products
 - . . **gasoline**
- RT antiknock additives
 - automobile fuels
 - diesel fuels
 - gasohol (fuel)
 - jet engine fuels
 - kerogen
 - kerosene
 - octane number

shale oil
solvent refined coal

GASP

USE **Global Air Sampling Program**

Gaspra asteroid

- (added July 1995)
- GS celestial bodies
 - . asteroids
 - . . **Gaspra asteroid**
- RT asteroid belts
 - Galileo spacecraft
 - meteoroids

gas-solid interactions

- DEF Effects of the impingement of gases (particles) on solid surfaces in various environments.
- GS fluid-solid interactions
 - . **gas-solid interactions**
 - . . gas-metal interactions
- RT air land interactions
 - dynamic loads
 - fluid dynamics
 - impingement
- ∞ interactions
 - panel method (fluid dynamics)

gas-solid interfaces

- GS boundaries
 - . fluid boundaries
 - . . **gas-solid interfaces**
 - interfaces
 - . fluid boundaries
 - . . **gas-solid interfaces**
- RT boundary layers
 - fluid-solid interactions
 - heat transfer
 - interface stability
 - metal surfaces
 - occlusion
 - solid phases
 - solid-solid interfaces
 - solubility
 - sublimation
 - vapor phases

gastrointestinal system

- GS anatomy
 - . digestive system
 - . . **gastrointestinal system**
 - . . . appendix (anatomy)
 - . . . intestines
 - . . . rectum
 - . . . stomach
- RT abdomen
 - colic
 - gall
 - glands (anatomy)
 - liver
 - organs
 - pancreas
- ∞ systems

GATE (experiment)

USE **GARP Atlantic Tropical Experiment**

∞ gates

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT closures
 - gates (circuits)
 - gates (openings)

gates (circuits)

- UF *OR-gates*
- GS circuits
 - . **gates (circuits)**
 - . . field-programmable gate arrays
 - . . threshold gates
- RT coincidence circuits
- ∞ gates
 - logic circuits
 - logical elements
 - switching circuits

threshold logic
trigger circuits

gates (openings)

- RT apertures
 - ∞ barriers
 - canals
 - doors
 - fences (barriers)
- ∞ gates
 - hatches
 - hydraulic equipment
 - openings
 - outlets
 - safety devices
 - vents
 - walls

gauge invariance

- GS invariance
 - . **gauge invariance**
- RT electromagnetic radiation
 - supergravity
 - transformations (mathematics)

gauge theory

DEF A field theory in which symmetries of the theory are implemented locally in space and time. This leads to theories where forces are generally carried by vector bosons. Some gauge theories are electrodynamics, quantum chromodynamics, and Yang Mills theory.

- GS field theory (physics)
 - . **gauge theory**
 - . . quantum chromodynamics
 - . . unified field theory
 - . . . electroweak model
 - . . . standard model (particle physics)
- RT gravitation theory
 - string theory
 - supergravity
 - supersymmetry
- ∞ theories
 - Yang-Mills fields
 - Yang-Mills theory

Gauss equation

- UF *Gauss function*
- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - **Gauss equation**
- RT ∞ equations
 - Maxwell equation

Gauss function

USE **Gauss equation**

Gaussian distributions

USE **normal density functions**

Gaussian elimination

DEF A technique for solving linear equations by progressive differencing.

- RT elimination
 - linear equations
 - matrices (mathematics)
 - subtraction

Gaussian noise

USE **random noise**

Gauss-Markov theorem

- GS theorems
 - . **Gauss-Markov theorem**
- RT least squares method
 - statistical analysis
 - variance (statistics)

Gaussmeters

USE **magnetometers**

gauze

- GS fabrics
 - . **gauze**

- RT casts
- windmills (windpowered machines)
- thixotropy
- GAW-1 airfoil**
- UF *General Aviation Whitcomb airfoil*
- GS airfoils
 . wings
 . . **GAW-1 airfoil**
- RT ATLIT project
 PA-34 Seneca aircraft
 wing profiles
- GAW-2 airfoil**
- UF *General Aviation Whitcomb airfoil*
- GS airfoils
 . wings
 . . **GAW-2 airfoil**
- RT body-wing configurations
 flaps (control surfaces)
 general aviation aircraft
 wing profiles
- GC-130 aircraft*
- USE **C-130 aircraft**
- GCR (reactors)*
- USE **gas cooled reactors**
- GDOP*
- USE **geometric dilution of precision**
- GE 625 computer**
- GS data processing equipment
 . computers
 . . digital computers
 . . . GE computers
 **GE 625 computer**
- GE 635 computer**
- GS data processing equipment
 . computers
 . . digital computers
 . . . GE computers
 **GE 635 computer**
- GE computers**
- UF *General Electric computers*
- GS data processing equipment
 . computers
 . . digital computers
 . . . **GE computers**
 GE 625 computer
 GE 635 computer
- ∞ **gear**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arresting gear
 gears
 landing gear
 mechanical drives
- gear teeth**
- RT bevel gears
 gears
 mechanical drives
- gearboxes*
(added October 1997)
- USE **transmissions (machine elements)**
- gears**
- GS **gears**
 . bevel gears
 . racks (gears)
 . . spiral bevel gears
- RT counter-rotating wheels
- ∞ gear
- gear teeth
 idlers
 lubrication
 mechanical drives
 transmissions (machine elements)
 wheels
- gegenschein**
- DEF A round or elongated spot of light in the sky at a point 180 degrees from the sun. Also called counter glow.
- GS electromagnetic radiation
 . light (visible radiation)
 . . **gegenschein**
 extraterrestrial radiation
 . **gegenschein**
- RT night sky
 polarized light
 sky brightness
 solar radiation
 terrestrial dust belt
 zodiacal light
- gehlenite**
- DEF A mineral of the mellite group. It is isomorphous with akermenite. Used for ver-lardenite.
- UF *velardenite*
- GS aluminum compounds
 . aluminum silicates
 . . **gehlenite**
 calcium compounds
 . calcium silicates
 . . **gehlenite**
 minerals
 . **gehlenite**
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **gehlenite**
 . . calcium silicates
 . . . **gehlenite**
- RT aluminum oxides
- Geiger counters**
- DEF Instruments for detecting and measuring radioactivity. In full, Geiger-Mueller counter. Used for Geiger-Mueller tubes.
- UF *Geiger-Mueller tubes*
- GS ionization chambers
 . **Geiger counters**
 measuring instruments
 . counters
 . . radiation counters
 . . . **Geiger counters**
 . radiation measuring instruments
 . . radiation counters
 . . . **Geiger counters**
- RT dosimeters
 neutron counters
 overvoltage
 particle telescopes
 proportional counters
 radiation detectors
- Geiger-Mueller tubes*
- USE **Geiger counters**
- gel filtration chromatography*
(added November 2001)
- USE **liquid chromatography**
- gel permeation chromatography*
- USE **liquid chromatography**
- gelatins**
- RT collagens
- ∞ food
- gels
 nonNewtonian fluids
- gelation**
- RT coagulation
 colloidizing
 gels
 solidification
- gelbstoff*
(added October 1997)
- USE **dissolved organic matter**
- gelled propellants**
- GS propellants
 . **gelled propellants**
 . . gelled rocket propellants
- RT chemical fuels
 colloidal propellants
 high temperature propellants
 hydrogen fuels
 metal fuels
 metal propellants
 plastic propellants
 propellant additives
 solid propellants
- gelled rocket propellants**
- UF *thixotropic propellants*
- GS propellants
 . gelled propellants
 . . **gelled rocket propellants**
 . rocket propellants
 . . liquid rocket propellants
 . . . **gelled rocket propellants**
- RT chemical fuels
 cryogenic rocket propellants
 gels
 high temperature propellants
 hybrid propellants
 hypergolic rocket propellants
 metal propellants
 monopropellants
 slurry propellants
 solid rocket propellants
 storable propellants
- gels**
- DEF Liquids containing colloidal structural networks that form continuous matrices and completely pervade the liquid phase. Gels deform elastically upon application of shear forces less than the yield stress. At shear forces above the yield stress, the flow properties are principally determined by the gel matrices.
- GS **gels**
 . double base rocket propellants
 . silica gel
 . xerogels
- RT aerogels
 colloids
 dopes
 gelatins
 gelation
 gelled rocket propellants
 nonNewtonian fluids
 slurries
 thickeners (materials)
 thixotropy
- Gemini 2 spacecraft**
- GS manned spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . Gemini spacecraft
 . . . **Gemini 2 spacecraft**
 soft landing spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
- RT manned space flight
- Gemini 3 flight**
- GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 3 flight**
- RT Titan launch vehicles
- Gemini 4 flight**
- GS space flight
 . manned space flight

Gemini 5 flight

- .. Gemini flights
- ... **Gemini 4 flight**

Gemini 5 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 5 flight**

Gemini 6 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 6 flight**

Gemini 7 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 7 flight**

- RT Titan launch vehicles

Gemini 8 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 8 flight**

- RT Titan launch vehicles

Gemini 9 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 9 flight**

- RT Titan launch vehicles

Gemini 10 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 10 flight**

- RT Titan launch vehicles

Gemini 11 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 11 flight**

- RT Titan launch vehicles

Gemini 12 flight

- GS space flight
- . manned space flight
- .. Gemini flights
- ... **Gemini 12 flight**

- RT Titan launch vehicles

Gemini (GT-1) spacecraft

- GS manned spacecraft
- . Gemini spacecraft
- .. **Gemini (GT-1) spacecraft**
- reentry vehicles
- . recoverable spacecraft
- .. Gemini spacecraft
- ... **Gemini (GT-1) spacecraft**
- soft landing spacecraft
- . Gemini spacecraft
- .. **Gemini (GT-1) spacecraft**

- RT manned space flight

Gemini B spacecraft

- GS manned spacecraft
- . **Gemini B spacecraft**
- reentry vehicles
- . recoverable spacecraft
- .. **Gemini B spacecraft**
- soft landing spacecraft
- . **Gemini B spacecraft**

- RT manned space flight

Gemini flights

- GS space flight
- . manned space flight
- .. **Gemini flights**
- ... Gemini 3 flight
- ... Gemini 4 flight

- ... Gemini 5 flight
- ... Gemini 6 flight
- ... Gemini 7 flight
- ... Gemini 8 flight
- ... Gemini 9 flight
- ... Gemini 10 flight
- ... Gemini 11 flight
- ... Gemini 12 flight

Gemini project

- GS programs
- . NASA programs
- .. NASA space programs
- ... **Gemini project**
- projects
- .. **Gemini project**
- space programs
- .. NASA space programs
- ... **Gemini project**

- RT Agena B rocket vehicle
- Agena rocket vehicles
- Atlas launch vehicles
- integrated mission control center
- Mercury project
- Titan project

Gemini spacecraft

- GS manned spacecraft
- . **Gemini spacecraft**
- .. Gemini 2 spacecraft
- .. Gemini (GT-1) spacecraft
- reentry vehicles
- . recoverable spacecraft
- .. **Gemini spacecraft**
- ... Gemini 2 spacecraft
- ... Gemini (GT-1) spacecraft
- soft landing spacecraft
- . **Gemini spacecraft**
- .. Gemini 2 spacecraft
- .. Gemini (GT-1) spacecraft

- RT manned space flight
- space capsules
- Titan project

Geminid meteoroids

- GS celestial bodies
- . meteoroid showers
- .. **Geminid meteoroids**
- meteoroids
- .. **Geminid meteoroids**

gene expression

DEF The process by which a gene's coded information is converted into the structures present and operating in the cell.

- UF *gene regulation*
- RT biological diversity
- biological evolution
- chromosomes
- cloning (biology)
- deoxyribonucleic acid
- evolution (development)
- gene therapy
- genes
- genetics
- molecular biology
- mutagenesis
- oncogenes
- ribonucleic acids
- transcription (genetics)

gene regulation

USE **gene expression**

gene therapy

(added February 2002)

DEF The introduction of new genes into cells for the purpose of treating disease by restoring or adding gene expression.

- GS therapy
- . **gene therapy**

- RT chromosomes
- deoxyribonucleic acid
- gene expression
- genetic engineering

plasmids

general aviation aircraft

- UF *executive aircraft*
- private aircraft*

GS **general aviation aircraft**

- . agricultural aircraft
- . Beechcraft 18 aircraft
- . C-33 aircraft
- . C-35 aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . Cessna 402B aircraft
- . CL-600 challenger aircraft
- . DH 125 aircraft
- . DHC 2 aircraft
- . DO-27 aircraft
- . DO-28 aircraft
- . G-1 aircraft
- . HC-3 helicopter
- . Yak 40 aircraft

RT ∞ aeronautics

- air transportation

∞ aircraft

- civil aviation
- commercial aircraft
- commuter aircraft
- GAW-2 airfoil
- helicopters
- jet aircraft
- light aircraft
- ∞ low wing aircraft
- passenger aircraft
- Piper aircraft
- single engine aircraft
- ∞ subsonic aircraft
- training aircraft
- transport aircraft
- turboprop aircraft
- utility aircraft

General Aviation Whitcomb airfoil

USE **GAW-1 airfoil**
GAW-2 airfoil

General Dynamics aircraft

GS **General Dynamics aircraft**

- . B-58 aircraft
- . C-131 aircraft
- . CL-41 aircraft
- . CL-44 aircraft
- . CL-84 aircraft
- . CV-340 aircraft
- . CV-440 aircraft
- . CV-880 aircraft
- . CV-990 aircraft
- . F-102 aircraft
- . F-106 aircraft
- . F-111 aircraft

RT ∞ aircraft

- Canadair aircraft
- PA-34 Seneca aircraft

General Electric computers

USE **GE computers**

general overviews

(added February 1993)

- RT bibliographies
- recommendations
- surveys
- technology utilization

General Purpose Heat Sources

(added December 2002)

USE **radioisotope heat sources**

generalization (psychology)

RT transfer of training

∞ generation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cogeneration
- heat generation

initiation
regeneration (engineering)

∞ **generators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT AC generators
arc generators
boilers
cavity vapor generators
colloidal generators
DC generators
decommutators
direct power generators
duochromators
electric generators
electrostatic generators
energy conversion efficiency
function generators
gas generators
Hall generators
harmonic generators
homopolar generators
impulse generators
linear alternators
magnetohydrodynamic generators
motors
noise generators
photoelectric generators
plasma generators
pulse generators
radiation sources
report generators
rotating generators
shock wave generators
signal generators
solar sea power plants
sound generators
stators
stimulated emission devices
subharmonic generators
test pattern generators
thermoelectric generators
tide powered generators
turbogenerators
vaporizers
voltage generators
vortex generators
wave generation
windpowered generators

genes
GS **genes**
. oncogenes
chromosomes
RT cloning (biology)
deoxyribonucleic acid
gene expression
genetic code
genetic engineering
genetics
genome
molecular biology
mutagenesis
mutations
ribonucleic acids

Genesis mission
(added February 1999)
DEF A space mission to collect solar wind samples from a halo orbit about the sun-Earth L1 point for two years, returning those samples to Earth in 2003 for analysis and examination. Analysis of the samples collected by the mission will contribute to an understanding of the origins of the solar system.
GS space missions
. **Genesis mission**
RT solar system evolution
solar wind

genetic algorithms
(added December 1992)
DEF Parameter search procedures loosely based on the mechanics of natural population genetics and the survival-of-the-fittest.

GS mathematical logic
. algorithms
. . **genetic algorithms**
optimization
. **genetic algorithms**
RT artificial intelligence
control systems design
design optimization
evolvable hardware
machine learning
multidisciplinary design optimization
neural nets
optimal control
parameter identification
trajectory optimization

genetic code
DEF The sequence of nucleotides, coded in triplets along the messenger RNA that determines the sequence of amino acids in protein synthesis.
RT chromosomes
cloning (biology)
genes
genetics
genome

genetic diversity
USE **biological diversity**

genetic engineering
DEF The intentional production of new genes and alteration of genomes by the substitution or addition of new genetic material. Used for hybrids (biology).
UF *hybrids (biology)*
RT biochemistry
bioengineering
∞ biology
biosynthesis
cloning (biology)
gene therapy
genes
genetics
genome
plasmids

genetics
RT biological diversity
biological evolution
∞ biology
breeding (reproduction)
chromosomes
cloning (biology)
congenital anomalies
cytogenesis
dominance
evolution (development)
gene expression
genes
genetic code
genetic engineering
mutagens
mutations
neurospora
nuclei (cytology)
nucleogenesis
species diffusion
transcription (genetics)

Genie rocket vehicle
UF *MB-1 rocket vehicle*
GS rocket vehicles
. single stage rocket vehicles
. . **Genie rocket vehicle**
RT Astrobee rocket vehicles
solid propellant rocket engines

genitourinary system
GS anatomy
. **genitourinary system**
. . bladder
. . kidneys
. . . glomerulus
. . reproductive systems
. . . sex glands

. . . . gonads
. ovaries
. testes
. . . . prostate gland
. . . uterus
RT gynecology
organs
∞ systems
urology

genome
(added September 2001)
DEF An organism's genetic complement as represented in its DNA or, in some cases, its RNA.
RT deoxyribonucleic acid
genes
genetic code
genetic engineering
proteome
ribonucleic acids

GEO environments
USE **Earth orbital environments**

geostrophysics
USE **astrophysics**

geobotany
GS botany
. **geobotany**
RT biogeochemistry
geographic distribution
plants (botany)
rain forests
trees (plants)

geocentric coordinates
GS coordinates
. planetocentric coordinates
. . **geocentric coordinates**
RT astronomical coordinates
celestial reference systems
inertial coordinates
planet ephemerides
spherical coordinates

geochemistry
DEF The study of the distribution of the amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere. Also, the study of the circulation of the elements in nature, on the basis of the properties of the atom and ions. A major concern of geochemistry is the synoptic evaluation of the abundance of the elements of the Earth's crust and in major classes of rocks and minerals.
GS environmental chemistry
. **geochemistry**
. . biogeochemistry
RT abundance
∞ chemistry
cosmochemistry
Earth sciences
geochronology
geology
geophysics
hydrology
isotope ratios
limnology
marine chemistry
mineralogy
paleobiology
paleontology
petrology
radioactivity
siderophile elements

geochronology
DEF The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose.
GS chronology
. **geochronology**
geology

geocoronal emissions

- . **geochronology**
- RT Cambrian Period
- Cenozoic Era
- Cretaceous Period
- Cretaceous-Tertiary boundary
- dendrochronology
- geochemistry
- geophysics
- Holocene epoch
- isotope ratios
- magnetostratigraphy
- Mesozoic Era
- paleobiology
- paleontology
- Paleozoic Era
- particle tracks
- petrogenesis
- Pleistocene epoch
- Quaternary period
- radioactive age determination
- stratigraphy
- Tertiary Period

geocoronal emissions

- GS atmospheric radiation
- . sky radiation
- .. airglow
- ... **geocoronal emissions**
- electromagnetic radiation
- . light (visible radiation)
- .. sky radiation
- ... airglow
- ... **geocoronal emissions**

geocyclotrons

- GS particle accelerators
- . cyclotrons
- .. **geocyclotrons**
- RT ∞ accelerators
- elementary particles

geodesic lines

- GS geometry
- . Euclidean geometry
- .. lines (geometry)
- ... **geodesic lines**
- RT chords (geometry)
- curves (geometry)

geodesy

DEF The science which deals mathematically with the size and shape of the Earth, and the Earth's external gravity field, and with surveys of such precision that overall size and shape of the Earth must be taken into consideration. Used for Earth figure, Earth shape, and Izsak ellipsoid.

- UF *Earth figure*
- Earth shape*
- Izsak ellipsoid*
- GS **geodesy**
- . celestial geodesy
- RT altimetry
- Earth (planet)
- Earth axis
- geodetic accuracy
- geodetic surveys
- geoids
- geology
- geophysics
- gravimeters
- lunar retroreflectors
- oblate spheroids
- OGO-4
- OGO-5
- perturbation
- photomapping
- polar wandering (geology)
- satellite altimetry
- satellite doppler positioning
- topography
- vinti theory

geodetic accuracy

DEF The degree to which point positions or boundaries indicated on maps or imagery corre-

spond with true geodetic positions.

- GS accuracy
- . **geodetic accuracy**
- RT Earth surface
- geodesy
- geoids
- geopotential height
- satellite doppler positioning

geodetic coordinates

DEF Quantities that define the position of a point on the spheroid of reference with respect to the planes of the geodetic equator and of a reference meridian.

- GS coordinates
- . **geodetic coordinates**
- RT International Satellite Geodesy Experiment
- latitude
- longitude
- ∞ nets
- satellite doppler positioning

geodetic satellites

- GS artificial satellites
- . **geodetic satellites**
- .. ANNA satellites
- .. Explorer 29 satellite
- .. Explorer 36 satellite
- .. GEOLE satellites
- .. GEOS 1 satellite
- .. GEOS 2 satellite
- .. GEOS 3 satellite
- .. Geosat satellites
- .. LARGOS satellite
- .. PAGEOS satellite
- .. Vanguard 1 satellite
- RT active satellites
- celestial geodesy
- navigation satellites
- NAVSTAR satellites
- passive satellites
- satellite altimetry
- satellite doppler positioning
- satellite laser ranging
- Vanguard satellites

geodetic surveys

DEF Surveys which takes into account the size and shape of the Earth.

- GS surveys
- . **geodetic surveys**
- RT geodesy
- geological surveys
- Phoenix quadrangle (AZ)
- satellite doppler positioning
- topography

geodimeters

DEF Trade name of electronic-optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light-sensitive tube where an electric current is set up. They are normally used at night and are effective with first-order accuracy up to distances of 5-40 km (3-25 miles). The term is derived from GEOdetic Distance METER.

- GS measuring instruments
- . distance measuring equipment
- .. **geodimeters**
- .. optical measuring instruments
- .. **geodimeters**
- optical equipment
- . optical measuring instruments
- .. **geodimeters**
- RT optical measurement
- range finders
- tellurometers

Geodynamic Experimental Ocean Satellite

USE **GEOS-D satellite**

geodynamics

DEF Study of the dynamic forces or pro-

cesses within the Earth. Used for crustal dynamics.

- UF *crustal dynamics*
- RT Chandler wobble
- crustal fractures
- ∞ dynamics
- Earth movements
- Earth sciences
- geomorphology
- geophysics
- planetary quakes
- shock waves
- terradyamics

geoelectricity

DEF The Earth's natural electric fields and phenomena. It is closely related to geomagnetism.

- GS electricity
- . **geoelectricity**
- .. telluric currents
- RT Earth (planet)
- field aligned currents
- geophysics
- geopotential

geofabrics

USE **geotechnical fabrics**

geofractures

USE **geological faults**

geographic applications program

- GS programs
- . space programs
- .. **geographic applications program**
- RT Earth resources
- Earth Resources Program
- geography
- mapping
- NASA programs
- remote sensors
- satellite-borne photography
- soil mapping
- terrain analysis

geographic distribution

(added June 1995)

- GS distribution (property)
- . spatial distribution
- .. **geographic distribution**
- RT ∞ distribution
- economic development
- geobotany
- geomorphology
- populations
- remote sensing
- species diffusion
- vegetative index

geographic information systems

DEF Computer assisted systems that acquire, store, manipulate, and display geographic data. Some systems are not automated.

- GS information systems
- . **geographic information systems**
- RT aerial photography
- data systems
- geography
- imagery
- infrared photography
- remote sensing

geography

DEF The study of all aspects of the Earth's surface including its natural and political divisions, the distribution and differentiation of areas and, often, man in relationship to his environment.

- GS **geography**
- . hypsography
- . orography
- RT Arctic regions
- cadastral mapping
- climatology

- continents
 Earth (planet)
 Eastern Hemisphere
 economic development
 estuaries
 geographic applications program
 geographic information systems
 geomorphology
 Heat Capacity Mapping Mission
 mapping
 maps
 oceanography
 oceans
 plains
 polar regions
 selenography
 temperate regions
 tropical regions
 tundra
 Western hemisphere
- geoids**
 DEF The figure of the Earth as defined by the geopotential surface which most nearly coincides with mean sea level over the entire surface of the Earth.
 RT altimetry
 geodesy
 geodetic accuracy
 geometry
 geophysics
 oblate spheroids
 satellite altimetry
 shapes
 spheroids
 symmetrical bodies
- GEOLE satellites**
 GS artificial satellites
 . French satellites
 . . **GEOLE satellites**
 . geodetic satellites
 . . **GEOLE satellites**
 . meteorological satellites
 . . **GEOLE satellites**
 RT EOLE satellites
 French space program
- geological faults**
 DEF A surface or zone of rock fracture along which there has been displacement, from a few centimeters to a few kilometers in scale. Used for closed faults, cross faults, echelon faults, geofractures, grabens, rifts, splits (geology), step faults, and thrust faults.
 UF *closed faults*
cross faults
echelon faults
geofractures
grabens
rifts
splits (geology)
step faults
thrust faults
 GS **geological faults**
 . African rift system
 . San Andreas Fault
 RT crevasses
 crustal fractures
 earthquake damage
 earthquakes
 ∞ faults
 fissures (geology)
 folds (geology)
 formations
 inliers (landforms)
 landforms
 massifs
 mid-ocean ridges
 plates (tectonics)
 Rouse belts
 San Andreas Fault experiment
 synclines
- geological surveys**
 GS surveys
- geological surveys**
 RT exploration
 geodetic surveys
 geology
 geophysics
 paleontology
 petrology
 photogeology
 radar geology
- geology**
 DEF The study of the planet Earth--the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils. Clues on the origin of the planet are sought in a study of the Moon and other extraterrestrial bodies. The knowledge thus obtained is placed in the service of man--to aid in the discovery of minerals and fuels of value in the Earth's crust, to identify geologically stable sites for major structures, and to provide foreknowledge of some of the dangers associated with the mobile forces in a dynamic Earth.
 GS **geology**
 . beds (geology)
 . . salt beds
 . cones (volcanoes)
 . contacts (geology)
 . crossbedding (geology)
 . domes (geology)
 . gaps (geology)
 . geochronology
 . geomorphology
 . glaciology
 . hydrogeology
 . kettles (geology)
 . lunar geology
 . orography
 . petrology
 . . lithology
 . . petrogenesis
 . . petrography
 . photogeology
 . planetary geology
 . . Mars volcanoes
 . radar geology
 . structural properties (geology)
 . subduction (geology)
 . tectonics
 . . neotectonics
 . volcanoes
 . . Mars volcanoes
 . volcanology
 RT bedrock
 boreholes
 bridges (landforms)
 Canadian Shield
 continental shelves
 Earth (planet)
 Earth planetary structure
 Earth sciences
 exploitation
 exploration
 fiords
 formations
 geochemistry
 geodesy
 geological surveys
 geophysical observatories
 geophysics
 geopressure
 geotemperature
 gravimetry
 Great Basin (US)
 inliers (landforms)
 isthmuses
 kreep
 massifs
 meteorology
 mineral deposits
 mineralogy
 minerals
- morphology
 ocean bottom
 oceanography
 oil exploration
 outcrops
 paleomagnetism
 paleontology
 photomapping
 ∞ physical sciences
 Precambrian period
 regolith
 rock mechanics
 rocks
 ∞ science
 seismology
 shatter cones
 soils
 stratigraphy
 structural basins
- geomagnetic anomalies*
 USE **magnetic anomalies**
- geomagnetic crotchets*
 USE **sudden ionospheric disturbances**
- geomagnetic effects*
 USE **magnetic effects**
- geomagnetic equator*
 USE **magnetic equator**
- geomagnetic field*
 USE **geomagnetism**
- geomagnetic hollow**
 GS anomalies
 . magnetic anomalies
 . . **geomagnetic hollow**
 RT Earth magnetosphere
 magnetohydrodynamic flow
 plasma clouds
- geomagnetic latitude**
 DEF Angular distances from the geomagnetic equator, measured northward or southward through 90 degrees and labeled N or S to indicate the direction of measurement.
 GS latitude
 . **geomagnetic latitude**
 RT coordinates
 geomagnetism
 polar cusps
- geomagnetic micropulsations**
 GS pulses
 . geomagnetic pulsations
 . . **geomagnetic micropulsations**
 . micropulsations
 . . **geomagnetic micropulsations**
 variations
 . magnetic variations
 . . geomagnetic pulsations
 . . . **geomagnetic micropulsations**
 RT nocturnal variations
 telluric currents
- geomagnetic pulsations**
 GS pulses
 . **geomagnetic pulsations**
 . . geomagnetic micropulsations
 variations
 . magnetic variations
 . . **geomagnetic pulsations**
 . . . geomagnetic micropulsations
 RT geomagnetism
 KP index
 magnetospheric instability
 nocturnal variations
- geomagnetic storms*
 USE **magnetic storms**
- geomagnetic tail**
 SN (RESTRICTED TO THE EARTH
 MAGNETOTAIL)

geomagnetism

UF *Earth magnetotail*
GS environments
. Earth magnetosphere
. . **geomagnetic tail**
RT field aligned currents
geomagnetism
magnetic fields
magnetic islands
∞ magnetotails
planetary magnetic fields
planetary magnetotails
polar cusps

geomagnetically trapped particles
USE **radiation belts**

geomagnetism

DEF The magnetic phenomena, collectively considered, exhibited by the Earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the Earth. Used for geomagnetic field and terrestrial magnetism.

UF *geomagnetic field*
terrestrial magnetism

GS magnetic fields
. **geomagnetism**
magnetic properties

. **geomagnetism**

RT aeromagnetism
barium ion clouds
Birkeland currents
continental drift
dynamo theory
Earth (planet)
Earth gravitation
Earth magnetosphere
Earth sciences
electrojets
field aligned currents
field theory (physics)
flux transfer events
geomagnetic latitude
geomagnetic pulsations
geomagnetic tail
geophysics
∞ inclination
International Magnetospheric Study
KP index
M region
magnetic anomalies
magnetic disturbances
magnetic effects
magnetic equator
magnetic poles
magnetic surveys
magnetoionics
magnetometers
magnetosheath
MagSat 1 satellite
Magsat A satellite
MagSat B satellite
MagSat satellites
paleomagnetism
planetary magnetic fields
polar cusps
Polar/GGS spacecraft
space plasmas
space weather
variometers

geometric accuracy

DEF The internal geometric fidelity of an imaging system.

GS accuracy
. **geometric accuracy**

RT distortion
geometric rectification (imagery)
image processing
image resolution

geometric dilution of precision

DEF A navigation and positioning system performance index expressing the dilution of range measurement precision due to the geometric relationship between user and satellites.

It is formulated as the square root of the sum of the variances of position estimates in the three orthogonal directions and can be employed to determine the optimal locations for network satellites and in the selection of optimal satellite signals sources. Used for GDOP.

UF *GDOP*
GS dilution
. **geometric dilution of precision**
RT precision

geometric rectification (imagery)

DEF The correction of image distortions due to sensor view angle, platform attitude, or target surface features.

GS image processing
. **geometric rectification (imagery)**
rectification
. **geometric rectification (imagery)**
RT atmospheric correction
geometric accuracy
image enhancement
imagery

geometrical acoustics

DEF The study of the behavior of sound under the assumption that sound transversing a homogeneous medium travels along straight lines or rays. Used for ray acoustics.

UF *ray acoustics*
GS acoustics
. **geometrical acoustics**
RT geometrical theory of diffraction
geometry
wave propagation

geometrical hydromagnetics

USE **magnetohydrodynamics**

geometrical optics

DEF The geometry of paths of light rays and their imagery through optical systems. Used for ray optics.

UF *ray optics*
RT acousto-optics
asphericity
astigmatism
Cassegrain optics
crystal optics
diffraction propagation
eikonal equation
fiber optics
focusing
geometrical theory of diffraction
gradient index optics
holographic optical elements
light (visible radiation)
light transmission
nonlinear optics
numerical aperture
optical equipment
optical measurement
optical paths
optical properties
optical reflection
∞ optics
physical optics
ray tracing
Snells law
underwater optics
x ray optics

geometrical theory of diffraction

DEF A ray theory of diffraction process.

RT diffraction
diffraction patterns
geometrical acoustics
geometrical optics
ray tracing
reflectance
∞ theories

wave diffraction

geometrodynamics

USE **relativity**

geometry

GS **geometry**
. Bose geometry
. computational geometry
. crack geometry
. curvature
. curves (geometry)
. . . catenaries
. . . cycloids
. . . epicycloids
. . . S curves
. . . Gompertz curves
. . . cusps (mathematics)
. . . double cusps
. . . differential geometry
. . . lie groups
. . . spinor groups
. . . Riemann manifold
. . . tensor analysis
. duct geometry
. Euclidean geometry
. . . analytic geometry
. . . catenaries
. . . circumferences
. . . conics
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
. . . cycloids
. . . epicycloids
. . . loci
. . . Mercator projection
. . . quadrants
. . . S curves
. . . . Gompertz curves
. . . spheroids
. . . . oblate spheroids
. . . . prolate spheroids
. . . tangents
. . . toruses
. . . trigonometry
. . . angles (geometry)
. . . angle of attack
. . . . zero angle of attack
. . . Bragg angle
. . . Brewster angle
. . . dihedral angle
. . . elevation angle
. . . look angles (electronics)
. . . look angles (tracking)
. . . sweep angle
. . . . sweepback
. . . . leading edge sweep
. Cartesian coordinates
. circles (geometry)
. . . great circles
. . . descriptive geometry
. . . lines (geometry)
. . . chords (geometry)
. . . geodesic lines
. . . points (mathematics)
. . . fixed points (mathematics)
. . . inflection points
. polygons
. . . hexagons
. . . tetragons
. . . . parallelograms
. . . . rhomboids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids
. . . triangles
. polyhedrons
. . . cubes (mathematics)
. . . icosahedrons
. . . octahedrons
. . . parallelepipeds
. . . pyramids
. . . rhombohedrons
. . . tetrahedrons
. . . projective geometry
. . . Mercator projection

- . . radii
 - . . . Larmor radius
 - . flow geometry
 - . fractals
 - . nozzle geometry
 - . specimen geometry
 - . tank geometry
 - . topology
 - . . fixed points (mathematics)
 - . . homotopy theory
 - . . imbeddings (mathematics)
 - . . . invariant imbeddings
 - . . links (mathematics)
 - . . metric space
 - . . . Hilbert space
 - . . . Sobolev space
 - . . vector analysis
 - . . collinearity
 - . . coplanarity
 - . . curl (vectors)
 - . . . vorticity
 - RT analysis (mathematics)
 - area
 - bodies of revolution
 - complex numbers
 - congruences
 - coordinates
 - ∞ cross sections
 - crystal lattices
 - diagrams
 - diameters
 - dimensions
 - distance
 - foci
 - frustums
 - geoids
 - geometrical acoustics
 - hypergeometric functions
 - hyperspheres
 - infinity
 - ∞ mathematics
 - ∞ measurement
 - planforms
 - Poincare spheres
 - position (location)
 - ∞ profiles
 - reciprocal theorems
 - ∞ science
 - shapes
 - sides
 - spheres
 - ∞ surface geometry
 - surveys
 - symmetry
 - toroids
 - uniqueness theorem
 - Venn diagrams
 - volume
 - Voronoi diagrams
- geomorphology
 - DEF A science that deals with the land and submarine relief features of the Earth's surface and genetic interpretation of them through using the principles of physiography in its descriptive aspects and of dynamic and structural geology in its explanatory phases. Used for physiography.
 - UF *physiography*
 - GS geology
 - . **geomorphology**
 - morphology
 - . **geomorphology**
 - RT cones (volcanoes)
 - contours
 - geodynamics
 - geographic distribution
 - geography
 - glaciology
 - isostasy
 - lunar geology
 - mountains
 - orography
 - photogeology
 - shatter cones
 - slumping
 - terrain
- topography
- volcanoes
- volcanology
- Geon (trademark)*
USE **polyvinyl chloride**
- geophysical fluid flow cells**
DEF Apparatus used in model experiments for deep solar convection and Jovian atmospheric circulation for Spacelab 1 and Spacelab 3.
- GS payloads
 - . Spacelab payloads
 - . . **geophysical fluid flow cells**
 - RT aerospace environments
 - ∞ cells
 - convective flow
 - fluid flow
 - gas flow
 - investigation
 - Jupiter atmosphere
 - Space Transportation System flights
 - spaceborne experiments
 - Spacelab
 - ∞ test equipment
- geophysical fluids**
DEF General term for the liquids and gases on or in the Earth (from water in all forms, to petroleum and hydrocarbons in liquid and gaseous form, and molten rock material within the Earth).
- GS **geophysical fluids**
 - . crude oil
 - . ground water
 - . lava
 - . magma
 - . natural gas
 - . . liquefied natural gas
 - RT Earth core
 - fluid dynamics
 - geothermal resources
 - geothermal technology
- geophysical observatories**
- GS observatories
 - . **geophysical observatories**
 - . . OGO
 - . . . EGO
 - . . . OGO-3
 - . . . OGO-5
 - . . . OGO-A
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - RT astronomical observatories
 - geology
 - geophysics
- geophysical satellites**
- GS artificial satellites
 - . **geophysical satellites**
 - . . Cosmos satellites
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
 - . . . Explorer 6 satellite
 - . . . Explorer 10 satellite
 - . . . Explorer 12 satellite
 - . . . Explorer 45 satellite
 - . . . OGO
 - . . . EGO
 - . . . OGO-3
 - . . . OGO-5
 - . . . OGO-A
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - Polar/GGS spacecraft
 - Radiation and Meteoroid satellite
 - Sputnik 3 satellite
 - Vanguard 3 satellite
 - Wind/GGS spacecraft
 - RT Ariel satellites
 - communication satellites
 - EOLE satellites
 - meteorological satellites
 - PEOLE satellites
 - space laboratories
 - unmanned spacecraft
 - Vanguard satellites
- geophysics**
DEF The physics of the Earth and its environment, i. e., its solid earth, air, waters, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the Earth including, therefore, geology, oceanography, geodesy, seismology, and hydrology. The trend is to extend the scope of geophysics to include meteorology, geomagnetism, astrophysics, and other sciences concerned with the physical nature of the universe.
- RT aeronomy
 - astrophysics
 - Chandler wobble
 - continental drift
 - Earth (planet)
 - Earth planetary structure
 - Earth sciences
 - field aligned currents
 - formations
 - geochemistry
 - geochronology
 - geodesy
 - geodynamics
 - geoelectricity
 - geoids
 - geological surveys
 - geology
 - geomagnetism
 - geophysical observatories
 - gravimeters
 - gravimetry
 - heat transmission
 - hydrography
 - hydrology

geopotential

International Geophysical Year
International Geosphere-Biosphere
program
isostasy
limnology
meteorology
Mission to Planet Earth
oceanography
paleomagnetism
petrology
∞ physics
plates (tectonics)
polar cusps
∞ radiation
radioactivity
∞ science
seismology
stratigraphy
structural properties (geology)
tectonics
theoretical physics
tiltmeters
topography

geopotential

DEF The potential energy of a unit mass relative to sea level, numerically equal to the work that would be done in lifting the unit mass from sea level to the height at which the mass is located; commonly expressed in terms of dynamic height or geopotential potential.

GS **geopotential**
. geopotential height
RT Earth gravitation
geoelectricity
gravitational fields
height
∞ potential
potential energy

geopotential height

DEF The height of a given point in the atmosphere in units proportional to the potential energy of unit mass (geopotential) at this height, relative to sea level.

GS geopotential
. **geopotential height**
potential energy
. **geopotential height**
RT atmospheric pressure
Earth atmosphere
Earth gravitation
geodetic accuracy
gravitational fields
head (fluid mechanics)
scale height

Geopotential Research Mission

DEF A NASA gravity field mapping mission utilizing the low-low satellite tracking concept to measure the Doppler shift between two coorbiting polar satellites. Used for Gravsat satellites.

UF *Gravsat satellites*
GS artificial satellites
. scientific satellites
. . . **Geopotential Research Mission**
RT gravitation
gravitational fields

geopressure

DEF Pressures that exceed the normal hydrostatic pressure of about 0.465 psi per foot of depth.

GS pressure
. **geopressure**
RT geology
geothermal resources
geothermal technology
pressure gradients

Georgia

GS nations
. United States
. . . **Georgia**
RT Atlanta (GA)

Sand Hills Region (GA-NC-SC)

Georgia (Eurasia)

(added August 1993)
GS nations
. **Georgia (Eurasia)**
RT Asia
Europe

GEOS 1 satellite

GS artificial satellites
. geodetic satellites
. . . **GEOS 1 satellite**
RT active satellites
ANNA satellites
celestial geodesy
Explorer 29 satellite
LARGOS satellite
PAGEOS satellite

GEOS 2 satellite

UF *GEOS-B satellite*
GS artificial satellites
. geodetic satellites
. . . **GEOS 2 satellite**
RT active satellites
ANNA satellites
celestial geodesy
Explorer 36 satellite
LARGOS satellite
PAGEOS satellite

GEOS 3 satellite

UF *GEOS-C satellite*
GS artificial satellites
. geodetic satellites
. . . **GEOS 3 satellite**
RT active satellites
ANNA satellites
celestial geodesy
LARGOS satellite
PAGEOS satellite
satellite altimetry

GEOS satellites (ESA)

UF *GEOS satellites (ESRO)*
GS artificial satellites
. ESA satellites
. . . **GEOS satellites (ESA)**
ESA spacecraft
. ESA satellites
. . . **GEOS satellites (ESA)**
RT Earth magnetosphere
European space programs
Geosari project

GEOS satellites (ESRO)

USE **GEOS satellites (ESA)**

Geosari project

DEF Launch of GEOS on second development flight of Ariane launcher into a geostationary elliptical orbit in 1979. The name is derived from a combination of GEOS and ARIane.

GS programs
. projects
. . . **Geosari project**
RT Ariane launch vehicle
European Space Agency
GEOS satellites (ESA)

Geosat satellites

GS artificial satellites
. geodetic satellites
. . . **Geosat satellites**
RT satellite altimetry

GEOS-B satellite

USE **GEOS 2 satellite**

GEOS-C satellite

USE **GEOS 3 satellite**

GEOS-D satellite

DEF Another in a series of the European Space Agency's geostationary scientific satel-

lites launched by NASA for long-term cosmic radiation studies. Used for Geodynamic Experimental Ocean Satellite.

UF *Geodynamic Experimental Ocean Satellite*
GS artificial satellites
. **GEOS-D satellite**

geosphere

USE **lithosphere**

Geostationary Operational Environ Sats

USE **GOES satellites**

Geostationary Operatl Environ Satellite B

USE **GOES 2**

geostationary platforms

USE **synchronous platforms**

geostationary satellites

USE **synchronous satellites**

geostrophic wind

DEF The horizontal wind velocity for which the coriolis acceleration exactly balances the horizontal pressure force.

GS wind (meteorology)
. winds aloft
. . . **geostrophic wind**
RT baroclinic instability
baroclinic waves
divergence
isobars (pressure)
sea breeze
wind shear

Geosynchronous Earth Orbital Environments

USE **Earth orbital environments**

geosynchronous orbits

GS orbits
. Earth orbits
. . . **geosynchronous orbits**
. spacecraft orbits
. . . satellite orbits
. . . . **geosynchronous orbits**
RT circular orbits
equatorial orbits
Infrared Astronomy Satellite
stationary orbits
synchronous platforms
twenty-four hour orbits

geosynclines

DEF Mobile downwardings of the crust of the Earth, either elongate or basinlike, measured in scores of kilometers, in which sedimentary and igneous rocks accumulate to thicknesses of thousands of meters.

RT anticlines
domes (geology)
∞ layers
strata
stratification
stratigraphy
synclines

geotechnical engineering

DEF The science and practice of that part of civil engineering involving the inter-relationship between a geologic environment and the works of man.

RT foundations
soil mechanics
structural design criteria
structural engineering

geotechnical fabrics

DEF Generic term for a variety of artificial fiber products used in engineering construction of civil works such as embankments. Also called geofabrics, filter cloth, geotextiles and civil engineering fabrics. Used for geofabrics and geotextiles.

UF *geofabrics*

- RT *geotextiles*
fabrics
soil mechanics
- geotemperature**
DEF Internal temperature of the planet Earth. Used for geothermometry.
UF *geothermometry*
RT geology
geothermal anomalies
temperature
- geotextiles*
USE **geotechnical fabrics**
- geothermal anomalies**
GS anomalies
. **geothermal anomalies**
RT geotemperature
geothermal resources
surface temperature
thermal mapping
- geothermal energy conversion**
GS energy conversion
. **geothermal energy conversion**
RT clean energy
∞ conversion
Earth resources
engines
geothermal technology
heat transfer
heat transmission
ocean thermal energy conversion
renewable energy
thermal energy
turbines
turbogenerators
- geothermal energy extraction**
DEF The removal for storage and/or utilization of heat from natural sources within the Earth (hot springs, geysers, hot rocks, etc.)
GS extraction
. **geothermal energy extraction**
RT energy conversion
energy technology
geothermal technology
heat exchangers
heat pumps
heat transmission
heating
turbines
turbogenerators
water heating
- geothermal energy utilization**
DEF Any application of energy derived from sources within the Earth.
GS renewable energy
. **geothermal energy utilization**
utilization
. **geothermal energy utilization**
RT cooling
∞ electric power
energy storage
geothermal technology
heat pipes
heat storage
heating
∞ power plants
turbogenerators
- geothermal resources**
GS heat sources
. thermal resources
. . **geothermal resources**
. . . geysers
resources
. Earth resources
. . thermal resources
. . . **geothermal resources**
. . . geysers
RT dry heat
∞ energy sources
geophysical fluids
- geopressure
geothermal anomalies
heat transmission
hydrothermal systems
thermal energy
thermal mapping
underwater resources
volcanoes
- geothermal technology**
DEF The gamut of operations involved in the exploration, exploitation, and conversion of energy derived from geothermal sources.
GS technologies
. energy technology
. . **geothermal technology**
RT dry heat
exploration
geophysical fluids
geopressure
geothermal energy conversion
geothermal energy extraction
geothermal energy utilization
geysers
heat sources
heat transfer
ocean thermal energy conversion
resources
thermal resources
- geothermometry*
USE **geotemperature**
- geotropism**
GS tropism
. **geotropism**
RT gravitational effects
physiological effects
plants (botany)
- GEP telescopes*
USE **particle telescopes**
- Gerdien arc heaters*
USE **arc heating**
heating equipment
- Gerdien condensers**
GS measuring instruments
. **Gerdien condensers**
RT capacitors
ion density (concentration)
- geriatrics**
GS medical science
. **geriatrics**
RT aging (biology)
gerontology
- German Democratic Republic*
USE **East Germany**
- German Infrared Laboratory**
DEF A proposed infrared telescope for Spacelab that was discontinued in 1985. It superseded the LIRTS (telescope).
GS telescopes
. spaceborne telescopes
. . **German Infrared Laboratory**
RT payloads
space shuttles
Spacelab
West Germany
- German space program**
(added December 1990)
GS programs
. space programs
. . European space programs
. . . **German space program**
RT East Germany
Germany
Saenger space transportation system
- West Germany
- germanates**
GS germanium compounds
. **germanates**
. . magnesium germanates
- germanides**
GS germanium compounds
. **germanides**
. . magnesium germanides
RT germanium alloys
- germanium**
GS chemical elements
. metalloids
. . **germanium**
. . . germanium isotopes
- germanium alloys**
GS alloys
. **germanium alloys**
RT germanides
silicon alloys
- germanium antimonides**
GS antimony compounds
. antimonides
. . **germanium antimonides**
germanium compounds
. **germanium antimonides**
- germanium chlorides**
GS germanium compounds
. **germanium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **germanium chlorides**
. halides
. . chlorides
. . . **germanium chlorides**
- germanium compounds**
GS **germanium compounds**
. germanates
. . magnesium germanates
. germanides
. . magnesium germanides
. germanium antimonides
. germanium chlorides
. germanium oxides
. organic germanium compounds
RT ∞ chemical compounds
∞ Group 4A compounds
∞ metal compounds
- germanium diodes**
UF *germanium rectifiers*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **germanium diodes**
. solid state devices
. . semiconductor devices
. . . **germanium diodes**
rectifiers
. **germanium diodes**
RT junction diodes
transistors
- germanium isotopes**
GS chemical elements
. metalloids
. . germanium
. . . **germanium isotopes**
. nuclides
. . isotopes
. . . **germanium isotopes**
- germanium oxides**
GS chalcogenides
. oxides
. . **germanium oxides**
germanium compounds
. **germanium oxides**

Germany

RT ∞ oxygen compounds

germanium rectifiers

USE **germanium diodes**

Germany

(added December 1990)

GS nations

. **Germany**

RT Central Europe

East Germany

Europe

German space program

West Germany

germicides

USE **bactericides**

germination

RT crop growth

growth

phytotrons

viability

germinators

USE **phytotrons**

gerontology

RT age factor

aging (biology)

geriatrics

life span

GERT

UF *graphic evaluation and review techniques*

RT critical path method

management

management analysis

management methods

management planning

∞ methodology

PERT

project management

Gestalt theory

RT psychotherapy

∞ theories

Get Away Specials (STS)

DEF Low-cost, man-independent Space Shuttle experimental payloads.

GS payloads

. Space Shuttle payloads

. . **Get Away Specials (STS)**

RT OSS-1 payload

Space Shuttle missions

spaceborne experiments

Spacelab

Spacelab payloads

GETOL aircraft

GS ground effect machines

. **GETOL aircraft**

RT ∞ aircraft

∞ subsonic aircraft

vertical takeoff aircraft

getters

DEF Materials which are included in a vacuum system or device for removing gas by sorption.

RT ion pumps

propargyl groups

purification

residual gas

vacuum

vapor traps

geysers

GS heat sources

. thermal resources

. . . geothermal resources

. . . **geysers**

resources

. Earth resources

. . thermal resources

. . . geothermal resources

. . . . **geysers**

RT anomalous temperature zones

geothermal technology

hydrogeology

hydrothermal systems

GGG (garnet)

USE **gadolinium-gallium garnet**

Ghana

GS nations

. **Ghana**

RT Africa

ghosts

RT distortion

radar echoes

radio echoes

Giacobini-Zinner comet

GS celestial bodies

. comets

. . **Giacobini-Zinner comet**

RT Draconid meteoroids

solar system

giant stars

GS celestial bodies

. stars

. . **giant stars**

. . . asymptotic giant branch stars

. . . Omicron Ceti star

. . . red giant stars

. . . . carbon stars

RT cool stars

F stars

G stars

horizontal branch stars

K stars

late stars

M stars

main sequence stars

S stars

subgiant stars

supergiant stars

gibberellins

GS plants (botany)

. fungi

. . **gibberellins**

RT hemostatics

regulators

Gibbs adsorption equation

RT adsorption

∞ equations

∞ Gibbs equations

interfacial tension

∞ Gibbs equations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ equations

Gibbs adsorption equation

Gibbs free energy

Gibbs-Helmholtz equations

phase rule

Gibbs free energy

GS heat

. enthalpy

. . **Gibbs free energy**

thermodynamic properties

. enthalpy

. . **Gibbs free energy**

. free energy

. . **Gibbs free energy**

RT ∞ Gibbs equations

Gibbs-Helmholtz equations

Mayer problem

Gibbs phenomenon

RT discontinuity

Fourier series

series (mathematics)

Gibbs-Helmholtz equations

RT electric potential

enthalpy

∞ equations

free energy

∞ Gibbs equations

Gibbs free energy

internal energy

pressure

temperature

Gibraltar

(added February 1992)

GS nations

. United Kingdom

. . **Gibraltar**

RT Europe

Mediterranean Sea

Spain

straits

gimballess inertial navigation

GS navigation

. inertial navigation

. . **gimballess inertial navigation**

RT gyroscopes

inertial platforms

navigation instruments

gimbals

DEF Devices with two mutually perpendicular and intersecting axes of rotation, thus giving free angular movement in two directions, on which engines or other objects may be mounted. In gyros, supports which provide the spin axes with degrees of freedom.

RT bearings

control moment gyroscopes

fluid rotor gyroscopes

gyrodampers

gyroscopes

pivots

stabilized platforms

supports

swivels

Ginga satellite

(added June 1992)

GS artificial satellites

. scientific satellites

. . astronomical satellites

. . . **Ginga satellite**

Japanese spacecraft

. **Ginga satellite**

observatories

. astronomical observatories

. . astronomical satellites

. . . **Ginga satellite**

RT Japanese space program

x ray astronomy

x ray spectra

x ray stars

Giotto mission

DEF The European Space Agency's mission to fly through the head of Halley's Comet in order to make in situ measurements of the composition and physical state as well as the structures of the head. Included in the onboard equipment are cameras to determine the structures, spectrometers to determine the composition, and a plasma detector and a magnetometer to measure the interactions with the solar wind. The time of encounter with the comet was during the second week of March 1986.

GS ESA spacecraft

. **Giotto mission**

space missions

. flyby missions

- . . **Giotto mission**
unmanned spacecraft
- . space probes
- . . **Giotto mission**
- RT Halley's comet
- girder webs**
- GS structural members
 - . plates (structural members)
 - . . **girder webs**
 - webs (supports)
 - . **girder webs**
- RT elastic sheets
girders
metal plates
- girders**
- GS structural members
 - . **girders**
- RT beams (supports)
box beams
girder webs
plates (structural members)
trusses
- girdles**
- RT ∞ belts
pelvis
- glacial drift**
- DEF A general term for drift transported by glaciers or icebergs and deposited directly on land or in seas. Used for drumlins, end moraines, eskers, glaciofluvial deposits, moraines, and Stoss-and-Lee topography.
- UF *drumlins*
end moraines
eskers
glaciofluvial deposits
moraines
Stoss-and-Lee topography
- RT debris
glaciers
kettles (geology)
land ice
landforms
sea ice
sediments
- glaciers**
- DEF Large masses of ice formed, at least in part, on land by the compaction and recrystallization of snow, moving slowly by creeping downslope or outward in all directions due to the stress of their own weight, and surviving from year to year. Included are small mountain glaciers as well as ice sheets continental in size, and ice shelves which float on oceans but are fed in part by ice formed on land. Used for active glaciers and advancing glaciers.
- UF *active glaciers*
advancing glaciers
- GS crevasses
 - . **glaciers**
 - ice
 - . **glaciers**
 - resources
 - . Earth resources
 - . . **glaciers**
- RT cirques (landforms)
glacial drift
glaciology
land ice
sea ice
- glaciofluvial deposits*
USE **glacial drift**
- glaciology**
- DEF The study of all aspects of snow and ice; the science that treats quantitatively the whole range of processes associated with all forms of solid existing water.
- GS geology
 - . **glaciology**
- RT geomorphology
- glaciers
hydrogeology
isostasy
- ∞ **glands**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT glands (anatomy)
glands (seals)
pump seals
- glands (anatomy)**
- GS anatomy
 - . **glands (anatomy)**
 - . . endocrine glands
 - . . . adrenal gland
 - . . . gonads
 - ovaries
 - testes
 - . . . hypothalamus
 - . . . pancreas
 - . . . parathyroid gland
 - . . . pineal gland
 - . . . pituitary gland
 - . . . thymus gland
 - . . . thyroid gland
 - . . mammary glands
 - . . salivary glands
 - . . sebaceous glands
 - . . sex glands
 - . . . gonads
 - ovaries
 - testes
 - . . . prostate gland
- RT endocrine systems
gastrointestinal system
- ∞ glands
liver
organs
secretions
- glands (seals)**
- GS seals (stoppers)
 - . **glands (seals)**
- RT ∞ glands
labyrinth seals
O ring seals
packings (seals)
pump seals
sealing
- glare**
- DEF A condition of vision in which there is discomfort or a reduction in ability to see details, objects, or both, caused by an unsuitable distribution or range of luminance, or by extreme conditions in space.
- RT brightness
comfort
dayglow
electromagnetic radiation
human factors engineering
illuminating
light (visible radiation)
luminance
luster
optical properties
radiance
sky brightness
specular reflection
spread reflection
visibility
vision
- glass**
- GS **glass**
 - . borosilicate glass
 - . E glass
 - . . S glass
 - . glass fibers
 - . metallic glasses
 - . obsidian glass
 - . Pyroceram (trademark)
 - . silica glass
 - . spin glass
 - . Vycor
- RT amorphous materials
ceramics
electrostatic bonding
glass transition temperature
glassware
glassy carbon
Griffith crack
- ∞ materials
moldavite
obsidian
optical materials
optical properties
photographic plates
porcelain
silicon dioxide
vitreous materials
vitrification
- glass coatings**
- SN (COATINGS CONSISTING OF GLASS)
- GS coatings
 - . **glass coatings**
- RT glazes
metallic glasses
protective coatings
silica glass
- glass electrodes**
- GS electrodes
 - . **glass electrodes**
- RT electrochemistry
ion exchanging
silica glass
- glass fiber reinforced plastics**
- GS composite materials
 - . fiber composites
 - . . **glass fiber reinforced plastics**
 - . polymer matrix composites
 - . . reinforced plastics
 - . . . **glass fiber reinforced plastics**
 - plastics
 - . reinforced plastics
 - . . **glass fiber reinforced plastics**
- RT airframe materials
composite structures
E glass
fiber orientation
fibers
laminates
plastic aircraft structures
pultrusion
reinforcing fibers
S glass
thermoplastic resins
thermosetting resins
woven composites
- glass fibers**
- UF *fiberglass*
- GS fibers
 - . synthetic fibers
 - . . **glass fibers**
 - glass
 - . **glass fibers**
 - optical materials
 - . **glass fibers**
- RT boron fibers
E glass
gradient index optics
metallic glasses
optical fibers
plastic fibers
reinforcing fibers
S glass
silica glass
Vycor
- glass lasers**
- DEF High power lasers used in laser fusion technology research.
- GS stimulated emission devices
 - . lasers
 - . . **glass lasers**
- RT high power lasers
laser fusion

glass transition temperature

- laser outputs
- laser plasma interactions
- laser targets
- neodymium lasers
- optical pumping
- pulsed lasers
- ultrashort pulsed lasers

glass transition temperature

- GS temperature
 - . **glass transition temperature**
- RT curing
 - epoxy resins
 - glass
 - polymer chemistry
 - polymer physics
 - temperature effects
 - transition temperature

glassware

- RT borosilicate glass
 - bottles
 - burettes
- ∞ containers
 - flasks
 - glass
 - laboratory equipment
 - pipettes
 - silica glass

glassy carbon

- DEF Form of carbon with unique properties and characteristics. Formed by carbonizing phenolic resins made by reacting phenols with cellulose, aldehydes, and ketones.
- GS composite materials
 - . **glassy carbon**
- RT carbon
 - glass
- ∞ materials

Glauber theory

- RT approximation
 - elastic scattering
 - Pomeranchuk theorem
- ∞ theories

glaucoma

- GS diseases
 - . eye diseases
 - . . **glaucoma**
- RT intraocular pressure

Glauert coefficient

- USE **aerodynamic forces**
 - Mach number**

glazes

- GS coatings
 - . **glazes**
 - finishes
 - . **glazes**
- RT ceramics
 - frit
 - glass coatings
 - porcelain
 - protective coatings

glide angles

- USE **glide paths**

glide landings

- GS landing
 - . **glide landings**
 - . . horizontal spacecraft landing
- RT aircraft landing
 - crash landing
 - ditching (landing)
 - planetary landing
 - soft landing
 - spacecraft landing
 - water landing

glide paths

- DEF Flight paths of aeronautical vehicles in a glide, seen from the side. The paths used by

aircraft or spacecraft in approach procedure and which are generated by instrument landing facilities. Used for glide angles and glide slopes.

- UF *glide angles*
 - glide slopes*
- GS flight paths
 - . **glide paths**
 - slopes
 - . **glide paths**
- RT aircraft approach spacing
 - approach control
 - approach indicators
 - gliding
 - instrument approach
 - instrument landing systems
 - terminal guidance

glide slopes

- USE **glide paths**

gliders

- DEF A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surface and whose free flight does not depend principally on an engine.

- UF *sailplanes*
- GS **gliders**
 - . ASSET gliders
 - . boostglide vehicles
 - . . X-20 aircraft
 - . hang gliders
 - . HL-10 reentry vehicle
 - . hypersonic gliders
 - . . X-20 aircraft
 - . Janus spacecraft
 - . paragliders
 - . . inflatable gliders

- RT aerospace planes
- ∞ aircraft
 - flexible wings
 - free flight
 - gliding
 - lifting reentry vehicles
- ∞ military aircraft
 - monoplanes
 - observation aircraft
 - sails
 - sailwings
 - Schleicher aircraft
 - soaring
- ∞ subsonic aircraft
 - towed bodies
- ∞ winged vehicles

gliding

- RT boostglide vehicles
 - descent
- ∞ flight
 - flight paths
 - free flight
 - glide paths
 - gliders
 - lift
- ∞ motion
 - soaring

Glimm method

- DEF Numerical technique for solving gas dynamics problems involving hyperbolic systems of conservation laws.

- GS analysis (mathematics)
 - . numerical analysis
 - . . **Glimm method**
 - procedures
 - . **Glimm method**

- RT ∞ equations
 - fluid dynamics
- ∞ methodology

glint

- RT angels (radar)
 - radar echoes
 - scintillation

global air pollution

- GS pollution

- . environment pollution
- . . air pollution
- . . . **global air pollution**
- RT Earth atmosphere
 - environments
 - global warming
 - pollution monitoring
 - pollution transport

Global Air Sampling Program

- UF *GASP*
- RT air pollution
 - air sampling
 - environmental quality
 - sampling

Global Atmospheric Research Program

- UF *GARP*
- GS programs
 - . **Global Atmospheric Research Program**
 - . . GARP Atlantic Tropical Experiment
- RT aerology
 - integrated global ocean station systems
 - meteorology
 - NASA programs
 - weather
 - weather reconnaissance aircraft

Global Communications Antenna Grid (navy)

- USE **Seafarer project**

Global Orbiting Navigation Satellite Sys.

- USE **GLONASS**

Global Positioning System

- DEF A satellite navigation system which will display many (up to 24) satellites in three sets of orbits by means of a precise time standard and three-dimensional information on position and velocity.

- GS satellite navigation systems
 - . **Global Positioning System**
- RT autonomous spacecraft clocks
 - flight paths
 - GLONASS
 - navigation
 - orbit determination
 - position indicators
 - positioning
 - satellite constellations
 - space navigation
- ∞ systems
 - time synchronization

Global Tracking Network

- UF *GLOTRAC (tracking network)*
- GS networks
 - . tracking networks
 - . . **Global Tracking Network**
 - stations
 - . tracking stations
 - . . **Global Tracking Network**
- RT data acquisition
 - ground stations
 - minitrack system
 - NASCOM network
 - optical tracking
 - radio relay systems
 - range and range rate tracking
 - satellite tracking
 - Space Flight Tracking and Data Network
 - STDN (network)

global warming

- (added December 1989)

- GS heating
 - . atmospheric heating
 - . . **global warming**
- RT atmospheric temperature
 - climate change
 - global air pollution
 - greenhouse effect
 - Mission to Planet Earth

- stratospheric warming
- ∞ **globes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Earth (planet)
 luminaires
 maps
 spheres
- globular clusters**
 GS celestial bodies
 . star clusters
 . . **globular clusters**
 RT ∞ clusters
 color-magnitude diagram
 galactic halos
 horizontal branch stars
 metallicity
 Population II stars
 star distribution
- globules**
 RT falling spheres
 interfacial tension
 liquids
 microballoons
 spheres
- globulins**
 GS biopolymers
 . proteins
 . . **globulins**
 . . . fibrinogen
 . . . gamma globulin
 organic compounds
 . proteins
 . . **globulins**
 . . . fibrinogen
 . . . gamma globulin
- glomerulus**
 GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . blood vessels
 capillaries (anatomy)
 **glomerulus**
 . genitourinary system
 . . kidneys
 . . . **glomerulus**
 RT renal function
- GLONASS**
 (added September 1994)
 UF *Global Orbiting Navigation Satellite Sys.*
 GS satellite navigation systems
 . **GLONASS**
 RT Global Positioning System
 international cooperation
 positioning
 Russian Space Program
 U. S. S. R. space program
- glossaries*
 USE **dictionaries**
- Gloster GA-5 aircraft*
 USE **GA-5 aircraft**
- GLOTRAC (tracking network)*
 USE **Global Tracking Network**
- glottis**
 GS anatomy
 . respiratory system
 . . larynx
 . . . **glottis**
 RT vocal cords
- gloves**
 GS clothing
 . **gloves**
- RT protective clothing
- glow*
 USE **luminescence**
- glow discharges**
 DEF Electrical discharges that produce luminosity.
 GS electric current
 . electric discharges
 . . **glow discharges**
 RT cathode glow
 electric arcs
 electric corona
 electrodeless discharges
 Faraday dark space
 gas discharges
 light sources
 plasma display devices
 plasma radiation
- glucocorticoids**
 (added December 1999)
 DEF Adrenocortical steroid hormones that are involved in the metabolism of fats, proteins, and carbohydrates, and have anti-inflammatory properties.
 GS organic compounds
 . lipids
 . . steroids
 . . . corticosteroids
 **glucocorticoids**
 secretions
 . endocrine secretions
 . . hormones
 . . . corticosteroids
 **glucocorticoids**
 RT adrenal gland
 atrophy
 carbohydrate metabolism
 hormone metabolisms
 hypokinesia
 lipid metabolism
 muscles
 protein metabolism
- glucose**
 GS organic compounds
 . carbohydrates
 . . sugars
 . . . monosaccharides
 hexoses
 **glucose**
- glucosides**
 UF *glycosides*
 GS organic compounds
 . carbohydrates
 . . **glucosides**
 . . . nucleosides
 adenines
 guanosines
- glues**
 GS adhesives
 . **glues**
 RT pastes
 sizing materials
 tetraethyl orthosilicate
- gluons**
 DEF The carriers of the strong force which holds atomic nuclei together (holding together groups of quarks making up stable particles, which in turn are bound together in the atomic nuclei).
 GS particles
 . elementary particles
 . . hypothetical particles
 . . . **gluons**
 RT leptons
 mesons
 quantum chromodynamics
- quarks
- glutamates**
 GS esters
 . **glutamates**
 RT glutamic acid
- glutamic acid**
 GS acids
 . amino acids
 . . **glutamic acid**
 organic compounds
 . amino acids
 . . **glutamic acid**
 RT glutamates
- glutamine**
 GS acids
 . amino acids
 . . **glutamine**
 organic compounds
 . amino acids
 . . **glutamine**
- glutathione**
 GS organic compounds
 . coenzymes
 . . **glutathione**
 . peptides
 . . polypeptides
 . . . **glutathione**
- glycerides**
 GS esters
 . **glycerides**
 RT glycerols
 nitroglycerin
- glycerins*
 USE **glycerols**
- glycerols**
 UF *glycerins*
 RT alcohols
 carbohydrates
 glycerides
 lipids
 liquids
 nitroglycerin
 triacetin
- glycidyl azide polymer**
 (added August 1990)
 UF *GAP (propellants)*
 RT ∞ polymers
 propellant binders
 solid rocket binders
- glycine**
 GS acids
 . amino acids
 . . **glycine**
 organic compounds
 . amino acids
 . . **glycine**
- glycogens**
 GS biopolymers
 . polysaccharides
 . . **glycogens**
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **glycogens**
- glycols**
 GS hydroxyl compounds
 . alcohols
 . . **glycols**
 RT hydroxyl radicals
- glycolysis**
 GS chemical reactions
 . **glycolysis**
 decomposition

- . **glycolysis**
- glycosides*
- USE **glucosides**
- gneiss**
- DEF A foliated rock formed by regional metamorphism, in which bands or lenticles of granular materials alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate. Generally less than 50 percent of the minerals show preferred parallel orientation. Although a gneiss is commonly feldspar- and quartz-rich, the mineral composition is not an essential factor in its definition.
- GS rocks
- . **gneiss**
- RT soils
- gnomonic projection**
- DEF A projection on a plane tangent to the surface of a sphere having the point of projection at the center of the sphere. Used in cartography and in crystallography.
- RT photomapping
- ∞ projection
- projective geometry
- gnotobiotics**
- DEF The study of germ free animals.
- RT bacteria
- bacteriology
- closed ecological systems
- controlled atmospheres
- isolation
- microbiology
- microorganisms
- sterilization
- GNP*
- USE **gross national product**
- goal theory**
- RT goals
- ∞ theories
- goals**
- RT achievement
- engineering management
- goal theory
- project planning
- purposes
- research management
- goats**
- GS animals
- . vertebrates
- . . . mammals
- . . . **goats**
- RT grazing
- livestock
- Gobi desert**
- GS land
- . deserts
- . . **Gobi desert**
- RT arid lands
- desertification
- Goddard experiment package telescope*
- USE **particle telescopes**
- Goddard Trajectory Determination System**
- UF *GTDS*
- RT computer programs
- interplanetary trajectories
- moon-Earth trajectories
- orbit calculation
- orbital mechanics
- orbital position estimation
- spacecraft trajectories
- ∞ systems
- trajectory analysis
- trajectory optimization
- Godunov method**
- (added February 1998)
- DEF Non-oscillatory finite-volume scheme that incorporates the exact or approximate solution to the Riemann initial-value problem, or a generalization of it.
- GS analysis (mathematics)
- . numerical analysis
- . . finite volume method
- . . . **Godunov method**
- procedures
- . finite volume method
- . . **Godunov method**
- RT approximation
- Cauchy problem
- Cauchy-Riemann equations
- computational fluid dynamics
- Euler equations of motion
- finite difference theory
- shock wave interaction
- supersonic flow
- Goertler instability**
- DEF Counter-rotating ring vortices formed in the annulus between two cylinders rotating with respect to each other.
- UF *Taylor-Goertler instability*
- GS dynamic characteristics
- . dynamic stability
- . . motion stability
- . . . flow stability
- **Goertler instability**
- . flow characteristics
- . . flow stability
- . . . **Goertler instability**
- stability
- . dynamic stability
- . . motion stability
- . . . flow stability
- **Goertler instability**
- RT boundary layer stability
- boundary layer transition
- centrifugal force
- laminar boundary layer
- rotating fluids
- rotating liquids
- Taylor instability
- vortices
- wall flow
- GOES 1**
- DEF The first in a series of geostationary operational environmental satellites launched in October 1975. It ceased operation in June of 1977.
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 1**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 1**
- RT meteorological satellites
- GOES 2**
- DEF The second in a series of geostationary operational environmental satellites launched in June 1977. Used for Geostationary Operatl Environ Satellite B.
- UF *Geostationary Operatl Environ Satellite B*
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 2**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 2**
- RT meteorological satellites
- SMS 1
- SMS 2
- GOES 3**
- DEF The third in a series of geostationary operational environmental satellites launched in June 1978.
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 3**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 3**
- RT meteorological satellites
- GOES 4**
- DEF The fourth in a series of geostationary operational environmental satellites launched in September 1980.
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 4**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 4**
- RT meteorological satellites
- GOES 5**
- DEF The fifth in a series of geostationary operational environmental satellites launched in May 1981.
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 5**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 5**
- RT meteorological satellites
- GOES 6**
- DEF The sixth in a series of geostationary operational environmental satellites launched in April 1983.
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 6**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 6**
- GOES 7**
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 7**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 7**
- GOES 8**
- (added July 1995)
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 8**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 8**
- GOES 9**
- (added July 1995)
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 9**
- . synchronous satellites
- . . GOES satellites
- . . . **GOES 9**
- GOES 10**
- (added March 2000)
- GS artificial satellites
- . meteorological satellites
- . . GOES satellites
- . . . **GOES 10**
- . synchronous satellites
- . . GOES satellites

- ... **GOES 10**
- GOES satellites**
 DEF Geostationary operational environmental satellites. Used for Geostationary Operational Environ Sats.
 UF *Geostationary Operational Environ Sats*
 GS artificial satellites
 . meteorological satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . synchronous satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 RT ISCCP Project
- goggles**
 GS clothing
 . **goggles**
 RT eye protection
 flight clothing
 helmets
 protective clothing
 sunglasses
- Golay detector cells**
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **Golay detector cells**
 RT energy absorption films
 pneumatic equipment
 radiation absorption
- gold**
 GS chemical elements
 . **gold**
 . . gold isotopes
 . . . gold 198
 metals
 . noble metals
 . . **gold**
 . . . gold isotopes
 gold 198
 . transition metals
 . . **gold**
 . . . gold isotopes
 gold 198
- gold 198**
 GS chemical elements
 . gold
 . . gold isotopes
 . . . **gold 198**
 . nuclides
 . . isotopes
 . . . gold isotopes
 **gold 198**
 . . . radioactive isotopes
 **gold 198**
 metals
 . noble metals
 . . gold
 . . . gold isotopes
 **gold 198**
 . transition metals
 . . gold
- ... gold isotopes
 . . . **gold 198**
- gold alloys**
 GS alloys
 . **gold alloys**
 RT copper alloys
 nickel alloys
 silver alloys
- gold coatings**
 UF *gold plate*
 GS coatings
 . metal coatings
 . . **gold coatings**
 RT nickel plate
 protective coatings
- gold isotopes**
 GS chemical elements
 . gold
 . . **gold isotopes**
 . . . gold 198
 . nuclides
 . . isotopes
 . . . **gold isotopes**
 gold 198
 metals
 . noble metals
 . . gold
 . . . **gold isotopes**
 gold 198
 . transition metals
 . . gold
 . . . **gold isotopes**
 gold 198
 RT radioactive isotopes
- gold plate*
 USE **gold coatings**
- Gompertz curves**
 GS charts
 . graphs (charts)
 . . **Gompertz curves**
 geometry
 . curves (geometry)
 . . S curves
 . . . **Gompertz curves**
 . Euclidean geometry
 . . analytic geometry
 . . . S curves
 **Gompertz curves**
- gonads**
 GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . sex glands
 **gonads**
 ovaries
 testes
 . glands (anatomy)
 . . endocrine glands
 . . . **gonads**
 ovaries
 testes
 . . sex glands
 . . . **gonads**
 ovaries
 testes
 RT physiological effects
- gondolas**
 RT aircraft compartments
 airships
 balloons
 baskets
- goniometers**
 DEF Instruments for measuring angles.
 GS measuring instruments
 . **goniometers**
 . . photogoniometers
 . . radiogoniometers
 RT angles (geometry)
- diffractometers
 etalons
 interferometers
 Mach-Zehnder interferometers
 monochromators
 optical measuring instruments
 refractometers
 spectrometers
- goodness of fit**
 DEF The degree to which the observed frequencies of occurrence of events in an experiment correspond to the probabilities in a model of the experiment.
 GS statistical analysis
 . **goodness of fit**
 RT fitting
 mathematical models
 maximum likelihood estimates
 probability distribution functions
 probability theory
 statistical distributions
 statistical tests
 variance (statistics)
- gores**
 RT fabrics
 parachute fabrics
- gorges*
 USE **canyons**
- GOSS (support system)*
 USE **ground operational support system**
- government procurement**
 GS procurement
 . **government procurement**
 RT commercial off-the-shelf products
 commodities
 contracts
 federal budgets
 services
- government/industry relations**
 RT commerce lab
 commercialization
 contract negotiation
 contractors
 contracts
 procurement
- governments**
 RT constitution
 culture (social sciences)
 policies
 politics
 regimes
 voting
- governors*
 USE **speed regulators**
- GPHS (nucleonics)*
 (added December 2002)
 USE **radioisotope heat sources**
- grabens*
 USE **geological faults**
- ∞ **grade**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT angles (geometry)
 gradients
 level (horizontal)
 position (title)
 quality

gradient index optics

slopes

graded index optics
USE **gradient index optics**

gradient index devices
USE **gradient index optics**

gradient index optics
DEF Optical systems with components whose refractive indexes vary continuously within the material used for the optical elements.
UF *graded index optics*
gradient index devices
GRIN (optics)
RT fiber optics
geometrical optics
glass fibers
lens design
lenses
nonlinear optics
optical properties
∞ optics
physical optics
ray tracing
refractivity

gradients
GS **gradients**
. electron density profiles
. potential gradients
. pressure gradients
. temperature gradients
. . thermoclines
RT angles (geometry)
composition (property)
conjugate gradient method
∞ cross sections
differences
distribution (property)
∞ drop
∞ grade
gravity gradiometers
isobars (pressure)
isotherms
level (horizontal)
optimization
∞ profiles
slopes
variations
vector analysis

∞ **gradiometers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT gravity gradiometers
magnetometers

graduation
USE **calibrating**

Graeff calculus
GS analysis (mathematics)
. calculus
. . **Graeff calculus**
. numerical analysis
. . **Graeff calculus**

grafting
RT implantation
insertion

grain boundaries
GS boundaries
. **grain boundaries**
RT antiphase boundaries
crystal dislocations
embedded atom method
grain size
intergranular corrosion
interstices
interstitials
precipitates
transgranular corrosion

twinning

grain bridging
USE **crack bridging**

grain size
GS size (dimensions)
. **grain size**
RT grain boundaries
metal fatigue
microstructure
nanocomposites
nanocrystals
nanostructure (characteristics)
Ostwald ripening
particle size distribution

∞ **grains**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT crystals
grains (food)
granular materials
particles
propellant grains

grains (food)
GS farm crops
. **grains (food)**
. . barley
. . corn
. . millet
. . oats
. . rice
. . sorghum
. . wheat
RT angiosperms
Earth resources
∞ grains
grasses
seeds

grammars
RT languages
parsing algorithms
semantics
syntax
vowels
words (language)

Granat satellite
(added April 1995)
GS artificial satellites
. Soviet satellites
. . **Granat satellite**
RT French space program
gamma ray astronomy
international cooperation
Mir space station
Russian Space Program
spaceborne astronomy
x ray astronomy

Grand Canyon (AZ)
GS landforms
. canyons
. . **Grand Canyon (AZ)**
RT Arizona

Grand Tours
UF *outer planet missions*
GS space missions
. flyby missions
. . **Grand Tours**
. . . Mariner Jupiter-Saturn flyby
. . . Mariner Jupiter-Uranus flyby
. . . Voyager 1977 mission
RT ∞ missions
outer planets explorers
space flight
Voyager 1 spacecraft
Voyager 2 spacecraft

grand unified theory
DEF A theory describing the unification of

gravity with the other elementary forces in physics, i. e. , the weak force, the strong force and the electromagnetic force. Used for GUT.
UF *GUT*
GS field theory (physics)
. **grand unified theory**
RT astrophysics
big bang cosmology
broken symmetry
cosmology
Einstein equations
electromagnetic fields
electromagnetic interactions
electromagnetism
gravitation theory
gravitational fields
particle theory
plasma physics
relativity
string theory
strong interactions (field theory)
supersymmetry
symmetry
theoretical physics
weak energy interactions
weak interactions (field theory)

granite
GS rocks
. igneous rocks
. . **granite**
RT batholiths
Earth resources
soils

grants
DEF Assets bestowed or transferred, such as money or land, for a particular purpose.
RT appropriations
budgeting
contracts
insurance (contracts)
NASA programs
patents
subcontracts

granular materials
RT brittle materials
∞ grains
low density materials
∞ materials
particles
pellets
powder (particles)

graph theory
DEF The mathematical study of the structure of graphs and networks.
RT combinatorial analysis
graphs (charts)
greedy algorithms
mathematical models
∞ nets
set theory
∞ theories
topology
trees (mathematics)

graphic arts
GS arts
. **graphic arts**
. . animation
. . . computer animation
RT charts
diagrams
drafting (drawing)
drawings
engineering drawings
imagery
inks
motion pictures
multimedia
photography

∞ projection

graphic evaluation and review techniques

USE **GERT**

graphical user interface

(added July 1993)

DEF A man-computer interface which relies on graphical and/or pictorial means for presenting the user with command options and their results. Input to a graphical user interface relies heavily on the use of point-and-click devices (such as a 'mouse'). Most graphical user interfaces are designed to facilitate multitasking through separate application windows (computer programs).

UF *GUI (computers)*

GS interfaces

. **graphical user interface**

. . windows (computer programs)

RT computer graphics

disk operating system (DOS)

display devices

human-computer interface

graphite

GS carbonaceous materials

. **graphite**

. . pyrolytic graphite

minerals

. **graphite**

. . pyrolytic graphite

RT aluminum graphite composites

buckminsterfullerene

carbon

carbon nanotubes

electrodes

fiber composites

fullerenes

graphite-epoxy composites

intercalation

lubricants

moderators

nanotubes

single crystals

solid lubricants

synthetic metals

graphite-epoxy composites

DEF Structural materials composed of epoxy resins reinforced with graphite.

GS composite materials

. polymer matrix composites

. . epoxy matrix composites

. . . **graphite-epoxy composites**

. resin matrix composites

. . **graphite-epoxy composites**

. superhybrid materials

. . **graphite-epoxy composites**

RT braided composites

carbon fiber reinforced plastics

∞ construction materials

epoxy resins

fiber composites

graphite

graphite-polyimide composites

∞ materials

reinforced plastics

reinforcing fibers

sheet molding compounds

woven composites

graphite-polyimide composites

DEF Composite materials utilizing graphite reinforcing fibers in a resin matrix.

GS composite materials

. polymer matrix composites

. . **graphite-polyimide composites**

RT graphite-epoxy composites

graphitization

RT annealing

heat treatment

graphoepitaxy

DEF The use of artificial surface relief struc-

tures to induce crystallographic orientation in thin films.

RT amorphous materials

crystal lattices

crystal structure

graphology

GS handwriting

. **graphology**

recognition

. pattern recognition

. . **graphology**

RT character recognition

graphs (charts)

UF *polarization charts*

GS charts

. **graphs (charts)**

. . bond graphs

. . Gompertz curves

. . Mollier diagram

. . Patterson map

RT conformal mapping

∞ curves

fault trees

graph theory

histograms

nomographs

∞ origins

Petri nets

recording instruments

representations

statistical analysis

trees (mathematics)

Grashof number

DEF A nondimensional parameter used in the theory of heat transfer. The Grashof number is associated with the Reynolds number and the Prandtl number in the study of convection.

GS dimensionless numbers

. **Grashof number**

ratios

. **Grashof number**

RT convection

Prandtl number

Reynolds number

grasses

GS plants (botany)

. **grasses**

. . hay

. . reeds (plants)

. . sea grasses

. . sorghum

RT alfalfa

canopies (vegetation)

defoliation

farm crops

farmlands

grains (food)

grasslands

millet

oats

sod

grasshoppers

GS animals

. invertebrates

. . arthropods

. . . insects

. . . . **grasshoppers**

grasslands

UF *grazing lands*

meadowlands

prairies

savannahs

GS land

. **grasslands**

. . Llanos Orientales (Colombia)

RT agriculture

crop growth

Earth resources

farm crops

farmlands

grasses

hay

land use

plains

plowing

rangelands

rural areas

rural land use

sod

steppes

Grassmann algebra

USE **vector spaces**

∞ gratings

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT gratings (spectra)

interference grating

optical filters

gratings (spectra)

UF *diffraction gratings*

GS **gratings (spectra)**

. Bragg gratings

. echelette gratings

. echelle gratings

RT

apodization

corrugated waveguides

diffraction radiation

Fresnel diffraction

∞ gratings

optical filters

photorefractivity

Ronchi test

Rowland circles

graupele

(added March 1989)

GS precipitation (meteorology)

. **graupele**

RT

cloud glaciation

cloud physics

hail

hailstorms

ice formation

ice nuclei

snow

gravel deposits

USE **gravels**

gravels

DEF Coarse, granular aggregates, with pieces larger than sand grains, resulting from the natural erosion of rocks. Used for gravel deposits.

UF *gravel deposits*

GS sediments

. **gravels**

soils

. **gravels**

RT

aggregates

alluvium

aquifers

boreholes

fans (landforms)

grit

sands

gravimeters

(added January 1991)

DEF Instruments for measuring variations in the gravitational field, generally by registering differences in the weight of a constant mass as the gravimeter is moved from place to place. Used for gravity meters.

UF *gravity meters*

GS measuring instruments

. **gravimeters**

RT

accelerometers

densitometers

geodesy

geophysics

gravimetry

gravitation

microdensitometers

gravimetry

DEF The measurement of gravity or gravitational acceleration, especially in geophysics and geodesy.

- RT ∞ acceleration
- accelerometers
- geology
- geophysics
- gravimeters
- gravitational fields
- ∞ measurement
- networks
- quantitative analysis

gravireceptors

DEF Highly specialized nerve endings and receptor organs located in skeletal muscles, tendons, joints, and in the inner ear which furnish information to the brain with respect to body position, equilibrium and the direction of gravitational forces.

- GS anatomy
 - . sense organs
 - . . **gravireceptors**
 - . . . otolith organs
 - . receptors (physiology)
 - . **gravireceptors**
 - . . otolith organs
- RT oculogravic illusions
- sensitometry
- vertical perception

gravitation

DEF The acceleration produced by the mutual attraction of two masses, and of magnitude inversely proportional to the square of the distance between the two centers of mass. Used for gravity.

- UF *gravity*
- GS **gravitation**
 - . artificial gravity
 - . Earth gravitation
 - . gravity anomalies
 - . lunar gravitation
 - . microgravity
 - . planetary gravitation
 - . stellar gravitation
 - . . solar gravitation
- RT antigravity
- drag
- environments
- Geopotential Research Mission
- gravimeters
- gravitational constant
- gravitational effects
- gravitational fields
- gravitational waves
- gravity gradiometers
- high gravity environments
- isostasy
- low weight
- Lunar Gravity Simulator
- pendulums
- Roche limit
- similitude law
- terminal velocity
- weight (mass)
- weightlessness

gravitation theory

- GS **gravitation theory**
 - . supergravity
- RT bimetric theories
- event horizon
- gauge theory
- grand unified theory
- gravitational fields
- gravitational wave antennas
- gravitinos
- gravitons
- string theory
- supersymmetry
- ∞ theories

unified field theory

gravitational binding energy

- (added May 1995)
- GS binding energy
 - . **gravitational binding energy**
- RT accretion disks
- astrophysics
- binary stars
- ∞ energy
- gravitational collapse
- neutron stars
- nuclear binding energy
- stellar gravitation

gravitational collapse

- GS collapse
 - . **gravitational collapse**
- RT astrophysics
- black holes (astronomy)
- gravitational binding energy
- gravitational instability
- naked singularities
- neutral currents
- protogalaxies
- quasars
- relativistic plasmas
- stellar cores
- stellar interiors
- stellar systems
- supernovae
- white holes (astronomy)

gravitational constant

- DEF The coefficient of proportionality in Newton's law of gravitation.
- GS constants
 - . **gravitational constant**
- RT big bang cosmology
- gravitation

gravitational effects

- GS **gravitational effects**
 - . gravitational lenses
 - . Lagrangian equilibrium points
 - . lunar gravitational effects
- RT acceleration stresses (physiology)
- acceleration tolerance
- Bond number
- clinorotation
- clinostats
- drop towers
- ∞ effects
- geotropism
- gravitation
- gravitational instability
- gravitational physiology
- gravitropism
- Gravity Probe B
- Langley complex coordinator
- lower body negative pressure
- orbital resonances (celestial mechanics)
- Reissner-Nordstrom solution
- stellar mass accretion
- stellar systems
- swingby technique
- weightlessness

gravitational fields

- DEF Regions that give rise to forces of gravitational attraction.
- UF *gravitational potential*
- RT attraction
- center of gravity
- Earth gravitation
- Earth-Moon system
- field strength
- field theory (physics)
- ∞ fields
- geopotential
- geopotential height
- Geopotential Research Mission
- grand unified theory
- gravimetry
- gravitation

- gravitation theory
- gravitational instability
- gravitational lenses
- gravity anomalies
- Lagrangian equilibrium points
- multipolar fields
- satellite perturbation
- Schwarzschild metric
- stellar gravitation
- unified field theory
- Yang-Mills fields

gravitational instability

- (added August 1997)
- GS dynamic characteristics
 - . dynamic stability
 - . . **gravitational instability**
 - stability
 - . dynamic stability
 - . . **gravitational instability**
- RT astrophysics
- galactic evolution
- gravitational collapse
- gravitational effects
- gravitational fields
- interstellar matter
- Jeans theory
- perturbation
- stellar evolution
- stellar gravitation

gravitational lenses

- GS gravitational effects
 - . **gravitational lenses**
 - lenses
 - . **gravitational lenses**
- RT black holes (astronomy)
- focusing
- gravitational fields
- light scattering
- massive compact halo objects
- neutron stars
- relativistic effects
- relativity
- stellar gravitation
- white holes (astronomy)

gravitational physiology

- GS physiology
 - . **gravitational physiology**
- RT acceleration stresses (physiology)
- aerospace medicine
- centrifuging stress
- clinorotation
- clinostats
- gravitational effects
- head up tilt
- hindlimb suspension
- physiological acceleration
- physiological effects
- physiological responses
- space flight stress
- stress (physiology)

gravitational potential

USE **gravitational fields**

gravitational radiation

USE **gravitational waves**

gravitational wave antennas

DEF Devices for receiving propagating gravitational fields produced by some change in the distribution of matter.

- GS antennas
 - . **gravitational wave antennas**
 - . . LIGO (observatory)
 - . . LISA (observatory)
- RT antenna design
- cryogenic equipment
- gravitation theory

gravitational waves

DEF Hypothetical waves that travel at the speed of light, by which gravitational attraction is propagated.

- UF *gravitational radiation*
 RT celestial bodies
 celestial mechanics
 Earth-Moon system
 gravitation
 gravity waves
 LIGO (observatory)
 LISA (observatory)
 ∞ radiation
 ∞ waves
- gravitinos**
 GS particles
 . elementary particles
 . . hypothetical particles
 . . . **gravitinos**
 . neutral particles
 . . **gravitinos**
 RT baryons
 cosmology
 decoupling
 gravitation theory
 gravitons
 neutrinos
 particle mass
 supergravity
 weak energy interactions
- gravitons**
 DEF The hypothetical elementary units of gravitation which are equivalent in the electrons in electromagnetic theory.
 GS particles
 . elementary particles
 . . hypothetical particles
 . . . **gravitons**
 RT atomic structure
 gravitation theory
 gravitinos
 supergravity
- gravitropism**
 GS tropism
 . **gravitropism**
 RT calmodulin
 gravitational effects
 plants (botany)
 vegetation growth
- gravity*
 USE **gravitation**
- gravity anomalies**
 DEF The differences between the observed values of gravity at different points and the theoretical calculated value. They are based on a simple gravity model, usually modified in accordance with some generalized hypothesis of variation in subsurface density as related to surface topography.
 GS anomalies
 . **gravity anomalies**
 gravitation
 . **gravity anomalies**
 RT Earth gravitation
 gravitational fields
 mascons
- gravity assist trajectories*
 USE **swingby technique**
- gravity gradient satellites**
 GS artificial satellites
 . **gravity gradient satellites**
 . . ATS
 . . . ATS 1
 . . . ATS 2
 . . . ATS 3
 . . . ATS 4
 . . . ATS 5
 . . . ATS 6
 . . . ATS 7
 . . . ATS 8
 . . ORBIS CAL satellite
 RT artificial gravity
 expulsion
- manned spacecraft
 OV-1 satellites
 OV-2 satellites
 OV-3 satellites
 OV-4 satellites
 OV-5 satellites
 satellite attitude control
 satellite control
 spin reduction
 unmanned spacecraft
- gravity gradiometers**
 GS measuring instruments
 . **gravity gradiometers**
 RT gradients
 ∞ gradiometers
 gravitation
- gravity meters*
 USE **gravimeters**
- Gravity Probe B**
 DEF An experiment designed to measure general relativistic induced torques on a gyroscope in orbit about the Earth.
 RT gravitational effects
 gyroscopes
 NASA programs
 relativity
- gravity waves**
 DEF Waves in an interface between fluids of different density in which the restoring force is gravity.
 GS elastic waves
 . capillary waves
 . . **gravity waves**
 . . . baroclinic waves
 surface waves
 . capillary waves
 . . **gravity waves**
 . . . baroclinic waves
 RT cnoidal waves
 gravitational waves
 Kelvin waves
 planetary waves
 ripples
 traveling ionospheric disturbances
 water waves
 wind (meteorology)
- Gravsat satellites*
 USE **Geopotential Research Mission**
- gray gas**
 GS gases
 . **gray gas**
 RT nongray atmospheres
 radiation absorption
 Rayleigh scattering
 thermal absorption
- gray scale**
 DEF Images that are not colored or multispectral.
 RT aerial photography
 image contrast
 image enhancement
 image processing
 imaging techniques
 optical data processing
 pattern recognition
- grazing**
 GS ingestion (biology)
 . **grazing**
 RT animals
 cattle
 deer
 goats
 horses
 rangelands
 rural land use
- swine
- grazing flow**
 RT acoustic attenuation
 acoustic ducts
 acoustic impedance
 acoustic measurement
 acoustic properties
 aeroacoustics
 ∞ flow
 noise reduction
 orifice flow
 resonators
 shear flow
- grazing incidence**
 DEF Incidence at a small glancing angle.
 GS incidence
 . **grazing incidence**
 RT aberration
 angles (geometry)
 grazing incidence telescopes
 optical measurement
 ray tracing
 x ray optics
- Grazing Incidence Solar Telescope*
 USE **GRIST (telescope)**
- grazing incidence telescopes**
 GS telescopes
 . **grazing incidence telescopes**
 . . GRIST (telescope)
 RT grazing incidence
 x ray astronomy
 x ray telescopes
- grazing lands*
 USE **grasslands**
- greases**
 RT fats
 kerogen
 lubricants
 oils
 petroleum products
 thickeners (materials)
- Great Basin (US)**
 GS landforms
 . structural basins
 . . **Great Basin (US)**
 . terraces (landforms)
 . . plateaus
 . . . **Great Basin (US)**
 regions
 . **Great Basin (US)**
 RT California
 Earth resources
 folds (geology)
 formations
 geology
 Nevada
 structural properties (geology)
 Utah
- Great Britain*
 USE **United Kingdom**
- great circles**
 DEF Circles which intersect a sphere and a plane through its center.
 GS geometry
 . Euclidean geometry
 . . circles (geometry)
 . . . **great circles**
 RT flight optimization
 flight paths
 ground tracks
 trajectories
- Great Lakes (North America)**
 GS lakes
 . **Great Lakes (North America)**
 . . Lake Erie
 . . Lake Huron

. . Lake Michigan
 . . Lake Ontario
 . . Lake Superior
 RT Canada
 canals
 Earth resources
 inland waters
 International Field Year for Great Lakes
 resources
 United States
 water flow
 water resources

Great Plains Corridor (North America)
 GS corridors
 . **Great Plains Corridor (North America)**
 regions
 . **Great Plains Corridor (North America)**
 RT agriculture
 Canada
 plains
 rural land use
 United States

Great Salt Lake (UT)
 GS lakes
 . **Great Salt Lake (UT)**
 RT Earth resources
 hydrology
 inland waters
 ponds
 Utah

Great Smoky Mountains (NC-TN)
 GS landforms
 . mountains
 . . **Great Smoky Mountains (NC-TN)**
 RT North Carolina
 Tennessee

GREB satellites
 SN (GALACTIC RADIATION EXPERIMENTAL BACKGROUND SATELLITES)
 UF *Galactic Radiation Exp Background sats*
 GS artificial satellites
 . **GREB satellites**

Greece
 GS nations
 . **Greece**
 RT Cyprus
 Europe
 Greek space program

greedy algorithms
 (added March 2000)
 DEF Any algorithm characterized by a procedure that selects the most extreme element from a set to satisfy a given goal. A recursive procedure for constructing a set of objects from the smallest possible elements.
 GS mathematical logic
 . algorithms
 . . **greedy algorithms**
 RT graph theory
 heuristic methods
 minimax technique
 optimization

Greek space program
 (added August 1990)
 GS programs
 . space programs
 . . European space programs
 . . . **Greek space program**
 RT Greece

green wave effect
 RT annual variations
 botany
 chlorophylls
 ∞ effects

foliage
 leaves

greenhouse effect

DEF The heating of the Earth's surface because outgoing long-wavelength terrestrial radiation is absorbed and re-emitted by the carbon dioxide and water vapor in the lower atmosphere and eventually returns to the surface.

RT atmospheric heat budget
 atmospheric radiation
 chlorofluorocarbons
 climate change
 Earth atmosphere
 ∞ effects
 environment effects
 Gaia hypothesis
 global warming
 insolation
 terrestrial radiation
 thermal radiation
 Venus clouds

greenhouses

DEF Structures enclosed by glass or plastic devoted to the cultivation or protection of tender plants or to the production of plants out of season.

RT buildings
 phytotrons
 plants (botany)

Greenland

GS landforms
 . islands
 . . **Greenland**
 RT Arctic Ocean
 Denmark

Green's functions

UF *Green's theorem*
 GS analysis (mathematics)
 . real variables
 . . **Green's functions**
 functions (mathematics)
 . **Green's functions**
 RT differential equations
 field theory (algebra)
 field theory (physics)
 half planes
 half spaces
 Jacobi integral
 many body problem

Green's theorem

USE **Green's functions**

Gregorian antennas

GS antennas
 . **Gregorian antennas**
 RT antenna design
 antenna feeds
 antenna radiation patterns
 Cassegrain antennas
 microwave antennas

Grenada

(added February 1989)
 GS landforms
 . islands
 . . West Indies
 . . . **Grenada**
 nations
 . **Grenada**
 RT Caribbean region

grenades

RT ammunition
 incendiary ammunition
 pyrotechnics

grid computing (computer networks)

(added December 2003)

SN (LIMITED TO DISTRIBUTED COMPUTING RESOURCES; DOES NOT INCLUDE COMPUTATIONAL MESHES USED FOR MATHEMATICAL ANALYSIS)

DEF The use and development of large-scale distributed systems that enable location-independent access to geographically dispersed computational resources such as supercomputers, data archives, and computational software; may also incorporate remote access to instrumentation and test-facility interfaces, and supporting information resources.

UF *computational grids (computer networks)*
 Information Power Grid
 IPG (NASA Information Power Grid)
 metacomputing
 GS data processing
 . distributed processing
 . . **grid computing (computer networks)**
 RT computer networks
 information systems
 supercomputers

grid generation (mathematics)

(added August 1988)

DEF Numerical generation of curvilinear-coordinate systems for the numerical solution of partial differential equations.

UF *mesh generation (mathematics)*
 RT computational fluid dynamics
 computational grids
 coordinates
 finite difference theory
 finite element method
 grid refinement (mathematics)
 multigrid methods
 structured grids (mathematics)
 unstructured grids (mathematics)
 Voronoi diagrams

grid refinement (mathematics)

(added August 2003)

DEF The dynamic modification of computational grids using either derived or user-supplied criteria to produce a more highly resolved grid.

UF *mesh refinement (mathematics)*
 RT computational grids
 grid generation (mathematics)

∞ grids

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT computational grids
 coordinates
 ionizers
 ∞ matrices
 mesh
 reticles
 tube grids
 turnstile antennas
 wire grid lenses

grids (mathematics)

USE **computational grids**

Griffith crack

RT crack closure
 crack propagation
 fracture mechanics
 glass
 ∞ theories

Griffon aircraft

USE **Nord 1500 aircraft**

Grigg-Skjellerup comet

GS celestial bodies
 . comets
 . . **Grigg-Skjellerup comet**
 RT ∞ coma
 comet tails
 solar system
 solar wind

Grignard reactions

GS chemical reactions
 . **Grignard reactions**

- RT catalysts
- GRIN (optics)*
USE **gradient index optics**
- ∞ **grinding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT grinding (material removal)
- grinding (comminution)**
UF *pulverizing*
GS comminution
. **grinding (comminution)**
RT atomizing
compounding
crushing
disintegration
grinding (material removal)
mixing
- grinding (material removal)**
GS **grinding (material removal)**
. metal grinding
RT abrasion
countersinking
cutting
∞ grinding
grinding (comminution)
grooving
machining
metal cutting
micromachining
planing
polishing
scarfing
wear
- grinding machines**
GS tools
. machine tools
. . **grinding machines**
RT lathes
∞ machinery
metal grinding
milling machines
shapers
ultrasonic cleaning
- grinding mills**
RT atomizers
atomizing
comminution
crushers
impactors
mixers
- Gripen aircraft*
USE **JAS-39 aircraft**
- GRIST (telescope)**
DEF An ESA Spacelab payload designed for grazing incidence solar phenomena. Used for grazing incidence solar telescope.
UF *Grazing Incidence Solar Telescope*
GS telescopes
. grazing incidence telescopes
. . **GRIST (telescope)**
RT energy spectra
solar cosmic rays
Spacelab
sun
- grit**
RT abrasives
gravels
particles
sands
sediments
- grooves**
GS **grooves**
. V grooves
. . riblets
RT corrugating
- grooving
- grooving**
UF *fluting*
RT cutting
grinding (material removal)
grooves
knurling
machining
micromachining
milling (machining)
striation
- gross national product**
DEF The total value of the goods and services produced in a nation during a specific period and also comprising the total expenditures by consumers and government plus gross private investment. Used for GNP.
UF *GNP*
GS products
. **gross national product**
RT commerce
costs
econometrics
finance
industries
- ground based control**
GS **ground based control**
. air traffic control
. . automated en route ATC
. . radar approach control
RT air traffic controllers (personnel)
aircraft approach spacing
aircraft control
airport surface detection equipment
airport towers
approach
approach control
automatic control
automatic traffic advisory and resolution
∞ control
flight control
flight management systems
fly by wire control
guidance (motion)
instrument landing systems
integrated mission control center
landing aids
missile control
radar navigation
radio control
remote control
spacecraft control
spacecraft guidance
traffic control
- ground clouds*
USE **exhaust clouds**
- ground crews**
GS personnel
. **ground crews**
RT maintenance
- ground effect (aerodynamics)**
DEF Increase in the lift of an aircraft operating close to the ground caused by reaction between high-velocity downwash from its wing or rotor and the ground.
RT aerodynamic drag
aerodynamics
air cushion landing systems
cushions
downwash
drag
∞ effects
ground resonance
jet blast effects
lift
peripheral jet flow
wakes
- wing-in-ground effect vehicles
- ground effect (communications)**
DEF The effect of ground conditions on radio communications.
RT echoes
∞ effects
electromagnetic interference
electromagnetic noise
radio attenuation
signal fading
wave reflection
- ground effect machines**
UF *air cushion vehicles*
DTMB-111 ground effect machine
DTMB-430 ground effect machine
hovercraft
GS **ground effect machines**
. Cushioncraft ground effect machine
. GETOL aircraft
. hovercraft ground effect machines
. Westland ground effect machines
. wing-in-ground effect vehicles
RT ∞ aircraft
commercial aircraft
∞ effects
∞ flight vehicles
flying platforms
hovering
lifting rotors
∞ machinery
∞ military aircraft
passenger aircraft
peripheral jet flow
rapid transit systems
research aircraft
∞ subsonic aircraft
surface vehicles
∞ transport vehicles
V/STOL aircraft
∞ vehicles
water takeoff and landing aircraft
- ground handling**
GS materials handling
. **ground handling**
RT air cargo
baggage
crew procedures (preflight)
∞ facilities
flight operations
hangars
mobile lounges
tractors
trucks
- ground operational support system**
UF *GOSS (support system)*
GS ground support equipment
. **ground operational support system**
support systems
. **ground operational support system**
weapon systems
. **ground operational support system**
RT ∞ systems
- ground penetrating radar**
(added August 1995)
DEF A radar imaging technique in which coherent background propagation of the received reflected wavefield forms a spatial image of the scattering interface within the region of interest.
GS radar
. **ground penetrating radar**
RT archaeology
nondestructive tests
planetary mapping
radar geology
soil mapping
synthetic aperture radar

ground resonance

tomography

ground resonance

DEF Mechanical phenomenon occurring when a rotor, operating within a certain speed range, experiences coupling between a rotor in-plane mode and a model support system mode, causing vibration in the system.

RT aerodynamic stability
ground effect (aerodynamics)
helicopters
rotary wings
rotor aerodynamics

ground speed

GS rates (per time)
. **ground speed**
velocity
. **ground speed**
RT airspeed
high speed
low speed

ground squirrels

GS animals
. vertebrates
. . . mammals
. . . . rodents
. squirrels
. **ground squirrels**

ground state

GS level (quantity)
. energy levels
. . **ground state**
RT atomic energy levels
atomic theory
electron states
quantum theory
yrast state

ground stations

GS stations
. **ground stations**
. . Deep Space Instrumentation Facility
. . Earth terminals
. . integrated mission control center
. . polystation doppler tracking system
RT data acquisition
data collection platforms
downlinking
Global Tracking Network
hangars
integrated global ocean station systems
Jodrell Bank Observatory
land mobile satellite service
MSAT
networks
ocean data acquisitions systems
pollution monitoring
Space Flight Tracking and Data Network
tracking stations
weather stations

ground support equipment

DEF That equipment on the ground, including all implements, tools, and devices (mobile or fixed), required to inspect, test, adjust, calibrate, appraise, gage, measure, repair, overhaul, assemble, transport, safeguard, record, store, or otherwise function in support of a rocket, space vehicle, or the like, either in the research and development phase or in operational phase, or in support of the guidance system used with the missile, vehicle, or the like.

GS **ground support equipment**
. ground operational support system
RT air traffic control
aircraft maintenance
airport planning
auxiliary power sources
ballistic cameras
Cape Kennedy launch complex

command and control
command guidance
crawler tractors
Earth terminal measurement system
∞ equipment
flight control
gantry cranes
handling equipment
landing aids
launching bases
launching pads
launching sites
maintenance
missile launchers
missile storage
missiles
ordnance
propellant storage
radio telemetry
refueling
rocket launchers
satellite ground support
∞ spacecraft
storable propellants
∞ test equipment
tracking networks
tracking stations

ground support systems

GS support systems
. **ground support systems**
RT commonality
∞ systems

ground tests

GS **ground tests**
. cold flow tests
. prelaunch tests
. . static firing
RT aircraft runup
captive tests
crew procedures (preflight)
electric equipment tests
engine tests
flight tests
full scale tests
missile tests
prefiring tests
preflight operations
space electric rocket tests
stability tests
static tests
test firing
∞ tests
wing flow method tests

ground tracks

DEF The inclination of a satellite, together with its orbital altitude and period of its orbit, create a track defined by an imaginary line connecting the satellite and the Earth's center; the satellite's apparent path over the ground.

GS **ground tracks**
. satellite ground tracks
RT area navigation
flight paths
great circles
orbits
∞ paths
∞ tracks

ground truth

DEF Data obtained on the ground concerning the significance of anomalies observed in remote sensing to help interpretation.

RT aerial photography
aerial reconnaissance
Airborne Integrated Reconnaissance System
crop identification
imagery
in situ measurement
photointerpretation
photoreconnaissance

spectrophotography

ground water

(added February 1991)
DEF That part of the subsurface water that is in the zone of saturation, including underground streams.

UF *groundwater*
GS geophysical fluids
. **ground water**
water
. inland waters
. . **ground water**
RT aquifers
Earth resources
fresh water
limnology
lysimeters
potable water
soil pollution
springs (water)
surface water
water flow
water resources
water runoff
water sampling
water tables
wells

ground wave propagation

GS transmission
. wave propagation
. . **ground wave propagation**
RT radio waves
selective fading
sky waves

ground wind

GS wind (meteorology)
. **ground wind**
RT air currents
atmospheric circulation
cyclones
gust loads
gusts
monsoons
squalls
storms (meteorology)
tornadoes
wind direction
wind effects
wind erosion
wind pressure
wind profiles
wind shear
wind velocity
windmills (windpowered machines)
windpower utilization
windpowered generators

ground-air-ground communication

GS communicating
. **ground-air-ground communication**
telecommunication
. **ground-air-ground communication**
RT aeronautical satellites
air traffic control
aircraft communication
automated en route ATC
communication satellites
discrete address beacon system
optical communication
radio communication
satellite communication
spacecraft communication
voice communication

ground-to-air missiles

USE **surface to air missiles**

groundwater

USE **ground water**

Group 1A compounds

USE **alkali metal compounds**

∞ Group 1B compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT ∞ chemical compounds
copper compounds
noble metals
silver compounds
- Group 2A compounds*
USE **alkaline earth compounds**
- ∞ **Group 2B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cadmium compounds
∞ chemical compounds
mercury compounds
zinc compounds
- ∞ **Group 3A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aluminum compounds
boron compounds
∞ chemical compounds
gallium compounds
indium compounds
- ∞ **Group 3B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT actinide series compounds
∞ chemical compounds
curium compounds
rare earth compounds
scandium compounds
yttrium compounds
- ∞ **Group 4A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT carbon compounds
∞ chemical compounds
germanium compounds
lead compounds
silicon compounds
tin compounds
- ∞ **Group 4B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
hafnium compounds
titanium compounds
zirconium compounds
- ∞ **Group 5A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *pnictides*
RT antimony compounds
arsenic compounds
bismuth compounds
∞ chemical compounds
nitrogen compounds
oxynitrides
phosphorus compounds
- ∞ **Group 5B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
niobium compounds
tantalum compounds
vanadium compounds
- ∞ **Group 6A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chalcogenides
∞ chemical compounds
polonium compounds
selenium compounds
sulfur compounds
- tellurium compounds
- ∞ **Group 6B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
chromium compounds
molybdenum compounds
tungsten compounds
- Group 7A compounds*
USE **halogen compounds**
- ∞ **Group 7B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
manganese compounds
rhenium compounds
technetium compounds
- ∞ **Group 8 compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
cobalt compounds
iridium compounds
iron compounds
nickel compounds
osmium compounds
platinum compounds
rhodium compounds
- group behavior*
USE **group dynamics**
- group dynamics**
UF *group behavior*
RT dependence
∞ dynamics
ethnic factors
problem solving
sociology
- group technology (manufacturing)**
(added April 2000)
DEF A manufacturing methodology where production processes are organized into groups or cells based on similarities in the manufacturing requirements of product parts or production equipment capabilities.
UF *cellular manufacturing*
GS manufacturing
. **group technology (manufacturing)**
production engineering
. **group technology (manufacturing)**
RT computer aided manufacturing
industrial management
operations research
process control (industry)
production management
- group theory**
GS algebra
. **group theory**
. . homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
RT chiral dynamics
chirality
fibers (mathematics)
lie groups
supergravity
supersymmetry
∞ theories
- group velocity**
DEF The velocity of a wave disturbance as a whole, i. e. , of an entire group of component simple harmonic waves.
GS rates (per time)
. **group velocity**
velocity
. **group velocity**
- RT beat frequencies
harmonic motion
phase velocity
propagation velocity
quantum mechanics
wave propagation
- ∞ **groups**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT categories
classes
subdivisions
- grout**
RT amorphous materials
cements
clays
concretes
∞ construction materials
mortars (material)
mud
plasters
tiles
- growth**
UF *hypertrophy*
maturing
GS **growth**
. crystal growth
. . Czochralski method
. . directional solidification (crystals)
. . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
. hydrothermal crystal growth
. . protein crystal growth
. . traveling solvent method
. . Verneuil process
. vegetation growth
. . crop growth
. nanostructure growth
RT accumulations
crop calendars
∞ development
evolution (development)
∞ formation
germination
increasing
inflating
ontogeny
phytotrons
shrinkage
sintering
swelling
timber vigor
timberline
tissue engineering
trends
viability
warpage
youth
- growth chambers*
USE **phytotrons**
- Grumman aircraft**
GS **Grumman aircraft**
. A-6 aircraft
. C-1A aircraft
. C-2 aircraft
. E-2 aircraft
. F-9 aircraft
. F-14 aircraft
. F-111 aircraft
. Jetstream aircraft
. OV-1 aircraft
RT ∞ aircraft

Gruneisen constant

AWACS aircraft

Grumman OV-1C aircraft
USE **OV-1 aircraft**

Gruneisen constant
GS constants
. **Gruneisen constant**
RT compressibility
specific heat
thermal expansion

GTDS
USE **Goddard Trajectory Determination System**

Guadeloupe
GS landforms
. islands
. . West Indies
. . . **Guadeloupe**
nations
. France
. . **Guadeloupe**

Guam
GS landforms
. islands
. . Pacific islands
. . . **Guam**
nations
. United States
. . **Guam**

guanethidine
GS amines
. diamines
. . guanidines
. . . **guanethidine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **guanethidine**

guanidines
GS amines
. diamines
. . **guanidines**
. . . guanethidine
. . . triaminoguanidinium azide
RT perfluoroguanidine

guanines
GS bases (chemical)
. **guanines**
fungicides
. xanthis
. . **guanines**
nitrogen compounds
. xanthis
. . **guanines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . xanthis
. **guanines**
RT cyclic AMP

guanosines
DEF Guanine riboside; a nucleoside composed of guanine and ribose. Used for vernine.
UF *vernine*
GS organic compounds
. carbohydrates
. . glucosides
. . . nucleosides
. . . . **guanosines**
RT nucleic acids
ribonucleic acids

guards (shields)
RT ∞ barriers
coverings
 housings
 safety devices

safety management
shielding

Guatemala
GS nations
. **Guatemala**
RT Central America

guayule
DEF A desert shrub native to southwestern United States and north Mexico that produces polymeric isoprene essentially identical to that made by Hevea rubber trees in southeast Asia.
GS plants (botany)
. **guayule**
RT brush (botany)
rubber

GUI (computers)
USE **graphical user interface**

guidance (motion)
DEF The process of directing the movements of an aeronautical vehicle or space vehicle, with particular reference to the selection of a flight path.

GS **guidance (motion)**
. aircraft guidance
. beam rider guidance
. command guidance
. entry guidance (STS)
. inertial guidance
. . strapdown inertial guidance
. injection guidance
. map matching guidance
. midcourse guidance
. reentry guidance
. rendezvous guidance
. spacecraft guidance
. . satellite guidance
. standardized space guidance
. terminal guidance
. . laser guidance

RT air navigation
approach
ascent trajectories
astrionics
automatic control
avionics
control surfaces
flight control
flight paths
ground based control
homing
homing devices
impact prediction
landing
manual control
missiles
navigation
∞ platforms
pointing control systems
radio navigation
remote control
stationkeeping
∞ systems
trajectory control
visual control

guidance sensors
RT attitude control
image dissector tubes
optical measuring instruments
∞ sensors
solar sensors
spacecraft instruments
star trackers

guide vanes
DEF Control surfaces that may be moved into or against a rocket's jetstream, used to change the direction of the jet flow for thrust vector control. Used for jetavators.
UF *jetavators*
GS control surfaces
. **guide vanes**

. . jet vanes
vanes
. **guide vanes**
. . jet vanes
RT airfoils
hydrofoils
thrust vector control

guided missile submarines
UF *Polaris submarines*
GS water vehicles
. ships
. . submarines
. . . **guided missile submarines**
. underwater vehicles
. . submarines
. . . **guided missile submarines**
RT fleet ballistic missiles
Poseidon missiles

Guinea
GS nations
. **Guinea**
RT Africa

guinea pigs
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **guinea pigs**

Gulf of Alaska
GS gulfs
. **Gulf of Alaska**
RT Alaska
Pacific Ocean

Gulf of California (Mexico)
GS gulfs
. **Gulf of California (Mexico)**
RT Mexico
Pacific Ocean

Gulf of Mexico
GS gulfs
. **Gulf of Mexico**
RT Alabama
Caribbean Sea
Florida
Louisiana
Mexico
Mississippi
Rio Grande (North America)
texas

Gulf Stream
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **Gulf Stream**
RT Atlantic Ocean
Caribbean Sea
Lomonosov current
Sargasso Sea
TOPEX

gulfs
DEF Relatively large parts of oceans or seas extending far into the land, partly enclosed by an extensive sweep of the coasts, and opened to the sea through straits. Gulfs are the largest of various forms of inlets of seas. They are usually larger, more enclosed, and more deeply indented than bays (topographic features).
GS **gulfs**
. Gulf of Alaska
. Gulf of California (Mexico)
. Gulf of Mexico
. Persian Gulf
RT bays (topographic features)
Delaware Bay (US)
inlets (topography)

- topography
- Gum nebula**
 GS celestial bodies
 . nebulae
 . . **Gum nebula**
 RT galaxies
 irregular galaxies
 Orion nebula
- gum vulcanizates*
 USE **vulcanized elastomers**
- Gumbel theory*
 USE **range (extremes)**
- gums (substances)**
 GS **gums (substances)**
 . rosin
 RT chitin
 polysaccharides
 rubber
 tars
- gun launchers**
 SN (LIMITED TO ORDNANCE DEVICES FOR FIRING MISSILES AND ROCKETS WITH INITIAL ATTITUDE CONTROL)
 DEF Ordnance devices for firing missiles and rockets with initial attitude control.
 GS launchers
 . **gun launchers**
 RT artillery
 ∞ barrels
 gunfire
 howitzers
 hypervelocity launchers
 missile launchers
 rocket catapults
 rocket launchers
 Sabot projectiles
- gun propellants**
 UF *gunpowder*
 GS propellants
 . **gun propellants**
 RT explosives
 guns (ordnance)
- gun turrets**
 RT ∞ cupolas
 guns (ordnance)
 ∞ turret
- gunfire**
 RT artillery fire
 fire control
 firing (igniting)
 gun launchers
 guns (ordnance)
 projectiles
- Gunn diodes**
 GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **Gunn diodes**
 transferred electron devices
 RT gallium arsenides
 negative resistance devices
 semiconductor devices
- Gunn effect**
 RT ∞ effects
 negative conductance
 negative resistance devices
 semiconductor devices
 semiconductor lasers
- gunnery training**
 GS education
 . **gunnery training**
 RT artillery
 fire control
 guns (ordnance)
 howitzers
- weapons
- gunpowder*
 USE **gun propellants**
- ∞ **guns**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT crossed field guns
 electron guns
 gas guns
 guns (ordnance)
 hypervelocity guns
 plasma guns
- guns (ordnance)**
 UF *cannons*
 GS weapons
 . **guns (ordnance)**
 . . artillery
 . . . howitzers
 . . . precision guided projectiles
 . . rifles
 RT ammunition
 explosives
 gun propellants
 gun turrets
 gunfire
 gunnery training
 ∞ guns
 heat of combustion
 hypervelocity guns
 incendiary ammunition
 projectiles
 propellants
 Sabot projectiles
- gust alleviators**
 RT deflectors
 gusts
 mission adaptive wings
 spoilers
 turbulent flow
 vortex alleviation
- gust loads**
 GS aerodynamic forces
 . aerodynamic loads
 . . **gust loads**
 loads (forces)
 . dynamic loads
 . . aerodynamic loads
 . . . **gust loads**
 . . . transient loads
 . . . **gust loads**
 . random loads
 . . **gust loads**
 RT atmospheric turbulence
 blast loads
 ground wind
 gusts
 structural design criteria
 wind pressure
 wing loading
- gustatory perception*
 USE **taste**
- gusts**
 GS turbulence
 . atmospheric turbulence
 . . **gusts**
 wind (meteorology)
 . **gusts**
 RT clear air turbulence
 ground wind
 gust alleviators
 gust loads
 sea breeze
 storm damage
 storms
 storms (meteorology)
- vortex avoidance
- GUT*
 USE **grand unified theory**
- Gutenberg zone**
 GS models
 . **Gutenberg zone**
 regions
 . **Gutenberg zone**
 RT acoustic velocity
 seismic waves
- guy wires**
 UF *stays*
 GS wire
 . **guy wires**
 RT anchors (fasteners)
 structural members
- Guyana**
 UF *British Guinea*
 GS nations
 . **Guyana**
 RT Caribbean region
 South America
- gymnastics*
 USE **physical exercise**
- gynecology**
 GS medical science
 . **gynecology**
 RT females
 genitourinary system
- gypsum**
 DEF The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate).
 GS minerals
 . **gypsum**
 plasters
 . **gypsum**
 RT calcium
 chalk
 rocks
 sedimentary rocks
 sulfates
- gyrals*
 USE **gyres**
- gyration**
 GS **gyration**
 . precession
 . . Larmor precession
 . . proton precession
 . . quenching (atomic physics)
 . revolving
 . rotation
 . . autorotation
 . . corotation
 . . counter rotation
 . . Earth rotation
 . . galactic rotation
 . . image rotation
 . . lunar rotation
 . . molecular rotation
 . . muon spin rotation
 . . planetary rotation
 . . satellite rotation
 . . stellar rotation
 . . . solar rotation
 . . clinorotation
 . . superrotation
 RT angular velocity
 coning motion
 ∞ motion
 spin dynamics
- gyrators**
 UF *Tellegen theory*
 GS microwave equipment
 . **gyrators**
 . . microwave filters

RT ferrites
microwave switching
network analysis
phase shift circuits
waveguides

gyres

DEF Closed circulatory systems in a body of water, larger than an eddy or a whirlpool. There is a circular motion of water in each of the major ocean basins, centered on a subtropical high-pressure region. These movements are generated by connective flow of warm surface water poleward, by the deflective effect of the Earth's rotation and by the effects of prevailing winds. The water within each gyre turns clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. Acceleration causes sea level to fall along mainland coasts; deceleration leads to rise.

UF *gyrals*

RT air water interactions
coastal currents
Coriolis effect
ocean currents
oceanography

gyro horizons

DEF Artificial horizons or attitude gyroscopes.

GS display devices
. **gyro horizons**
flight instruments
. attitude indicators
. . **gyro horizons**
gyroscopes
. attitude gyros
. . **gyro horizons**
horizon
. **gyro horizons**
measuring instruments
. indicating instruments
. . attitude indicators
. . . **gyro horizons**
navigation aids
. navigation instruments
. . attitude indicators
. . . **gyro horizons**

gyrocompasses

DEF Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal plane, so that the Earth's rotation causes the spinning axis to assume a position in a plane passing through the Earth's axis, and thus to point to true north.

GS gyroscopes
. **gyrocompasses**
measuring instruments
. indicating instruments
. . compasses
. . . **gyrocompasses**
navigation aids
. navigation instruments
. . compasses
. . . **gyrocompasses**

RT magnetic compasses
radio direction finders
solar compasses

gyrodampers

DEF Single-gimbal control moment gyros actively controlled to extract the structural vibratory energy through the local rotational deformations of a structure; used in large space structures.

RT control moment gyroscopes

gimbals
gyroscopic stability
structural vibration
vibration damping

Gyrodyne aircraft

DEF A rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

GS **Gyrodyne aircraft**

. QH-50 helicopter
RT ∞ aircraft

Gyrodyne DSN-3 helicopter

USE **QH-50 helicopter**

Gyrodyne military aircraft

USE **QH-50 helicopter**

gyrofrequency

DEF The natural period of revolution of a free electron in the Earth's magnetic field.

GS magnetic properties

. gyromagnetism
. . **gyrofrequency**

RT charged particles
magnetoionics

gyrointeraction

USE **magnetic rigidity**

gyromagnetism

GS magnetic properties

. **gyromagnetism**
. . gyrofrequency

RT Larmor radius

gyroplanes

USE **helicopters**

gyros

USE **gyroscopes**

gyroscope fluids

RT damping

∞ fluids

rotary gyroscopes
suspending (hanging)

gyroscopes

DEF Devices which utilize the angular momentum of a spinning mass (rotor) to sense angular motion of its base about one or two axes orthogonal to the spin axis. Used for gyros, gyroscopic drift, and gyrostats.

UF *gyros*

gyroscopic drift
gyrostats

GS **gyroscopes**

. attitude gyros
. . gyro horizons
. control moment gyroscopes
. cryogenic gyroscopes
. electrostatic gyroscopes
. gyrocompasses
. gyroscopic pendulums
. gyrostabilizers
. laser gyroscopes
. nuclear gyroscopes
. optical gyroscopes
. rotary gyroscopes
. . fluid rotor gyroscopes
. tuning fork gyroscopes

RT automatic pilots
gimballess inertial navigation

gimbals
Gravity Probe B
gyroscopic stability
precession
 ∞ stabilizers
torquers

gyroscopic coupling

GS coupling

. **gyroscopic coupling**

RT navigation

gyroscopic drift

USE **gyroscopes**

gyroscopic stability

gyroscopic pendulums

UF *pendulous gyroscopes*

GS gyroscopes

. **gyroscopic pendulums**

oscillators

. mechanical oscillators

. . pendulums

. . . **gyroscopic pendulums**

RT accelerometers

damping

Schuler tuning

gyroscopic stability

UF *gyroscopic drift*

GS dynamic characteristics

. dynamic stability

. . motion stability

. . . attitude stability

. . . . directional stability

. **gyroscopic stability**

. . . rotary stability

. . . . **gyroscopic stability**

stability

. dynamic stability

. . motion stability

. . . attitude stability

. . . . directional stability

. **gyroscopic stability**

. . . rotary stability

. . . . **gyroscopic stability**

RT damping

gyrodampers

gyroscopes

hovering stability

inertial platforms

precession

rotary gyroscopes

Schuler tuning

sea keeping

stabilized platforms

stable oscillations

yo-yo devices

gyrostabilizers

GS gyroscopes

. **gyrostabilizers**

RT navigation aids

sea keeping

stabilized platforms

thrust vector control

gyrostats

USE **gyroscopes**

gyrotrons

USE **cyclotron resonance devices**

gyrotropism

GS tropism

. **gyrotropism**

RT electromagnetic properties

frequency shift

H

H alpha line

- GS spectra
 - . radiation spectra
 - .. electromagnetic spectra
 - ... line spectra
 - H lines
 - **H alpha line**
- RT absorption spectra
 - emission spectra
 - H II regions
 - solar spectra

H beta line

- GS spectra
 - . radiation spectra
 - .. electromagnetic spectra
 - ... line spectra
 - H lines
 - **H beta line**
- RT absorption spectra
 - Balmer series
 - emission spectra
 - solar spectra

H gamma line

- GS spectra
 - . radiation spectra
 - .. electromagnetic spectra
 - ... line spectra
 - H lines
 - **H gamma line**
- RT absorption spectra
 - Balmer series
 - emission spectra
 - solar spectra

H I regions

- GS celestial bodies
 - . nebulae
 - .. **H I regions**
 - hydrogen clouds
 - . **H I regions**
- RT ∞ clouds
 - hydrogen atoms
 - interstellar gas
 - interstellar matter
 - neutral atoms
 - neutral gases
 - radio spectra

H II regions

- GS celestial bodies
 - . nebulae
 - .. **H II regions**
 - hydrogen clouds
 - . **H II regions**
- RT ∞ clouds
 - emission spectra
 - H alpha line
 - hydrogen ions
 - interstellar gas
 - interstellar matter
 - ionized gases

H lines

- SN (EXCLUDES SURFACES OF CONSTANT MAGNETIC FIELD STRENGTH)
- GS spectra
 - . radiation spectra
 - .. electromagnetic spectra
 - ... line spectra
 - **H lines**
 - H alpha line
 - H beta line
 - H gamma line
- RT absorption spectra
 - Balmer series
 - D lines
 - emission spectra
 - K lines
 - Lyman spectra

- Paschen series
- Rydberg series
- solar spectra
- telluric lines

H waves

- GS electromagnetic radiation
 - . **H waves**
 - oscillations
 - . transverse oscillation
 - .. **H waves**
 - transverse waves
 - . **H waves**
- RT electric field strength

H-1 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **H-1 engine**
 - .. liquid propellant rocket engines
 - ... **H-1 engine**
- RT Saturn 1 launch vehicles
 - Saturn 1B launch vehicles

H-2 control

- (added February 1998)
- GS automatic control
 - . optimal control
 - .. **H-2 control**
 - optimization
 - . optimal control
 - .. **H-2 control**
- RT control systems design
 - control theory
 - controllers
 - feedback control
 - H-infinity control
 - linear quadratic Gaussian control

H-2 orbiting plane

- USE **HOPE aerospace plane**

H-13 helicopter

- USE **OH-13 helicopter**

H-17 helicopter

- UF *Flying Crane helicopter*
- GS Hughes aircraft
 - . **H-17 helicopter**
 - jet aircraft
 - . **H-17 helicopter**
 - research vehicles
 - . research aircraft
 - .. **H-17 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... **H-17 helicopter**
- RT ∞ aircraft

H-19 helicopter

- GS passenger aircraft
 - . **H-19 helicopter**
 - Sikorsky aircraft
 - . **H-19 helicopter**
 - transport aircraft
 - . **H-19 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **H-19 helicopter**

- RT ∞ aircraft

H-21 helicopter

- USE **CH-21 helicopter**

H-23 helicopter

- USE **OH-23 helicopter**

H-25 helicopter

- GS Boeing aircraft
 - . **H-25 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... tandem rotor helicopters
 - ... **H-25 helicopter**
- RT antisubmarine warfare aircraft

H-34 helicopter

- USE **CH-34 helicopter**

H-43 helicopter

- GS Kaman aircraft
 - . **H-43 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **H-43 helicopter**
- RT ∞ aircraft

H-51 helicopter

- USE **XH-51 helicopter**

H-53 helicopter

- UF *CH-53 helicopter*
 - HHX helicopter*
 - Sikorsky S-65 helicopter*
- GS passenger aircraft
 - . **H-53 helicopter**
 - Sikorsky aircraft
 - . **H-53 helicopter**
 - transport aircraft
 - . **H-53 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **H-53 helicopter**
- RT ∞ aircraft

H-54 helicopter

- GS V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **H-54 helicopter**
- RT ∞ aircraft

H-56 helicopter

- GS passenger aircraft
 - . **H-56 helicopter**
 - Sikorsky aircraft
 - . **H-56 helicopter**
 - transport aircraft
 - . **H-56 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - .. helicopters
 - ... military helicopters
 - ... **H-56 helicopter**
- RT ∞ aircraft

H-60 Helicopter

- DEF The Black Hawk (Sikorsky) assault helicopter. Used for Black Hawk assault helicopter.
- UF *Black Hawk assault helicopter*
 - Jayhawk helicopter*
- GS Sikorsky aircraft
 - . **H-60 Helicopter**

H-126 aircraft

V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. **H-60 Helicopter**
RT ∞ aircraft
∞ military aircraft

H-126 aircraft

UF *Hunting H-126 aircraft*
GS BAC aircraft
. **H-126 aircraft**
jet aircraft
. **H-126 aircraft**
monoplanes
. **H-126 aircraft**
research vehicles
. research aircraft
. . . **H-126 aircraft**
RT ∞ aircraft
jet flaps

habitability

RT ecology
environmental control
environments
shelters

habitats

SN (LIMITED TO PLANTS AND ANIMALS)
DEF The areas or types of environment in which plants or animals normally occur or live.
GS regions
. **habitats**
RT animals
∞ biology
botany
conservation
Earth resources
ecology
endangered species
environment effects
environments
wildlife

habits

RT learning
psychological factors

habituation (learning)

GS learning
. **habituation (learning)**
RT conditioning (learning)

hadrons

GS particles
. elementary particles
. . . **hadrons**
. . . . baryons
. hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. xi hyperons
. . . . kaons
. . . . meson resonance
. X mesons
. . . . muons
. omega-mesons
. . . . pions
. . . . vector mesons
. rho-mesons
. sigma-mesons
RT charm (particle physics)
flavor (particle physics)
particle decay
partons
quark parton model
vector dominance model

hafnium

GS chemical elements

. **hafnium**
. . . hafnium isotopes
metals
. transition metals
. . . **hafnium**
. . . hafnium isotopes

hafnium alloys

GS alloys
. **hafnium alloys**
RT heat resistant alloys
niobium alloys
tantalum alloys
tungsten alloys
zirconium alloys

hafnium carbides

GS carbon compounds
. carbides
. . . **hafnium carbides**
hafnium compounds
. **hafnium carbides**

hafnium compounds

GS **hafnium compounds**
. hafnium carbides
. hafnium iodides
. hafnium oxides
RT ∞ chemical compounds
∞ Group 4B compounds
∞ metal compounds

hafnium iodides

GS hafnium compounds
. **hafnium iodides**
halogen compounds
. halides
. . . metal halides
. . . . **hafnium iodides**
. . . iodine compounds
. . . iodides
. . . . **hafnium iodides**

hafnium isotopes

GS chemical elements
. hafnium
. . . **hafnium isotopes**
. nuclides
. . . isotopes
. . . . **hafnium isotopes**
metals
. transition metals
. hafnium
. . . . **hafnium isotopes**

hafnium oxides

GS chalcogenides
. oxides
. . . metal oxides
. . . . **hafnium oxides**
hafnium compounds
. **hafnium oxides**

hahnium

(added November 1994)
GS chemical elements
. **hahnium**
RT ∞ elements

hail

DEF Precipitation in the form of spheroidal layered ice pellets that usually fall from cumulonimbus clouds during thunderstorms. The layered structure of hail is produced by successive accretions of clear and frothy ice.

UF *hailstones*
GS precipitation (meteorology)
. **hail**
RT cloud glaciation
graupel
hailstorms
ice formation
storms (meteorology)

thunderstorms

hailstones

USE **hail**

hailstorms

GS storms
. storms (meteorology)
. . . **hailstorms**
RT climatology
graupel
hail
meteorology
precipitation (meteorology)
rainstorms
storm damage
storm enhancement
storm suppression
thunderstorms

hair

GS fibers
. **hair**
RT keratins
skin (anatomy)
wool

hairpin vortices

USE **horseshoe vortices**

Haiti

GS landforms
. islands
. . . West Indies
. . . . **Haiti**
nations
. **Haiti**
RT Caribbean region
Caribbean Sea

HAL/S (language)

DEF Programming language developed for the flight software of the NASA Space Shuttle program.
GS languages
. programming languages
. . . **HAL/S (language)**
RT computer programming
computers

Halden Boiling Water Reactor

UF *Halden reactor*
HBWR reactor
GS nuclear reactors
. liquid cooled reactors
. . . water cooled reactors
. . . . boiling water reactors
. **Halden Boiling Water Reactor**

Halden reactor

USE **Halden Boiling Water Reactor**

Hale-Bopp comet

(added July 1998)
DEF Long-period comet discovered July 23, 1995; designated C/1995 O1.
GS celestial bodies
. comets
. . . **Hale-Bopp comet**
RT Oort cloud

half cones

GS cones
. **half cones**
RT aerodynamic configurations
circular cones
conics
nose cones

half life

DEF The average time required for one half the atoms in a sample of radioactive element to decay.
GS life (durability)
. **half life**
RT decay

- nuclear reactions
 - post-blast nuclear radiation
 - radiative lifetime
 - radioactive age determination
 - radioactive decay
 - radioactivity
 - reaction kinetics
- half planes**
- GS analysis (mathematics)
 - . **half planes**
 - RT boundary value problems
 - coordinates
 - differential equations
 - Green's functions
- half spaces**
- GS analysis (mathematics)
 - . **half spaces**
 - RT boundary value problems
 - coordinates
 - elliptic differential equations
 - fractals
 - Green's functions
- halides**
- GS halogen compounds
 - . **halides**
 - . bromides
 - . ammonium bromides
 - . cesium bromides
 - . chromium bromides
 - . dibromides
 - . hydrobromic acid
 - . hydrobromides
 - . magnesium bromides
 - . potassium bromides
 - . silver bromides
 - . sodium bromides
 - . strontium bromides
 - . chlorides
 - . aluminum chlorides
 - . ammonium chlorides
 - . beryllium chlorides
 - . boron chlorides
 - . cadmium chlorides
 - . calcium chlorides
 - . carbon tetrachloride
 - . copper chlorides
 - . dichlorides
 - . germanium chlorides
 - . hydrochlorides
 - . hydrogen chlorides
 - . hydrochloric acid
 - . iron chlorides
 - . lanthanum chlorides
 - . lead chlorides
 - . lithium chlorides
 - . magnesium chlorides
 - . nitrosyl chlorides
 - . nitroxychlorides
 - . nitril chlorides
 - . phosgene
 - . potassium chlorides
 - . silicon tetrachloride
 - . silver chlorides
 - . sodium chlorides
 - . sulfur chlorides
 - . tetrachlorides
 - . titanium chlorides
 - . tungsten chlorides
 - . zinc chlorides
 - . fluorides
 - . antimony fluorides
 - . barium fluorides
 - . boron fluorides
 - . chlorine fluorides
 - . compound A
 - . cryolite
 - . deuterium fluorides
 - . difluorides
 - . calcium fluorides
 - . fluorspar
 - . hydrofluoric acid
 - . metal fluorides
 - . aluminum fluorides
 - . beryllium fluorides
 - . cadmium fluorides
 - . calcium fluorides
 - . fluorspar
 - . cesium fluorides
 - . chromium fluorides
 - . cobalt fluorides
 - . copper fluorides
 - . lanthanum fluorides
 - . lithium fluorides
 - . magnesium fluorides
 - . nickel fluorides
 - . plutonium fluorides
 - . protactinium fluorides
 - . sodium fluorides
 - . strontium fluorides
 - . thorium fluorides
 - . tungsten fluorides
 - . uranium fluorides
 - . zinc fluorides
 - . nitrogen fluorides
 - . nitril fluorides
 - . oxyfluorides
 - . oxygen fluorides
 - . ozone fluoride
 - . perchloryl fluorides
 - . polyvinyl fluoride
 - . sulfur fluorides
 - . sulfur hexafluoride
 - . technetium fluorides
 - . metal halides
 - . alkali halides
 - . cesium halides
 - . cesium bromides
 - . cesium fluorides
 - . cesium iodides
 - . potassium iodides
 - . sodium bromides
 - . sodium chlorides
 - . sodium fluorides
 - . sodium iodides
 - . aluminum chlorides
 - . barium fluorides
 - . beryllium chlorides
 - . cadmium chlorides
 - . calcium chlorides
 - . chromium bromides
 - . copper chlorides
 - . hafnium iodides
 - . iron chlorides
 - . lanthanum chlorides
 - . lead chlorides
 - . lithium chlorides
 - . magnesium bromides
 - . metal fluorides
 - . aluminum fluorides
 - . beryllium fluorides
 - . cadmium fluorides
 - . calcium fluorides
 - . fluorspar
 - . cesium fluorides
 - . chromium fluorides
 - . cobalt fluorides
 - . copper fluorides
 - . lanthanum fluorides
 - . lithium fluorides
 - . magnesium fluorides
 - . nickel fluorides
 - . plutonium fluorides
 - . protactinium fluorides
 - . sodium fluorides
 - . strontium fluorides
 - . thorium fluorides
 - . tungsten fluorides
 - . uranium fluorides
 - . zinc fluorides
 - . niobium iodides
 - . potassium bromides
 - . potassium chlorides
 - . silver halides
 - . silver bromides
 - . silver chlorides
 - . silver iodides
 - . strontium bromides
 - . technetium fluorides
 - . titanium chlorides
 - . tungsten halides
 - . tungsten chlorides
 - . tungsten fluorides
 - . zinc chlorides
 - . zirconium iodides
 - . oxyhalides
- RT halogens
- molten salts
 - nitrosyls
- halites**
- UF *rock salt*
 - RT molten salts
 - ∞ salts
- Hall accelerators**
- RT ∞ accelerators
 - alpha plasma devices
 - Hall thrusters
 - magnetohydrodynamics
 - plasma physics
- Hall coefficient*
- USE **Hall effect**
- Hall currents*
- USE **electric current**
 - Hall effect**
- Hall effect**
- DEF The electrical polarization of a horizontal conducting sheet of limited extent, when that sheet moves laterally through a magnetic field having a component vertical to the sheet. The Hall effect is important in determining the behavior of the electrical currents generated by winds in the lower atmosphere. Used for Hall coefficient and Hall currents.
 - UF *Hall coefficient*
 - Hall currents*
 - GS galvanomagnetic effects
 - . **Hall effect**
 - . quantum Hall effect
 - RT carrier mobility
 - ∞ effects
 - Hall resistance
 - magnetohydrodynamics
 - mobility
 - Pedersen currents
 - polarization (charge separation)
 - semiconductor devices
 - transport properties
- Hall generators**
- DEF Hall plates, together with leads, and where used, encapsulation and ferrous or non-ferrous backing plates.
 - RT circulators (phase shift circuits)
 - Faraday effect
 - ∞ generators
 - plasma generators
 - signal generators
- Hall resistance**
- (added July 2000)
 - DEF For a current-carrying conductor within a magnetic field, the ratio of the transverse voltage induced by the Hall effect, to the conductor current.
 - GS electrical properties
 - . electrical impedance
 - . electrical resistance
 - . **Hall resistance**
 - impedance
 - . electrical impedance
 - . electrical resistance
 - . **Hall resistance**
 - RT electrical resistivity
 - Hall effect
 - magnetoconductivity
 - quantum Hall effect
 - ∞ resistance
 - transport properties
- Hall thrusters**
- (added June 2000)
 - DEF Gridless ion engines that produce thrust by electrostatically accelerating plasma

Hallam Nuclear Power Facility

ions out of an annular discharge chamber.

- GS engines
 - . rocket engines
 - . . electric rocket engines
 - . . . electrostatic engines
 - ion engines
 - **Hall thrusters**

- RT electric propulsion
 - Hall accelerators
 - plasma engines
 - spacecraft propulsion

Hallam Nuclear Power Facility

- UF *HNPF (Hallam Nuclear Power Facility)*
- GS electric power plants
 - . nuclear power plants
 - . . **Hallam Nuclear Power Facility**
 - nuclear electric power generation
 - . nuclear power plants
 - . . **Hallam Nuclear Power Facility**
- RT ∞ power plants
 - sodium graphite reactors

Halley's comet

DEF A member of the solar system with an orbit and a period of about 76 years. It appeared in 1985-1986.

- GS celestial bodies
 - . comets
 - . . **Halley's comet**

- RT Giotto mission
 - solar system
 - Vega project

hallucinations

- GS psychological effects
 - . illusions
 - . . **hallucinations**
- RT signs and symptoms

Halo Orbit space station

- GS artificial satellites
 - . space stations
 - . . **Halo Orbit space station**
 - stations
 - . space stations
 - . . **Halo Orbit space station**
- RT lunar spacecraft

halocarbons

DEF Compounds consisting of halogen atoms and carbon atoms.

- GS carbon compounds
 - . **halocarbons**
 - . . chlorocarbons
 - . . chlorofluorocarbons
 - . . fluorocarbons
 - . . halon
 - halogen compounds
 - . **halocarbons**
 - . . chlorocarbons
 - . . chlorofluorocarbons
 - . . fluorocarbons
 - . . halon

- RT bromine compounds
 - ∞ chemical compounds
 - chlorine compounds
 - fluorine compounds
 - fluoro compounds
 - iodine compounds

HALOE

USE **Halogen Occultation Experiment**

halogen compounds

- UF *Group 7A compounds*
- GS **halogen compounds**
 - . bromine compounds
 - . . bromates
 - . . bromides
 - . . . ammonium bromides
 - . . . cesium bromides
 - . . . chromium bromides
 - . . . dibromides
 - . . . hydrobromic acid

- . . . hydrobromides
- . . . magnesium bromides
- . . . potassium bromides
- . . . silver bromides
- . . . sodium bromides
- . . . strontium bromides
- . . halon
- . chlorine compounds
- . . chlorates
- . . chlorides
- . . . aluminum chlorides
- . . . ammonium chlorides
- . . . beryllium chlorides
- . . . boron chlorides
- . . . cadmium chlorides
- . . . calcium chlorides
- . . . carbon tetrachloride
- . . . copper chlorides
- . . . dichlorides
- . . . germanium chlorides
- . . . hydrochlorides
- . . . hydrogen chlorides
- . . . hydrochloric acid
- . . . iron chlorides
- . . . lanthanum chlorides
- . . . lead chlorides
- . . . lithium chlorides
- . . . magnesium chlorides
- . . . nitrosyl chlorides
- . . . nitroxychlorides
- . . . nitril chlorides
- . . phosgene
- . . . potassium chlorides
- . . . silicon tetrachloride
- . . . silver chlorides
- . . . sodium chlorides
- . . . sulfur chlorides
- . . tetrachlorides
- . . . titanium chlorides
- . . . tungsten chlorides
- . . . zinc chlorides
- . . chlorine fluorides
- . . chlorine oxides
- . . chlorocarbons
- . . chlorosilanes
- . . DDT
- . . meclizine
- . . perchlorates
- . . . aluminum perchlorates
- . . . ammonium perchlorates
- . . . hydrazine perchlorates
- . . . hydrogen perchlorate
- . . . hydroxylammonium perchlorates
- . . . lithium perchlorates
- . . . magnesium perchlorates
- . . . nitronium perchlorate
- . . . potassium perchlorates
- . . trichloroethylene
- . fluorine compounds
- . . fluorides
- . . . antimony fluorides
- . . . barium fluorides
- . . . boron fluorides
- . . . chlorine fluorides
- . . . compound A
- . . . cryolite
- . . . deuterium fluorides
- . . . difluorides
- calcium fluorides
- fluorspar
- . . . hydrofluoric acid
- . . . metal fluorides
- aluminum fluorides
- beryllium fluorides
- cadmium fluorides
- calcium fluorides
- fluorspar
- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides

- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- . . . nitrogen fluorides
- . . . nitril fluorides
- . . . oxyfluorides
- . . . oxygen fluorides
- . . . ozone fluoride
- . . . perchloryl fluorides
- . . . polyvinyl fluoride
- . . . sulfur fluorides
- sulfur hexafluoride
- . . . technetium fluorides
- . . fluorite
- . . fluoro compounds
- . . . cryolite
- . . . difluoro compounds
- perfluoroalkane
- polytetrafluoroethylene
- teflon (trademark)
- . . . fluorine organic compounds
- fluoroamines
- nitrofluoroamines
- trifluoroamine oxide
- fluorocarbons
- fluorohydrocarbons
- carbon tetrafluoride
- chlorofluoromethane
- polytetrafluoroethylene
- teflon (trademark)
- fluoropolymers
- polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- polyvinyl fluoride
- perfluoroalkane
- perfluoroguanidine
- . . . fluorosilicates
- . . . tetrafluorohydrazine
- . halides
- . . bromides
- . . . ammonium bromides
- . . . cesium bromides
- . . . chromium bromides
- . . . dibromides
- . . . hydrobromic acid
- . . . hydrobromides
- . . . magnesium bromides
- . . . potassium bromides
- . . . silver bromides
- . . . sodium bromides
- . . . strontium bromides
- . . chlorides
- . . . aluminum chlorides
- . . . ammonium chlorides
- . . . beryllium chlorides
- . . . boron chlorides
- . . . cadmium chlorides
- . . . calcium chlorides
- . . . carbon tetrachloride
- . . . copper chlorides
- . . . dichlorides
- . . . germanium chlorides
- . . . hydrochlorides
- . . . hydrogen chlorides
- . . . hydrochloric acid
- . . . iron chlorides
- . . . lanthanum chlorides
- . . . lead chlorides
- . . . lithium chlorides
- . . . magnesium chlorides
- . . . nitrosyl chlorides
- . . . nitroxychlorides
- . . . nitril chlorides
- . . . phosgene
- . . . potassium chlorides
- . . . silicon tetrachloride
- . . . silver chlorides
- . . . sodium chlorides
- . . . sulfur chlorides
- . . . tetrachlorides
- . . . titanium chlorides
- . . . tungsten chlorides
- . . . zinc chlorides

.. fluorides
 ... antimony fluorides
 ... barium fluorides
 ... boron fluorides
 ... chlorine fluorides
 ... compound A
 ... cryolite
 ... deuterium fluorides
 ... difluorides
 ... calcium fluorides
 fluorspar
 ... hydrofluoric acid
 ... metal fluorides
 aluminum fluorides
 beryllium fluorides
 cadmium fluorides
 calcium fluorides
 fluorspar
 cesium fluorides
 chromium fluorides
 cobalt fluorides
 copper fluorides
 lanthanum fluorides
 lithium fluorides
 magnesium fluorides
 nickel fluorides
 plutonium fluorides
 protactinium fluorides
 sodium fluorides
 strontium fluorides
 thorium fluorides
 tungsten fluorides
 uranium fluorides
 zinc fluorides
 ... nitrogen fluorides
 ... nitryl fluorides
 ... oxyfluorides
 ... oxygen fluorides
 ... ozone fluoride
 ... perchloryl fluorides
 ... polyvinyl fluoride
 ... sulfur fluorides
 sulfur hexafluoride
 ... technetium fluorides
 .. metal halides
 .. alkali halides
 ... cesium halides
 cesium bromides
 cesium fluorides
 cesium iodides
 potassium iodides
 sodium bromides
 sodium chlorides
 sodium fluorides
 sodium iodides
 ... aluminum chlorides
 ... barium fluorides
 ... beryllium chlorides
 ... cadmium chlorides
 ... calcium chlorides
 ... chromium bromides
 ... copper chlorides
 ... hafnium iodides
 ... iron chlorides
 ... lanthanum chlorides
 ... lead chlorides
 ... lithium chlorides
 ... magnesium bromides
 ... metal fluorides
 aluminum fluorides
 beryllium fluorides
 cadmium fluorides
 calcium fluorides
 fluorspar
 cesium fluorides
 chromium fluorides
 cobalt fluorides
 copper fluorides
 lanthanum fluorides
 lithium fluorides
 magnesium fluorides
 nickel fluorides
 plutonium fluorides
 protactinium fluorides
 sodium fluorides
 strontium fluorides
 thorium fluorides

... tungsten fluorides
 ... uranium fluorides
 ... zinc fluorides
 ... niobium iodides
 ... potassium bromides
 ... potassium chlorides
 ... silver halides
 ... silver bromides
 ... silver chlorides
 ... silver iodides
 ... strontium bromides
 ... technetium fluorides
 ... titanium chlorides
 ... tungsten halides
 ... tungsten chlorides
 ... tungsten fluorides
 ... zinc chlorides
 ... zirconium iodides
 .. oxyhalides
 .. halocarbons
 .. chlorocarbons
 .. chlorofluorocarbons
 .. fluorocarbons
 .. halon
 .. iodine compounds
 .. iodates
 .. lithium iodates
 .. iodides
 .. cesium iodides
 .. gallamine triethiodide
 .. hafnium iodides
 .. niobium iodides
 .. potassium iodides
 .. silver iodides
 .. sodium iodides
 .. zirconium iodides
 .. iodoacetic acid
 .. nitrosyls
 .. nitrosyl chlorides
 RT ∞ chemical compounds

Halogen Occultation Experiment

DEF Shuttle experiment to provide global stratospheric vertical concentration profiles of key chemical species involved in the catalytic destruction of ozone due to chlorine compounds. Used for HALOE.

UF HALOE
GS payloads
.. Space Shuttle payloads

RT **Halogen Occultation Experiment**
ozone

halogenation

GS chemical reactions
.. **halogenation**
.. bromination
.. chlorination
.. fluorination
RT defluorination
halogens

halogens

GS chemical elements
.. **halogens**
.. astatine
.. bromine
... bromine isotopes
.. chlorine
.. fluorine
... fluorine isotopes
.. liquid fluorine
.. iodine
... iodine isotopes
... iodine 125
... iodine 131
... iodine 132
RT excimer lasers
halides
halogenation

halon

(added January 2000)

DEF A bromofluorocarbon compound that was widely used as an agent for fire suppression and explosion protection. After being recognized

as an ozone-depleting substance, the U. S. production and import of halons was banned in 1994.

GS carbon compounds
.. halocarbons
.. **halon**
halogen compounds
.. bromine compounds
.. **halon**
.. halocarbons
.. **halon**
RT fire extinguishers
flame retardants
fluorocarbons

halophiles

RT agriculture
plants (botany)

halos

GS scattering
.. wave scattering
.. electromagnetic scattering
.. light scattering
... **halos**
transmission
.. electromagnetic wave transmission
.. light transmission
.. light scattering
... **halos**
.. wave propagation
.. light scattering
... **halos**
RT astronomy
atmospheric scattering
coronas
galactic halos
haze
images
rainbows

Halphen method

RT ∞ methodology

Hamburger aircraft

GS **Hamburger aircraft**
.. C-160 aircraft
.. HFB-320 aircraft
RT ∞ aircraft

Hamburger HFB-320 aircraft

USE **HFB-320 aircraft**

Hamiltonian functions

GS functions (mathematics)
.. **Hamiltonian functions**
RT classical mechanics
cluster variation method
∞ dynamics
Hamilton-Jacobi equation
quantum theory
von Zeipel method

Hamilton-Jacobi equation

RT ∞ equations
equations of motion
Hamiltonian functions
relativistic particles

hammerhead configuration

RT forebodies
missile configurations

hammers

GS tools
.. **hammers**
.. electromagnetic hammers
RT impactors
presses
rams (presses)

hamsters

GS animals
.. vertebrates
.. mammals
... rodents

hand (anatomy)

. . . . hamsters

hand (anatomy)

- GS anatomy
- . limbs (anatomy)
- . . **hand (anatomy)**
- . . . fingers
- appendages
- . **hand (anatomy)**
- . . fingers
- RT wrist

handbooks

- GS documents
- . **handbooks**
- . . user manuals (computer programs)
- RT bibliographies
- directories
- indexes (documentation)
- manuals
- subjects
- textbooks
- training analysis

handedness

- RT chirality
- lateral stability

handicaps

USE **disabilities**

handles

- RT knobs
- levers
- manual control

Handley Page aircraft

- GS **Handley Page aircraft**
- . HP-115 aircraft
- . Victor MK-1 aircraft
- RT ∞ aircraft

Handley Page HP-115 aircraft

USE **HP-115 aircraft**

handling equipment

- GS **handling equipment**
- . cranes
- . . gantry cranes
- RT crawler tractors
- ∞ equipment
- ground support equipment
- harbors
- locomotives
- propellant storage
- ∞ storage
- tractors
- transportation

handling qualities

USE **controllability**

hands (robotics)

USE **end effectors**

handwriting

- GS **handwriting**
- . graphology
- RT character recognition
- orthography

Hanford reactors

- GS nuclear reactors
- . **Hanford reactors**
- RT reactor design
- reactor physics
- reactor technology

hang gliders

DEF Ultralight, unpowered aircraft in which the pilot controls the flight attitude and glide path by shifting his position on a suspended seat (swing seat).

- GS gliders
- . **hang gliders**

- RT ∞ aircraft
- flexible wings
- free flight
- man powered aircraft
- parawings
- sailwings
- soaring
- ultralight aircraft
- ∞ winged vehicles

hangars

- (added December 1990)
- UF *aircraft hangars*
- RT airfield surface movements
- airports
- buildings
- ground handling
- ground stations
- heliports
- military air facilities

Hankel functions

- GS analysis (mathematics)
- . complex variables
- . . Bessel functions
- . . . **Hankel functions**
- . real variables
- . . Bessel functions
- . . . **Hankel functions**
- functions (mathematics)
- . **Hankel functions**
- RT boundary value problems
- differential equations
- orthogonal functions

Hansen lunar theory

- RT Earth orbits
- orbital mechanics
- perturbation theory
- ∞ theories

haploscopes

- GS measuring instruments
- . optical measuring instruments
- . . **haploscopes**
- optical equipment
- . optical measuring instruments
- . . **haploscopes**
- RT astigmatism
- binocular vision
- eye examinations
- ∞ instruments
- optometry

harbors

DEF Small bays or sheltered parts of seas, lakes, or other large bodies of water, usually well protected either naturally or artificially against high waves and strong currents. Harbors are furnished deep enough to provide safe anchorage for ships; especially such places in which port facilities are furnished.

- GS waterways
- . **harbors**
- . . artificial harbors
- RT boats
- breakwaters
- cargo
- dredging
- estuaries
- freighters
- handling equipment
- marine transportation
- oceanography
- ∞ ports
- regional planning
- ship terminals
- ships
- tanker ships
- terminal facilities
- traffic
- ∞ travel
- water vehicles

wharves

hard coal

USE **anthracite**

hard landing

DEF An impact landing of a spacecraft on the surface of a planet or natural satellite destroying all equipment except possibly a very rugged package.

- GS landing
- . **hard landing**
- RT aircraft landing
- crash landing
- emergency landing
- lunar landing
- planetary landing
- soft landing
- spacecraft landing
- water landing

hardeners

- RT alloys
- hardening (materials)
- heat treatment

∞ hardening

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT hardening (materials)
- hardening (systems)

hardening (materials)

- UF *metal hardening*
- GS **hardening (materials)**
- . carburizing
- . cold hardening
- . hot pressing
- . . hot isostatic pressing
- . nitriding
- . precipitation hardening
- . . maraging
- . pulse heating
- . shot peening
- . siliconizing
- . work hardening
- . . strain hardening
- RT aging (materials)
- aging (metallurgy)
- annealing
- coagulation
- dispersion strengthening
- hardeners
- ∞ hardening
- heat treatment
- martensite
- metal working
- ∞ metallurgy
- microstructure
- normalizing (heat treatment)
- oxide dispersion strengthening
- peening
- quenching (cooling)
- ∞ setting
- softening
- tempering

hardening (systems)

DEF Techniques for decreasing the susceptibility or vulnerability of weapon systems and components.

- GS **hardening (systems)**
- . radiation hardening
- RT ∞ hardening
- missile defense
- nuclear warfare
- ∞ systems

hardness

DEF Resistance of metal to plastic deformation usually by indentation. However, the term may also refer to stiffness or temper, or to resistance to scratching, abrasion, or cutting.

- GS mechanical properties
- . **hardness**
- . . microhardness

- . . . Knoop hardness
 . . . Rockwell hardness
 . . . Vickers hardness
 RT abrasion resistance
 brittle materials
 brittleness
 Charpy impact test
 cold hardening
 ductility
 fatigue (materials)
 fracture strength
 impact strength
 indentation
 notch tests
 plastic properties
 softness
 surface properties
 temper (metallurgy)
 toughness
 wear
 wear resistance
- hardness tests**
- RT compression tests
 high temperature tests
 impact tests
 Knoop hardness
 low temperature tests
 ∞ materials tests
 nanoindentation
 nondestructive tests
 static tests
 ∞ tests
 Vickers hardness
 wear tests
- ∞ **hardware**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Physical equipment as contrasted to ideas or design that may exist only on paper.
- RT computers
 electronic modules
 ∞ equipment
 evolvable hardware
 firmware
 fixtures
 reconfigurable hardware
 tools
- hardware description languages**
(added January 1994)
- DEF Formal languages and notations used in the specification, design, simulation, and documentation of computer hardware systems and their component circuits.
- UF HDL (computers)
 VHDL (computers)
- GS languages
 . **hardware description languages**
- RT computer design
 computer systems simulation
 formalism
 integrated circuits
 logic design
 very large scale integration
- hardware utilization lists**
- UF HUL
- GS lists
 . **hardware utilization lists**
- RT ∞ catalogs
 documents
- hardware-in-the-loop simulation**
(added February 1999)
- UF hardware-in-the-loop tests
- GS simulation
 . **hardware-in-the-loop simulation**
- RT computerized simulation
 control simulation
 performance tests
- systems simulation
- hardware-in-the-loop tests*
(added February 1999)
- USE **hardware-in-the-loop simulation**
- Harleton meteorite**
- GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . chondrites
 **Harleton meteorite**
- RT iron meteorites
- harmonic analysis**
- DEF A statistical method for determining the amplitude and period of certain harmonic or wave components in a set of data with the aid of Fourier series.
- GS analysis (mathematics)
 . functional analysis
 . . **harmonic analysis**
 . . . tesseral harmonics
 . . . zonal harmonics
- RT Banach space
 form factors
 Fourier analysis
 frequency analyzers
 microwave resonance
- harmonic control**
- RT ∞ control
 harmonic oscillation
 harmonics
 helicopter control
 rotary wings
 vibration damping
- harmonic excitation**
- GS excitation
 . wave excitation
 . . **harmonic excitation**
 harmonics
 . **harmonic excitation**
- RT acoustics
 Fourier analysis
 simple harmonic motion
- harmonic functions**
- DEF Any solution of the Laplace equations.
- GS analysis (mathematics)
 . complex variables
 . . **harmonic functions**
 functions (mathematics)
 . **harmonic functions**
- RT Airy function
 Fourier analysis
 Laplace equation
 maximum principle
- harmonic generations**
- GS harmonics
 . **harmonic generations**
- RT acoustics
 carrier frequencies
 Fourier analysis
 phase matching
 wave generation
- harmonic generators**
- RT comparators
 frequency converters
 ∞ generators
 harmonics
 oscillators
 subharmonic generators
- harmonic motion**
- DEF The projection on a diameter of the circle of such motion.
- GS **harmonic motion**
 . simple harmonic motion
- RT group velocity
- ∞ motion
- harmonic oscillation**
- GS harmonics
 . **harmonic oscillation**
 oscillations
 . **harmonic oscillation**
- RT acoustics
 Fourier analysis
 harmonic control
 transverse oscillation
- harmonic oscillators**
- GS oscillators
 . **harmonic oscillators**
- RT harmonics
 mechanical oscillators
 subharmonic generators
- harmonic radiation**
- RT electromagnetic radiation
 ∞ radiation
- harmonics**
- DEF Eigenfrequency oscillations excited in a vibrating system. Used for overtones.
- UF overtones
- GS **harmonics**
 . harmonic excitation
 . harmonic generations
 . harmonic oscillation
 . simple harmonic motion
 . spherical harmonics
 . superharmonics
 . tesseral harmonics
 . zonal harmonics
- RT acoustics
 cycles
 Fourier analysis
 frequencies
 harmonic control
 harmonic generators
 harmonic oscillators
 nodes (standing waves)
 resonant frequencies
 sound-sound interactions
 standing waves
 subaudible frequencies
 subharmonic generators
 vibration
 wavelengths
- harnesses**
- RT couches
 safety devices
 seat belts
 seats
 transmission lines
- Harpoon missile**
- GS missiles
 . air to surface missiles
 . . **Harpoon missile**
- RT surface to surface missiles
 weapon systems
- Harrier aircraft**
(added February 1993)
- UF AV-8A aircraft
 AV-8B aircraft
 YAV-8B aircraft
- GS attack aircraft
 . fighter aircraft
 . . **Harrier aircraft**
 Hawker Siddeley aircraft
 . **Harrier aircraft**
- RT ∞ aircraft
 Buccaneer aircraft
 ∞ military aircraft
 P-1127 aircraft
 Saab 37 aircraft
 Vampire MK 35 aircraft
 Vulcan aircraft
- Hartmann flow**
- GS fluid flow

Hartmann number

- . laminar flow
- . . **Hartmann flow**
- . steady flow
- . . **Hartmann flow**
- RT Couette flow
- magnetohydrodynamic flow
- magnetohydrodynamics
- two dimensional flow

Hartmann number

- GS dimensionless numbers
- . **Hartmann number**
- ratios
- . **Hartmann number**
- RT magnetohydrodynamics
- viscous drag

Hartmann-Sprenger tubes

(added August 2003)

DEF A passive, pulsed-flow device in which under-expanded, sonic or supersonic jet flows impinge on a tube closed on one end, thus producing gas dynamic oscillations and converting a steady flow into a continuous source of pulsed flow.

- RT pulse generators
- ∞ test equipment

Hartree approximation

UF *Hartree-Appleton approximation*
Hartree-Fock approximation

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **Hartree approximation**
- RT atomic structure
- many body problem
- perturbation theory
- self consistent fields
- wave functions

Hartree-Appleton approximation
USE **Hartree approximation**

Hartree-Fock approximation
USE **Hartree approximation**

Hartree-Fock-Slater method

DEF A refined approximation method for the calculation from wave function of electron total energies, kinetic energies, etc. , for chemical elements.

- RT atomic physics
- electron energy
- ∞ methodology
- Slater orbitals

Harvard Radio Meteor Project

- GS programs
- . projects
- . . **Harvard Radio Meteor Project**
- RT radio echoes

hassium

(added May 1998)

- GS chemical elements
- . **hassium**
- RT bohrium
- meitnerium

Hastelloy (trademark)

- GS alloys
- . nickel alloys
- . . **Hastelloy (trademark)**
- RT iron alloys
- molybdenum alloys

hatches

- RT air locks
- doors
- egress
- gates (openings)
- ingress (spacecraft passageway)

hauling

- RT cargo

- delivery
- materials handling
- packaging
- transportation
- transportation energy
- trucks

Hawaii

- GS landforms
- . islands
- . . **Hawaii**
- nations
- . United States
- . . **Hawaii**

Hawk missile

- GS missiles
- . surface to air missiles
- . . **Hawk missile**
- RT solid propellant rocket engines

Hawker Hunter aircraft

USE **F-2 aircraft**

Hawker P-1127 aircraft

USE **P-1127 aircraft**

Hawker P-1154 aircraft

USE **P-1154 aircraft**

Hawker Siddeley aircraft

- GS **Hawker Siddeley aircraft**
- . Argosy MK-1 aircraft
- . AVRO 707 aircraft
- . Buccaneer aircraft
- . Comet 4 aircraft
- . DH 112 aircraft
- . DH 115 aircraft
- . DH 121 aircraft
- . DH 125 aircraft
- . F-2 aircraft
- . GA-5 aircraft
- . Harrier aircraft
- . HS-748 aircraft
- . HS-801 aircraft
- . P-1127 aircraft
- . P-1154 aircraft
- . Shackleton bomber
- . Vampire MK 35 aircraft
- . Vulcan aircraft
- RT ∞ aircraft

Hawkeye 1 satellite

USE **Explorer 52 satellite**

Hawkeye aircraft

USE **E-2 aircraft**

Hawkeye satellites

- GS artificial satellites
- . scientific satellites
- . . **Hawkeye satellites**

hay

- GS farm crops
- . **hay**
- plants (botany)
- . grasses
- . . **hay**
- RT agriculture
- botany
- Earth resources
- farmlands
- ∞ food
- grasslands
- leguminous plants

Haynes Stellite

USE **Stellite (trademark)**

HAZ (metallurgy)

USE **heat affected zone**

hazardous material disposal (in space)

DEF The disposal in space of hazardous

material. When radioactive materials are involved, the expected lifetime of orbit exceeds the lifetime of the radioactivity.

- GS disposal
- . waste disposal
- . . **hazardous material disposal (in space)**
- management
- . waste management
- . . waste disposal
- . . . **hazardous material disposal (in space)**
- RT aerospace environments
- public health
- radioactive wastes
- toxicity and safety hazard

hazardous materials

(added March 1997)

- GS **hazardous materials**
- . hazardous wastes
- RT biological hazards
- carcinogens
- contaminants
- explosives
- hazards
- ∞ materials
- poisons
- radiation hazards
- toxic hazards
- toxins and antitoxins
- waste disposal

hazardous wastes

(added March 1997)

- GS hazardous materials
- . **hazardous wastes**
- wastes
- . **hazardous wastes**
- RT biological hazards
- contaminants
- environmental cleanup
- hazards
- radiation hazards
- toxic hazards
- waste disposal

hazards

- UF *danger*
- noise hazards*
- GS **hazards**
- . aircraft hazards
- . flight hazards
- . . meteoroid hazards
- . biological hazards
- . operational hazards
- . radiation hazards
- . toxic hazards
- RT accident prevention
- accidents
- aircraft spin
- avoidance
- crash injuries
- ∞ detectors
- explosions
- fires
- flammable gases
- hazardous materials
- hazardous wastes
- incompatibility
- injuries
- low visibility
- noise tolerance
- occupational diseases
- protection
- risk
- sabotage
- safety
- safety devices
- safety factors
- safety management
- spacecraft breakup
- spontaneous combustion
- toxicology

warning systems

haze

DEF Fine particles of dust, salt, or water dispersed through a part of the atmosphere, diminishing transparency of the air, causing colors to assume a characteristic subdued opalescent appearance, and reducing the horizontal visibility to more than one, but less than two kilometers. The obscuration, or lack of transparency, of the atmosphere near the Earth's surface, is often caused by haze or by heat refraction (shimmering).

RT air pollution
atmospheric optics
clarity
fog
halos
light transmission
low visibility
mist
opacity
optical properties
transparence
turbidity
visibility

haze detection

GS detection
. **haze detection**
RT fog
forest fire detection
fumes
gas detectors
mist
remote sensors
smoke
vapors

HBNQ

USE **nitroguanidine**

HBWR reactor

USE **Halden Boiling Water Reactor**

HC-1 helicopter

USE **CH-47 helicopter**

HC-3 helicopter

UF *Omnipol HC-3 helicopter*
GS general aviation aircraft
. **HC-3 helicopter**
transport aircraft
. **HC-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **HC-3 helicopter**
RT passenger aircraft

HCL argon lasers

DEF Gas lasers in which the active material is gaseous hydrogen chloride and argon.

GS stimulated emission devices
. lasers
. . . chemical lasers
. . . . HCL lasers
. . . . **HCL argon lasers**
. . . gas lasers
. . . . HCL lasers
. . . . **HCL argon lasers**

HCL lasers

DEF Gas lasers in which the active material is gaseous hydrogen chloride. Used for hydrogen chloride lasers.

UF *hydrogen chloride lasers*
GS stimulated emission devices
. lasers
. . . chemical lasers
. . . . **HCL lasers**
. . . . HCL argon lasers
. . . gas lasers
. . . **HCL lasers**

. . . . HCL argon lasers

HCMM

USE **Heat Capacity Mapping Mission**

HCN lasers

UF *hydrogen cyanide lasers*
GS stimulated emission devices
. lasers
. . . gas lasers
. . . . **HCN lasers**
RT chemical lasers
coherent light
hydrocyanic acid
light amplifiers
light sources
optical pumping
stimulated emission

HD-1 ground effect machines

USE **hovercraft ground effect machines**

HDL (computers)

USE **hardware description languages**

HDTV

USE **high definition television**

head (anatomy)

GS anatomy
. **head (anatomy)**
. . . skull
. . . . cranium
. intracranial cavity
. . . . mastoids
RT brain
chin
eye (anatomy)
face (anatomy)
forehead
lips (anatomy)
nose (anatomy)
sense organs

head (fluid mechanics)

GS fluid flow
. **head (fluid mechanics)**
. . . head flow
. . . pressure heads
RT elevation
geopotential height
hydrostatic pressure
hydrostatics
liquid flow
pressure
scale height

head (pressure)

USE **pressure heads**

head down tilt

GS posture
. **head down tilt**
RT aerospace medicine
bed rest
bioastronautics
body sway test
head up tilt
hemodynamic responses
hindlimb suspension
hypokinesia
orthostatic tolerance
physiological effects
vestibular tests
weightlessness simulation

head flow

GS fluid flow
. **head (fluid mechanics)**
. . . **head flow**
RT base flow
Blasius flow
inlet flow
liquid flow

∞ pressure drop

head movement

RT acceleration stresses (physiology)
aerospace medicine
eye movements
∞ motion
motion sickness
vestibular tests

head up tilt

(added March 1998)
DEF Body posture while lying on a tilt table with the head higher than the rest of the body.
UF *HUT (physiology)*
GS posture
. **head up tilt**
RT aerospace medicine
bed rest
bioastronautics
cardiovascular system
gravitational physiology
head down tilt
hemodynamic responses
hindlimb suspension
lower body negative pressure
orthostatic tolerance
physiological responses
supine position
weightlessness simulation

headache

UF *cephalalgia*
GS diseases
. **headache**
signs and symptoms
. **headache**

∞ **headers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT beams (supports)
chassis
hermetic seals
pipes (tubes)
supports
∞ terminals

headsets

USE **earphones**

head-up displays

GS display devices
. **head-up displays**
RT avionics
consoles
flight instruments
image tubes
indicating instruments
landing aids
navigation aids
position indicators
spacecraft position indicators
warning systems

healing

GS **healing**
. wound healing
RT clinical medicine
cures
therapy

health

GS **health**
. health physics
. . . public health
. . . mental health
RT chronic conditions
clinical medicine
hygiene
oral hygiene
psychotherapy

health physics

sanitation

health and usage monitoring systems
(added April 2001)
USE **systems health monitoring**

health physics

GS biophysics
 . **health physics**
 . . . public health
 health
 . **health physics**
 . . . public health

RT fluence
 industrial safety
 nuclear medicine
 nuclear physics
 nuclear radiation
 occupational diseases

∞ physics
 radiation detectors
 radiation dosage
 radiation effects
 radiation hazards
 radiation injuries
 radiation measuring instruments
 radiation protection
 radiation sickness
 radiobiology
 safety factors

∞ science

Health Physics Research Reactor

UF *HPRR*

GS nuclear reactors
 . nuclear research and test reactors
 . . **Health Physics Research Reactor**

RT ∞ physics

Health-Education Telecommunications exp
USE **HET experiment**

HEAO

UF *High Energy Astronomy Observatories*

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **HEAO**
 HEAO 1
 HEAO 2
 HEAO 3
 HEAO 4
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **HEAO**
 HEAO 1
 HEAO 2
 HEAO 3
 HEAO 4

RT OAO

HEAO 1

DEF The first of three NASA High Energy Astronomy Observatories launched during 1977 for the study of cosmic rays and Earth's magnetic field to study the x ray and gamma ray sky. Used for HEAO A, High Energy Astronomy Observatory A, and High Energy Astronomy Observatory 1.

UF *HEAO A*
High Energy Astronomy Observatory 1
High Energy Astronomy Observatory A

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 1**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO

. . . . **HEAO 1**
unmanned spacecraft
 . **HEAO 1**
RT OAO

HEAO 2

DEF The second of three NASA High Energy Astronomy Observatories. It was launched during 1978 for the study of specific x ray objects, quasars, x ray pulsars, and candidate black holes. Used for Einstein Observatory, HEAO B, High Energy Astronomy Observatory B, and High Energy Astronomy Observatory 2.

UF *Einstein Observatory*
HEAO B
High Energy Astronomy Observatory 2
High Energy Astronomy Observatory B

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 2**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO
 **HEAO 2**
 unmanned spacecraft
 . **HEAO 2**
RT OAO

HEAO 3

DEF The third of four NASA High Energy Astronomy Observatories. It was launched during 1979 for the study of cosmic rays and elemental and isotropic composition as a corollary to a search of narrow gamma ray lines. Used for HEAO C, High Energy Astronomy Observatory C, and High Energy Astronomy Observatory 3.

UF *HEAO C*
High Energy Astronomy Observatory 3
High Energy Astronomy Observatory C

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 3**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO
 **HEAO 3**
 unmanned spacecraft
 . **HEAO 3**
RT OAO

HEAO 4

(added May 1997)

UF *HEAO D*
High Energy Astronomy Observatory 4
High Energy Astronomy Observatory D

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 4**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO
 **HEAO 4**

RT gamma ray astronomy

x ray astronomy

HEAO A
USE **HEAO 1**

HEAO B
USE **HEAO 2**

HEAO C
USE **HEAO 3**

HEAO D
(added May 1997)
USE **HEAO 4**

hearing

GS **hearing**
 . binaural hearing

RT audiology
 audiometry
 auditory fatigue
 auditory tasks
 ear
 loudness
 stereophonics
 thresholds (perception)

hearing loss
USE **auditory defects**

heart

GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . **heart**
 cardiac auricles
 cardiac ventricles
 epicardium
 myocardium

RT aorta
 artificial cardiac pacemaker
 artificial heart valves
 blood
 blood pumps
 cardiograms
 cardiography
 cardiology
 cardiotachometers
 coronary circulation
 diastole
 muscles
 phonocardiography

heart diseases

GS diseases
 . **heart diseases**
 . . angina pectoris
 . . coronary artery disease
 . . infarction
 . . . myocardial infarction

RT bradycardia
 cardiography
 cardiology
 cardiovascular system
 echocardiography
 electrocardiography
 fat embolisms
 fibrillation
 His bundle
 phonocardiography

heart function

GS **heart function**
 . diastole
 . fibrillation
 . systole

RT angina pectoris
 blood circulation
 blood pressure
 cardiac output
 cardiography
 cardiology
 carotid sinus reflex
 cyanosis
 echocardiography
 heart minute volume
 heart rate

- hemodynamics
His bundle
physiology
stroke volume
- heart implantation**
GS implantation
 . **heart implantation**
RT artificial heart valves
 biotechnology
 blood circulation
 pulmonary circulation
 surgery
 transplantation
- heart minute volume**
GS output
 . cardiac output
 . . **heart minute volume**
RT heart function
 spirometers
- heart rate**
UF *pulse (cardiovascular)*
GS rates (per time)
 . **heart rate**
 . . arrhythmia
 . . bradycardia
 . . tachycardia
RT angina pectoris
 baroreflexes
 biofeedback
 biomedical data
 cardiac output
 cardiology
 diastole
 epinephrine
 heart function
 Hering-Breuer reflex
 sphygmography
 stroke volume
 systole
- heart valves**
GS valves
 . **heart valves**
 . . artificial heart valves
RT coronary circulation
- hearths**
RT furnaces
 refractories
- heat**
DEF Energy transferred by a thermal process.
GS **heat**
 . dry heat
 . enthalpy
 . . Gibbs free energy
 . . heat of dissociation
 . . heat of formation
 . . heat of solution
 . . latent heat
 . . . heat of fusion
 . . . heat of vaporization
 . heat of combustion
 . nuclear heat
 . process heat
 . specific heat
RT activation energy
 ∞ energy
 entropy
 heating
 heating equipment
 infrared radiation
 temperature
 thermal energy
 thermal insulation
 thermal radiation
 thermochemistry
 thermodynamic properties
 thermodynamics
- work
- heat acclimatization**
GS adaptation
 . acclimatization
 . . **heat acclimatization**
RT body temperature
 cold acclimatization
 high temperature environments
 human tolerances
 perspiration
 physiological effects
- heat affected zone**
DEF That portion of the base metal, the structure or properties of which have been altered by the heat of welding or gas-cutting operation. Used for HAZ (metallurgy).
UF *HAZ (metallurgy)*
RT arc welding
 gas tungsten arc welding
 heat treatment
 metal bonding
 ∞ metallurgy
 metal-metal bonding
 soldering
 temperature dependence
 temperature effects
 thermomechanical treatment
 weldability
 welding
- heat balance**
DEF The equilibrium which exists on the average between the radiation received by a planet and its atmosphere from the sun and that emitted by the planet and the atmosphere. The equilibrium which is known to exist when all sources of heat gain and loss for a given region of body are accounted for. In general, this balance includes advective or evaporative terms as well as a radiation term.
GS balance
 . **heat balance**
RT atmospheric heat budget
 boilers
 combustion
 material balance
 pyrometallurgy
 thermochemical properties
 thermochemistry
 thermodynamic properties
- heat budget**
DEF The accounting for the total amount of heat received and lost by a particular system.
GS energy budgets
 . **heat budget**
 . . atmospheric heat budget
RT ∞ budgets
 Earth radiation budget
 specific heat
- heat capacity*
USE **specific heat**
- Heat Capacity Mapping Mission**
UF *HCMM*
RT Applications Explorer Satellites
 geography
 mapping
 ∞ missions
 planetary mapping
 thermal mapping
- heat conduction*
USE **conductive heat transfer**
- heat content*
USE **enthalpy**
- heat dissipation*
USE **cooling**
- heat dissipation chilling*
USE **cooling**
- heat effects*
USE **temperature effects**
- heat engines**
(added September 1992)
- RT ceramics
 energy technology
 engines
 thermodynamic cycles
- heat equations*
USE **thermodynamics**
- heat exchangers**
DEF Devices for transferring heat from one fluid to another without intermixing the fluids, as a regenerator and, an apparatus for cooling or heating the air in a wind tunnel.
GS **heat exchangers**
 . tube heat exchangers
RT condensers (liquefiers)
 coolants
 cooling
 cooling fins
 cooling systems
 counterflow
 evaporators
 ∞ exchangers
 finned bodies
 gas cooling
 geothermal energy extraction
 heating
 heating equipment
 regenerative cooling
 regenerators
 SNAP
 SNAP 1
 SNAP 2
 SNAP 8
 SNAP 10A
 space cooling (buildings)
 space power reactors
 space power unit reactors
 waste heat
 water heating
- heat flow*
USE **heat transmission**
- heat flux**
SN (LIMITED TO HEAT ENERGY TRANSMISSION RATE)
DEF The thermal intensity indicated by the amount of energy transmitted per unit area.
GS rates (per time)
 . flux (rate)
 . . **heat flux**
RT flux density
 solar flux
- heat gain*
USE **heating**
- heat generation**
SN (EXCLUDES BIOLOGICAL PRODUCTION OF HEAT)
RT cogeneration
 combustion
 direct power generators
 ∞ generation
 heating
 heating equipment
 process heat
 solid propellant combustion
- heat islands**
RT cities
 climatology
 urban planning
 weather modification
- heat measurement**
UF *calorimetry*
RT bolometers
 bomb calorimeters
 calorimeters
 drop calorimeters
 enthalpy
 flame calorimeters
 ∞ measurement

heat of combustion

shell anodes

heat of combustion

UF *combustion heat*
GS chemical properties
. thermochemical properties
. . **heat of combustion**
heat
. **heat of combustion**
thermodynamic properties
. thermochemical properties
. . **heat of combustion**
RT combustion physics
guns (ordnance)

heat of dissociation

GS chemical properties
. thermochemical properties
. . **heat of dissociation**
heat
. enthalpy
. . **heat of dissociation**
thermodynamic properties
. enthalpy
. . **heat of dissociation**
. thermochemical properties
. . **heat of dissociation**
RT chemical equilibrium
dissociation
∞ equilibrium
reaction kinetics
thermal dissociation
thermochemistry
thermodynamic equilibrium

heat of formation

UF *formation heat*
GS chemical properties
. thermochemical properties
. . **heat of formation**
heat
. enthalpy
. . **heat of formation**
thermodynamic properties
. enthalpy
. . **heat of formation**
. thermochemical properties
. . **heat of formation**

heat of fusion

DEF The increase in enthalpy accompanying the conversion of one mole, or a unit mass, of a solid to a liquid at its melting point at constant pressure and temperature. Used for latent heat of fusion.

UF *fusion heat*
latent heat of fusion
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of fusion**
heat
. enthalpy
. . latent heat
. . . **heat of fusion**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of fusion**
. thermochemical properties
. . latent heat
. . . **heat of fusion**
. thermophysical properties
. . latent heat
. . . **heat of fusion**
RT fusion (melting)
melting
phase change materials
phase diagrams
phase transformations
specific heat
thermal energy
thermochemistry
thermodynamics

transition temperature

heat of solution

GS chemical properties
. thermochemical properties
. . **heat of solution**
heat
. enthalpy
. . **heat of solution**
thermodynamic properties
. enthalpy
. . **heat of solution**
. thermochemical properties
. . **heat of solution**
. thermophysical properties
. . **heat of solution**
RT molecular energy levels
thermal energy
thermochemistry
thermodynamics

heat of vaporization

UF *vaporization heat*
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
heat
. enthalpy
. . latent heat
. . . **heat of vaporization**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of vaporization**
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
. thermophysical properties
. . latent heat
. . . **heat of vaporization**
RT vaporizing

heat pipes

SN (EXCLUDES PIPES AND TUBES USED FOR THE TRANSMISSION OF HEATED LIQUIDS OR GASES)
RT geothermal energy utilization
spacecraft temperature

heat pumps

RT air conditioning
air conditioning equipment
condensers (liquefiers)
cooling systems
geothermal energy extraction
heating equipment
pumps
refrigerating machinery
residential energy
space cooling (buildings)
thermoelectric cooling
waste heat

heat radiators

UF *condenser radiators*
heat rejection devices
GS **heat radiators**
. spacecraft radiators
RT black body radiation
cooling
cooling fins
cooling systems
heating equipment
∞ insulated structures
radiative heat transfer
∞ radiators
Stefan-Boltzmann law

heat regulation

USE **temperature control**

heat rejection devices

USE **heat radiators**

heat resistance

USE **thermal resistance**

heat resistant alloys

DEF Alloys developed for very high tem-

perature service where relatively high stresses (tensile, thermal, vibratory, and shock) are encountered and where oxidation resistance is frequently required. Used for high temperature alloys and superalloys.

UF *high temperature alloys*
superalloys
GS alloys
. **heat resistant alloys**
. . nimonic alloys
. . . refractory metal alloys
. . . . molybdenum alloys
. Rene 41
. Rene 63
. Rene 77
. Rene 95
. . . niobium alloys
. . . osmium alloys
. . . rhenium alloys
. . . tantalum alloys
. . . tungsten alloys
. . Udimet alloys
. . Waspaloy
RT aluminides
cermets
chromium alloys
cobalt alloys
dispersion strengthening
hafnium alloys
nickel alloys
oxide dispersion strengthening
refractory metals
sulfidation
superplasticity

heat shielding

DEF The use of devices that protect something from heat. Specifically, the protective structure necessary to protect a reentry body from aerodynamic heating. Used for thermal shielding.

UF *thermal shielding*
GS shielding
. **heat shielding**
. . reentry shielding
. . reusable heat shielding
RT ablation
ablative materials
ablative nose cones
cooling
infrared suppression
∞ insulated structures
Ludox (trademark)
pyrolytic graphite
solar reflectors
spacecraft shielding
temperature
temperature control
thermal control coatings
thermal insulation
thermal protection

heat sinks

UF *thermal sinks*
GS sinks
. **heat sinks**
RT ablative materials
absorbers (materials)
cooling systems
endothermic reactions
energy absorption
reentry shielding
regenerators
thermal absorption
thermal insulation

heat sources

UF *hydraulic heating sources*
GS **heat sources**
. thermal resources
. . geothermal resources
. . . geysers
. . . radioisotope heat sources
RT ∞ energy sources
energy storage
engines
geothermal technology

laser heating
light sources
∞ power supplies
radiation sources
thermodynamic efficiency

heat storage

UF *thermal energy storage*
GS energy storage
. **heat storage**
RT geothermal energy utilization
heat tapes
phase change materials
solar dynamic power systems
solar houses
temperature
Trombe walls

heat stroke

RT body temperature
heat tolerance
hot weather
hyperthermia
physiological effects
thermal comfort
thermal environments

heat tapes

RT heat storage
ice prevention
∞ tapes

heat tests

USE **high temperature tests**

heat tolerance

GS tolerances (physiology)
. **heat tolerance**
RT body temperature
cold tolerance
heat stroke
human tolerances

heat transfer

SN (TRANSMISSION ACROSS AN INTERFACE)
DEF The transfer or exchange of heat by radiation, conduction, or convection with a substance and between the substance and its surroundings. Used for nonadiabatic processes.
UF *nonadiabatic processes*
GS transmission
. heat transmission
. . **heat transfer**
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
. . . . conductive heat transfer
. . . . convective heat transfer
. . . . laminar heat transfer
. . . . radiative heat transfer
. . . . turbulent heat transfer
RT advection
atmospheric heat budget
baths
Biot number
boiling
Boussinesq approximation
capillary pumped loops
chemical engineering
compressibility effects
∞ conduction
∞ cooling
counterflow
cryogenic cooling
diffuse radiation
dimensionless numbers
energy transfer
film boiling
film condensation
flat plates
fluid boundaries
forced convection
gas transport
gas-liquid interactions
gas-solid interfaces
geothermal energy conversion

geothermal technology
heating
hot surfaces
Leidenfrost phenomenon
Lewis numbers
liquid-liquid interfaces
liquid-solid interfaces
liquid-vapor interfaces
mass transfer
mechanical engineering
metal vapors
nonadiabatic conditions
nongray gas
nonisothermal processes
nucleate boiling
Nusselt number
Peclet number
phase change materials
Prandtl number
radiative transfer
Rayleigh equations
reusable heat shielding
stagnation point
Stanton number
temperature profiles
temperature ratio
temperature sensitive paints
thermal diffusion
thermal expansion
thermal insulation
thermal pollution
thermoacoustic effects
thermodynamics
thermomigration
transferring
transport properties
waste energy utilization

heat transfer coefficients

SN (HEAT FLUX PER UNIT AREA PER UNIT TEMPERATURE DIFFERENCE)
DEF The rate of heat transfer per unit area per unit temperature difference, a quantity having the dimensions of reciprocal length.
GS coefficients
. **heat transfer coefficients**
RT accommodation coefficient
evaporation rate
heating
mass flow factors
nucleate boiling

heat transmission

DEF Heat transmitted from one substance to another. Used for heat flow.
UF *heat flow*
GS transmission
. **heat transmission**
. . heat transfer
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
. . . . conductive heat transfer
. . . . laminar heat transfer
. . . . radiative heat transfer
. . . . turbulent heat transfer
RT adiabatic equations
annular flow
convection
convective flow
ducted flow
equilibrium flow
∞ flow
fluid flow
geophysics
geothermal energy conversion
geothermal energy extraction
geothermal resources
mass flow factors
nonequilibrium flow
potential flow
radial flow
radiative transfer
steady flow
thermal analysis
thermal insulation

thermohydraulics
uniform flow
unsteady flow
wall flow

heat treatment

DEF Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties.
GS **heat treatment**
. annealing
. . laser annealing
. . . pulse heating
. maraging
. nitriding
. normalizing (heat treatment)
. stress relieving
. tempering
RT aging (metallurgy)
alloys
baking
critical temperature
ferritic stainless steels
forging
furnaces
graphitization
hardeners
hardening (materials)
heat affected zone
heating
martensite
∞ metallurgy
microstructure
nucleation
phase diagrams
precipitation hardening
quenching (cooling)
recrystallization
salt baths
∞ soaking
stabilization
supercooling
supersaturation
temper (metallurgy)
temperature distribution
thermochemistry
thermomechanical treatment
∞ treatment
∞ **heaters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
RT deicers
deicing
electron tubes
heating equipment
vaporizers
water heating

heating

UF *heat gain*
preheating
reheating
warming
GS **heating**
. arc heating
. atmospheric heating
. . global warming
. . . stratospheric warming
. baking
. base heating
. gas heating
. induction heating
. ionospheric heating
. kinetic heating
. . . aerodynamic heating
. . . . shock heating
. laser heating
. magnetohydrodynamic shear heating
. pasteurizing
. plasma heating
. . . electron cyclotron heating
. radiant heating
. radio frequency heating
. resistance heating

heating equipment

- . solar heating
- . space heating (buildings)
- . superheating
- . transient heating
- . . pulse heating
- . . shock heating
- . water heating
- RT air conditioning
- annealing
- autoclaving
- boiling
- cementation
- ∞ conduction
- convection
- cooling
- decarburization
- defrosting
- environmental engineering
- geothermal energy extraction
- geothermal energy utilization
- heat
- heat exchangers
- heat generation
- heat transfer
- heat transfer coefficients
- heat treatment
- heating equipment
- Hilsch tubes
- hydrothermal systems
- ice prevention
- integrated energy systems
- jackets
- laser annealing
- laser welding
- melting
- Modular Integrated Utility System
- ∞ radiation
- roasting
- sintering
- ∞ soaking
- temperature
- temperature control
- temperature distribution
- thermal cycling tests
- thermal shock
- thermal stresses
- vaporizing
- waste energy utilization

heating equipment

UF *Gerdien arc heaters*
preheaters

GS **heating equipment**

- . boilers
- . furnaces
- . . electric furnaces
- . . image furnaces
- . . solar furnaces
- . . vacuum furnaces
- . ovens
- . vaporizers
- . . evaporators

RT air conditioning

air conditioning equipment

crucibles

deicers

deicing

∞ electric equipment

∞ equipment

fuel tanks

heat

heat exchangers

heat generation

heat pumps

heat radiators

∞ heaters

heating

onboard equipment

space heating (buildings)

temperature control

thermal insulation

water heating

heaving

RT bending

∞ bows

buckling

- displacement
- distortion
- flexing
- kinking
- ∞ motion
- pitch (inclination)
- warpage

heavy cosmic ray primaries

USE **heavy nuclei**
primary cosmic rays

heavy elements

GS chemical elements

. **heavy elements**

RT ∞ elements

heavy ions

heavy fermion superconductors

(added April 1999)

GS conductors

. superconductors (materials)

. . **heavy fermion superconductors**

intermetallics

. heavy fermion systems

. . **heavy fermion superconductors**

heavy fermion systems

(added April 1999)

GS intermetallics

. **heavy fermion systems**

. . heavy fermion superconductors

RT fermions

superconductors (materials)

heavy ion collisions

USE **ionic collisions**

heavy ions

GS ions

. **heavy ions**

RT heavy elements

ion stripping

isotope separation

isotopes

light ions

heavy lift airships

DEF Airships designed to lift heavy materials.

GS airships

. **heavy lift airships**

RT materials handling

rotors

heavy lift helicopters

GS V/STOL aircraft

. rotary wing aircraft

. . helicopters

. . . **heavy lift helicopters**

. . . . CH-62 helicopter

RT air cargo

∞ aircraft

cargo aircraft

helicopter design

heavy lift launch vehicles

UF *HLLV*

GS launch vehicles

. **heavy lift launch vehicles**

. . Energiya launch vehicle

. . Proton launch vehicle

RT Advanced Launch System (STS)

Long March launch vehicles

rocket engines

∞ rockets

spacecraft launching

∞ vehicles

heavy metals

(added July 1999)

DEF Metals or alloys having a high specific gravity; usually ones with a density greater than 5 grams per cubic centimeter.

GS metals

. **heavy metals**

RT cadmium
chromium
contaminants
copper
industrial wastes
lead (metal)
mercury (metal)
soil pollution
toxic hazards
zinc

heavy nuclei

UF *heavy cosmic ray primaries*

GS particles

. charged particles

. . energetic particles

. . . nuclei (nuclear physics)

. . . . **heavy nuclei**

. corpuscular radiation

. . energetic particles

. . . nuclei (nuclear physics)

. . . . **heavy nuclei**

RT primary cosmic rays

heavy water

DEF Water in which the hydrogen of the water molecule consists entirely of the heavy hydrogen isotope of mass 2 (deuterium). Used for deuterium oxides and hydrogen deuterium oxide.

UF *deuterium oxides*

hydrogen deuterium oxide

GS chalcogenides

. oxides

. . **heavy water**

hydrogen compounds

. deuterium compounds

. . **heavy water**

water

. **heavy water**

RT deuterium

moderators

tritium

heavy water components test reactors

GS nuclear reactors

. liquid cooled reactors

. . water cooled reactors

. . . heavy water reactors

. . . . **heavy water components test**

reactors

. nuclear research and test reactors

. . **heavy water components test**

reactors

. water moderated reactors

. . **heavy water components test**

reactors

heavy water reactors

GS nuclear reactors

. liquid cooled reactors

. . water cooled reactors

. . . **heavy water reactors**

. . . . heavy water components test

reactors

. . . . plutonium recycle test reactor

. . . . zero power reactor 2

RT light water breeder reactors

HEF (high energy fuels)

USE **high energy fuels**

height

DEF Vertical distance; the distance above some reference point or plane, as, height above sea level. The vertical dimension of anything; the distance which something extends above its foot or root, as blade height.

GS dimensions

. **height**

. . scale height

RT altitude

depth

distance

geopotential

∞ level

slopes

Heinkel aircraft

RT ∞ aircraft

Heisenberg theory

GS atomic theory
 . **Heisenberg theory**
 RT atomic excitations
 Dyson theory
 energy transfer
 ∞ theories

Helene

(added January 1996)

DEF A natural satellite of Saturn orbiting at a mean distance of 377,400 kilometers.

GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Helene**
 RT Saturn (planet)

helical antennas

DEF Antennas used where circular polarization is required. The driven element consists of a helix supported above a ground plane.

GS antennas
 . directional antennas
 . . **helical antennas**
 RT antenna design
 ∞ helices
 microwave antennas

helical flow

GS fluid flow
 . **helical flow**
 RT axisymmetric flow
 flow geometry
 ∞ helices
 magnetohydrodynamic stability
 three dimensional flow

helical inducers

GS intake systems
 . **helical inducers**
 RT field coils
 ∞ helices
 plasma control

helical windings

GS winding
 . **helical windings**
 RT ∞ helices
 magnetic field configurations
 plasma control
 stellarators

∞ **helices**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT curves (geometry)
 helical antennas
 helical flow
 helical inducers
 helical windings
 ∞ spirals

*helicopter attitude indicators*USE **attitude indicators****helicopter control**

GS aircraft control
 . **helicopter control**
 RT airborne radar approach
 attitude control
 automatic control
 ∞ control
 controllability
 directional control
 flight control
 harmonic control
 helicopters
 lateral control
 longitudinal control

manual control

speed control

tail rotors

helicopter design

GS aircraft design
 . **helicopter design**
 RT compound helicopters
 computer aided design
 ∞ design
 engine design
 heavy lift helicopters
 helicopters
 product development
 rotor body interactions
 streamlining
 structural design
 UH-60A helicopter
 UH-61A helicopter
 whirl towers

helicopter engines

GS engines
 . aircraft engines
 . . **helicopter engines**
 . internal combustion engines
 . . **helicopter engines**
 RT convertible fan-shaft engines
 helicopters
 jet engines
 T-53 engine
 T-55 engine
 T-58 engine
 T-63 engine
 T-64 engine
 T-74 engine
 T-76 engine

*helicopter impulsive noise*USE **blade slap noise****helicopter performance**

GS aircraft performance
 . **helicopter performance**
 RT aerodynamic stability
 aircraft reliability
 controllability
 Cooper-Harper ratings
 flight characteristics
 flight envelopes
 helicopters
 maneuverability
 pilot ratings

helicopter propeller drive

GS mechanical drives
 . propeller drive
 . . **helicopter propeller drive**
 RT helicopters
 jet propulsion
 rotary wings
 tilted propellers
 variable pitch propellers

*helicopter rotors*USE **rotary wings****helicopter tail rotors**

GS rotating bodies
 . rotors
 . . tail rotors
 . . . **helicopter tail rotors**
 RT helicopters
 rotary wings
 ∞ rotor blades

helicopter wakes

GS wakes
 . aircraft wakes
 . . **helicopter wakes**
 RT downwash
 helicopters

helicopters

DEF Rotorcraft that, for its horizontal mo-

tion, depends principally on its engine-driven rotors.

UF *drone helicopters**gyroplanes*

GS V/STOL aircraft

. rotary wing aircraft

. . **helicopters**

. . . Alouette helicopters
 . . . SA-330 helicopter
 . . . SE-3160 helicopter
 . . . Bell 214A helicopter
 . . . compound helicopters
 . . . S-67 helicopter
 . . . H-17 helicopter
 . . . heavy lift helicopters
 . . . CH-62 helicopter
 . . . light helicopters
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-58 helicopter
 . . . military helicopters
 . . . AH-1G helicopter
 . . . AH-1S helicopter
 . . . AH-1W helicopter
 . . . AH-63 helicopter
 . . . AH-64 helicopter
 . . . BO-105 helicopter
 . . . CH-3 helicopter
 . . . CH-21 helicopter
 . . . CH-34 helicopter
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . CH-54 helicopter
 . . . CH-62 helicopter
 . . . H-19 helicopter
 . . . H-43 helicopter
 . . . H-53 helicopter
 . . . H-54 helicopter
 . . . H-56 helicopter
 . . . H-60 Helicopter
 . . . HC-3 helicopter
 . . . HH-43 helicopter
 . . . HH-65 helicopter
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-13 helicopter
 . . . OH-23 helicopter
 . . . OH-58 helicopter
 . . . P-531 helicopter
 . . . QH-50 helicopter
 . . . S-67 helicopter
 . . . SA-321 helicopter
 . . . SA-330 helicopter
 . . . SH-3 helicopter
 . . . SH-4 helicopter
 . . . Sikorsky Whirlwind helicopter
 . . . UH-1 helicopter
 . . . UH-2 helicopter
 . . . UH-34 helicopter
 . . . UH-60A helicopter
 . . . UH-61A helicopter
 . . . Westland Whirlwind helicopter
 . . . XV-9A aircraft
 . . . rigid rotor helicopters
 . . . CH-3 helicopter
 . . . F-28 helicopter
 . . . XH-51 helicopter
 . . . S-58 helicopter
 . . . S-61 helicopter
 . . . tandem rotor helicopters
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . H-25 helicopter
 . . . EH-101 helicopter
 . . . TH-55 helicopter
 RT airborne radar approach
 ∞ aircraft
 aircraft survivability
 blade slap noise
 blade-vortex interaction
 general aviation aircraft
 ground resonance
 helicopter control
 helicopter design
 helicopter engines

Helio aircraft

- helicopter performance
- helicopter propeller drive
- helicopter tail rotors
- helicopter wakes
- heliports
- ∞ military aircraft
- nap-of-the-earth navigation
- recovery vehicles
- rotor systems research aircraft
- short takeoff aircraft
- ∞ subsonic aircraft
- tilt rotor aircraft
- Tilt Rotor Research Aircraft Program
- utility aircraft
- V-22 aircraft
- vertical takeoff aircraft
- Weser aircraft
- Westland aircraft
- XV-15 aircraft

Heliliner (helicopter)
(added April 1997)
USE **EH-101 helicopter**

Helio aircraft

- UF *Helio military aircraft*
- GS **Helio aircraft**
 - . U-10 aircraft
- RT ∞ aircraft

Helio military aircraft
USE **Helio aircraft**

heliocentric orbits
USE **solar orbits**

heliographs
USE **spectroheliographs**

heliography
USE **spectroheliographs**

heliomagnetism
USE **solar magnetic field**

heliometers

- UF *heliometry*
- GS measuring instruments
 - . **heliometers**
 - . . pyroheliometers
 - optical equipment
 - . **heliometers**
 - . . pyroheliometers
 - telescopes
 - . **heliometers**
 - . . pyroheliometers

heliometry
USE **heliometers**
pyroheliometers

Helios 1

- GS artificial satellites
 - . Helios satellites
 - . . **Helios 1**
- unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios 1**

Helios 2

- GS artificial satellites
 - . Helios satellites
 - . . **Helios 2**
- unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios 2**

Helios A

- GS artificial satellites
 - . Helios satellites
 - . . **Helios A**
- unmanned spacecraft
 - . space probes

- . . solar probes
- . . . **Helios A**

Helios B

- GS artificial satellites
 - . Helios satellites
 - . . **Helios B**
- unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios B**

Helios Project

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Helios Project**
- projects
 - . **Helios Project**
 - . space programs
 - . . NASA space programs
 - . . . **Helios Project**
- RT charged particles
 - high temperature plasmas
 - solar probes
 - zodiacal light

Helios satellites

- GS artificial satellites
 - . **Helios satellites**
 - . . Helios 1
 - . . Helios 2
 - . . Helios A
 - . . Helios B
- RT magnetic fields
 - particle flux density
 - solar flux density

helioseismology

- UF *solar dynamics*
solar seismology
- GS seismology
 - . asteroseismology
 - . . **helioseismology**
- RT astrophysics
 - ∞ science
 - solar interior
 - solar physics

heliosphere

- DEF The region around the sun whose plasma processes are dominated by solar wind.
- RT cosmic rays
 - interplanetary space
 - interstellar gas
 - SOHO Mission
 - solar activity effects
 - solar wind

heliostats

- DEF Instruments consisting of mirrors moved by clockwork for reflecting the sun's rays in a fixed direction.
- RT ∞ instruments
 - mirrors
 - reflectors
 - servomotors
 - solar reflectors
 - synchronizers

heliotrons

(added September 1988)

- GS nuclear reactors
 - . fusion reactors
 - . . **heliotrons**
- RT plasma control
 - stellarators

heliports

- DEF An area of land, water, or structure used, or intended to be used, for the landing and takoff of helicopters.
- GS airports
 - . **heliports**
- RT air traffic control
 - airport planning

- airport towers
- hangars
- helicopters
- landing aids
- landing sites
- military air facilities
- navigation aids
- solar compasses
- V/STOL aircraft

helitrons

- GS electron tubes
 - . vacuum tubes
 - . . microwave tubes
 - . . . traveling wave tubes
 - backward wave tubes
 - **helitrons**
- microwave equipment
 - . microwave tubes
 - . . traveling wave tubes
 - . . . backward wave tubes
 - **helitrons**
- RT carcinotrons

helium

- GS chemical elements
 - . rare gases
 - . . **helium**
 - . . . helium isotopes
 - liquid helium
 - liquid helium 2
- gases
 - . rare gases
 - . . **helium**
 - . . . helium isotopes
 - liquid helium
 - liquid helium 2
- RT alpha particles
 - helium afterglow
 - helium atoms
 - helium film
 - helium ions
 - Wolf-Rayet stars

helium 2

USE **helium isotopes**
liquid helium

helium 3

USE **helium isotopes**

helium 4

USE **helium isotopes**

helium afterglow

- GS afterglows
 - . **helium afterglow**
- RT gas ionization
 - helium
 - plasma decay

helium atoms

- GS atoms
 - . **helium atoms**
- RT helium

helium compounds

RT ∞ rare gas compounds

helium film

RT ∞ films

- helium

helium hydrogen atmospheres

- GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - **helium hydrogen atmospheres**

helium ions

- GS ions
 - . **helium ions**
- RT alpha particles

- helium
- helium isotopes**
- UF *helium 2*
helium 3
helium 4
- GS chemical elements
. nuclides
. isotopes
. . . **helium isotopes**
. rare gases
. . . helium
. . . **helium isotopes**
gases
. rare gases
. . . helium
. . . **helium isotopes**
- helium plasma**
- GS particles
. charged particles
. . . energetic particles
. . . plasmas (physics)
. . . . **helium plasma**
. corpuscular radiation
. . . energetic particles
. . . plasmas (physics)
. . . . **helium plasma**
- RT argon plasma
electron plasma
hydrogen plasma
oxygen plasma
- helium stars*
USE **B stars**
- helium-neon lasers**
- GS stimulated emission devices
. lasers
. . . gas lasers
. . . . **helium-neon lasers**
- RT laser modes
laser outputs
- helium-oxygen atmospheres**
- GS controlled atmospheres
. **helium-oxygen atmospheres**
- RT aerospace environments
∞ atmospheres
∞ breathing
gas mixtures
portable life support systems
underwater breathing apparatus
- helix tubes*
USE **traveling wave tubes**
- Hellmann-Feynman theorem**
- GS theorems
. **Hellmann-Feynman theorem**
- helmet mounted displays**
- UF *HMD (displays)*
- GS display devices
. **helmet mounted displays**
- RT crew workstations
∞ detectors
images
indicating instruments
∞ instruments
monitors
personnel
- helmets**
- GS clothing
. protective clothing
. . . **helmets**
safety devices
. **helmets**
- RT armor
flight clothing
goggles
- pressure suits
- ∞ **Helmholtz equations**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ equations
Helmholtz vorticity equation
Kelvin-Helmholtz instability
time dependence
wave equations
- Helmholtz resonators**
- DEF An enclosure having a small opening consisting of a straight tube of such dimensions that the enclosure resonates at a single frequency determined by the geometry of the resonator.
- GS resonators
. **Helmholtz resonators**
- RT cavity resonators
noise reduction
- Helmholtz vorticity equation**
- GS analysis (mathematics)
. real variables
. . . differential equations
. . . partial differential equations
. . . . **Helmholtz vorticity equation**
. . . vorticity equations
. . . . **Helmholtz vorticity equation**
equations of motion
. kinetic equations
. . . hydrodynamic equations
. . . . **Helmholtz vorticity equation**
flow equations
. vorticity equations
. . **Helmholtz vorticity equation**
- RT ∞ equations
∞ Helmholtz equations
vorticity
- HELOS (satellite)*
USE **Exosat satellite**
- hematite**
- DEF A common iron mineral; ferric oxide.
- GS chalcogenides
. oxides
. . . metal oxides
. . . . iron oxides
. . . . **hematite**
iron compounds
. iron oxides
. . **hematite**
minerals
. iron ores
. . **hematite**
- hematocrit**
- RT blood
blood circulation
blood flow
blood plasma
blood volume
erythrocytes
hematology
hemoglobin
- hematocrit ratio**
- GS ratios
. **hematocrit ratio**
- RT anemias
erythrocytes
hematology
- hematology**
- RT carboxyhemoglobin test
hematocrit
hematocrit ratio
reticulocytes
- hematopoiesis**
- GS cytogenesis
. **hematopoiesis**
- RT blood
- blood cells
bone marrow
cardiovascular system
cells (biology)
physiological effects
radiation effects
- hematopoietic system**
- RT blood cells
blood volume
bone marrow
cardiovascular system
physiological effects
∞ systems
- hematuria**
- GS signs and symptoms
. **hematuria**
- RT urine
- hemisphere cylinder bodies**
- RT ∞ cylinders
cylindrical bodies
hemispherical shells
pressure vessels
- ∞ **hemispheres**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aerodynamic configurations
bodies of revolution
Eastern Hemisphere
hemispherical shells
Northern Hemisphere
Southern Hemisphere
spheres
- hemispherical shells**
- GS shells (structural forms)
. **hemispherical shells**
- RT bodies of revolution
circular shells
domes (structural forms)
hemisphere cylinder bodies
∞ hemispheres
metal shells
reinforced shells
spheres
spherical shells
- hemocytes**
- GS cells (biology)
. blood cells
. . **hemocytes**
- RT invertebrates
- hemodynamic responses**
- GS physiological effects
. physiological responses
. . **hemodynamic responses**
responses
. physiological responses
. . **hemodynamic responses**
- RT baroreflexes
blood circulation
blood pressure
head down tilt
head up tilt
- hemodynamics**
- GS **hemodynamics**
. lower body negative pressure
- RT blood circulation
blood volume
cardiovascular system
∞ dynamics
heart function
hemoperfusion
physiology
- hemoglobin**
- GS biopolymers
. proteins
. . **hemoglobin**
. . . carboxyhemoglobin

hemolysis

- . . . oxyhemoglobin
- organic compounds
- . proteins
- . . **hemoglobin**
- . . . carboxyhemoglobin
- . . . oxyhemoglobin
- organometallic compounds
- . **hemoglobin**
- . . carboxyhemoglobin
- . . oxyhemoglobin

RT anemias
blood
blood cells
cells (biology)
erythrocytes
hematocrit
hemolysis
polycythemia
porphines
porphyrins
reticulocytes

hemolysis

RT complement (biology)
erythrocytes
hemoglobin
polycythemia
reticulocytes

hemoperfusion

DEF Type of poison treatment in which the patient's blood is passed over a bed of adsorbent material (activated carbon, resin, etc.) to remove the toxin from the bloodstream.

RT activated carbon
adsorbents
blood flow
blood pressure
hemodynamics
toxicology

hemorrhages

GS **hemorrhages**
. petechia

RT ∞ bleeding
blood
cardiovascular system
coagulation
hemostatics
hypotension
injuries
pathology
polycythemia
reticulocytes

hemostasis

USE **hemostatics**

hemostatics

UF *hemostasis*
GS drugs
. **hemostatics**

RT blood coagulation
fibrinogen
gibberellins
hemorrhages
thrombin
thromboplastin

HEMT (electronics)

USE **high electron mobility transistors**

Henry law

RT composition (property)
partial pressure
Raoult law
solubility
solutions
vapor pressure

HEOS A satellite

GS artificial satellites
. ESA satellites
. . . HEOS satellites
. . . **HEOS A satellite**
ESA spacecraft

- . ESA satellites
- . . HEOS satellites
- . . . **HEOS A satellite**

HEOS B satellite

GS artificial satellites
. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**
ESA spacecraft
. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**

HEOS satellites

UF *Highly Eccentric Orbit satellites*

GS artificial satellites
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
ESA spacecraft
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite

RT European space programs
solar orbits

heparins

RT anticoagulants

hepatitis

DEF An inflammation of the liver, commonly of viral origin, but also associated with other diseases.

GS diseases
. infectious diseases
. . **hepatitis**

RT acquired immunodeficiency syndrome
anatomy
liver
viral diseases

heptadiene

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . **heptadiene**

heptanes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **heptanes**

RT hydrocarbon fuels

herbicides

DEF Chemical agents used for the eradication of undesirable plants or for the inhibition of their growth.

RT brush (botany)
defoliant
foliage
forests
leaves
plants (botany)
toxicity
trees (plants)

Herbig-Haro objects

DEF Celestial objects having many of the characteristics of a T Tauri star (e. g. , their spectra show a weak continuum with strong emission lines), believed to be stars in the very early stages of development. All known Herbig-Haro objects have been found within the boundaries of dark clouds. These strong infrared sources are characterized by mass loss.

GS celestial bodies
. nebulae
. . **Herbig-Haro objects**

RT B stars
∞ bodies

- infrared sources (astronomy)
- infrared stars
- stellar radiation
- stellar spectra
- T Tauri stars

Hercules aircraft

USE **C-130 aircraft**

Hercules engine

GS engines
. rocket engines
. . solid propellant rocket engines
. . . **Hercules engine**

RT Honest John rocket vehicle
Little John rocket vehicle

Hercules nova

GS celestial bodies
. stars
. . variable stars
. . . novae
. . . . **Hercules nova**

RT dwarf novae

heredity

RT breeding (reproduction)
congenital anomalies
cytogenesis
evolution (development)

Hering-Breuer reflex

GS reflexes
. respiratory reflexes
. . **Hering-Breuer reflex**

RT heart rate

Hermes manned spaceplane

GS manned spacecraft
. space shuttles
. . **Hermes manned spaceplane**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Hermes manned spaceplane**

RT French space program
space transportation system
spacecraft design

Hermes satellite

USE **Communications Technology Satellite**

hermetic seals

GS seals (stoppers)
. **hermetic seals**

RT ∞ headers
labyrinth seals
O ring seals
pump seals

Hermitian polynomial

GS algebra
. polynomials
. . **Hermitian polynomial**

RT Jacobi matrix method
matrices (mathematics)
real variables
vector spaces

HERO Reactor

GS nuclear reactors
. nuclear research and test reactors
. . **HERO Reactor**

Hertzsprung-Russell diagram

UF *HR diagram*

GS diagrams
. **Hertzsprung-Russell diagram**

RT asymptotic giant branch stars
color-color diagram
color-magnitude diagram
horizontal branch stars
stellar evolution
stellar luminosity

stellar spectra

Herzberg bands
 GS spectra
 . radiation spectra
 . . absorption spectra
 . . . **Herzberg bands**
 . spectral bands
 . . absorption spectra
 . . . **Herzberg bands**
 RT ∞ bands
 oxygen spectra
 Schumann-Runge bands
 ultraviolet spectra

Herzegovina
 (added June 1996)
 USE **Bosnia and Herzegovina**

Hessian matrices
 DEF Given a real value function of N variables, an N by N symmetric of all second order partial derivatives.
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **Hessian matrices**
 RT algorithms
 optimization

HET experiment
 UF *Health-Education Telecommunications exp*
 GS telecommunication
 . teleconferencing
 . . **HET experiment**
 RT ATS 6
 communication satellites
 satellite networks

heterocyclic compounds
 GS organic compounds
 . cyclic compounds
 . . **heterocyclic compounds**
 . . . acriflavine
 . . . adenosines
 adenosine diphosphate
 adenosine triphosphate
 cyclic AMP
 . . . alkaloids
 atropine
 betaines
 caffeine
 colchicine
 ergotamine
 hyoscine
 lysergine
 morphine
 nicotinamide
 nicotine
 pilocarpine
 reserpine
 strychnine
 tropyli compounds
 . . . anisole
 . . . ascorbic acid
 . . . azines
 cyanurates
 cyanuric acid
 meclizine
 methylene blue
 phenothiazines
 . . . azoles
 acetazolamide
 oxazole
 pyrroles
 carbazoles
 indoles
 tryptophan
 . . . azulene
 . . . bioflavonoids
 . . . biotin
 . . . carnitine
 . . . cyanocobalamin
 . . . cytidylic acid
 . . . dimenhydrinate

. . . endrin
 . . . ethylene oxide
 . . . folic acid
 . . . furans
 tetrahydrofuran
 . . . guanethidine
 . . . HMX
 . . . nicotinic acid
 . . . phthalocyanin
 . . . phyloquinone
 . . . piperidine
 . . . promethazine
 . . . purines
 adenines
 xanthines
 caffeine
 guanines
 uric acid
 . . . pyridines
 . . . pyridoxine
 . . . pyrimidines
 alloxan
 thymidine
 thymine
 uracil
 RDX
 retinene
 riboflavin
 tetracyclines
 tetrazoles
 thiamine
 thiazine (trademark)
 thiophenes
 tocopherol
 trimethadione
 RT ∞ chemical compounds

heterodyning
 DEF Mixing two radio signals of different frequencies to produce a third signal which is of lower frequency; i. e. , to produce beating.
 GS **heterodyning**
 . optical heterodyning
 RT autodynes
 demodulation
 intermediate frequency amplifiers
 mixing circuits
 superheterodyne receivers

heterogeneity
 DEF Having different properties at different points.
 RT deviation
 impurities
 inclusions
 inhomogeneity
 range (extremes)
 sampling
 standard deviation
 statistical tests
 variability
 variance (statistics)

heterojunction devices
 DEF Electronic devices utilizing junctions between different semiconducting materials. The characteristics and performance of the devices are dependent on the relative lineup of the energy bands at the junctions.
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **heterojunction devices**
 high electron mobility transistors
 MODFETS
 RT band structure of solids
 distributed feedback lasers
 gallium arsenides
 homojunctions
 ITO (semiconductors)
 junction diodes
 modulation doping
 quantum efficiency
 quantum well lasers
 quantum wells
 semiconductor junctions
 solar energy conversion

waveguide lasers

heterojunctions
 DEF Junctions between semiconductors that differ in their doping level conductivities, and also in their atomic or alloy compositions.
 GS semiconductor junctions
 . **heterojunctions**
 RT homojunctions
 junction diodes
 modulation doping
 quantum cascade lasers
 quantum wells
 silicon junctions
 solar cells
 thin films
 tunnel junctions

heterophoria
 UF *exophoria*
 RT vision

heterosphere
 DEF The upper portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; the layer above the homosphere. The heterosphere is characterized by variation in composition and mean molecular weight of constituent gases. This region starts at 80 to 100 kilometers above the Earth, and therefore closely coincides with the ionosphere and the thermosphere.
 GS Earth atmosphere
 . **heterosphere**
 environments
 . **heterosphere**
 RT chemosphere
 Earth ionosphere
 Earth magnetosphere
 exosphere
 lower atmosphere
 middle atmosphere
 thermosphere
 upper atmosphere

heterotrophs
 RT animals
 autotrophs
 metabolism
 plants (botany)

heuristic methods
 RT automata theory
 computer programming
 greedy algorithms
 ∞ methodology
 simulation
 sorting algorithms

HEUS rocket engines
 GS engines
 . rocket engines
 . . **HEUS rocket engines**
 RT rocket engine control
 rocket vehicles

Hewlett-Packard computers
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Hewlett-Packard computers**

hexadiene
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . dienes
 **hexadiene**

hexagonal cells
 RT ∞ cells
 crystal lattices
 honeycomb structures

hexagons
 GS geometry

hexahedrite

- . Euclidean geometry
- .. polygons
- ... **hexagons**

hexahedrite

- GS magnesium compounds
- . magnesium sulfates
- .. **hexahedrite**
- minerals
- . **hexahedrite**
- sulfur compounds
- . sulfates
- .. magnesium sulfates
- ... **hexahedrite**

hexamethonium

- RT ammonium compounds
- anticonvulsants

hexamethylenetetramine

- GS amines
- . **hexamethylenetetramine**

hexanitrostilbene

- UF *HNST*
- RT stilbene

hexenes

- GS organic compounds
- . hydrocarbons
- .. aliphatic hydrocarbons
- ... alkenes
- **hexenes**
- RT cyclohexane
- hydrocarbon fuels

Hexogenes (trademark)

- GS acids
- . carboxylic acids
- .. **Hexogenes (trademark)**
- organic compounds
- . carboxylic acids
- .. **Hexogenes (trademark)**

hexokinase

- GS biopolymers
- . proteins
- .. enzymes
- ... **hexokinase**
- organic compounds
- . proteins
- .. enzymes
- ... **hexokinase**

hexoses

- GS organic compounds
- . carbohydrates
- .. sugars
- ... monosaccharides
- **hexoses**
- galactose
- glucose

hexyl compounds

- GS alkyl compounds
- . **hexyl compounds**
- RT ∞ chemical compounds

HF lasers

- UF *hydrogen fluoride lasers*
- GS stimulated emission devices
- . lasers
- .. gas lasers
- ... **HF lasers**
- RT chemical lasers
- infrared lasers
- TEA lasers

HFB-320 aircraft

- UF *Hamburger HFB-320 aircraft*
- GS Hamburger aircraft
- . **HFB-320 aircraft**
- jet aircraft
- . **HFB-320 aircraft**
- monoplanes
- . **HFB-320 aircraft**

- passenger aircraft
- . **HFB-320 aircraft**
- transport aircraft
- . **HFB-320 aircraft**
- RT ∞ aircraft

HFIR

- USE **high flux isotope reactors**

HFIR (reactor)

- USE **high flux isotope reactors**

HH-43 helicopter

- UF *HH-43B helicopter*
- Huskie helicopter*
- GS Kaman aircraft
- . **HH-43 helicopter**
- utility aircraft
- . **HH-43 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- .. helicopters
- ... military helicopters
- **HH-43 helicopter**

HH-43B helicopter

- USE **HH-43 helicopter**

HH-65 helicopter

- (added August 1995)*
- GS V/STOL aircraft
- . rotary wing aircraft
- .. helicopters
- ... military helicopters
- **HH-65 helicopter**
- RT ∞ aircraft
- rescue operations

HXX helicopter

- USE **H-53 helicopter**

hibernation

- RT adaptation
- thermoregulation

HICAT (radar technique)

- USE **high resolution coverage antennas**

HICAT project

- USE **high resolution coverage antennas**

hierarchies

- GS classifications
- . **hierarchies**
- .. BBGKY hierarchy
- ... dichotomies

Higgs bosons

- (added April 1994)*
- GS particles
- . elementary particles
- .. bosons
- ... **Higgs bosons**
- . nuclear particles
- .. bosons
- ... **Higgs bosons**
- RT broken symmetry
- electroweak model
- particle theory

high acceleration

- GS rates (per time)
- . acceleration (physics)
- .. **high acceleration**
- RT ∞ acceleration
- acceleration stresses (physiology)
- acceleration tolerance
- electron runaway (plasma physics)
- mechanical shock
- ∞ motion
- shock resistance

- high alt target and background measurement**
- UF *HITAB program*

- RT ∞ measurement
- target acquisition

high altitude

- UF *high altitude flight*
- GS altitude
- . **high altitude**
- RT midaltitude
- skyhook balloons
- upper atmosphere

high altitude balloons

- GS expandable structures
- . inflatable structures
- .. balloons
- ... **high altitude balloons**
- jimsphere balloons
- skyhook balloons
- superpressure balloons
- RT balloon-borne instruments
- gas bags
- meteorological balloons
- ROBIN balloons
- rockoons

high altitude breathing

- GS respiration
- . **high altitude breathing**
- RT altitude tolerance
- ∞ breathing
- emergency life sustaining systems
- hypobaric atmospheres
- oxygen masks

high altitude environments

- GS environments
- . **high altitude environments**
- RT altitude simulation
- altitude tests
- altitude tolerance
- escape capsules
- hypobaric atmospheres
- low pressure
- low temperature environments
- mountain inhabitants
- thermal vacuum tests
- timberline
- vacuum chambers

high altitude flight

- USE **flight**
- high altitude**

high altitude nuclear detection

- GS detection
- . **high altitude nuclear detection**
- RT space surveillance (spaceborne)
- Vela satellites

high altitude pressure

- GS pressure
- . low pressure
- .. **high altitude pressure**
- RT altitude tolerance
- atmospheric pressure
- hypobaric atmospheres
- vacuum chambers

high altitude sounding projectile

- USE **WASP sounding rocket**

high altitude tests

- GS altitude tests
- . **high altitude tests**
- RT background radiation
- environmental tests
- Fishbowl Operation
- flight tests
- full scale tests
- test vehicles
- ∞ tests
- Vela satellites

high aspect ratio

- GS ratios
- . aspect ratio

- . . **high aspect ratio**
- high aspect ratio wings*
- USE **slender wings**
- high current**
- GS electric current
- . **high current**
- RT high voltages
- plasma currents
- high definition television**
- (added August 1990)
- UF *HDTV*
- GS television systems
- . **high definition television**
- RT communication equipment
- digital television
- high resolution
- image resolution
- imaging techniques
- television transmission
- video communication
- video data
- high dispersion spectrographs**
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . ultraviolet spectrometers
- **high dispersion spectrographs**
- . radiation measuring instruments
- . . actinometers
- . . . ultraviolet detectors
- ultraviolet spectrometers
- **high dispersion spectrographs**
- . . photometers
- . . . ultraviolet spectrometers
- **high dispersion spectrographs**
- . spectrometers
- . . ultraviolet spectrometers
- . . . **high dispersion spectrographs**
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . ultraviolet spectrometers
- **high dispersion spectrographs**
- spectrographs
- . **high dispersion spectrographs**
- RT ultraviolet spectra
- High Eccentric Lunar Occultation Satellite*
- USE **Exosat satellite**
- high electron mobility transistors**
- (added November 1992)
- DEF A recently developed field effect transistor based on the technique of modulation doping of GaAs/Al(x)Ga(1-x) as heterojunctions. This technique achieves high mobility in part by introducing carriers into high purity GaAs from donor ions in an adjacent AlGaAs layer, the electrons and ions being separated by the built-in heterojunction potential. Used for HEMT (electronics)
- UF *HEMT (electronics)*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . heterojunction devices
- **high electron mobility transistors**
- MODFETS
- transistors
- **high electron mobility transistors**
- MODFETS
- RT cascode devices
- electron mobility
- field effect transistors
- indium aluminum arsenides
- modulation doping
- High Energy Astronomy Observatories*
- USE **HEAO**
- High Energy Astronomy Observatory 1*
- USE **HEAO 1**
- High Energy Astronomy Observatory 2*
- USE **HEAO 2**
- High Energy Astronomy Observatory 3*
- USE **HEAO 3**
- High Energy Astronomy Observatory 4*
- (added May 1997)
- USE **HEAO 4**
- High Energy Astronomy Observatory A*
- USE **HEAO 1**
- High Energy Astronomy Observatory B*
- USE **HEAO 2**
- High Energy Astronomy Observatory C*
- USE **HEAO 3**
- High Energy Astronomy Observatory D*
- (added May 1997)
- USE **HEAO 4**
- high energy electrons**
- GS particles
- . charged particles
- . . energetic particles
- . . . electrons
- **high energy electrons**
- relativistic electron beams
- corpuscular radiation
- energetic particles
- electrons
- **high energy electrons**
- relativistic electron beams
- elementary particles
- fermions
- leptons
- electrons
- **high energy electrons**
- relativistic electron beams
- RT SCATHA satellite
- high energy fuels**
- SN (HEAT CONTENT GREATER THAN OR EQUAL TO APPROXIMATELY 25,000 BTU/LB)
- UF *HEF (high energy fuels)*
- GS fuels
- . chemical fuels
- . . **high energy fuels**
- RT additives
- boron compounds
- catalysts
- cryogenic rocket propellants
- hybrid propellants
- hydrocarbon fuels
- high energy interactions**
- GS particle interactions
- . elementary particle interactions
- . . **high energy interactions**
- . . . strong interactions (field theory)
- RT annihilation reactions
- beam interactions
- fission products
- ∞ interactions
- nuclear explosions
- nuclear fission
- nuclear fusion
- nuclear interactions
- nuclear radiation
- nuclear reactions
- nuclear research
- pair production
- particle production
- Pomeranchuk theorem
- proton-antiproton interactions
- thermonuclear reactions
- vector dominance model
- high energy oxidizers**
- GS oxidizers
- . **high energy oxidizers**
- RT rocket oxidizers
- high energy propellants**
- GS propellants
- . **high energy propellants**
- . . Domino propellants
- RT cryogenic rocket propellants
- gaseous rocket propellants
- hybrid propellants
- liquid rocket propellants
- high field magnets**
- UF *supermagnets*
- GS magnets
- . electromagnets
- . . **high field magnets**
- RT superconducting magnets
- high flux beam reactors**
- RT nuclear reactors
- high flux isotope reactors**
- UF *HFIR*
- HFIR (reactor)*
- GS nuclear reactors
- . **high flux isotope reactors**
- RT neutron flux density
- high frequencies**
- SN (3 - 30 MHZ)
- GS frequencies
- . radio frequencies
- . . **high frequencies**
- RT decametric waves
- intermediate frequencies
- low frequencies
- maximum usable frequency
- ring discharge
- short wave radiation
- short wave radio transmission
- toroidal discharge
- high gain**
- GS amplification
- . **high gain**
- RT antenna gain
- pilot induced oscillation
- power gain
- transfer functions
- high gravity (acceleration)*
- USE **high gravity environments**
- high gravity environments**
- UF *high gravity (acceleration)*
- hypergravity*
- GS environments
- . **high gravity environments**
- . . rates (per time)
- . . acceleration (physics)
- . . . **high gravity environments**
- RT ∞ acceleration
- centrifuges
- extraterrestrial environments
- gravitation
- human centrifuges
- microgravity
- rotating environments
- high impulse**
- GS impulses
- . **high impulse**
- RT ∞ force

high level languages

propulsion

high intensity lasers

USE **high power lasers**

high latitudes

USE **polar regions**

high level languages

DEF Computer languages whose instructions or statements each correspond to several machine language instructions.

UF *higher order languages*

GS languages

. programming languages

. . . **high level languages**

. . . . Ada (programming language)

. . . . C (programming language)

. . . . C++ (programming language)

. . . . Java (programming language)

RT communication theory
language programming
symbols

high melting compounds

USE **refractory materials**

high pass filters

DEF Wave filters having a single transmission band extending from some critical or cutoff frequency, not zero, up to infinite frequency.

RT bandstop filters

electric filters

electromagnetic wave filters

∞ filters

microwave filters

optical filters

high polymers

RT ∞ polymers

high power lasers

DEF Stimulated emission devices having high energy flux density outputs. Used for high intensity lasers.

UF *high intensity lasers*

GS stimulated emission devices

. lasers

. . . **high power lasers**

. . . . Nova Laser System

. . . . Shiva laser system

RT free-space optical communication
glass lasers
laser fusion
laser outputs
optical communication

high pressure

GS pressure

. **high pressure**

RT anticyclones

critical pressure

degenerate matter

hyperbaric chambers

low pressure

supercritical pressures

transition pressure

vacuum

high pressure oxygen

GS gases

. compressed gas

. . . **high pressure oxygen**

RT fire prevention

oxygen

pressure

spacecraft cabin atmospheres

high Q

USE **Q factors**

∞ **high resistance**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT chemical properties

electrical resistance

flow resistance

mechanical properties

∞ physical properties

∞ resistance

ruggedness

thermal resistance

high resolution

GS resolution

. **high resolution**

RT accuracy

angular resolution

high definition television

precision

spatial resolution

high resolution coverage antennas

UF *HICAT (radar technique)*

HICAT project

GS antennas

. **high resolution coverage antennas**

RT radar antennas

radar resolution

resolution

high Reynolds number

SN (RN ABOVE 3,000)

DEF A Reynolds number above the critical Reynolds number of a sphere.

GS dimensionless numbers

. Reynolds number

. . . **high Reynolds number ratios**

ratios

. Reynolds number

. . . **high Reynolds number**

RT low Reynolds number

high speed

UF *high speed flight*

GS rates (per time)

. **high speed**

velocity

. **high speed**

RT airspeed

escape velocity

ground speed

hypersonic speed

landing speed

light speed

relativistic velocity

rotor speed

supersonic speed

high speed cameras

GS optical equipment

. cameras

. . . **high speed cameras**

. . . . framing cameras

photographic equipment

. cameras

. . . **high speed cameras**

. . . . framing cameras

RT ballistic cameras

frame photography

high speed photography

rotating mirrors

streak photography

stroboscopes

high speed flight

USE **flight**

high speed

high speed photography

GS imagery

. photography

. . . **high speed photography**

RT high speed cameras

photographic recording

high speed transportation

USE **rapid transit systems**

high strength

GS mechanical properties

. **high strength**

RT compressive strength

shear strength

∞ strength

tensile strength

tensile stress

yield strength

high strength alloys

GS alloys

. **high strength alloys**

. . . Astroloy (trademark)

. . . high strength steels

. . . maraging steels

RT aluminum-lithium alloys

tensile properties

high strength steels

UF *low alloy steels*

GS alloys

. high strength alloys

. . . **high strength steels**

. . . maraging steels

. iron alloys

. . . steels

. . . . **high strength steels**

. . . . maraging steels

RT carbon steels

high temperature

GS temperature

. **high temperature**

RT sialon

temperature measurement

high temperature air

UF *hot air*

GS gases

. gas mixtures

. . air

. . . **high temperature air**

. high temperature gases

. . **high temperature air**

high temperature fluids

. high temperature gases

. . **high temperature air**

mixtures

. solutions

. . gas mixtures

. . . air

. . . . **high temperature air**

high temperature alloys

USE **heat resistant alloys**

high temperature environments

GS environments

. **high temperature environments**

RT dry heat

heat acclimatization

lunar temperature

thermal environments

thermal fatigue

high temperature fatigue

USE **thermal fatigue**

high temperature fluids

GS **high temperature fluids**

. high temperature gases

. . high temperature air

RT ∞ fluids

hydraulic fluids

plasmas (physics)

working fluids

high temperature gas cooled reactors

UF *HTGR*

GS nuclear reactors

. gas cooled reactors
 . . high temperature nuclear reactors
 . . . **high temperature gas cooled reactors**
 . nuclear research and test reactors
 . . high temperature nuclear reactors
 . . . **high temperature gas cooled reactors**
 RT nuclear power reactors

high temperature gases

UF *hot gas systems*
hot gases
hot jet exhaust
 GS gases
 . **high temperature gases**
 . . high temperature air
 high temperature fluids
 . **high temperature gases**
 . . high temperature air
 RT combustion products
 exhaust emission
 ionized gases
 pneumatic probes
 rarefied gases
 shock wave propagation

high temperature lubricants

GS lubricants
 . **high temperature lubricants**
 RT gas bearings
 gas lubricants
 thermal resistance

high temperature materials

USE **refractory materials**

high temperature nuclear reactors

UF *Los Alamos Turret Reactor*
UHTREX (nuclear reactors)
 GS nuclear reactors
 . gas cooled reactors
 . . **high temperature nuclear reactors**
 . . . high temperature gas cooled reactors
 . nuclear research and test reactors
 . . **high temperature nuclear reactors**
 . . . high temperature gas cooled reactors
 RT nuclear propulsion
 reactor design
 reactor technology
 ∞ reactors

high temperature plasmas

UF *hot plasmas*
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **high temperature plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **high temperature plasmas**
 RT Boltzmann-Vlasov equation
 collisional plasmas
 dense plasmas
 electron plasma
 Helios Project
 relativistic plasmas
 strongly coupled plasmas
 thermal plasmas

high temperature propellants

GS propellants
 . **high temperature propellants**
 RT electrothermal engines
 gelled propellants
 gelled rocket propellants
 ion propulsion
 nuclear propulsion
 plasma engines
 solid propellants

storable propellants

high temperature research

GS research
 . **high temperature research**
 RT plasma generators
 refractory materials

high temperature superconductors

(added December 1992)

DEF New superconducting materials consisting of mixed metal oxide ceramics that maintain their superconductivity at higher temperature ranges (above 24 K) than the more traditional superconductors.

UF *HTSC (superconductors)*
 GS conductors
 . superconductors (materials)
 . . **high temperature superconductors**
 . . . BSCCO superconductors
 . . . YBCO superconductors
 RT barium oxides
 ceramics
 critical temperature
 cryogenic gyroscopes
 cryogenic magnets
 cryogenics
 electrical resistivity
 Josephson junctions
 liquid nitrogen
 low temperature physics
 metal oxides
 mixed oxides
 operating temperature
 SIS (superconductors)
 strontium oxides
 superconducting magnets
 superconducting power transmission
 superconductivity
 yttrium oxides

high temperature tests

UF *heat tests*
 GS environmental tests
 . **high temperature tests**
 RT bomb calorimeters
 calorimeters
 chemical tests
 cold strength
 cold weather tests
 cryostats
 drop calorimeters
 flame calorimeters
 hardness tests
 lubricant tests
 ∞ materials tests
 melting points
 nondestructive tests
 temperature control
 ∞ tests
 thermal expansion
 thermal resistance
 thermal shock
 thermal stability
 thermodynamic properties
 transport properties

high thrust

GS thrust
 . **high thrust**
 RT jet thrust
 low thrust
 rocket thrust
 thrust augmentation
 variable thrust

high vacuum

GS pressure
 . vacuum
 . . **high vacuum**
 RT cold welding
 low vacuum
 molecular shields
 residual gas
 space manufacturing

ultrahigh vacuum
 vacuum apparatus
 vacuum tests

High Vacuum Orbital Simulator

UF *HIVOS (simulator)*
 GS simulators
 . environment simulators
 . . space simulators
 . . . **High Vacuum Orbital Simulator**
 RT space environment simulation

high velocity oxy-fuel spraying

(added July 2001)

USE **HVOF thermal spraying**

high velocity oxygen fuel thermal spraying

(added July 2001)

USE **HVOF thermal spraying**

high voltages

GS potential energy
 . electric potential
 . . **high voltages**
 RT electric current
 high current

higher order languages

USE **high level languages**

highlands

DEF A general term for large areas of elevated or mountainous land standing prominently above adjacent low areas; mountainous regions.

RT Colorado Plateau (US)
 mesas
 mountains
 plateaus
 topography

Highly Eccentric Orbit satellites

USE **HEOS satellites**

highly maneuverable aircraft

UF *HIMAT*
 RT airborne/spaceborne computers
 ∞ aircraft
 aircraft maneuvers
 automatic flight control
 automatic pilots
 computerized simulation
 fighter aircraft
 flight characteristics
 flight tests
 remotely piloted vehicles

highways

GS roads
 . **highways**
 RT air bag restraint devices
 bridges (structures)
 construction
 crashes
 intersections
 pavements
 ramps (structures)
 rapid transit systems
 regional planning
 streets
 transportation
 transportation networks
 urban planning

H-II orbiting plane

USE **HOPE aerospace plane**

hijacking

USE **air piracy**

Hilbert space

GS algebra
 . vector spaces
 . . Banach space
 . . . **Hilbert space**

Hilbert transformation

- Sobolev space
- analysis (mathematics)
- . function space
- . . Banach space
- . . . **Hilbert space**
- Sobolev space
- . functional analysis
- . . Banach space
- . . . **Hilbert space**
- Sobolev space
- geometry
- . topology
- . . metric space
- . . . **Hilbert space**
- Sobolev space

Hilbert transformation

GS analysis (mathematics)

- . functional analysis
- . . integral transformations
- . . . **Hilbert transformation**

transformations (mathematics)

- . integral transformations
- . . **Hilbert transformation**

Hill curves

USE **Hill method**

Hill determinant

GS analysis (mathematics)

- . **Hill determinant**

RT differential equations

- eigenvalues
- Mathieu function

Hill lunar theory

RT Earth orbits

- orbital mechanics
- perturbation theory

∞ theories

Hill method

UF *Hill curves*

RT Earth orbits

- ∞ methodology
- orbital mechanics
- perturbation theory

Hiller aircraft

GS **Hiller aircraft**

- . OH-5 helicopter

RT ∞ aircraft

Hilsch tubes

UF *vortex tubes*

RT coaxial flow

- cooling
- heating

∞ tubes

- vortex generators
- vortices

Himalayas

GS landforms

- . mountains
- . . **Himalayas**

RT Asia

- Bhutan
- India
- Pakistan
- Sikkim
- Tibet

Himalia

(added July 1995)

DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,480,000 kilometers.

GS celestial bodies

- . natural satellites
- . . Jupiter satellites
- . . . **Himalia**

RT Jupiter (planet)

HIMAT

USE **highly maneuverable aircraft**

hindcasting

(added July 1999)

DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical-model simulation of the processes involved, or a combination of data analysis and modeling.

GS predictions

- . **hindcasting**

RT forecasting

- meteorological parameters
- nowcasting
- oceanographic parameters
- weather forecasting

hindlimb suspension

(added June 2001)

DEF Technique for limiting use, activity, or movement by immobilizing or restraining animal by suspending from hindlimbs or tails. This immobilization is used to simulate some effects of reduced gravity and study weightlessness physiology.

UF *hindlimb unloading*

GS immobilization

- . **hindlimb suspension**
- suspending (hanging)
- . **hindlimb suspension**

RT aerospace medicine

- atrophy
- bioastronautics
- bone demineralization
- gravitational physiology
- head down tilt
- head up tilt
- hypodynamia
- hypokinesia
- limbs (anatomy)
- weightlessness simulation

hindlimb unloading

(added June 2001)

USE **hindlimb suspension**

hindrance

USE **constraints**

H-infinity control

(added November 1992)

GS automatic control

- . optimal control
- . . **H-infinity control**

optimization

- . optimal control
- . . **H-infinity control**

RT control systems design

- control theory
- controllers
- feedback control
- H-2 control
- linear parameter-varying control
- linear quadratic Gaussian control

hinge moments

USE **torque**

hinged rotor blades

USE **hinges**

- rotary wings**

hingeless rotors

USE **rigid rotors**

hinges

UF *hinged rotor blades*

GS **hinges**

- . flapping hinges

RT bearingless rotors

- pivots

swivels

HIP (process)

USE **hot isostatic pressing**

Hipparcos satellite

DEF An ESA astrometric satellite to determine trigonometric parallaxes, proper motions, and positions of 100,000 stars, mainly for stars brighter than magnitude 10. The satellite was launched in August 1989.

GS artificial satellites

- . ESA satellites
- . . **Hipparcos satellite**

ESA spacecraft

- . ESA satellites
- . . **Hipparcos satellite**

RT astrometry

- European space programs
- spaceborne astronomy
- stellar motions
- stellar parallax

hippocampus

GS anatomy

- . nervous system
- . . central nervous system
- . . . brain
- **hippocampus**

hippuric acid

GS acids

- . amino acids
- . . **hippuric acid**

organic compounds

- . amino acids
- . . **hippuric acid**

His bundle

RT cardiac auricles

- cardiac ventricles
- electrophysiology
- heart diseases
- heart function
- nerves

hiss

DEF Random noise in the audiofrequency range, having subjective characteristics analogous to prolonged sibilant sounds.

GS electromagnetic interference

- . radio frequency interference
- . . electromagnetic noise
- . . . atmospherics
- ionospherics
- **hiss**

histamines

GS drugs

- . **histamines**

RT amines

- antihistaminics
- itching

histidine

GS acids

- . amino acids
- . . **histidine**

amines

- . **histidine**
- organic compounds
- . amino acids
- . . **histidine**

histochemical analysis

DEF In biochemistry, the analysis of chemical components in tissues.

RT bioassay

- biochemistry
- cells (biology)
- organic chemistry
- tissues (biology)

histograms

RT discrete functions

- graphs (charts)

- normal density functions
- histology**
 GS medical science
 . **histology**
 RT epithelium
 in vitro methods and tests
 in vivo methods and tests
 morphology
 platelets
 tissue engineering
 tissues (biology)
- histories**
 GS **histories**
 . case histories
 RT documentation
 museums
 paleontology
 peacetime
 records
- HITAB program*
 USE **high alt target and background measurement**
- HIV (virus)*
 USE **human immunodeficiency virus**
- HIVOS (simulator)*
 USE **High Vacuum Orbital Simulator**
- HL-10 reentry vehicle**
 GS gliders
 . **HL-10 reentry vehicle**
 lifting bodies
 . lifting reentry vehicles
 . . **HL-10 reentry vehicle**
 reentry vehicles
 . maneuverable reentry bodies
 . . lifting reentry vehicles
 . . . **HL-10 reentry vehicle**
 RT hypersonic gliders
- HLD-35 reentry vehicle**
 GS lifting bodies
 . lifting reentry vehicles
 . . **HLD-35 reentry vehicle**
 reentry vehicles
 . maneuverable reentry bodies
 . . lifting reentry vehicles
 . . . **HLD-35 reentry vehicle**
 RT hypersonic gliders
- HLLV*
 USE **heavy lift launch vehicles**
- HMD (displays)*
 USE **helmet mounted displays**
- HMX**
 UF *cyclotetramethylene tetranitramine*
tetranitrotetrazacycloctane
 GS explosives
 . **HMX**
 nitrogen compounds
 . azo compounds
 . . **HMX**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **HMX**
 propellants
 . rocket propellants
 . . solid rocket propellants
 . . . **HMX**
 . solid propellants
 . . solid rocket propellants
 . . . **HMX**
 pyrotechnics
- . **HMX**
HNPF (Hallam Nuclear Power Facility)
 USE **Hallam Nuclear Power Facility**
- HNST*
 USE **hexanitrostilbene**
- HO-4 helicopter*
 USE **OH-4 helicopter**
- HO-5 helicopter*
 USE **OH-5 helicopter**
- HO-6 helicopter*
 USE **OH-6 helicopter**
- hodographs**
 RT Chaplygin equation
 kinematics
 vector spaces
- hodosopes**
 GS measuring instruments
 . radiation measuring instruments
 . . **hodosopes**
 RT anticoincidence detectors
 radiation counters
 scintillating fibers
- hogbacks*
 USE **ridges**
- hohlraums**
 DEF In radiation thermodynamics, cavities whose walls are in radiative equilibrium with the radiant energy with the cavity.
 RT black body radiation
 emissivity
- Hohmann trajectories*
 USE **elliptical orbits transfer orbits**
- Hohmann transfer orbits*
 USE **elliptical orbits transfer orbits**
- holders**
 GS **holders**
 . flame holders
 RT anchors (fasteners)
 ∞ bands
 bolts
 brackets
 clamps
 clips
 fasteners
 jigs
 latches
 lugs
 mechanical devices
 nuts (fasteners)
 pins
 positioning devices (machinery)
 rivets
 screws
 ∞ spikes
 splines
 straps
 studs (structural members)
 zippers
- ∞ **holding**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT constraints
 delay
 retaining
 stopping
- hole burning**
 DEF A laser process that depletes, spatially or spectrally, the electron/hole pair density in a region of space or frequency of high coherent light, being spatial hole burning and spectral hole burning respectively.
 RT computer storage devices
 holography
 laser applications
 lasers
 lasing
 memory (computers)
- ∞ **hole distribution**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT current distribution
 hole distribution (electronics)
 hole distribution (mechanics)
- hole distribution (electronics)**
 GS distribution (property)
 . **hole distribution (electronics)**
 RT charge distribution
 current distribution
 ∞ hole distribution
 holes (electron deficiencies)
 semiconductors (materials)
- hole distribution (mechanics)**
 GS distribution (property)
 . **hole distribution (mechanics)**
 RT cavities
 ∞ hole distribution
 holes (mechanics)
 perforated shells
 porosity
 stress concentration
 void ratio
- hole geometry (mechanics)**
 DEF The sizes, locations, and shapes of perforations created in materials.
 RT fracture mechanics
 holes (mechanics)
 perforated plates
 perforated shells
 stress concentration
 stress intensity factors
 structural analysis
- hole mobility**
 GS electrical properties
 . carrier mobility
 . . **hole mobility**
 mobility
 . carrier mobility
 . . **hole mobility**
 transport properties
 . carrier mobility
 . . **hole mobility**
 RT atomic mobilities
 charge carriers
 electromigration
 electron mobility
 holes (electron deficiencies)
 ∞ solid state physics
- ∞ **holes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT boreholes
 cavities
 coronal holes
 gaps
 holes (electron deficiencies)
 holes (mechanics)
- holes (electron deficiencies)**
(added November 1991)
 UF *electron holes*
 GS charge carriers
 . **holes (electron deficiencies)**
 RT acceptor materials
 crystal defects
 donor materials
 electrons
 excitons
 hole distribution (electronics)

holes (mechanics)

- hole mobility
- ∞ holes
 - majority carriers
- ∞ materials
 - minority carriers
 - order-disorder transformations
 - p-type semiconductors
 - semiconductor plasmas
 - semiconductors (materials)
 - Suhl effect
 - vacancies (crystal defects)

holes (mechanics)

(added September 1988)

- RT cavities
 - hole distribution (mechanics)
 - hole geometry (mechanics)
- ∞ holes
 - perforated plates
 - perforated shells
- ∞ perforation
 - porous boundary layer control

Holland

USE **Netherlands**

∞ hollow

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Low tract of land surrounded by hills or mountains; small sheltered valley or basin, especially in a rugged area.
- RT cavities
- ∞ depression
 - recesses

hollow cathodes

- GS electrodes
 - . cathodes
 - . . . **hollow cathodes**
- RT tube cathodes
- tunnel cathodes

holmium

- GS chemical elements
 - . rare earth elements
 - . . . **holmium**
 - holmium isotopes
 - metals
 - . rare earth elements
 - . . . **holmium**
 - holmium isotopes

holmium isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - **holmium isotopes**
 - . rare earth elements
 - . . holmium
 - **holmium isotopes**
 - metals
 - . rare earth elements
 - . . holmium
 - **holmium isotopes**

Holocene epoch

(added May 2001)

DEF Most recent geologic epoch of the Quaternary period extending from about 10,000 years ago to, and including, the present.

- GS Cenozoic Era
 - . Quaternary period
 - . . **Holocene epoch**
- RT geochronology
- Pleistocene epoch

hologrammetry

- RT holography
 - imaging techniques
 - photographic recording
 - photomapping
 - speckle holography

terrain analysis

holographic interferometry

- GS interferometry
 - . **holographic interferometry**
- RT coherent light
 - diffraction patterns
 - holographic optical elements
 - holography
 - laser outputs
 - Moire interferometry
 - scatter plates (optics)
 - speckle holography
 - wave front reconstruction

holographic optical elements

(added April 1995)

DEF Holograms used to control transmitted light beams, rather than to display images, based on the principles of diffraction.

- RT diffraction paths
 - geometrical optics
 - holographic interferometry
 - imagery
 - laser beams
 - light transmission
 - optical paths
 - pulse diffraction
 - wave diffraction
 - white light holography

holographic spectroscopy

- GS spectroscopy
 - . **holographic spectroscopy**
- RT Fourier transformation
 - holography
 - spectrum analysis
 - wave front reconstruction

holographic subtraction

DEF A holographic technique by which two dissimilar optical fields can be subtracted to yield only their difference. Used for self subtraction holography.

- UF *self subtraction holography*
- RT holography

holography

DEF The interferometry technique used to make three-dimensional pictures of surfaces. One light beam illuminates a surface, and sets up interference patterns with a reference beam.

- GS imagery
 - . photography
 - . . **holography**
 - . . . acoustical holography
 - . . . microwave holography
 - . . . speckle holography
 - . . . white light holography
- RT coherent electromagnetic radiation
 - coherent light
 - data storage
 - differential interferometry
 - diffractive optics
 - Gabor transformation
 - hole burning
 - hologrammetry
 - holographic interferometry
 - holographic spectroscopy
 - holographic subtraction
 - image correlators
 - image reconstruction
 - kinofom
 - lasers
 - optical memory (data storage)
 - photopolymers
 - scatter plates (optics)
 - spatial filtering
 - speckle patterns
 - wave front reconstruction

holomorhism

USE **analytic functions**

homeostasis

- RT acclimatization

acid base equilibrium
adaptation
body temperature
cold tolerance
colloids
∞ equilibrium
fibrinogen
hormones
metabolism
nervous system
osmosis
physiology
respiratory system
skin (anatomy)
stress (physiology)
thermoregulation
thromboplastin
water balance

homeotherms

- UF *warm blooded animals*
- GS animals
 - . **homeotherms**
- RT birds
 - body temperature
 - mammals
 - vertebrates

homing

DEF The following of a path of energy waves to or toward their source or point of reflection.

- RT automatic pilots
 - beacons
 - guidance (motion)
 - missile control
 - proportional navigation
 - radio direction finders
 - terminal guidance

homing devices

- UF *seekers*
- RT beacons
 - guidance (motion)
 - infrared tracking
 - laser guidance
 - missiles
 - navigation
 - navigation aids
 - radio beacons
 - radio direction finders
 - radio navigation
 - rendezvous guidance
 - solar compasses
 - trajectory control

homodyne reception

- GS signal reception
 - . **homodyne reception**
- RT frequency synchronization
- radio reception

homogeneity

DEF Having the same properties at all points.

- RT anisotropic media
 - homogenizing
 - sampling
 - statistical tests
 - unity
 - variance (statistics)

homogeneous turbulence

- GS turbulence
 - . **homogeneous turbulence**
- RT atmospheric turbulence
 - fluctuation theory
 - isotropic turbulence
 - low level turbulence
 - magnetohydrodynamic turbulence

homogenization

USE **homogenizing**

homogenizing

- UF *homogenization*

- GS mixing
 . **homogenizing**
- RT agitation
 colloid
 compounding
 dispersing
 dissolving
 homogeneity
 premixing
 ∞ separation
 suspending (mixing)
- homojunctions**
 DEF Junctions between semiconductors that differ in their doping level conductivities but not in their atomic or alloy composition.
 GS semiconductor junctions
 . **homojunctions**
 RT heterojunction devices
 heterojunctions
 silicon junctions
 solar cells
- homology**
 UF *cohomology*
 RT analogies
 duality theorem
 matching
 ∞ relationships
 topology
- homomorphisms**
 GS algebra
 . group theory
 . . **homomorphisms**
 . . . automorphisms
 . . . monoids
 . . . subgroups
 RT field theory (algebra)
 isomorphism
- homopolar generators**
 DEF Rotating electric machines for converting mechanical power into pure direct current by utilizing poles having the same polarity at the armature.
 GS electric generators
 . direct power generators
 . . DC generators
 . . . **homopolar generators**
 . rotating generators
 . . **homopolar generators**
 RT direct current
 ∞ electric equipment
 electromechanical devices
 ∞ generators
- homosphere**
 DEF The lower portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; opposed to the heterosphere. The region in which there is no gross change in atmospheric composition, that is, all the atmosphere from the Earth's surface to about 90 kilometers. The homosphere is about equivalent to the neutrosphere, and includes the troposphere, stratosphere, and mesosphere; it also includes the ozonosphere and at least part of the chemosphere.
 GS Earth atmosphere
 . **homosphere**
 RT biosphere
 chemosphere
 Earth ionosphere
 lower atmosphere
 mesosphere
 middle atmosphere
 ozonosphere
 stratosphere
 thermosphere
 troposphere
 upper atmosphere
- homotopy theory**
 GS geometry
 . topology
 . . **homotopy theory**
 RT curves (geometry)
 fibers (mathematics)
 ∞ theories
- homotropy**
 RT algebra
 problem solving
 set theory
 topology
- Honduras**
 GS nations
 . **Honduras**
 RT Central America
- Honest John rocket vehicle**
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Honest John rocket vehicle**
 . surface to surface rockets
 . . **Honest John rocket vehicle**
 RT Argo rocket vehicles
 EXOS sounding rocket
 Hercules engine
 solid propellant rocket engines
 Trailblazer 1 reentry vehicle
- honeycomb cores**
 DEF Lightweight strengthening materials of structures resembling honeycomb meshes.
 GS cores
 . **honeycomb cores**
 honeycomb structures
 . **honeycomb cores**
 RT ceramic honeycombs
 composite structures
 low density materials
 sandwich structures
- honeycomb mirrors**
(added August 1995)
 DEF High strength to weight telescope mirrors constructed of spun-cast borosilicate glass in a honeycomb structure that optically represents a single large mirror.
 GS honeycomb structures
 . **honeycomb mirrors**
 mirrors
 . **honeycomb mirrors**
 RT adaptive optics
 astronomical observatories
 borosilicate glass
 optical correction procedure
 reflecting telescopes
 segmented mirrors
- honeycomb structures**
 GS **honeycomb structures**
 . honeycomb cores
 . honeycomb mirrors
 RT ∞ cells
 ceramic honeycombs
 composite structures
 hexagonal cells
 insulation
 laminates
 low density materials
 metal foils
 porous materials
 sandwich structures
 ∞ structures
- Honeywell 600/6000 computer**
 GS data processing equipment
 . computers
 . . analog computers
 . . . **Honeywell 600/6000 computer**
 . . . digital computers
 . . . Honeywell computers
 **Honeywell 600/6000 computer**
- Honeywell ADEPT computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . Honeywell computers
 **Honeywell ADEPT computer**
- Honeywell computers**
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Honeywell computers**
 DDP 516 computer
 Honeywell 600/6000 computer
 Honeywell ADEPT computer
 Honeywell DDP 116 computer
- Honeywell DDP 116 computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . Honeywell computers
 **Honeywell DDP 116 computer**
- Hong Kong**
 RT Asia
 China
 nations
 Taiwan
- honoring**
 RT scrapers
 smoothing
- Hookes law**
 GS laws
 . **Hookes law**
 RT elastic properties
 fiber strength
 Maxwell bodies
 modulus of elasticity
 shear properties
 stress-strain diagrams
- hooks**
 RT fasteners
 forks
 swivels
- hoop column antennas**
 GS antennas
 . **hoop column antennas**
 RT large space structures
 satellite communication
 spacecraft communication
- hoops**
 RT ring structures
 tensile stress
- Hopcalite (trademark)**
 GS catalysts
 . **Hopcalite (trademark)**
 chalcogenides
 . oxides
 . . metal oxides
 . . . manganese oxides
 **Hopcalite (trademark)**
 manganese compounds
 . manganese oxides
 . . **Hopcalite (trademark)**
 RT air purification
 carbon monoxide
 gas analysis
- HOPE aerospace plane**
(added September 1995)
 UF *H-2 orbiting plane*
H-II orbiting plane
 GS aerospace vehicles
 . aerospace planes
 . . **HOPE aerospace plane**
 maneuverable spacecraft
 . aerospace planes
 . . **HOPE aerospace plane**
 manned spacecraft
 . **HOPE aerospace plane**
 reentry vehicles
 . recoverable spacecraft

hoppers

- . . reusable spacecraft
- . . . aerospace planes
- **HOPE aerospace plane**
- soft landing spacecraft
- . aerospace planes
- . . **HOPE aerospace plane**
- RT hypersonic vehicles
- Japanese space program
- lifting reentry vehicles
- space transportation

hoppers

- RT ∞ containers
- materials handling
- packaging

horizon

DEF That great circle or the celestial sphere midway between the zenith and nadir, or a line resembling or approximating such a circle.

- GS **horizon**
- . event horizon
- . gyro horizons
- . radio horizons
- RT celestial sphere
- range (extremes)

horizon scanners

- UF *horizon sensing*
- infrared horizon scanners*
- GS flight instruments
- . **horizon scanners**
- scanners
- . **horizon scanners**
- RT attitude control
- infrared scanners
- navigation instruments
- optical equipment
- photometers
- radio horizons
- radiometers
- Scanner project

horizon sensing

USE **horizon scanners**

horizontal branch stars

DEF Horizontal strips of stars on the Hertzsprung-Russell diagram of globular clusters to the left of the red giant branch.

- GS celestial bodies
- . stars
- . . **horizontal branch stars**
- RT color-magnitude diagram
- giant stars
- globular clusters
- Hertzsprung-Russell diagram
- Population II stars
- stellar evolution
- stellar luminosity
- stellar spectra
- stellar spectrophotometry

horizontal distribution

(added September 1992)

- GS distribution (property)
- . spatial distribution
- . . **horizontal distribution**
- RT atmospheric circulation
- atmospheric composition
- atmospheric models
- horizontal orientation
- vertical distribution

horizontal flight

- RT aerodynamic balance
- aircraft stability
- climbing flight
- cruising flight
- ∞ flight
- flight paths
- rocket flight
- soaring
- transition flight

turning flight

horizontal orientation

DEF The attitude of an object in reference to the plane which is perpendicular to the direction of gravity.

- RT alignment
- attitude (inclination)
- directional stability
- dynamic stability
- horizontal distribution
- ∞ orientation
- stabilization
- vertical orientation

horizontal spacecraft landing

- GS landing
- . glide landings
- . . **horizontal spacecraft landing**
- . spacecraft landing
- . . **horizontal spacecraft landing**
- RT approach and landing tests (STS)
- crash landing
- planetary landing
- soft landing
- water landing

horizontal stabilizers

USE **stabilizers (fluid dynamics)**

horizontal tail surfaces

- UF *tail planes*
- GS airfoils
- . **horizontal tail surfaces**
- assemblies
- . tail assemblies
- . . **horizontal tail surfaces**
- control surfaces
- . **horizontal tail surfaces**
- stabilizers (fluid dynamics)
- . **horizontal tail surfaces**
- tail surfaces
- . **horizontal tail surfaces**
- RT aerial rudders
- elevators (control surfaces)
- ∞ surfaces
- trapezoidal tail surfaces

horizontally polarized shear waves

USE **SH waves**

hormone metabolisms

- GS metabolism
- . **hormone metabolisms**
- RT glucocorticoids
- hormones

hormones

- GS secretions
- . endocrine secretions
- . . **hormones**
- . . . corticosteroids
- aldosterone
- hydroxycorticosteroid
- cortisone
- glucocorticoids
- estrogens
- hypertensin
- pituitary hormones
- adrenocorticotropin (ACTH)
- prostaglandins
- thyroxine
- RT catecholamine
- endocrine systems
- epinephrine
- homeostasis
- hormone metabolisms
- regulatory mechanisms (biology)
- steroids

horn antennas

DEF Antennas shaped like a horn.

- GS antennas
- . directional antennas
- . . **horn antennas**
- . radio antennas

- . . microwave antennas
- . . . **horn antennas**
- . waveguide antennas
- . . **horn antennas**
- microwave equipment
- . microwave antennas
- . . **horn antennas**
- radio equipment
- . radio antennas
- . . microwave antennas
- . . . **horn antennas**
- RT antenna design
- lens antennas
- parabolic antennas
- radar antennas
- Schelkunoff principle
- sidelobe reduction
- slot antennas

horns

- RT auditory signals
- Schwarzschild antennas
- ∞ signals
- sirens
- sound generators
- warning
- warning systems

horsepower

- RT physical work
- ∞ power
- power efficiency
- work

horses

- GS animals
- . vertebrates
- . . mammals
- . . . **horses**
- RT grazing
- livestock

horseshoe vortices

(added July 1989)

- UF *hairpin vortices*
- GS vortices
- . **horseshoe vortices**
- RT Abrikosov theory
- flow distortion
- flow geometry
- vortex filaments
- vortex generators
- vortex rings
- vorticity
- wakes
- wing tip vortices

hoses

- RT pipes (tubes)
- ∞ tubes

hospitals

- RT evacuating (transportation)
- medical equipment

hot air

USE **high temperature air**

hot atoms

DEF Atoms with high internal or kinetic energy as a result of a nuclear process such as beta decay or neutron capture.

- GS atoms
- . **hot atoms**
- RT beta particles
- decay
- neutron decay

hot cathodes

DEF Cathodes that function primarily by the process of thermionic emission.

- GS electrodes
- . cathodes
- . . tube cathodes
- . . . **hot cathodes**
- RT Bayard-Alpert ionization gages

- ionization gages
thermionic cathodes
- hot corrosion**
DEF The corrosion at high temperatures as a result of the reduction of protective oxide coatings and scales and the subsequent accelerated oxidation.
GS corrosion
 . **hot corrosion**
RT coatings
 damage
 degradation
 deterioration
 erosion
 gas-metal interactions
 metal coatings
 oxidation
 pitting
 rusting
 scale (corrosion)
 surface properties
 temperature dependence
- hot cycle propulsion system*
USE **tip driven rotors**
- hot electrons**
GS particles
 . charged particles
 . . . energetic particles
 electrons
 **hot electrons**
 . corpuscular radiation
 . . . energetic particles
 electrons
 **hot electrons**
 . elementary particles
 . . fermions
 . . . leptons
 electrons
 **hot electrons**
- hot extruding*
USE **extruding**
- hot forming*
USE **hot working**
- hot gas systems*
USE **high temperature gases**
- hot gases*
USE **high temperature gases**
- hot isostatic pressing**
DEF A thermomechanical process for forming metal-powder compacts or ceramic shapes by use of isostatically applied gas pressure in order to achieve high density in the treated material. Used for HIP (process).
UF *HIP (process)*
GS forming techniques
 . pressing (forming)
 . . hot pressing
 . . . **hot isostatic pressing**
 hardening (materials)
 . hot pressing
 . . **hot isostatic pressing**
 thermomechanical treatment
 . hot pressing
 . . **hot isostatic pressing**
RT coining
 cold pressing
 compacting
 forging
 isostatic pressure
 metal working
∞ pressing
 sintering
 stamping
- upsetting
- hot jet exhaust*
USE **high temperature gases**
jet exhaust
- hot jets*
USE **jet flow**
- hot machining**
GS machining
 . **hot machining**
RT forming techniques
- hot plasmas*
USE **high temperature plasmas**
- hot pressing**
DEF The simultaneous heating and molding of a compact.
GS forming techniques
 . pressing (forming)
 . . **hot pressing**
 . . . hot isostatic pressing
 hardening (materials)
 . **hot pressing**
 . . hot isostatic pressing
 thermomechanical treatment
 . **hot pressing**
 . . hot isostatic pressing
RT coining
 cold pressing
 compacting
 forging
 metal working
∞ pressing
 sintering
 stamping
 upsetting
- hot stars**
GS celestial bodies
 . stars
 . . early stars
 . . . **hot stars**
 A stars
 B stars
 shell stars
 Sigma Orionis
 blue stars
 O stars
 white dwarf stars
 Wolf-Rayet stars
RT cataclysmic variables
 peculiar stars
 red dwarf stars
- hot surfaces**
RT heat transfer
 Rayleigh-Benard convection
∞ surfaces
- hot water rocket engines**
GS engines
 . rocket engines
 . . **hot water rocket engines**
- hot weather**
GS weather
 . **hot weather**
RT heat stroke
 summer
 tropical regions
- hot working**
DEF Controlled mechanical operations for shaping a product at temperatures above the recrystallization temperature. Used for hot forming.
UF *hot forming*
GS forming techniques
 . **hot working**
 . . ausforming
RT bulging
 forging
 metal drawing
- metal spinning
metal working
pultrusion
shearing
upsetting
- hot-film anemometers**
GS measuring instruments
 . anemometers
 . . **hot-film anemometers**
RT flow measurement
 meteorological instruments
 sonic anemometers
 velocity measurement
 wind (meteorology)
 wind measurement
 wind vanes
 wind velocity
 wind velocity measurement
- HOTOL launch vehicle**
DEF A British unmanned horizontal takeoff and landing single-stage-to-orbit launch vehicle. Later launches will be manned.
GS aerospace vehicles
 . aerospace planes
 . . **HOTOL launch vehicle**
 launch vehicles
 . reusable launch vehicles
 . . single stage to orbit vehicles
 . . . **HOTOL launch vehicle**
 maneuverable spacecraft
 . aerospace planes
 . . **HOTOL launch vehicle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . aerospace planes
 **HOTOL launch vehicle**
 single stage to orbit vehicles
 **HOTOL launch vehicle**
 soft landing spacecraft
 . aerospace planes
 . . **HOTOL launch vehicle**
 unmanned spacecraft
 . **HOTOL launch vehicle**
RT launch vehicle configurations
 space shuttles
 space transportation
 spacecraft launching
 UK space program
∞ vehicles
- hotshot wind tunnels**
GS test facilities
 . wind tunnels
 . . hypersonic wind tunnels
 . . . **hotshot wind tunnels**
 . . . hypervelocity wind tunnels
 . . . **hotshot wind tunnels**
RT blowdown wind tunnels
 shock tubes
 shock tunnels
- hot-wire anemometers**
GS measuring instruments
 . anemometers
 . . **hot-wire anemometers**
RT flow measurement
 flowmeters
 meteorological instruments
 velocity measurement
- hot-wire flowmeters**
UF *hot-wire turbulence meters*
GS measuring instruments
 . flowmeters
 . . **hot-wire flowmeters**
RT Pirani gages
 plasma electrodes
 thermal conductivity

Hound Dog missile

turbulence meters

hot-wire turbulence meters
USE **hot-wire flowmeters**
turbulence meters

Hound Dog missile
GS missiles
. air to surface missiles
. . **Hound Dog missile**
RT turbojet engines

Householder transformations
GS transformations (mathematics)
. **Householder transformations**
RT problem solving

housekeeping (spacecraft)
GS cleaning
. **housekeeping (spacecraft)**
cleanliness
. **housekeeping (spacecraft)**
RT hygiene
sanitation
sterilization
washing

hosings
GS **hosings**
. cowlings
. doghouses (electronics)
. radomes
RT ∞ containers
coverings
domes (structural forms)
enclosure
enclosures
fairings
guards (shields)
nacelles
perforated shells
protection
protectors
protuberances
shells (structural forms)
shielding
walls

Houston (TX)
GS cities
. **Houston (TX)**
RT texas

hovercraft
USE **ground effect machines**

hovercraft ground effect machines
UF *HD-1 ground effect machines*
GS ground effect machines
. **hovercraft ground effect machines**
RT ∞ aircraft
research aircraft
water takeoff and landing aircraft

hovering
GS maneuvers
. **hovering**
RT aerodynamic stability
Cushioncraft ground effect machine
flutter
ground effect machines
hovering rocket vehicles
terrain following
transition flight
V/STOL aircraft
vertical flight
whirl towers

hovering rocket vehicles
GS rocket vehicles
. **hovering rocket vehicles**
RT hovering
soft landing spacecraft

∞ vehicles

hovering stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . aircraft stability
. . . . **hovering stability**
stability
. dynamic stability
. . motion stability
. . . aircraft stability
. . . . **hovering stability**
RT attitude stability
directional stability
gyroscopic stability
lateral stability
longitudinal stability
low speed stability
whirl towers

howitzers
GS weapons
. guns (ordnance)
. . artillery
. . . **howitzers**
RT ballistics
gun launchers
gunnery training

HP-115 aircraft
UF *Handley Page HP-115 aircraft*
GS Handley Page aircraft
. **HP-115 aircraft**
jet aircraft
. **HP-115 aircraft**
monoplanes
. **HP-115 aircraft**
research vehicles
. research aircraft
. . **HP-115 aircraft**
tailless aircraft
. **HP-115 aircraft**
RT ∞ aircraft
wing planforms

HPRR
USE **Health Physics Research Reactor**

HR diagram
USE **Hertzsprung-Russell diagram**

HRB-1 helicopter
USE **CH-46 helicopter**

HS-125 aircraft
USE **DH 125 aircraft**

HS-748 aircraft
UF *AVRO Whitworth HS-748 aircraft*
GS Hawker Siddeley aircraft
. **HS-748 aircraft**
jet aircraft
. turboprop aircraft
. . **HS-748 aircraft**
monoplanes
. **HS-748 aircraft**
passenger aircraft
. **HS-748 aircraft**
RT ∞ aircraft

HS-801 aircraft
GS Hawker Siddeley aircraft
. **HS-801 aircraft**
jet aircraft
. **HS-801 aircraft**
reconnaissance aircraft
. **HS-801 aircraft**
RT aerial reconnaissance
∞ aircraft
observation aircraft
photography

photoreconnaissance

HSS-2 helicopter
USE **SH-3 helicopter**

HTGR
USE **high temperature gas cooled reactors**

HTML
USE **document markup languages**

HTPB propellants
DEF Solid rocket propellants containing hydroxyl terminated polybutadiene as bonding material.
GS propellants
. rocket propellants
. . solid rocket propellants
. . . **HTPB propellants**
. solid propellants
. . solid rocket propellants
. . . **HTPB propellants**
RT plastic propellants
polybutadiene

HTSC (superconductors)
USE **high temperature superconductors**

HU-1 helicopter
USE **UH-1 helicopter**

HU2K-1 helicopter
USE **UH-2 helicopter**

Hubble constant
DEF The rate at which the velocity of recession of the galaxies increases with distance.
GS constants
. **Hubble constant**
RT cosmology
galaxies
irregular galaxies
red shift
velocity measurement

Hubble diagram
GS cosmology
. **Hubble diagram**
RT barred galaxies
galactic radiation
galaxies
irregular galaxies
red shift
velocity measurement

Hubble Space Telescope
UF *Large Space Telescope*
LST
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Hubble Space Telescope**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Hubble Space Telescope**
telescopes
. spaceborne telescopes
. . **Hubble Space Telescope**
RT faint object camera
James Webb Space Telescope
Space Shuttle payloads
spaceborne astronomy
ultraviolet astronomy

hubs
UF *rotor hubs*
RT spokes
wheels

Hudson Bay (Canada)
GS bays (topographic features)
. **Hudson Bay (Canada)**

RT Canada

Hudson River (NY-NJ)
 GS rivers
 . Hudson River (NY-NJ)
 RT New Jersey
 New York

Hueckel theory
 RT ∞ theories

Hughes aircraft
 GS **Hughes aircraft**
 . AH-64 helicopter
 . H-17 helicopter
 . OH-6 helicopter
 . TH-55 helicopter
 . XV-9A aircraft
 RT ∞ aircraft

Hugoniot adiabat
 USE **Hugoniot equation of state**

Hugoniot equation of state
 UF *Hugoniot adiabat*
 GS equations of state
 . **Hugoniot equation of state**
 RT compressible flow
 ∞ equations
 loads (forces)
 one dimensional flow
 shock waves

HUL
 USE **hardware utilization lists**

hulls (structures)
 GS **hulls (structures)**
 . ship hulls
 RT aircraft structures
 bays (structural units)
 bulkheads
 fuselages
 hydrofoils
 keels
 metal shells
 perforated shells
 seaplanes
 shells (structural forms)
 skin (structural member)
 strakes
 ∞ structures
 SWATH (ship)

hum
 DEF Electrical disturbance at the power supply frequency or harmonics thereof.
 RT acoustics
 ∞ interference
 ∞ noise

human behavior
 GS behavior
 . **human behavior**
 RT boredom
 detachment
 disorders
 dithers
 emotions
 extroversion
 introversion
 lethargy
 neuropsychiatry
 panic

human beings
 UF *man*
 GS animals
 . vertebrates
 . . mammals
 . . . primates
 **human beings**
 RT aborigines
 anthropology
 census
 children

chimpanzees
 clinical medicine
 cultural resources
 demography
 females
 males
 man environment interactions
 parents
 patients
 race factors
 races (anthropology)
 youth

human body
 GS anatomy
 . **human body**
 RT appendages
 ∞ bodies
 body measurement (biology)
 exercise physiology
 limbs (anatomy)
 lumbar region
 posture
 sciatic region

human centrifuges
 UF *piloted centrifuges*
 GS centrifuges
 . **human centrifuges**
 RT acceleration tolerance
 artificial gravity
 high gravity environments

human engineering
 USE **human factors engineering**

human factors engineering
 DEF Application of information on physical and psychological characteristics of man to the design of devices and systems for human use. Used for ergonomics and human engineering.
 UF *ergonomics*
human engineering
 RT ∞ aeronautics
 aircraft accidents
 aircraft hazards
 anthropometry
 architecture
 astronaut maneuvering equipment
 astronaut performance
 ∞ astronautics
 bioengineering
 biofeedback
 bionics
 body measurement (biology)
 brightness
 color
 comfort
 cybernetics
 education
 efficiency
 ∞ engineering
 ∞ environmental engineering
 environments
 fatigue (biology)
 flat panel displays
 ∞ flight stress
 glare
 human resources
 human-computer interface
 illuminating
 life support systems
 man machine systems
 manned space flight
 manual control
 monocular vision
 noise (sound)
 ∞ performance
 pilot error
 production engineering
 psychological effects
 safety devices
 safety management
 situational awareness
 systems engineering
 teleoperators

visibility
 vision
 wheelchairs
 workstations

human factors laboratories
 GS laboratories
 . **human factors laboratories**
 RT environmental laboratories

human immunodeficiency virus
(added August 1991)
 DEF A virus which attacks the human immune system and causes acquired immunodeficiency syndrome (AIDS).
 UF *HIV (virus)*
 GS microorganisms
 . viruses
 . . **human immunodeficiency virus**
 RT acquired immunodeficiency syndrome
 antibodies
 immune systems
 immunology
 interferon
 vaccines
 viral diseases
 virulence

human pathology
 GS medical science
 . pathology
 . . **human pathology**
 RT cholera
 convulsions
 epilepsy
 patients

human performance
 GS **human performance**
 . astronaut performance
 . . blackout prevention
 . operator performance
 . pilot performance
 . . blackout prevention
 RT abilities
 competition
 ∞ endurance
 human resources
 information processing (biology)
 intelligence tests
 intravehicular activity
 mental health
 mental performance
 ∞ performance
 pilot error
 psychomotor performance
 race factors
 sensorimotor performance
 visual tasks
 workloads (psychophysiology)

human reactions
 RT biological effects
 boredom
 competition
 emotional factors
 laughing
 noise pollution
 physiological effects
 psychological effects
 psychomotor performance
 ∞ reaction
 reaction time
 reward (psychology)
 sensorimotor performance
 shock (physiology)
 vacillation

human relations
 UF *interpersonal relations*
 RT employee relations
 personnel management
 sociology

human resources
 DEF Those elements of support and capa-

human tolerances

bility that are provided by persons using their mental and physical capabilities.

- RT education
- human factors engineering
- human performance
- management planning
- manpower
- personnel
- personnel development
- personnel management

human tolerances

- GS tolerances (physiology)
 - . **human tolerances**
- RT ∞ acceleration
 - acceleration tolerance
 - diving (underwater)
- ∞ endurance
 - heat acclimatization
 - heat tolerance
 - noise pollution
 - noise tolerance
 - orthostatic tolerance
 - radiation tolerance
 - shock (physiology)

human wastes

- GS wastes
 - . metabolic wastes
 - . . . **human wastes**
 - . . . feces
 - . . . urine
- RT activated sludge
- air pollution
- environment pollution
- environmental surveys
- excretion
- liquid wastes
- organic wastes (fuel conversion)
- pollution
- sewage
- sewers
- solid wastes
- toilets
- waste disposal

human-computer interface

- UF *man-computer interface*
- user-computer interface*
- GS interfaces
 - . **human-computer interface**
 - man machine systems
 - . **human-computer interface**
- RT command languages
- computer aided design
- data processing terminals
- display devices
- document markup languages
- graphical user interface
- human factors engineering
- hypertext
- natural language processing
- pilot support systems
- query languages
- user requirements
- virtual reality

Humason comet

- GS celestial bodies
 - . comets
 - . . . **Humason comet**
- RT solar system

humerus

- RT arm (anatomy)
- elbow (anatomy)

humidity

- DEF The amount of water vapor in the air. Specifically, relative humidity.
- RT air conditioning
- atmospheric density
- atmospheric moisture
- body temperature
- climatology
- comfort

corrosion
dehumidification
drop size
dry heat
environments
hygral properties
hygrometers
lapse rate
meteorological parameters
meteorology
mixing ratios
moisture
moisture content
moisture meters
perspiration
precipitation (meteorology)
psychological effects
psychrometers
refrigerating
temperature
vapor pressure
water
water vapor
weather forecasting

humidity measurement

- RT hygrometers
 - ∞ measurement
 - meteorological instruments
 - moisture meters
 - psychrometers

Hummingbird aircraft

- USE **XV-4 aircraft**

Hungarian space program

(added June 1989)

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Hungarian space program**
- RT Hungary

Hungary

- GS nations
 - . **Hungary**
- RT Central Europe
- Europe
- Hungarian space program

Hunter F-2 aircraft

- USE **F-2 aircraft**

Hunting H-126 aircraft

- USE **H-126 aircraft**

Hunting P-84 aircraft

- USE **jet provost aircraft**

hurricanes

- DEF Tropical cyclones, especially in the West Indies, in which the wind velocity equals or exceeds 64 knots (73 mph).
- GS storms
 - . storms (meteorology)
 - . . cyclones
 - . . . **hurricanes**
 - Anna hurricane
 - . . tropical storms
 - . . . **hurricanes**
 - Anna hurricane
- RT climatology
- cyclogenesis
- meteorology
- storm damage
- storm surges
- tornadoes

typhoons

HUS-1 helicopter

- USE **UH-34 helicopter**

Huskie helicopter

- USE **HH-43 helicopter**

Hustler aircraft

- USE **B-58 aircraft**

HUT (physiology)

(added March 1998)

- USE **head up tilt**

Huygens principle

DEF A very general principle applying to all forms of wave motion which states that every point on the instantaneous position of an advancing phase front (wave front) may be regarded as a source of secondary spherical wavelets. The position of the phase front a moment later is then determined as the envelope of all the secondary wavelets (ad infinitum).

- RT diffraction
 - ∞ optics
 - point sources
 - refraction
 - scattering
 - Schellkunoff principle
 - spherical waves
 - wave fronts
 - wave propagation

Huygens probe

(added May 1997)

- GS ESA spacecraft
 - . **Huygens probe**
 - unmanned spacecraft
 - . space probes
 - . . **Huygens probe**
- RT Cassini mission
- satellite atmospheres
- Titan

Hvittis chondrite

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Hvittis chondrite**

HVOF thermal spraying

(added July 2001)

DEF Thermal spray process where the spray powder particles are injected into a high-velocity jet formed by the combustion of oxygen and fuel. Used to deposit strong, high-density coatings with low residual stress.

- UF *high velocity oxy-fuel spraying*
- high velocity oxygen fuel thermal spraying*
- GS spraying
 - . flame spraying
 - . . **HVOF thermal spraying**
- RT coating
- metal spraying
- plasma spraying
- protective coatings
- sprayed coatings

hybrid circuits

- GS circuits
 - . **hybrid circuits**
- RT electronic packaging
- printed circuits
- semiconductor devices
- transistor circuits

hybrid combustion

- USE **hybrid propellant rocket engines**

hybrid composites

(added April 1992)

- GS composite materials
 - . **hybrid composites**

- RT fiber composites
hybrid structures
laminates
metal matrix composites
polymer matrix composites
reinforced plastics
reinforcing fibers
resin matrix composites
superhybrid materials
- hybrid computers**
GS data processing equipment
. computers
. . **hybrid computers**
RT analog computers
digital computers
- hybrid navigation systems**
GS navigation
. **hybrid navigation systems**
RT navigation aids
navigation instruments
∞ systems
- hybrid propellant rocket engines**
UF *hybrid combustion*
GS engines
. rocket engines
. . **hybrid propellant rocket engines**
. . . lithergol rocket engines
RT booster rocket engines
∞ hybrid rocket engines
internal combustion engines
jet engines
liquid propellant rocket engines
restartable rocket engines
solid propellant rocket engines
sustainer rocket engines
Vernier engines
- hybrid propellants**
UF *lithergolic propellants*
GS propellants
. **hybrid propellants**
RT case bonded propellants
chemical fuels
cryogenic rocket propellants
gaseous rocket propellants
gelled rocket propellants
high energy fuels
high energy propellants
hypergolic rocket propellants
liquid rocket propellants
metal fuels
metal propellants
solid propellant ignition
solid propellants
solid rocket propellants
- hybrid propulsion**
UF *dual mode propulsion*
GS propulsion
. chemical propulsion
. . **hybrid propulsion**
RT jet engines
laser propulsion
rocket engines
rocket-based combined-cycle engines
- ∞ **hybrid rocket engines**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ducted rocket engines
hybrid propellant rocket engines
liquid propellant rocket engines
lithergol rocket engines
solid propellant rocket engines
turboramjet engines
- hybrid structures**
DEF An assembly constructed of interconnected rigid and flexible structural shapes; designed to sustain dynamic, static, and other loads.
RT composite structures
elastic properties
- flexible bodies
hybrid composites
rigid structures
structural stability
∞ structures
- hybrids (biology)*
USE **genetic engineering**
- hybrid-Trefftz finite element method (added July 1998)*
USE **finite element method**
Trefftz method
- hydrates**
RT aqueous solutions
water
- hydration**
DEF The formation of a compound by the combining of water with some other substance.
RT chemical reactions
dehydration
hydrolysis
hydrophobicity
- hydraulic actuators*
USE **actuators**
hydraulic equipment
- hydraulic analogies**
GS analogies
. **hydraulic analogies**
RT computerized simulation
flow visualization
fluorics
fluidics
gas flow
numerical flow visualization
wave propagation
- hydraulic control**
UF *electrohydraulic control*
RT automatic control
∞ control
electronic control
engine control
fluid power
fluidics
∞ hydraulics
pneumatic control
remote control
solenoid valves
- hydraulic equipment**
UF *hydraulic actuators*
hydraulic heating sources
hydraulic pumps
hydraulic systems
hydraulic valves
GS **hydraulic equipment**
. aircraft hydraulic systems
RT airborne equipment
automatic control valves
cocks
cushions
∞ equipment
fluid amplifiers
fluid power
fluid switching elements
fly by tube control
gates (openings)
∞ hydraulics
motors
network analysis
network synthesis
pumps
relief valves
servocontrol
servomechanisms
shock absorbers
∞ systems
turbine wheels
valves
water hammer
- wheel brakes
- hydraulic fluids**
DEF Liquids used in hydraulic systems for transmitting power.
GS liquids
. **hydraulic fluids**
. . Skydrol (trademark)
RT fluid pressure
fluid transmission lines
∞ fluids
high temperature fluids
∞ hydraulics
oils
patch tests
transmission fluids
working fluids
- hydraulic heating sources*
USE **heat sources**
hydraulic equipment
- hydraulic jets**
UF *water jets*
GS fluid jets
. **hydraulic jets**
RT jet flow
- hydraulic pumps*
USE **hydraulic equipment**
pumps
- hydraulic shock**
GS mechanical shock
. **hydraulic shock**
- hydraulic systems*
USE **hydraulic equipment**
- hydraulic test tunnels**
UF *water tunnels*
GS test facilities
. **hydraulic test tunnels**
RT ∞ tunnels
- hydraulic valves*
USE **hydraulic equipment**
valves
- ∞ **hydraulics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fluid dynamics
fluid flow
fluid mechanics
fluid power
hydraulic control
hydraulic equipment
hydraulic fluids
hydrodynamic ram effect
hydrodynamics
hydrology
hydromechanics
hydrostatics
impedance
influence coefficient
limnology
∞ mechanics (physics)
pipes (tubes)
pneumatics
pressure heads
thermo-hydraulics
water
water flow
water pressure
- hydrazides**
RT hydrazines
- hydrazine borane**
GS boron compounds
. boron hydrides
. . boranes
. . . **hydrazine borane**
hydrazines

hydrazine engines

- . **hydrazine borane**
- hydrogen compounds
- . hydrides
- . boron hydrides
- . boranes
- . . . **hydrazine borane**

hydrazine engines

- UF *NIMPHE (engine)*
- GS engines
- . rocket engines
- . liquid propellant rocket engines
- . . . **hydrazine engines**
- RT monomethylhydrazines
- turbo-rocket engines

hydrazine nitrate

- GS nitrogen compounds
- . nitrates
- . inorganic nitrates
- . . . **hydrazine nitrate**

hydrazine nitroform

- GS esters
- . organic nitrates
- . nitroforms
- . . . **hydrazine nitroform**
- explosives
- . **hydrazine nitroform**
- nitrogen compounds
- . nitrates
- . organic nitrates
- . . . nitroforms
- . . . **hydrazine nitroform**
- propellants
- . **hydrazine nitroform**

hydrazine perchlorates

- GS halogen compounds
- . chlorine compounds
- . perchlorates
- . . . **hydrazine perchlorates**
- hydrazines
- . **hydrazine perchlorates**

hydrazines

- GS **hydrazines**
- . chlorpromazine
- . dihydrazine
- . dimethylhydrazines
- . ethylene dihydrazine
- . hydrazine borane
- . hydrazine perchlorates
- . methylhydrazine
- . . . monomethylhydrazines
- . tetrafluorohydrazine
- RT aroazine
- amines
- hydrazides
- hydrazones
- liquid rocket propellants
- rocket propellants

hydrazinium compounds

- GS nitrogen compounds
- . **hydrazinium compounds**
- RT ∞ chemical compounds

hydrazoic acid

- GS acids
- . **hydrazoic acid**
- nitrogen compounds
- . **hydrazoic acid**
- RT nitrogen hydrides

hydrazones

- GS nitrogen compounds
- . **hydrazones**
- RT hydrazines

hydrazonium compounds

- RT ∞ chemical compounds

hydrides

- GS hydrogen compounds
- . **hydrides**

- . borohydrides
- . . . aluminum borohydrides
- . . . beryllium borohydrides
- . boron hydrides
- . . . aluminum borohydrides
- . . . beryllium borohydrides
- . boranes
- . . . carborane
- . . . hydrazine borane
- . . . pentaboranes
- . diborane
- . dihydrides
- . metal hydrides
- . . . aluminum hydrides
- . . . aluminum borohydrides
- . . . beryllium hydrides
- . . . cesium hydrides
- . lithium hydrides
- . . . lithium aluminum hydrides
- . . . potassium hydrides
- . sodium hydrides
- . nitrogen hydrides
- . . . amino radical
- . phosphines
- . silanes
- . . . chlorosilanes
- . . . methyl chlorosilanes
- . zirconium hydrides
- RT deuterides
- hydrogen production

hydroacoustics

- USE **underwater acoustics**

hydroaeromechanics

- USE **aerodynamics**

hydroballistics

- GS ballistics
- . **hydroballistics**
- RT ballistic ranges
- hydrodynamics
- torpedoes
- underwater explosions
- underwater trajectories

hydrobarophones

- USE **hydrophones**

hydroboration

- GS chemical reactions
- . **hydroboration**

hydrobromic acid

- GS acids
- . **hydrobromic acid**
- halogen compounds
- . bromine compounds
- . bromides
- . . . **hydrobromic acid**
- . halides
- . bromides
- . . . **hydrobromic acid**

hydrobromides

- GS halogen compounds
- . bromine compounds
- . bromides
- . . . **hydrobromides**
- . halides
- . bromides
- . . . **hydrobromides**
- hydrogen compounds
- . **hydrobromides**

hydrocarbon combustion

- GS combustion
- . **hydrocarbon combustion**
- RT explosions
- fuel combustion
- oxidation
- propellant combustion
- smog

hydrocarbon fuel production

- GS fuel production

hydrocarbon fuel production

- RT agriculture
- bioconversion
- biomass energy production
- energy technology
- hydrogen fuels
- lignite
- solvent refined coal
- waste utilization

hydrocarbon fuels

- GS fuels
- . chemical fuels
- . . . **hydrocarbon fuels**
- . diesel fuels
- . fossil fuels
- . . . coal
- . . . anthracite
- . . . lignite
- . . . solvent refined coal
- . . . crude oil
- . . . natural gas
- . . . liquefied natural gas
- . . . peat
- . . . shale oil
- . gasoline
- . jet engine fuels
- . . . JP-4 jet fuel
- . . . JP-5 jet fuel
- . . . JP-6 jet fuel
- . . . JP-7 jet fuel
- . . . JP-8 jet fuel
- . . . synthane
- RT acetylene
- aircraft fuels
- alkanes
- amines
- automobile fuels
- butadiene
- clean fuels
- coal gasification
- coal liquefaction
- coal utilization
- endothermic fuels
- energy policy
- environmental chemistry
- ethane
- ethylene
- fuel production
- heptanes
- hexenes
- high energy fuels
- hydrogen fuels
- hydrogen-based energy
- hypergolic rocket propellants
- kerogen
- kerosene
- methanation
- methane
- paraffins
- propane
- retort processing
- rocket propellants
- shale oil
- storable propellants
- synthetic fuels

hydrocarbon poisoning

- GS diseases
- . toxic diseases
- . . . **hydrocarbon poisoning**
- toxicity
- . **hydrocarbon poisoning**
- RT benzene poisoning
- industrial safety
- ∞ poisoning
- smog
- toxicity and safety hazard
- toxicology

hydrocarbons

- GS organic compounds
- . **hydrocarbons**
- . aliphatic hydrocarbons
- . . . alkanes
- . . . butanes
- . . . cetane

- ... ethane
- ... heptanes
- ... methane
- ... nitropropane
- ... nonanes
- ... octanes
- ... paraffins
- ceresin
- ... pentanes
- ... neopentane
- ... propane
- ... alkenes
- ... butenes
- ... ethylene
- ... vinylidene
- ... hexenes
- ... propylene
- ... trienes
- ... alkynes
- ... acetylene
- ... oxyacetylene
- ... dienes
- ... butadiene
- ... heptadiene
- ... hexadiene
- ... polybutadiene
- ... carotene
- ... cubane
- ... cyanoacetylene
- ... cyclic hydrocarbons
- ... anthracene
- ... benzene
- ... chlorobenzenes
- ... colchicine
- ... cyclobutane
- ... cyclohexane
- ... cyclopropane
- ... durene
- ... indene
- ... menthol
- ... naphthalene
- ... naphthenes
- ... polycyclic aromatic hydrocarbons
- ... diphenyl compounds
- ... diphenyl hydantoin
- ... fluorohydrocarbons
- ... carbon tetrafluoride
- ... chlorofluoromethane
- ... polytetrafluoroethylene
- teflon (trademark)
- ... mesitylene
- ... methylene
- ... methylidyne
- ... natural gas
- ... liquefied natural gas
- ... phenanthrene
- ... pyrenes
- ... quinoxalines
- ... stilbene
- ... toluene
- ... triphenyls
- ... xylene

RT ∞ aromatic compounds
carbon compounds
cracking (chemical engineering)
organic peroxides

hydrochloric acid

GS acids

- . **hydrochloric acid**
- . halogen compounds
- . chlorine compounds
- . chlorides
- . . hydrogen chlorides
- . . . **hydrochloric acid**
- . halides
- . chlorides
- . . hydrogen chlorides
- . . . **hydrochloric acid**

hydrochlorides

GS halogen compounds

- . chlorine compounds
- . chlorides
- . . **hydrochlorides**
- . halides
- . chlorides

- . . . **hydrochlorides**
- RT hydrogen chlorides

hydroclimatology

DEF The study of the physical and often the chemical factors that characterize a particular environment.

GS climatology

- . **hydroclimatology**
- RT agroclimatology
- hydrography
- hydrology
- meteorology
- oceanography

hydrocracking

DEF Technique for the catalytic conversion of coal into liquid fuels.

GS chemical reactions

- . cracking (chemical engineering)
- . . **hydrocracking**
- . hydrogenolysis
- . . **hydrocracking**
- decomposition
- . cracking (chemical engineering)
- . . **hydrocracking**
- . hydrogenolysis
- . . **hydrocracking**
- fractionation
- . **hydrocracking**
- RT coal gasification
- coal liquefaction

hydrocyanic acid

UF *hydrogen cyanides*
prussic acid

GS acids

- . **hydrocyanic acid**
- hydrogen compounds
- . **hydrocyanic acid**
- nitrogen compounds
- . **hydrocyanic acid**
- RT CN emission
- HCN lasers

hydrodynamic coefficients

DEF The factors producing motions in floating objects in liquids.

GS coefficients

- . **hydrodynamic coefficients**
- RT computational fluid dynamics
- ∞ drag coefficients
- flow distribution
- flow velocity
- liquid flow
- sea roughness
- ship hulls
- steady flow
- unsteady flow
- water waves

hydrodynamic equations

GS equations of motion

- . kinetic equations
- . . **hydrodynamic equations**
- . . . Burnett equations
- . . . Helmholtz vorticity equation
- RT Boltzmann transport equation
- ∞ equations
- flow stability
- flow theory
- fluid mechanics
- gas dynamics
- hydrodynamics
- meteorology
- plasma dynamics

hydrodynamic ram effect

DEF The physical effect (force) transmitted to the walls of a liquid filled container by the action of a projectile penetrating the container and transferring its energy to the liquid as kinetic energy. The fluid, in turn, transfers this kinetic energy to the walls of the container, causing excessive structural damage.

UF *ram effect (hydrodynamics)*

RT ∞ effects

- fluid filled shells
- ∞ hydraulics
- hypervelocity impact
- impact
- kinetic energy
- liquid filled shells
- momentum transfer
- penetration

hydrodynamic stability

USE **flow stability**

hydrodynamic tunnels

USE **plasma jet wind tunnels**

hydrodynamics

GS fluid mechanics

- . fluid dynamics
- . . **hydrodynamics**
- . . . elastohydrodynamics
- . . . electrohydrodynamics
- . . . magnetohydrodynamics
- . hydromechanics
- . . **hydrodynamics**
- . . . elastohydrodynamics
- . . . electrohydrodynamics
- . . . magnetohydrodynamics
- RT ballast (mass)
- ∞ dynamics
- Earth sciences
- Euler equations of motion
- flow theory
- fluid flow
- fluid power
- gas dynamics
- ∞ hydraulics
- hydroballistics
- hydrodynamic equations
- hydrostatics
- internal flow
- Krook equation
- Lagrange coordinates
- ∞ mechanics (physics)
- ocean dynamics
- pressure gradients
- pressure heads
- seepage
- ship hulls
- thermohydraulics
- water
- water flow
- water hammer
- water pressure

hydroelasticity

GS mechanical properties

- . elastic properties
- . . **hydroelasticity**
- RT compressibility
- compressible fluids
- modulus of elasticity
- thermoelasticity
- viscoelasticity

hydroelectric power stations

UF *hydropower stations*

GS stations

- . **hydroelectric power stations**
- RT electric power plants
- electric power transmission
- hydroelectricity
- ∞ power plants
- ∞ power transmission
- turbogenerators
- water wheels

hydroelectricity

DEF Electric power produced by water power using water wheels, turbogenerators, or other conversion equipment.

GS electricity

- . **hydroelectricity**
- renewable energy
- . **hydroelectricity**
- RT dams

hydrofluoric acid

electric current
∞ electric power
hydroelectric power stations
∞ power plants
turbogenerators

hydrofluoric acid

UF *hydrogen fluorides*
GS acids
. **hydrofluoric acid**
halogen compounds
. fluorine compounds
. . . fluorides
. . . **hydrofluoric acid**
. halides
. . . fluorides
. . . **hydrofluoric acid**

hydrofoil boats

USE **hydrofoil craft**

hydrofoil craft

UF *hydrofoil boats*
RT captured air bubble vehicles
hydrofoils
hydroplanes (vehicles)
ships

hydrofoil oscillations

GS oscillations
. **hydrofoil oscillations**
RT flow stability
flutter
hydrofoils
supercavitating flow

hydrofoils

GS **hydrofoils**
. keels
RT airfoils
∞ blades
elevators (control surfaces)
fins
∞ foils
foils (materials)
guide vanes
hulls (structures)
hydrofoil craft
hydrofoil oscillations
hydroplanes (surfaces)
hydroplaning
landing gear
marine rudders
ships
skis
streamlining
tail assemblies

hydroforming

GS metal working
. **hydroforming**
RT dehydrogenation

hydrogen

GS chemical elements
. **hydrogen**
. . . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . . liquid hydrogen
gases
. **hydrogen**
. . . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . . liquid hydrogen
RT Balmer series
deuterium plasma
fuels
hydrogen atoms
hydrogen ions
hydrogen plasma

hydrogenation
hydrogenolysis
hydronium ions
metallicity
Neptune atmosphere
ortho hydrogen
para hydrogen
Paschen series
Rydberg series
synthane
Uranus atmosphere

hydrogen 2

USE **deuterium**

hydrogen 3

USE **tritium**

hydrogen 4

GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **hydrogen 4**
. . . nuclides
. . . isotopes
. . . hydrogen isotopes
. . . . **hydrogen 4**
gases
. hydrogen
. . hydrogen isotopes
. . . **hydrogen 4**

hydrogen air fuel cells

USE **hydrogen oxygen fuel cells**

hydrogen atoms

GS atoms
. **hydrogen atoms**
RT H I regions
hydrogen

hydrogen azides

GS explosives
. **hydrogen azides**
nitrogen compounds
. azides (inorganic)
. . **hydrogen azides**
propellants
. **hydrogen azides**

hydrogen bombs

USE **fusion weapons**

hydrogen bonds

GS chemical bonds
. **hydrogen bonds**
RT molecular structure
water

hydrogen chloride lasers

USE **HCL lasers**

hydrogen chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **hydrogen chlorides**
. . . hydrochloric acid
. . . halides
. . . chlorides
. . . **hydrogen chlorides**
. . . hydrochloric acid
RT hydrochlorides

hydrogen clouds

GS **hydrogen clouds**
. H I regions
. H II regions
. Orion nebula
RT ∞ clouds
drop size
galactic rotation
gases
molecular clouds
neutral gases
plasma clouds

spin temperature
star formation
vapor phases
vapors

hydrogen compounds

GS **hydrogen compounds**
. deuterium compounds
. . deuterides
. . deuterium fluorides
. . heavy water
. . hydrides
. . borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . boron hydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. . diborane
. . dihydrides
. . metal hydrides
. . . aluminum hydrides
. . . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
. . . nitrohydrogen hydrides
. . . amino radical
. . phosphines
. . silanes
. . . chlorosilanes
. . . methyl chlorosilanes
. . zirconium hydrides
. hydrobromides
. hydrocyanic acid
. hydrogen peroxide
. hydrogen sulfide
. hydrosulfites
. light water
RT acids
∞ chemical compounds
water

hydrogen cyanide lasers

USE **HCN lasers**

hydrogen cyanides

USE **hydrocyanic acid**

hydrogen deuterium oxide

USE **heavy water**

hydrogen embrittlement

DEF A decrease in fracture strength of metals due to the incorporation of hydrogen in the metal lattice.
GS embrittlement
. **hydrogen embrittlement**
RT chemisorption
gas-metal interactions
iron
steels

hydrogen engines

DEF Internal combustion engines utilizing gaseous hydrogen as the fuel.
GS engines
. air breathing engines
. . gas turbine engines
. . . **hydrogen engines**
. . internal combustion engines
. . . gas turbine engines
. . . **hydrogen engines**
. turbine engines
. . gas turbine engines
. . . **hydrogen engines**
RT aircraft engines

automobiles

*hydrogen fluoride lasers*USE **HF lasers***hydrogen fluorides*USE **hydrofluoric acid****hydrogen fuels**

- GS fuels
 - . chemical fuels
 - . . liquid fuels
 - . . . **hydrogen fuels**
- RT cryogenic rocket propellants
 - deuterium
 - fuel cells
 - fuel production
 - gaseous rocket propellants
 - gelled propellants
 - hydrocarbon fuel production
 - hydrocarbon fuels
 - hydrogen-based energy
 - liquid hydrogen
 - liquid rocket propellants
 - ramjet engines
 - slush hydrogen
 - water splitting

hydrogen ions

- GS ions
 - . **hydrogen ions**
- RT acidity
 - H II regions
 - hydrogen
 - hydronium ions
 - pH
 - pH factor
 - positive ions
 - protons

hydrogen isotopes

- GS chemical elements
 - . hydrogen
 - . . **hydrogen isotopes**
 - . . . deuterium
 - . . . hydrogen 4
 - . . . metallic hydrogen
 - . . . tritium
 - . nuclides
 - . . isotopes
 - . . . **hydrogen isotopes**
 - deuterium
 - hydrogen 4
 - metallic hydrogen
 - tritium
 - gases
 - . hydrogen
 - . . **hydrogen isotopes**
 - . . . deuterium
 - . . . hydrogen 4
 - . . . metallic hydrogen
 - . . . tritium

hydrogen masers

DEF A stimulated emission device in which hydrogen gas provides an output signal with a high degree of stability and spectral purity.

- GS stimulated emission devices
 - . masers
 - . . gas masers
 - . . . **hydrogen masers**

hydrogen metabolism

DEF The physical and chemical processes by which an organism transforms the complex hydrogen components of foodstuffs into simple hydrogen compounds by disassimilation and catabolism in the production of energy.

- GS metabolism
 - . **hydrogen metabolism**
- RT carbohydrate metabolism
 - nitrogen metabolism
 - oxygen metabolism
 - respiration

secretions

hydrogen oxygen engines

DEF Engines using liquid hydrogen as fuel and liquid oxygen as oxidizer. Used for hydrox engines and lox-hydrogen engines.

- UF *hydrox engines*
- LOX-hydrogen engines
- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **hydrogen oxygen engines**
 - J-2 engine
 - M-1 engine
 - RL-10-A-1 engine
 - RL-10-A-3 engine
- RT auxiliary propulsion
 - liquid air cycle engines
 - space station propulsion
 - turbo-rocket engines

hydrogen oxygen fuel cells

- UF *hydrogen air fuel cells*
- GS electric generators
 - . direct power generators
 - . . fuel cells
 - . . . **hydrogen oxygen fuel cells**
 - electrochemical cells
 - . fuel cells
 - . . **hydrogen oxygen fuel cells**
- RT phosphoric acid fuel cells

hydrogen perchlorate

- GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **hydrogen perchlorate**

hydrogen peroxide

- GS chalcogenides
 - . oxides
 - . . anhydrides
 - . . . peroxides
 - inorganic peroxides
 - **hydrogen peroxide**
 - dioxides
 - . . . **hydrogen peroxide**
 - hydrogen compounds
 - . **hydrogen peroxide**
- RT rocket oxidizers

hydrogen plasma

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **hydrogen plasma**
 - deuterium plasma
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - **hydrogen plasma**
 - deuterium plasma
- RT argon plasma
 - deuterium
 - helium plasma
 - hydrogen
 - oxygen plasma
 - solar wind
 - Stark effect

hydrogen production

DEF Production of hydrogen for fuel purposes by photosynthetic, chemical, electrical, thermal, electrochemical, or other means.

- RT electrolysis
 - energy conversion
 - fuels
 - hydrides
 - hydrogen-based energy
 - hydrolysis
 - lignite
 - solar energy conversion
 - thermal dissociation

water splitting

hydrogen recombinations

- GS recombination reactions
 - . **hydrogen recombinations**

hydrogen sulfide

- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **hydrogen sulfide**
 - hydrogen compounds
 - . **hydrogen sulfide**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **hydrogen sulfide**

hydrogenation

- GS chemical reactions
 - . reduction (chemistry)
 - . . **hydrogenation**
- RT asphaltenes
 - cyclohexane
 - dehydrogenation
 - hydrogen
 - refining

hydrogen-based energy

- RT ∞ energy
 - energy technology
 - fuel cells
 - gas mixtures
 - hydrocarbon fuels
 - hydrogen fuels
 - hydrogen production
 - liquid hydrogen
 - nickel hydrogen batteries
 - renewable energy

hydrogenolysis

- GS chemical reactions
 - . **hydrogenolysis**
 - . . hydrocracking
 - decomposition
 - . **hydrogenolysis**
 - . . hydrocracking
- RT cracking (chemical engineering)
 - dehydrogenation
 - hydrogen
 - ∞ reduction

hydrogenomonas

- GS autotrophs
 - . **hydrogenomonas**
 - microorganisms
 - . bacteria
 - . . **hydrogenomonas**

hydrogeology

DEF The science that deals with subsurface waters and with related geologic aspects of surface waters. The term is also used in the more restrictive sense of ground water geology.

- GS geology
 - . **hydrogeology**
 - hydrology
 - . **hydrogeology**
- RT aquifers
 - core sampling
 - erosion
 - flood plains
 - flood predictions
 - geysers
 - glaciology
 - hydrology models
 - hydrostatics
 - ∞ science
 - soil erosion
 - stratigraphy
 - watersheds

hydrography

DEF The science that deals with the physical aspects of all waters on the Earth's surface, especially the compilation of navigational charts.

hydrological cycle

RT geophysics
hydroclimatology
hydrology
hydrometeorology
ice mapping
limnology
meteorology
ocean currents
ocean surface
oceanography

hydrokinetics

USE **hydromechanics**

hydrological cycle

UF *water cycle (hydrology)*

GS cycles

. **hydrological cycle**

RT air water interactions
Earth hydrosphere
evaporation
hydrology
hydrology models
hydrometeorology
precipitation (meteorology)

hydrology

(*added February 1991*)

DEF The science that deals with global water (both liquid and solid), its properties, circulation, and distribution, on and under the Earth's surface and in the atmosphere through evapotranspiration or is discharged into oceans. In recent years, the scope of hydrology has been expanded to include environmental and economic aspects.

UF *hydroscience*

GS **hydrology**

. hydrogeology

RT alluvium
aquifers
climatology
drainage
drainage patterns
drought
Earth hydrosphere
Earth planetary structure
Earth sciences
flood control
flood damage
flood plains
flood predictions
floods
geochemistry
geophysics
Great Salt Lake (UT)

∞ hydraulics

hydroclimatology

hydrography

hydrological cycle

hydrometeorology

hydrometeors

ice mapping

International Hydrological Decade

Lake Erie

Lake Huron

Lake Michigan

Lake Ontario

Lake Superior

limnology

marine chemistry

meteorology

oceanography

polar meteorology

precipitation (meteorology)

rain

streams

structural properties (geology)

water

water management

water resources

watersheds

hydrology models

DEF Mathematical or physical representations by which the circulation, distribution, and

properties of the waters of the Earth can be studied.

GS models

. **hydrology models**

RT climate models
drainage
floods
hydrogeology
hydrological cycle
precipitation (meteorology)
rain
streams
water flow

hydrolysis

GS chemical reactions

. **hydrolysis**

RT ammonolysis
cracking (chemical engineering)
extraction
hydration
hydrogen production

hydromagnetic flow

USE **magnetohydrodynamic flow**

hydromagnetic stability

USE **magnetohydrodynamic stability**

hydromagnetic waves

USE **magnetohydrodynamic waves**

hydromagnetics

USE **magnetohydrodynamics**

hydromagnetism

USE **magnetohydrodynamics**

hydromechanics

UF *hydrokinetics*

GS fluid mechanics

. **hydromechanics**

. . hydrodynamics
. . . elastrohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
. . hydrostatics
. . . magnetohydrostatics

RT fluid dynamics

fluid flow

∞ hydraulics

kinetics

∞ science

water

hydrometallurgy

RT chlorination

electrodialysis

filtration

ion exchanging

leaching

∞ metallurgy

∞ precipitation

precipitation (chemistry)

refining

sulfation

hydrometeorology

GS meteorology

. **hydrometeorology**

. . marine meteorology

RT agrometeorology

hydrography

hydrological cycle

hydrology

precipitation (meteorology)

water balance

hydrometeors

(*added March 1995*)

DEF A minute droplet of water or crystal of ice falling through or suspended in the atmosphere.

GS condensates

. **hydrometeors**

RT atmospheric moisture

dew
drops (liquids)
fog
hydrology
ice nuclei
precipitation (meteorology)

hydrometers

DEF Instruments used for measuring the specific gravity of a liquid.

GS measuring instruments

. **hydrometers**

RT chemical analysis
density (mass/volume)
density measurement
weight measurement

hydronium ions

GS ions

. molecular ions

. . **hydronium ions**

. positive ions

. . **hydronium ions**

RT hydrogen
hydrogen ions

hydrophobicity

(*added June 2000*)

DEF The degree to which a substance is insoluble in water, or resists wetting or hydration.

GS hygral properties

. **hydrophobicity**

RT adsorption
chemical properties
hydration
hygroscopicity
moisture resistance

∞ properties

solubility

sorption

surface properties

surfactants

waterproofing

wettability

wetting

hydrophones

DEF Microphones suitable for use in water or other liquid. Used for hydrobarophones.

UF *hydrobarophones*

GS transducers

. sound transducers

. . electroacoustic transducers

. . . **hydrophones**

RT microphones

sonar

sonobuoys

hydroplanes (surfaces)

UF *hydroskis*

RT hydrofoils

hydroplaning

skis

∞ systems

hydroplanes (vehicles)

RT hydrofoil craft

hydroplaning

∞ vehicles

hydroplaning

RT hydrofoils

hydroplanes (surfaces)

hydroplanes (vehicles)

skid landings

skidding

water landing

hydroponics

DEF Growing of plants in a nutrient with the mechanical support of an inert medium such as sand.

RT agriculture

aquatic plants

aquiculture

plants (botany)

vegetation growth

hydropower stations

USE **hydroelectric power stations**

hydropyrolysis

DEF A coal-to-liquid process in which bituminous coal, lignite, tars, sand and related materials are rapidly heated to 1000-1100 degrees K in pressurized hydrogen gasification reactors to generate pure methane.

GS gasification
. coal gasification
. . . **hydropyrolysis**

RT coal
coal liquefaction
lignite
methanation
methane

hydroscience

USE **hydrology**

hydroskis

USE **hydroplanes (surfaces)**

hydrosphere (Earth)

USE **Earth hydrosphere**

hydropinning

GS forming techniques
. metal spinning
. . . **hydropinning**
metal working
. metal spinning
. . . **hydropinning**
spin
. metal spinning
. . . **hydropinning**

hydrostatic pressure

DEF A state of stress in which all the principal stresses are equal (and there is no shear stress).

GS pressure
. static pressure
. . . **hydrostatic pressure**

RT center of pressure
elevation
head (fluid mechanics)
hydrostatics
isostatic pressure
pressure dependence
pressure heads
transition pressure
water pressure

hydrostatics

GS fluid mechanics
. hydromechanics
. . . **hydrostatics**
. . . magnetohydrostatics
statics
. **hydrostatics**
. . magnetohydrostatics

RT aerostatics
elevation
head (fluid mechanics)
∞ hydraulics
hydrodynamics
hydrogeology
hydrostatic pressure
isostasy
pressure gradients
pressure heads
water
water pressure

hydrosulfites

GS hydrogen compounds
. **hydrosulfites**
sulfur compounds
. sulfites

. . **hydrosulfites**

hydrothermal crystal growth

GS growth
. crystal growth
. . . **hydrothermal crystal growth**
RT electroepitaxy

hydrothermal stress analysis

DEF The evaluation of the combined effects of temperature-humidity cycling.

RT hydrothermal systems
hygral properties
hygroscopicity
moisture content
moisture resistance

hydrothermal systems

DEF Energy systems utilizing hot water from geysers, hot springs, solar heating, and other sources.

RT aquifers
energy conversion
geothermal resources
geysers
heating
hydrothermal stress analysis
solar heating
∞ systems

hydrox engines

USE **hydrogen oxygen engines**

hydroxides

GS **hydroxides**
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
RT alkalies

hydroxycorticosteroid

GS organic compounds
. lipids
. . . steroids
. . . . corticosteroids
. . . . **hydroxycorticosteroid**
. cortisone
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . **hydroxycorticosteroid**
. cortisone
RT adrenal metabolism

hydroxyl compounds

GS **hydroxyl compounds**
. alcohols
. . ethyl alcohol
. . glycols
. . isopropyl alcohol
. . methyl alcohol
. . phenols
. . . bisphenols
. . . cresols
. . . phloroglucinol
. . . thymol
. . polyvinyl alcohol
. . triols
. . . cyanuric acid
RT ∞ chemical compounds
organic compounds

hydroxyl emission

GS electromagnetic radiation
. radio waves
. . radio emission
. . . **hydroxyl emission**
emission
. radio emission
. . **hydroxyl emission**
RT emission spectra
radio sources (astronomy)

hydroxyl radicals

GS radicals

. free radicals
. . **hydroxyl radicals**
RT alcohols
∞ chemistry
formyl ions
glycols
ions

hydroxylamine sulfate

GS amines
. **hydroxylamine sulfate**
sulfur compounds
. sulfates
. . **hydroxylamine sulfate**

hydroxylammonium perchlorates

GS ammonium compounds
. **hydroxylammonium perchlorates**
halogen compounds
. chlorine compounds
. . perchlorates
. . . **hydroxylammonium perchlorates**

hygiene

GS **hygiene**
. oral hygiene
RT bathing
cleanliness
consumables (spacecrew supplies)
health
housekeeping (spacecraft)
public health
sanitation

hygral properties

DEF The affinity of something for moisture.
GS **hygral properties**
. hydrophobicity
RT humidity
hydrothermal stress analysis
moisture
porosity
∞ properties

hygrometers

DEF Instruments for measuring the humidity of the atmosphere.

GS measuring instruments
. moisture meters
. . **hygrometers**
. . . psychrometers
RT chemical analysis
dew point
humidity
humidity measurement
meteorological instruments

hygroscopicity

RT chemical properties
hydrophobicity
hydrothermal stress analysis
material absorption
moisture content
moisture resistance
∞ physical properties
solubility
wettability

Hyla-Star rocket vehicle

GS launch vehicles
. **Hyla-Star rocket vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Hyla-Star rocket vehicle**
RT liquid propellant rocket engines
Titan 2 ICBM

Hylleraas coordinates

GS coordinates
. **Hylleraas coordinates**
RT quantum mechanics
two body problem

hyoscine

UF *scopolamine*

hyperbaric chambers

- GS amines
 - . **hyoscine**
- bases (chemical)
 - . alkaloids
 - . . . **hyoscine**
- epoxy compounds
 - . **hyoscine**
- nitrogen compounds
 - . alkaloids
 - . . . **hyoscine**
- organic compounds
 - . cyclic compounds
 - . . . heterocyclic compounds
 - alkaloids
 - **hyoscine**

hyperbaric chambers

DEF Chambers used to induce a decrease in ambient pressure as would occur in ascending to altitude. This type of chamber is primarily used for training and experimental purposes. It is also called an altitude chamber or a decompression chamber.

- GS compartments
 - . test chambers
 - . . . pressure chambers
 - **hyperbaric chambers**
- RT ∞ chambers
 - high pressure
 - vacuum chambers

hyperbolas

DEF Open curves with two branches, all points of which have a constant difference in distance from two fixed points called foci.

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . conics
 - **hyperbolas**
- RT hyperbolic trajectories

hyperbolic coordinates

- UF *hyperbolic space*
- GS coordinates
 - . **hyperbolic coordinates**

hyperbolic differential equations

- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **hyperbolic differential equations**
- RT Dirichlet problem
- ∞ equations
 - essentially non-oscillatory schemes
 - wave equations

hyperbolic functions

- GS analysis (mathematics)
 - . complex variables
 - . . **hyperbolic functions**
 - . . . real variables
 - **hyperbolic functions**
 - functions (mathematics)
 - **hyperbolic functions**
- RT exponential functions
- ∞ hyperbolic systems
 - method of characteristics
 - orthogonal functions
 - Riemann waves
 - Riesz theorem

hyperbolic navigation

DEF Radio navigation in which a hyperbolic line of position is established by signals received from two stations at a constant time difference.

- GS navigation
 - . radio navigation
 - . . **hyperbolic navigation**
 - . . . Decca navigation
 - LORAC navigation system
 - loran
 - loran C
 - loran D
 - Shoran

- RT air navigation
 - ∞ hyperbolic systems
 - inertial navigation
 - surface navigation

hyperbolic reentry

- GS atmospheric entry
 - . reentry
 - . . **hyperbolic reentry**
- RT reentry trajectories

hyperbolic space

USE **hyperbolic coordinates**

∞ hyperbolic systems

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT hyperbolic functions
 - hyperbolic navigation
- ∞ systems

hyperbolic trajectories

- GS trajectories
 - . **hyperbolic trajectories**
- RT celestial mechanics
 - escape velocity
 - hyperbolas
 - spacecraft trajectories

hyperbranched polymers

(added October 2000)

USE **dendrimers**

hypercapnia

- GS carbon dioxide tension
 - . **hypercapnia**
- RT blood
 - ∞ breathing
 - respiratory rate
 - respiratory system

hypercube multiprocessors

DEF Distributed-memory, message-passing multiprocessors designed to reduce the number of interconnections compared to the number of processors. Other simple geometries such as rings, meshes, or trees of processors can be embedded in hypercubes.

- GS data processing equipment
 - . computers
 - . . **hypercube multiprocessors**
- RT architecture (computers)
 - interprocessor communication
 - multiprocessing (computers)
 - parallel computers
 - parallel processing (computers)
 - sorting algorithms
 - supercomputers

hyperfine structure

- RT atomic structure
 - fine structure
 - line spectra
 - muon spin rotation
 - spectrum analysis
- ∞ structures

hypergeometric functions

- UF *Jacobi polynomials*
- GS analysis (mathematics)
 - . complex variables
 - . . **hypergeometric functions**
 - . . . functions (mathematics)
 - **hypergeometric functions**
- RT Bessel functions
 - geometry
 - hyperspaces

hypergeometry

USE **hyperspaces**

hyperglycemia

- GS metabolism
 - . carbohydrate metabolism

. . hyperglycemia

hypergolic rocket propellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **hypergolic rocket propellants**
- RT cryogenic rocket propellants
 - gelled rocket propellants
 - hybrid propellants
 - hydrocarbon fuels
 - monomethylhydrazines
 - pyrophoric materials
 - solid propellant ignition
 - spontaneous combustion
 - storable propellants

hypergravity

(added June 2001)

USE **high gravity environments**

Hyperion

DEF One of the natural satellites of Saturn orbiting at a mean distance of 1,481,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Hyperion**
 - Saturn satellites
 - **Hyperion**
- RT Saturn (planet)

hyperkinesia

DEF Excessive exercise, that is often accompanied by uncontrollable muscular movement.

- GS physical exercise
 - . **hyperkinesia**
- RT exhaustion
 - fatigue (biology)
 - hypokinesia
 - stress (physiology)
 - work capacity

hypermedia

USE **multimedia**

hypernea

- RT mental performance

hypernuclei

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **hypernuclei**
 - corpuscular radiation
 - energetic particles
 - nuclei (nuclear physics)
 - **hypernuclei**
- RT elementary particles
 - radioactive decay

hyperons

DEF In the classification of subatomic particles according to mass, the heaviest of such particles. Some large and highly unstable components of cosmic rays are hyperons.

- GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - **hyperons**
 - xi hyperons
 - fermions
 - baryons
 - **hyperons**
 - xi hyperons
 - baryons
 - **hyperons**
 - xi hyperons
 - mesons
 - **hyperons**
 - xi hyperons

- . nuclear particles
 - . . bosons
 - . . . mesons
 - **hyperons**
 - xi hyperons
 - RT antiparticles
 - baryon resonance
 - charged particles
 - meson resonance
 - nucleons
 - strangeness
- hyperopia**
- GS acuity
 - . visual acuity
 - . . **hyperopia**
 - defects
 - . **hyperopia**
 - RT eye diseases
 - vision
- hyperoxia**
- DEF A condition in which the total oxygen content of the body is increased above that normally existing at sea level. Used for oxygen toxicity.
 - UF *oxygen toxicity*
 - RT hyperventilation
 - oximetry
 - oxygen consumption
 - toxic diseases
 - toxicity
- hyperplanes**
- GS analysis (mathematics)
 - . real variables
 - . . **hyperplanes**
 - RT hyperspaces
 - polytopes
 - set theory
- hyperpnea**
- RT ∞ breathing
 - respiratory rate
- hypersomnia**
- GS sleep
 - . **hypersomnia**
- hypersonic aircraft**
- GS hypersonic vehicles
 - . **hypersonic aircraft**
 - . . hypersonic gliders
 - . . . X-20 aircraft
 - RT aerospace planes
 - ∞ aircraft
 - boostglide vehicles
 - hypersonics
 - jet aircraft
 - ∞ low wing aircraft
 - research aircraft
 - supersonic aircraft
 - sweptback tail surfaces
 - sweptback wings
 - trapezoidal tail surfaces
- hypersonic boundary layer**
- GS boundary layers
 - . **hypersonic boundary layer**
 - RT laminar boundary layer
 - thermal boundary layer
 - turbulent boundary layer
- hypersonic combustion**
- GS combustion
 - . **hypersonic combustion**
 - RT erosive burning
 - fuel combustion
- hypersonic flight**
- RT aerodynamics
 - ∞ flight
 - hypersonics
 - missiles
 - rocket flight
 - supersonic flight
- waveriders
 - X-43 vehicle
- hypersonic flow**
- DEF In aerodynamics, flow of a fluid over a body at speeds much greater than the speed of sound and in which the shock waves start at a finite distance from the surface of the body.
 - GS fluid flow
 - . **hypersonic flow**
 - RT aerodynamics
 - Burnett equations
 - cascade wind tunnels
 - compressible flow
 - flow velocity
 - gas flow
 - hypersonics
 - hypervelocity wind tunnels
 - Lighthill gas model
 - shock tubes
 - shock tunnels
 - shock waves
 - supersonic flow
 - wind tunnels
- hypersonic forces**
- GS aerodynamic forces
 - . **hypersonic forces**
 - RT aerodynamic drag
 - hypersonics
 - lift
- hypersonic gliders**
- DEF Unpowered vehicles, specifically reentry vehicles, designed to flow at hypersonic speeds.
 - GS gliders
 - . **hypersonic gliders**
 - . . X-20 aircraft
 - hypersonic vehicles
 - . hypersonic aircraft
 - . . **hypersonic gliders**
 - . . . X-20 aircraft
 - RT aerospace planes
 - ∞ aircraft
 - ASSET gliders
 - boostglide vehicles
 - HL-10 reentry vehicle
 - HLD-35 reentry vehicle
 - lifting reentry vehicles
 - paragliders
- hypersonic heat transfer**
- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . aerodynamic heat transfer
 - **hypersonic heat transfer**
 - RT aerothermodynamics
 - hypersonics
 - supersonic heat transfer
- hypersonic inlets**
- GS intake systems
 - . air intakes
 - . . **hypersonic inlets**
 - RT bypass ratio
 - ∞ diffusers
 - engine inlets
 - inlet airframe configurations
 - nose inlets
 - side inlets
 - supersonic inlets
- hypersonic nozzles**
- RT conical nozzles
 - ∞ nozzles
 - rocket nozzles
 - supersonic nozzles
 - transonic nozzles
 - wind tunnel nozzles
- hypersonic reentry**
- GS atmospheric entry
 - . reentry
 - . . **hypersonic reentry**
- . . . uncontrolled reentry (spacecraft)
 - RT aerodynamic heating
 - aerothermodynamics
 - Berenice rocket vehicle
 - boundary layer plasmas
 - entry guidance (STS)
 - reentry effects
 - reentry physics
 - spacecraft reentry
- hypersonic shock**
- RT hypersonics
 - Mach cones
 - noise (sound)
 - shock waves
- hypersonic speed**
- SN (MACH 5 OR GREATER)
 - GS rates (per time)
 - . **hypersonic speed**
 - velocity
 - . **hypersonic speed**
 - RT high speed
 - hypersonics
 - ∞ hypervelocity
 - supersonic speed
- hypersonic test apparatus**
- RT hypersonics
 - hypervelocity wind tunnels
 - missile ranges
 - supersonic test apparatus
 - ∞ test equipment
- hypersonic vehicles**
- GS **hypersonic vehicles**
 - . hypersonic aircraft
 - . . hypersonic gliders
 - . . . X-20 aircraft
 - . X-30 vehicle
 - . X-37 vehicle
 - . X-43 vehicle
 - RT ∞ flight vehicles
 - HOPE aerospace plane
 - hypersonics
 - ∞ insulated structures
 - National Aerospace Plane Program
 - recoverable spacecraft
 - reentry vehicles
 - ∞ spacecraft
 - test vehicles
 - ∞ vehicles
 - waveriders
 - ∞ winged vehicles
- hypersonic wakes**
- GS wakes
 - . **hypersonic wakes**
 - RT aircraft wakes
 - bow waves
 - hypersonics
 - shock waves
 - supersonic wakes
- hypersonic wind tunnels**
- GS test facilities
 - . wind tunnels
 - . . **hypersonic wind tunnels**
 - . . . cascade wind tunnels
 - hotshot wind tunnels
 - plasma jet wind tunnels
 - shock tunnels
 - RT blowdown wind tunnels
 - combustion wind tunnels
 - hypervelocity wind tunnels
 - low density wind tunnels
 - magnetic pistons
 - shock tubes
 - subsonic wind tunnels
 - supersonic wind tunnels
 - transonic wind tunnels
- hypersonics**
- DEF That branch of aerodynamics that deals with hypersonic flow.
 - GS fluid mechanics

hyperspaces

. fluid dynamics
. . . gas dynamics
. . . . aerodynamics
. **hypersonics**
RT aérothermodynamique
hypersonic aircraft
hypersonic flight
hypersonic flow
hypersonic forces
hypersonic heat transfer
hypersonic shock
hypersonic speed
hypersonic test apparatus
hypersonic vehicles
hypersonic wakes
supersonic speed
supersonics

hyperspaces

UF *hypergeometry*
RT hypergeometric functions
hyperplanes
hyperspheres
phase-space integral
∞ space

hyperspheres

RT geometry
hyperspaces
real variables

hypertensin

GS drugs
. vasoconstrictor drugs
. . . **hypertensin**
organic compounds
. peptides
. . . polypeptides
. . . . **hypertensin**
secretions
. endocrine secretions
. . . hormones
. . . . **hypertensin**

hypertension

GS pressure
. blood pressure
. . . **hypertension**
RT myocardial infarction
tranquilizers

hypertext

(added July 1995)
RT artificial intelligence
document markup languages
electronic publishing
human-computer interface
information retrieval
knowledge representation

hyperthermia

RT body temperature
fever
heat stroke
skin temperature (biology)
thermoregulation

hypertonia

USE **osmosis**

hypertrophy

USE **growth**

∞ hypervelocity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Extremely high velocity. Applied by physicists to speeds approaching the speed of light, but generally implies speeds of the order of satellite speed and greater.
RT escape velocity
hypersonic speed
orbital velocity

relativistic velocity

hypervelocity accelerators
USE **hypervelocity guns**

hypervelocity cratering
USE **hypervelocity projectiles**
projectile cratering

hypervelocity flow

GS fluid flow
. **hypervelocity flow**
RT flow velocity
supersonic flow

hypervelocity guns

UF *hypervelocity accelerators*
RT ∞ accelerators
ballistics
gas guns
∞ guns
guns (ordnance)
railgun accelerators
ram accelerators

hypervelocity impact

GS impact
. **hypervelocity impact**
RT asteroid collisions
cometary collisions
hydrodynamic ram effect
impact melts
impact velocity
mechanical shock
meteorite collisions
meteoritic damage
point impact
projectile cratering

hypervelocity launchers

GS launchers
. **hypervelocity launchers**
RT gun launchers
railgun accelerators
ram accelerators

hypervelocity projectiles

UF *hypervelocity cratering*
GS projectiles
. **hypervelocity projectiles**
RT ∞ bombardment
light gas guns
meteoroids
micrometeorites
projectile cratering
simulation

hypervelocity wind tunnels

SN (ABOVE MACH 10)
GS test facilities
. wind tunnels
. . . **hypervelocity wind tunnels**
. . . . cascade wind tunnels
. . . . hotshot wind tunnels
. . . . plasma jet wind tunnels
. . . . shock tunnels
RT blowdown wind tunnels
combustion wind tunnels
hypersonic flow
hypersonic test apparatus
hypersonic wind tunnels
low density wind tunnels
magnetic pistons
shock tubes
supersonic wind tunnels

hyperventilation

DEF Overbreathing. A respiratory minute volume, or pulmonary ventilation that is greater than normal.
RT acidosis
alkalosis
hyperoxia

hypervolemia

RT blood circulation

blood volume
circulatory system

hypnosis

GS sleep
. **hypnosis**
RT anesthesia
suggestion

hypobaric atmospheres

RT altitude simulation
altitude tolerance
∞ atmospheres
high altitude breathing
high altitude environments
high altitude pressure
low pressure
vacuum tests

hypocapnia

DEF Deficiency of carbon dioxide in the blood and body tissues, which may result in dizziness, confusion, and muscular cramps.
GS carbon dioxide tension
. **hypocapnia**
RT blood

hypodermis

GS tissues (biology)
. **hypodermis**

hypodynamia

RT hindlimb suspension
muscles
muscular function

hypoeasticity

GS mechanical properties
. elastic properties
. . . **hypoeasticity**

hypoglycemia

GS metabolism
. carbohydrate metabolism
. . . **hypoglycemia**

hypogravity

(added June 2001)
USE **microgravity**

hypokinesia

RT glucocorticoids
head down tilt
hindlimb suspension
hyperkinesia
muscular function
musculoskeletal system
physical exercise

hypometabolism

GS metabolism
. **hypometabolism**
RT thyroid gland

hypophysis

USE **pituitary gland**

hypotension

GS pressure
. blood pressure
. . . **hypotension**
RT hemorrhages

hypothalamus

GS anatomy
. glands (anatomy)
. . . endocrine glands
. . . . **hypothalamus**
. nervous system
. . . central nervous system
. . . . brain
. diencephalon
. **hypothalamus**

- RT pituitary gland
- hypothermia**
 RT body temperature
 skin temperature (biology)
 thermoregulation
- hypotheses**
 GS **hypotheses**
 . expectancy hypothesis
 . intermittency hypothesis
 . Lagrange similarity hypothesis
 . null hypothesis
 . vorticity transport hypothesis
 RT assumptions
 inference
 mathematical logic
 quality control
 theorems
 ∞ theories
 theses
- hypothetical particles**
(added November 1999)
 GS particles
 . elementary particles
 . . **hypothetical particles**
 . . . gluons
 . . . gravitinos
 . . . gravitons
 . . . partons
 . . . quarks
 . . . tachyons
 . . . weakly interacting massive particles
- hypothetical planets**
(added June 1998)
 UF *Phaethon (hypothetical planet)*
planet X
rogue planets
transplutonic planets
 GS celestial bodies
 . planets
 . . **hypothetical planets**
 RT comets
 extrasolar planets
- planetary orbits
- hypotonia**
 GS muscular tonus
 . **hypotonia**
 RT muscular function
- hypoventilation**
 DEF A respiratory minute volume, or pulmonary ventilation that is less than normal. Also called underbreathing.
 GS rates (per time)
 . respiratory rate
 . . **hypoventilation**
- hypovolemia**
 RT blood circulation
 blood volume
- hypoxemia**
 DEF The condition of reduction of the normal oxygen tension in the blood.
 GS pressure
 . partial pressure
 . . oxygen tension
 . . . **hypoxemia**
 RT hypoxia
- hypoxia**
 DEF Oxygen want or deficiency; any state wherein a physiologically inadequate amount of oxygen is available to, or utilized by, tissue without respect to cause or degree. Used for oxygen deficiency.
 UF *oxygen deficiency*
 RT anoxia
 fasting
 hypoxemia
 necrosis
 oximetry
 oxygen consumption
 stress (physiology)
- hypsoigraphy**
 GS geography
 . **hypsoigraphy**
 RT contours
- datum (elevation)
 elevation
 mapping
 maps
 relief maps
 topography
- hypsometers**
 GS measuring instruments
 . **hypsometers**
 RT altimeters
 barometers
 meteorological instruments
 pressure gages
- hysteresis**
 DEF Any of several effects resembling a kind of internal friction, accompanied by the generation of heat within the substance affected. The delay of an indicator in registering a change in a parameter being measured.
 RT accuracy
 antiferroelectricity
 antiferromagnetism
 damping
 dynamic characteristics
 eddy currents
 electrical properties
 errors
 internal friction
 magnetic permeability
 magnetic properties
 mechanical properties
 optical bistability
 ∞ physical properties
 precision
 retarding
 shear properties
 tensile strength
 time lag
 tolerances (mechanics)
 viscoelasticity
 viscoplasticity
- HYTIME**
 USE **document markup languages**

I beams

- GS structural members
 - . beams (supports)
 - .. **I beams**
- RT cantilever beams
 - curved beams
 - trusses

I2S cameras

- GS optical equipment
 - . cameras
 - .. **I2S cameras**
 - photographic equipment
 - . cameras
 - .. **I2S cameras**
- RT aircraft instruments
 - multispectral photography
 - spacecraft instruments

Iapetus

- DEF A satellite of Saturn orbiting at a mean distance of 3,562,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . icy satellites
 - .. **Iapetus**
 - .. Saturn satellites
 - .. **Iapetus**
- RT Charon
 - Saturn (planet)

IBM 360 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 360 computer**
 - .. IBM computers
 - .. **IBM 360 computer**

IBM 370 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 370 computer**
 - .. IBM computers
 - .. **IBM 370 computer**

IBM 650 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 650 computer**
 - .. IBM computers
 - .. **IBM 650 computer**

IBM 704 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 704 computer**
 - .. IBM computers
 - .. **IBM 704 computer**

IBM 709 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 709 computer**
 - .. IBM computers
 - .. **IBM 709 computer**

IBM 1130 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 1130 computer**
 - .. IBM computers

... **IBM 1130 computer**

IBM 1401 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 1401 computer**
 - .. IBM computers
 - .. **IBM 1401 computer**

IBM 1410 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 1410 computer**
 - .. IBM computers
 - .. **IBM 1410 computer**

IBM 1620 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 1620 computer**
 - .. IBM computers
 - .. **IBM 1620 computer**

IBM 2250 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 2250 computer**
 - .. IBM computers
 - .. **IBM 2250 computer**

IBM 7030 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7030 computer**
 - .. IBM computers
 - .. **IBM 7030 computer**

IBM 7040 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7040 computer**
 - .. IBM computers
 - .. **IBM 7040 computer**

IBM 7044 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7044 computer**
 - .. IBM computers
 - .. **IBM 7044 computer**

IBM 7070 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7070 computer**
 - .. IBM computers
 - .. **IBM 7070 computer**

IBM 7074 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7074 computer**
 - .. IBM computers
 - .. **IBM 7074 computer**

IBM 7090 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7090 computer**
 - .. IBM computers

... **IBM 7090 computer**

IBM 7094 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - .. **IBM 7094 computer**
 - .. IBM computers
 - .. **IBM 7094 computer**

IBM computers

- GS data processing equipment
 - . computers
 - .. **IBM computers**
 - .. IBM 360 computer
 - .. IBM 370 computer
 - .. IBM 650 computer
 - .. IBM 704 computer
 - .. IBM 709 computer
 - .. IBM 1130 computer
 - .. IBM 1401 computer
 - .. IBM 1410 computer
 - .. IBM 1620 computer
 - .. IBM 2250 computer
 - .. IBM 7030 computer
 - .. IBM 7040 computer
 - .. IBM 7044 computer
 - .. IBM 7070 computer
 - .. IBM 7074 computer
 - .. IBM 7090 computer
 - .. IBM 7094 computer
 - .. IBM personal computers
- RT digital computers

IBM PC

- USE **IBM personal computers**

IBM personal computers

- (added September 1992)
- SN (INCLUDES IBM COMPATIBLE PERSONAL COMPUTERS)
- UF **IBM PC**
- GS data processing equipment
 - . computers
 - .. digital computers
 - .. microcomputers
 - .. personal computers
 - .. **IBM personal computers**
 - .. IBM computers
 - .. **IBM personal computers**
- RT computer graphics
 - computer programs

Icarus asteroid

- GS celestial bodies
 - . asteroids
 - .. **Icarus asteroid**
- RT asteroid belts

ICBM (missiles)

- USE **intercontinental ballistic missiles**

ice

- DEF Water in the solid state; specifically, the dense substance formed in nature by the freezing of liquid water, by the condensation of water vapor directly into ice crystals, or by the recrystallization or compaction of fallen snow. It is colorless to pale blue or greenish blue, usually white from included gas bubbles. At standard atmospheric pressure, it is formed at and has a melting point of 0 deg. C; in freezing it expands about one eleventh in volume. Ice commonly occurs as hexagonal crystals, and in large masses is classed as a rock. The term is often substituted for glacier; as in "continental ice."

GS **ice**

- . bay ice
- . glaciers
- . lake ice
- . ice floes

- . land ice
 - . sea ice
 - . . ice floes
 - . . icebergs
 - . . pressure ice
 - RT aufeis (ice)
 - cirques (landforms)
 - frost
 - ice clouds
 - polar caps
 - refrigerants
 - runway conditions
 - slush
 - storms (meteorology)
 - water
- ice clearings*
(added July 2001)
USE **polynyas**
- ice clouds**
(added March 1989)
GS clouds (meteorology)
. **ice clouds**
- RT cloud glaciation
 ∞ clouds
ice
stratosphere
- ice environments**
UF *Antarctic environment*
Arctic environments
GS environments
. **ice environments**
- RT Earth cryosphere
environment effects
marine environments
planetary cryospheres
sea ice
- ice floes**
DEF Large fragments or extensive sheets of ice, detached and floating freely in open water.
GS ice
. lake ice
. . **ice floes**
. sea ice
. . **ice floes**
- RT oceanography
- ice formation**
UF *icing*
GS **ice formation**
. aircraft icing
. cloud glaciation
- RT bay ice
fouling
freezing
graupel
hail
lake ice
low temperature
pressure ice
sea ice
snow
- ice mapping**
GS mapping
. **ice mapping**
- RT aerial photography
bay ice
Earth resources
hydrography
hydrology
infrared photography
oceanography
photogeology
photography
photomapping
sea ice
space surveillance (spaceborne)
surveillance
- ice nuclei**
RT Aitken nuclei
cloud glaciation
- condensation nuclei
freezing
graupel
hydrometeors
nucleation
 ∞ nuclei
- ice observation*
USE **ice reporting**
- ice packs*
USE **sea ice**
- ice prevention**
GS prevention
. **ice prevention**
- RT aircraft icing
anticing additives
defrosting
deicers
deicing
heat tapes
heating
melting
storm suppression
- ice reporting**
UF *ice observation*
RT bay ice
icebergs
meteorological flight
polar meteorology
space surveillance (spaceborne)
surveillance
- ice shelves*
USE **land ice**
- Ice, Cloud and Land Elevation Satellite**
(added December 2002)
DEF Earth Observing System satellite and mission designed to measure Earth's ice sheet mass balance, cloud and aerosol heights, as well as land topography and vegetation characteristics.
UF *ICESat*
GS artificial satellites
. scientific satellites
. . **Ice, Cloud and Land Elevation Satellite**
- RT Earth Observing System (EOS)
laser altimeters
satellite altimetry
- icebergs**
DEF Large, massive pieces of floating or stranded glacier ice of any shape, detached (calved) from the front of glaciers into a body of water. Icebergs extend more than 5 m above sea level and have the greater part of their masses (4/5 to 8/9) below sea level. They may reach a length of more than 80 km.
GS ice
. sea ice
. . **icebergs**
resources
. Earth resources
. . **icebergs**
- RT ice reporting
land ice
- Iceland**
GS landforms
. islands
. . **Iceland**
nations
. **Iceland**
- RT Europe
Icelandic space program
- Icelandic space program**
(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Icelandic space program**
- RT Iceland
- ICESat*
(added December 2002)
USE **Ice, Cloud and Land Elevation Satellite**
- ichthyology**
RT fishes
schools (fish)
- icing*
USE **ice formation**
- ICL computers**
DEF Family of British digital computers produced by International Computers, Ltd. Used for International Computers Limited.
UF *International Computers Limited*
GS data processing equipment
. computers
. . digital computers
. . . **ICL computers**
- RT European Space Agency
- icosahedrons**
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **icosahedrons**
- ICP-MS (spectrometry)*
(added March 2001)
USE **inductively coupled plasma mass spectrometry**
- icy satellites**
GS celestial bodies
. natural satellites
. . **icy satellites**
. . . Ariel
. . . Callisto
. . . Dione
. . . Enceladus
. . . Europa
. . . Ganymede
. . . Hyperion
. . . Iapetus
. . . Mimas
. . . Rhea (astronomy)
. . . Tethys
. . . Titania
- RT Galilean satellites
Jupiter satellites
satellite surfaces
Saturn satellites
- Ida asteroid**
(added December 1995)
GS celestial bodies
. asteroids
. . **Ida asteroid**
- RT asteroid belts
Galileo spacecraft
meteoroids
- Idaho**
GS nations
. United States
. . **Idaho**
- RT Columbia River Basin (ID-OR-WA)
Yellowstone National Park (ID-MT-WY)
- ideal fluids**
RT compressible fluids
equations of state
 ∞ fluids
incompressible fluids
Mollier diagram
- ideal gas**
DEF A gas which conforms to Boyle's law and has zero heat of free expansion (or also obeys Charles' law). Used for perfect gas.
UF *perfect gas*

identifying

- GS gases
 - . **ideal gas**
- RT Bose-Einstein condensates
- Dalton law
- equations of state
- gas density
- kinetic theory
- kinetics
- real gases

identify friend or foe

USE **IFF systems (identification)**

identifying

- GS **identifying**
 - . crop identification
 - . IFF systems (identification)
 - . parameter identification
 - . rapid ballistics identification
 - . system identification
 - . timber identification
- RT chemical analysis
- coding
- cognition
- detection
- gas detectors
- inspection
- marking
- ∞ measurement
- missile detection
- particulate sampling
- perception
- recognition
- spectral signatures
- tracking (position)
- ultrasonic flaw detection
- Wiswesser notations

identities

- RT congruences
- ∞ equations

IDEF (data exchange)

USE **interservice data exchange program**

idlers

- RT bearings
- gears
- pulleys
- rollers
- vehicular tracks

IFF systems (identification)

- UF *identify friend or foe*
- GS identifying
 - . **IFF systems (identification)**
- RT aircraft detection
- cognition
- interrogation
- recognition
- ∞ systems

IFR (rules)

USE **instrument flight rules**

IGFET

USE **field effect transistors**

igneous rocks

DEF Rocks or minerals that solidify from molten or partly molten material, i. e. , from magma. The term is also applied to processes leading to, related to, or resulting from the formation of such rocks. Igneous rocks constitute one of the three main classes into which rocks are divided, the others being metamorphic rocks and sedimentary rocks.

- UF *ignimbrite*
- GS rocks
 - . **igneous rocks**
 - . . anorthosite
 - . . basalt
 - . . diorite
 - . . dunite
 - . . eclogite

- . . felsite
- . . gabbro
- . . granite
- . . obsidian
- . . . moldavite
- . . peridotite
- . . pumice
- . . rhyolite
- . . syenite
- . . trachyte

- RT andesite
- basalts
- breccia
- effusives
- enstatite
- feldspars
- ilmenite
- lava
- magma
- mica
- minerals
- olivine
- petrogenesis
- pyroxenes
- quartz
- regolith
- rock intrusions
- sedimentary rocks
- soils
- spinel
- tourmaline

ignimbrite

USE **igneous rocks**

igniters

DEF Devices used to begin combustion, such as a spark plug in a combustion chamber of a jet engine, or a squib used to ignite the fuel in a rocket.

- GS **igniters**
 - . initiators (explosives)
 - . . boosters (explosives)
 - . . caps (explosives)
 - . . detonators
 - . . exploding wires
 - . . primers (explosives)
 - . squibs

- RT ammunition
- electric ignition
- explosive devices
- ignition
- ignition systems
- incendiary ammunition
- pyrophoric materials
- solid propellant ignition
- spark plugs

ignition

DEF The initiation of combustion. Used for reignition.

- UF *reignition*
- GS **ignition**
 - . electric ignition
 - . solid propellant ignition
 - . spark ignition
- RT combustion
- combustion physics
- firing (igniting)
- flame propagation
- flammability
- flash point
- fuel combustion
- igniters
- premixing
- propellant combustion
- roasting
- sparks
- spontaneous combustion
- starting

ignition limits

- RT combustion
- flame retardants
- flammability
- fuel-air ratio

- gas mixtures
- ∞ limits

ignition systems

- RT automobiles
- distributors
- dwelt
- electric coils
- electric ignition
- engines
- igniters
- internal combustion engines
- rocket engines
- spark plugs
- squibs
- starters
- ∞ systems

ignition temperature

- GS temperature
 - . **ignition temperature**
 - . . flash point
- RT combustion temperature
- flammability
- propellant sensitivity
- pyrophoric materials
- solid propellant ignition
- spontaneous combustion
- thermites

ignitrons

- GS electron tubes
 - . gas discharge tubes
 - . . **ignitrons**
 - . rectifiers
 - . **ignitrons**

IGOSS

USE **integrated global ocean station systems**

IGY (geophysical year)

USE **International Geophysical Year**

IHD (hydrological decade)

USE **International Hydrological Decade**

IIR filters

(added December 2002)

DEF Digital filters that use previous output values in the calculation of current output values, providing an impulse response that is theoretically infinite.

- UF *infinite impulse response filters*
- GS electromagnetic wave filters
 - . electric filters
 - . . digital filters
 - . . . **IIR filters**
- RT adaptive filters
- autoregressive moving average
- FIR filters
- recursive functions

IL-14 aircraft

- UF *Ilyushin IL-14 aircraft*
- GS Ilyushin aircraft
 - . **IL-14 aircraft**
 - monoplanes
 - . **IL-14 aircraft**
 - transport aircraft
 - . **IL-14 aircraft**
- RT ∞ aircraft

IL-62 aircraft

- UF *Classic aircraft*
- GS Ilyushin IL-62 aircraft
 - . **IL-62 aircraft**
 - commercial aircraft
 - . **IL-62 aircraft**
 - Ilyushin aircraft
 - . **IL-62 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **IL-62 aircraft**
 - monoplanes
 - . **IL-62 aircraft**

- passenger aircraft
 . **IL-62 aircraft**
 RT ∞ aircraft
- IL-76 aircraft**
(added September 1994)
 GS Ilyushin aircraft
 . **IL-76 aircraft**
 jet aircraft
 . **IL-76 aircraft**
 passenger aircraft
 . **IL-76 aircraft**
 transport aircraft
 . **IL-76 aircraft**
 RT ∞ aircraft
- IL-86 aircraft**
(added September 1994)
 GS Ilyushin aircraft
 . **IL-86 aircraft**
 jet aircraft
 . **IL-86 aircraft**
 passenger aircraft
 . **IL-86 aircraft**
 transport aircraft
 . **IL-86 aircraft**
 RT ∞ aircraft
- IL-96 aircraft**
(added September 1994)
 GS Ilyushin aircraft
 . **IL-96 aircraft**
 jet aircraft
 . **IL-96 aircraft**
 passenger aircraft
 . **IL-96 aircraft**
 transport aircraft
 . **IL-96 aircraft**
 RT ∞ aircraft
- ill-conditioned problems (mathematics)**
(added March 1994)
 DEF In numerical analysis, problems (algorithms) in which a small error in the data or small errors introduced by rounding, truncation, or other computational procedures result in much larger errors in the solution. (See also ILL-POSED PROBLEMS)
 RT computation
 differential equations
 error analysis
 ill-posed problems (mathematics)
 integral equations
 numerical analysis
 numerical stability
 problem solving
 truncation errors
 uniqueness
- Illiic 3 computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . Illiac computers
 **Illiic 3 computer**
 RT analog to digital converters
 parallel processing (computers)
- Illiic 4 computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . Illiac computers
 **Illiic 4 computer**
 RT analog to digital converters
 parallel processing (computers)
- Illiic computers**
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Illiic computers**
 Illiac 3 computer
- ... Illiac 4 computer
- Illinois**
 GS nations
 . United States
 . . **Illinois**
 RT Ohio River (US)
 Wabash River Basin (IL-IN-OH)
- illite**
 GS clays
 . **illite**
 minerals
 . **illite**
 RT soils
- ill-posed problems (mathematics)**
(added March 1994)
 DEF Problems corresponding to physical system models whose solutions do not satisfy Hadamard's criteria for 'well posedness,' i. e. , existence, uniqueness, and continuous dependence on initial data. Most commonly, such problems stem fundamental physical limitations on the accessibility of information about the object or process being studied. (See also ILL-CONDITIONED PROBLEMS)
 UF *improperly-posed problems (mathematics)*
 RT boundary value problems
 differential equations
 Fredholm equations
 ill-conditioned problems
 (mathematics)
 integral equations
 iterative solution
 numerical analysis
 numerical stability
 problem solving
 uniqueness
- illumination**
 SN (LIMITED TO DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION—EQUALS LIGHT PRESSURE TIMES SPEED OF LIGHT)
 DEF The total luminous flux received on a unit area of a given real or imaginary surface, expressed in such units as the footcandle, lux, or phot. Illuminance is analogous to irradiance, but is to be distinguished from the latter in that illuminance refers only to light and contains the luminous efficiency weighting factor necessitated by the nonlinear wavelength response of the human eye. Used for light pressure.
 UF *light pressure*
 GS pressure
 . radiation pressure
 . . luminous intensity
 . . . **illumination**
 rates (per time)
 . flux density
 . . radiant flux density
 . . . irradiance
 **illumination**
 luminous intensity
 **illumination**
 RT brightness
 illuminating
 ∞ illumination
 light (visible radiation)
 luminance
 luminosity
 radiancy
 solar constant
 solar flux density
 visibility
- illuminating**
 UF *lighting*
 RT architecture
 brightness
 comfort
 darkness
 environmental engineering
 ∞ flares
 glare
- human factors engineering
 illuminance
 ∞ illumination
 light sources
 light transmission
 lighting equipment
 luminaires
 luminance
 photometry
 ∞ projection
 projectors
 pyrotechnics
 shadows
- ∞ **illumination**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT brightness discrimination
 darkening
 darkness
 ∞ diffusers
 illumination
 illuminating
 illuminators
 isophotes
 light transmission
 luminescence
 photometry
- illuminators**
 GS light sources
 . **illuminators**
 lighting equipment
 . **illuminators**
 RT ∞ illumination
 incandescence
 luminescence
- illusions**
 GS psychological effects
 . **illusions**
 . . hallucinations
 . . moon illusion
 . . oculogravic illusions
 . . optical illusion
 . . . elevator illusion
 RT afterimages
 images
 perception
 vision
- ilmenite**
 DEF A mineral having the theoretical composition FeO. TiO₂ used principally in the production of titanium oxide.
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . iron oxides
 **ilmenite**
 titanium oxides
 **ilmenite**
 iron compounds
 . iron oxides
 . . **ilmenite**
 minerals
 . **ilmenite**
 titanium compounds
 . titanates
 . . **ilmenite**
 . titanium oxides
 . . **ilmenite**
 RT igneous rocks
 sands
- ILS (landing systems)*
 USE **instrument landing systems**
- Ilyushin aircraft**
 GS **Ilyushin aircraft**
 . IL-14 aircraft
 . IL-62 aircraft
 . IL-76 aircraft
 . IL-86 aircraft
 . IL-96 aircraft

image analysis

RT ∞ aircraft

Ilyushin IL-14 aircraft
USE **IL-14 aircraft**

Ilyushin IL-62 aircraft
USE **IL-62 aircraft**

image analysis

DEF Technique for understanding or quantification of digital data as presented in a two dimensional format.

GS **image analysis**
. image classification
. spectral mixture analysis

RT cluster analysis
edge detection
Gabor filters
image enhancement
image processing
image resolution
optical flow (image analysis)
pattern recognition
radar imagery
remote sensing
satellite imagery
scene analysis
Voronoi diagrams

image classification

(added July 1993)

DEF The sorting of remotely sensed image data by any one or more of a variety of means.

GS image analysis
. **image classification**

RT atmospheric correction
change detection
classifications
∞ classifying
image correlators
image enhancement
image processing
imaging techniques
normalized difference vegetation index
optical data processing
pattern recognition
remote sensing
remote sensors

image contrast

GS contrast
. **image contrast**

RT focusing
gray scale
pattern registration
resolution
self focusing
signal to noise ratios
smear
visibility

image converters

DEF Optoelectronic devices capable of changing the spectral characteristics of a radiant image. Examples of such changes are infrared to visible and x ray to visible.

GS optical equipment
. **image converters**
. . . telescopes
. . . image tubes
. . . thermicons

RT camera tubes
∞ converters
Lallemand cameras
light amplifiers
microchannels
photocathodes

image correlators

UF *SIMICOR (image correlator)*
simultaneous image correlator

GS correlators
. **image correlators**

RT holography
image classification

imaging techniques
map matching guidance
optical correlators
pattern registration
speckle holography
video landmark acquisition and tracking

image dissector tubes

GS electron tubes
. camera tubes
. . . **image dissector tubes**
television equipment
. **image dissector tubes**

RT guidance sensors
satellite orientation

image enhancement

RT band ratioing
focusing
geometric rectification (imagery)
gray scale
image analysis
image classification
images
imaging techniques
light amplifiers
radiometric correction
resolution
signal to noise ratios
tomography
vegetative index

image filters

GS **image filters**
. Gabor filters

RT ∞ filters
imaging techniques

image furnaces

GS heating equipment
. furnaces
. . . **image furnaces**
laboratory equipment
. **image furnaces**

RT arc heating
carbon arcs

image intensifiers

UF *intensifier tubes*

GS intensifiers
. **image intensifiers**
. . . image orthicons

RT amplifiers
imaging techniques
Lallemand cameras
light amplifiers
night vision
orthicons
phosphors
photocathodes

image motion compensation

RT aerial photography
∞ compensation
imaging techniques
pattern registration
video compression

image orthicons

GS electron tubes
. camera tubes
. . . orthicons
. . . . **image orthicons**
intensifiers
. image intensifiers
. . . **image orthicons**

RT photocathodes

image processing

DEF Conversion of optical images into digital data form for storage and reconstruction by computer techniques.

GS **image processing**
. band ratioing
. geometric rectification (imagery)

RT atmospheric correction
change detection
cluster analysis
computer aided tomography
data processing
discrete cosine transform
edge detection
Feature Identification and Location
Exper
frames (data processing)
Gabor filters
Gabor transformation
geometric accuracy
gray scale
image analysis
image classification
imagery
imaging techniques
laser guide stars
multisensor applications
nap-of-the-earth navigation
onboard data processing
optical data processing
optical flow (image analysis)
point spread functions
preprocessing
principal components analysis
∞ processing
pushbroom sensor modes
raster scanning
scientific visualization
spatial resolution
spectral mixture analysis
vector quantization
video compression
wavelet analysis

image reconstruction

DEF The reproduction of the original scene from data stored or transmitted after scanning by an electron beam. In reprography, the recreation of graphic images from digital data stored in a computer.

GS reconstruction
. **image reconstruction**

RT display devices
holography
imaging techniques
pattern registration
scene generation

image resolution

DEF In optics, a measure of the ability of an optical instrument to produce separable images of different points on an object.

GS resolution
. **image resolution**

RT anisoplanatism
electro-optical photography
geometric accuracy
high definition television
image analysis
imagery
matching
multispectral photography
pattern registration
spatial resolution

image rotation

DEF Mechanized or digital rotation of an image.

GS gyration
. rotation
. . . **image rotation**

RT imaging techniques

IMAGE satellite

(added November 2000)

DEF A medium class Explorer (MIDEX) mission to study the global response of the Earth's magnetosphere to changes in the solar wind. IMAGE (Imager for Magnetopause-to-Aurora Global Exploration) will use neutral atom, ultraviolet, and radio imaging techniques to: (a) identify the dominant mechanisms for injecting plasma into the magnetosphere on substorm

and magnetic storm time scales; (b) determine the directly driven response of the magnetosphere to solar wind changes; and, (c) discover how and where magnetospheric plasmas are energized, transported, and subsequently lost during substorms and magnetic storms.

UF *Explorer 78 satellite*
Imager for Magnetopause-to-Aurora
Global Explorer

GS artificial satellites
. scientific satellites
. Explorer satellites
. . . **IMAGE satellite**
RT auroral zones
Earth magnetosphere
magnetic storms
magnetopause
plasmasphere
space plasmas

image transducers

GS transducers
. **image transducers**
RT camera tubes
imaging techniques
Lallemand cameras

image tubes

DEF Electron tubes that reproduce on their fluorescent screens images of irradiation patterns incident on their photosensitive surfaces.

GS electron tubes
. **image tubes**
. thermicons
optical equipment
. image converters
. . . **image tubes**
. thermicons
RT cathode ray tubes
display devices
flying spot scanners
head-up displays
monoscopes

image velocity sensors

RT images
imaging techniques
∞ sensors

Imager for Magnetopause-to-Aurora Global Explorer

(added December 2000)

USE **IMAGE satellite**

imagery

GS **imagery**
. kinoform
. microwave imagery
. photography
. . . aerial photography
. . . all sky photography
. . . astronomical photography
. . . autoradiography
. . . black and white photography
. . . chronophotography
. . . cinematography
. . . cloud photography
. . . color photography
. . . electron photography
. . . electro-optical photography
. . . fractography
. . . frame photography
. . . high speed photography
. . . holography
. . . . acoustical holography
. . . . microwave holography
. . . . speckle holography
. . . . white light holography
. . . infrared imagery
. . . lunar photography
. . . metric photography
. . . microwave photography
. . . multispectral photography
. . . . infrared photography
. . . . color infrared photography
. . . . radar photography

. . orthophotography
. . photomicrography
. . rocket-borne photography
. . shadowgraph photography
. . . Schlieren photography
. . spaceborne photography
. . . satellite-borne photography
. . spectrophotography
. . stereoscopy
. . . stereophotography
. . . streak photography
. . . ultraviolet photography
. . . ultraviolet photometry
. . underwater photography
. . urography
. . radar imagery
. . radiography
. . angiography
. . autoradiography
. . neutron radiography
. . tomography
. . . computer aided tomography
. . urography
. reproduction (copying)
. . xerography
. . satellite imagery
. . spectroheliographs
. . ultraviolet imagery
. . x ray imagery
. . ultraviolet photography

RT acousto-optics
appearance
Atmospheric & Oceanographic Inform
Sys
change detection
contour sensors
display devices
Earth resources
geographic information systems
geometric rectification (imagery)
graphic arts
ground truth
holographic optical elements
image processing
image resolution
microwave sounding
multispectral radar
radar signatures
scene analysis
sea truth
signature analysis

images

UF *optical images*
GS **images**
. afterimages
. retinal images
RT contour sensors
display devices
evaporography
halos
helmet mounted displays
illusions
image enhancement
image velocity sensors
∞ optics
perception
photographs
raster scanning
representations
spatial filtering
vision

imaging radar

GS radar
. **imaging radar**
. . Shuttle Imaging Radar
RT radar imagery
remote sensors
side-looking radar
synthetic aperture radar

imaging spectrometers

GS measuring instruments
. spectrometers
. . **imaging spectrometers**
RT Envisat-1 satellite

imaging techniques
remote sensing
spectral reflectance
spectrophotometry

imaging techniques

GS **imaging techniques**
. acoustic imaging
. . acoustical holography
. raster scanning
. scene generation
. speckle holography
RT acoustic microscopes
acoustical holography
adaptive optics
apodization
charge injection devices
crop identification
flat panel displays
gray scale
high definition television
hologrammetry
image classification
image correlators
image enhancement
image filters
image intensifiers
image motion compensation
image processing
image reconstruction
image rotation
image transducers
image velocity sensors
imaging spectrometers
∞ methodology
microwave holography
modulation transfer function
multimedia
multisensor applications
multisensor fusion
multispectral band scanners
multispectral photography
multispectral radar
optical relay systems
optical transfer function
∞ optics
particle image velocimetry
pattern registration
photography
pixels
principal components analysis
radar imagery
rapid ballistics identification
resolution cell
satellite imagery
scene analysis
spatial resolution
streak photography
synthetic apertures
television systems
ultrasonic scanners
vegetative index
x ray imagery

∞ imbeddings

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT encapsulating
imbeddings (mathematics)
invariant imbeddings
∞ matrices

imbeddings (mathematics)

GS geometry
. topology
. . **imbeddings (mathematics)**
. . . invariant imbeddings
RT ∞ imbeddings
strange attractors

IMBLMS

SN (INTEGRATED MEDICAL AND
BEHAVIORAL LABORATORY
MEASUREMENT SYSTEM)
UF *Integ Med and Behavioral Lab*
Measur System
RT bioinstrumentation

imides

biomedical data
measuring instruments
medical equipment

IMCC (control center)

USE **integrated mission control center**

IME satellite

USE **International Magnetospheric Explorer**

imides

GS nitrogen compounds

. **imides**

. . bismaleimide

. . succinimides

RT amides

imines

UF *Schiff bases*

GS nitrogen compounds

. **imines**

RT amines

IMLSS

SN (INTEGRATED MANEUVERING AND LIFE SUPPORT SYSTEM)

UF *Integrated Maneuvering Life Support Sys*

GS self maneuvering units

. **IMLSS**

support systems

. life support systems

. . portable life support systems

. . . **IMLSS**

RT astronaut maneuvering equipment

extravehicular activity

extravehicular mobility units

∞ systems

immersion

USE **submerging**

immiscibility

USE **solubility**

immittance

USE **electrical impedance**

immobilization

GS **immobilization**

. hindlimb suspension

RT damage

impairment

∞ motion

immune systems

GS anatomy

. **immune systems**

. . lymphatic system

. . . spleen

. . . thymus gland

RT acquired immunodeficiency syndrome

antibodies

antigens

human immunodeficiency virus

immunity

immunoassay

immunology

leukocytes

lymphocytes

physiological defenses

immunity

GS physiological defenses

. **immunity**

RT immune systems

infectious diseases

inoculation

∞ resistance

toxins and antitoxins

immunoassay

DEF An assay that utilizes antigen-antibody reactions for the determination of biochemical substances. Used for plasma renin activity.

UF *plasma renin activity*

GS **immunoassay**

. radioimmunoassay

RT antigens

assaying

biochemistry

immune systems

immunology

radiobiology

immunology

GS medical science

. **immunology**

RT acquired immunodeficiency syndrome

allergic diseases

anaphylaxis

antibodies

antigens

antisera

biocompatibility

∞ biology

human immunodeficiency virus

immune systems

immunoassay

lymphatic system

prophylaxis

radioimmunoassay

veterinary medicine

IMP

UF *Interplanetary Monitoring Platform*

GS artificial satellites

. lunar satellites

. . **IMP**

. scientific satellites

. . Explorer satellites

. . . **IMP**

lunar spacecraft

. lunar satellites

. . **IMP**

IMP-1

USE **Explorer 18 satellite**

IMP-2

USE **Explorer 21 satellite**

IMP-3

USE **Explorer 28 satellite**

IMP-4

USE **Explorer 34 satellite**

IMP-5

USE **Explorer 41 satellite**

IMP-6

USE **Explorer 43 satellite**

IMP-7

USE **Explorer 47 satellite**

IMP-8

USE **Explorer 50 satellite**

IMP-A

USE **Explorer 18 satellite**

impact

GS **impact**

. economic impact

. electron impact

. hypervelocity impact

. ion impact

. point impact

. proton impact

RT

deceleration

hydrodynamic ram effect

impingement

mechanical shock

penetration

percussion

pressure

shock absorbers

shock resistance

shock waves

stresses

impact acceleration

DEF The acceleration generated by very sudden starts or stops of a vehicle. The term is usually applied in the context of physiological acceleration. Used for impact deceleration.

UF *impact deceleration*

GS rates (per time)

. acceleration (physics)

. . **impact acceleration**

RT ∞ acceleration

deceleration

impact velocity

mechanical shock

physiological acceleration

railroad humping tests

shock absorbers

impact damage

GS damage

. **impact damage**

. . meteoritic damage

. . rain impact damage

RT

cratering

craters

ejecta

impact tolerances

Mars craters

meteoroid protection

planetary craters

impact deceleration

USE **impact acceleration**

impact fusion

DEF The conversion of the kinetic energy of a fast moving, initially stationary, macroparticle projectile into the internal energy of fusile material using a particle accelerator. Impact fusion is generally an inertial confinement fusion concept.

GS inertial confinement fusion

. **impact fusion**

RT fusion reactors

impact loads

UF *impact pressures*

GS loads (forces)

. compression loads

. . **impact loads**

. contact loads

. . **impact loads**

. dynamic loads

. . transient loads

. . . **impact loads**

RT

blast loads

dynamic pressure

fiber orientation

impact velocity

landing loads

loading rate

random loads

shock loads

structural design criteria

impact melts

DEF Molten material resulting from hypervelocity impact.

GS melts (crystal growth)

. **impact melts**

RT

celestial bodies

hypervelocity impact

lunar rocks

melting

meteorites

minerals

petrology

impact prediction

UF *ARIP (impact prediction)*

automatic rocket impact predictors

GS predictions

. **impact prediction**

RT

ballistic trajectories

downrange

guidance (motion)
laser guidance
missile trajectories
range safety
reentry
trajectory analysis

impact pressures

USE **impact loads**

impact resistance

UF *impact sensitivity*
GS sensitivity
. **impact resistance**
shock resistance
. **impact resistance**
RT crashworthiness
propellant sensitivity
∞ resistance
tolerances (physiology)

impact sensitivity

USE **impact resistance**

impact strength

DEF The amount of energy required to fracture a material. The type of specimen and the testing conditions affect the values and therefore should be specified.

GS mechanical properties
. **impact strength**
RT brittle materials
brittleness
ductility
earthquake resistance
hardness
notch sensitivity
∞ resistance
shear properties
∞ strength
stress concentration
wave resistance

impact testing machines

RT drop tests
fatigue tests
∞ machinery
∞ test equipment

impact tests

GS **impact tests**
. Charpy impact test
RT brittleness
compression tests
destructive tests
drop tests
fatigue tests
hardness tests
impactors
load tests
∞ materials tests
notch sensitivity
notch strength
notch tests
shock tests
strain rate
stress concentration
∞ tests
toughness

impact tolerances

GS tolerances (mechanics)
. **impact tolerances**
RT impact damage

impact velocity

(added April 1997)
GS velocity
. **impact velocity**
RT collisions
hypervelocity impact
impact acceleration
impact loads
terminal ballistics

terminal velocity

impactors

RT crushers
grinding mills
hammers
impact tests

impairment

RT damage
immobilization
injuries
losses

IMPATT diodes

USE **avalanche diodes**

IMP-B

USE **Explorer 21 satellite**

IMP-C

USE **Explorer 28 satellite**

IMP-D

USE **Explorer 33 satellite**

IMP-E

USE **Explorer 35 satellite**

impedance

DEF The total opposition that a circuit presents to the flow of an alternating current, specifically the complex quotient of voltage divided by current. Used for dummy loads.

UF *dummy loads*
GS **impedance**
. acoustic impedance
. electrical impedance
. . . electrical resistance
. . . contact resistance
. . . Hall resistance
. . . skin resistance
. . . transconductance
. . reactance
. mechanical impedance
. respiratory impedance
RT attenuation coefficients
bandwidth
chokes (restrictions)
∞ conductivity
constrictions
damping
diffusivity
dynamic characteristics
dynamic response
electric coils
electrical properties
∞ hydraulics
mechanical properties
∞ physical properties
∞ resistance
resonant frequencies
Smith chart
time constant
transient response

impedance matching

RT antenna couplers
couplers
coupling circuits
directional couplers
electric networks
electrical impedance
iterative networks
matching
mode transformers
transfer functions
transmission lines
waveguide tuners
waveguide windows

impedance measurement

RT electrical impedance
electrical measurement
mechanical impedance
mismatch (electrical)

radio frequency impedance probes

impedance probes

GS measuring instruments
. **impedance probes**
. . . radio frequency impedance probes
RT resonance probes

impeller blades

USE **rotor blades (turbomachinery)**

impellers

DEF Devices that impart motion to a fluid; specifically in centrifugal compressors, rotary disks which, faced on one or both sides with radial vanes, accelerate the incoming fluid outward into diffusers.

GS rotating bodies
. rotors
. . . **impellers**
. . . . pump impellers
RT blowers
centrifugal compressors
centrifugal pumps
compressor rotors
pumps
rotor blades (turbomachinery)
stators
turbine wheels
turbines
turbomachine blades
vanes

imperfections

USE **defects**

Imperial Valley (CA)

GS valleys
. **Imperial Valley (CA)**
RT California
deserts
Mexico

IMP-F

USE **Explorer 34 satellite**

IMP-G

USE **Explorer 41 satellite**

IMP-H

USE **Explorer 47 satellite**

IMP-I

USE **Explorer 43 satellite**

impingement

DEF A process resulting in a continuing succession of impacts between (liquid or solid) particles and a solid phase.

GS **impingement**
. jet impingement
RT ablation
attenuation
cavitation flow
corrosion
erosion
gas-solid interactions
impact
incidence
reflection
scattering

IMP-J

USE **Explorer 50 satellite**

implantation

GS **implantation**
. heart implantation
. ion implantation
RT grafting
injection
insertion

implanted electrodes (biology)

GS bioengineering

implication

- . bioinstrumentation
 - . . **implanted electrodes (biology)**
 - electrodes
 - . **implanted electrodes (biology)**
- RT ∞ biology

implication

- RT inference

implisions

DEF The rapid inward collapsing of the walls of vacuum systems or devices as the result of failure of the walls to sustain the ambient pressure.

- RT bursts
explosions
explosive decompression
propellant explosions
shock waves

impregnating

- RT chemical attack
coatings
finishes
insertion
lubrication
permeating
porosity
preserving
self lubricating materials
self lubrication

improperly-posed problems (mathematics)

- USE **ill-posed problems (mathematics)**

Improved TIROS Operational Satellites

- USE **ITOS satellites**

improvement

- RT correction
public relations
upgrading

impulse generators

DEF Standard reference sources of broad-band impulse energy.

- RT ∞ generators
impulses
pulse generators
turbines

impulses

DEF The products of the forces and the times during which the forces are applied.

- GS **impulses**
. high impulse
. specific impulse
. total impulse
- RT impulse generators

impurities

- RT contaminants
crystal defects
dirt
heterogeneity
inclusions
point defects
pseudopotentials
quality
trace contaminants
ultrapure metals
wastes

IMS

- USE **International Magnetospheric Study**

in situ measurement

(added September 1992)

DEF In situ is Latin for "in original place". It refers to measurements made at the actual location of the object or material measured.

- RT atmospheric composition
atmospheric sounding
balloon sounding
ground truth

- ∞ measurement
optical measurement
pollution monitoring
remote sensing
rocket sounding
temperature measurement

in situ resource utilization

(added August 2001)

DEF The use of indigenous materials at a planetary or other extraterrestrial landing site for the production of propellants, life support consumables, or other needed materials.

- UF *indigenous space materials utilization*
ISMU (resource utilization)
ISRU (resource utilization)

GS utilization

. in situ resource utilization

- RT consumables (spacecraft)
extraterrestrial resources
fuel production
lunar resources
manned Mars missions
materials recovery
oxygen production
planetary bases

in vitro methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring in an artificial environment or outside of a living cell or organism.

- RT bioassay
biotechnology
conditions
culture techniques
cytology
fertilization
histology
in vivo methods and tests
∞ methodology
∞ tests
tissue engineering

in vivo methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring within a living cell or organism.

- RT bioassay
biotechnology
conditions
culture techniques
cytology
histology
in vitro methods and tests
intravenous procedures
∞ methodology
∞ tests

inactivation

- USE **deactivation**

incandescence

DEF Emission of light due to high temperature of the emitting material. Any other emission of light is called luminescence.

- GS emission
. light emission
. . **incandescence**

- RT brightness
color
emissivity
illuminators
light (visible radiation)
luminescence
luminosity
luminous intensity
radiance
spectral emission
thermal emission

incendiary ammunition

- GS ammunition
. **incendiary ammunition**

- RT bombs (ordnance)
combustion
exothermic reactions
grenades
guns (ordnance)
igniters
missiles
projectiles
propellants
pyrotechnics
∞ rockets

incentive techniques

- RT cost incentives
cost reduction
efficiency
management
value engineering

incentives

- GS **incentives**
. contract incentives
- RT income
management
management methods
motivation
personnel

incidence

DEF Partial coincidence, as a circle and a tangent line. The impingement of a ray on a surface.

- GS **incidence**
. grazing incidence
- RT angles (geometry)
impingement

incident radiation

- RT bistatic reflectivity
corpuscular radiation
electromagnetic radiation
obliqueness
optical reflection
photon beams
∞ radiation
reflected waves
refracted waves
retroreflection
scattering
Stokes law of radiation
wave incidence control

incineration

- USE **incinerators**

incinerators

- UF *incineration*
- RT burners
furnaces
waste disposal
waste energy utilization

∞ **inclination**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The angle between the plane of an orbit and the reference plane. The equator is the reference plane for geocentric orbits and the ecliptic is the reference plane for heliocentric orbits. Also the magnetic dip.

- RT geomagnetism
magnetic equator
orbits
slopes
tendencies

inclusions

- GS defects
. **inclusions**
- RT casting
castings
clathrates
heterogeneity
impurities
metallography
veins (petrology)

voids

incoherence
 RT discontinuity
 nonsynchronization

incoherent scatter radar
 DEF Radar used in the study of the ionosphere, thermosphere, etc.
 GS radar
 . **incoherent scatter radar**
 . . EISCAT radar system (Europe)
 RT incoherent scattering
 radar scattering

incoherent scattering
 DEF The phenomena of generating waves with random variations in phase, amplitude, polarization, and direction of propagation when an incident wave encounters matter.
 GS scattering
 . **incoherent scattering**
 RT coherent scattering
 EISCAT radar system (Europe)
 electromagnetic radiation
 electromagnetic wave transmission
 incoherent scatter radar
 nuclear scattering
 radar scattering

income
 RT budgeting
 economics
 incentives

incompatibility
 RT corrosion
 hazards
 ∞ interference
 solubility

incompressibility
 RT compressibility
 fluid mechanics

incompressible boundary layer
 GS boundary layers
 . **incompressible boundary layer**
 RT laminar boundary layer
 turbulent boundary layer

incompressible flow
 GS fluid flow
 . **incompressible flow**
 . . Stokes flow
 RT aerodynamics
 Beltrami flow
 compressible flow
 gas flow
 Milne-Thomson method
 Navier-Stokes equation
 Reynolds stress
 stream functions (fluids)
 subsonic flow

incompressible fluids
 GS **incompressible fluids**
 . micropolar fluids
 RT Boussinesq approximation
 channel flow
 compressible fluids
 fluid power
 ∞ fluids
 ideal fluids
 Navier-Stokes equation
 Oseen approximation
 superfluidity

Inconel (trademark)
 GS alloys
 . nickel alloys
 . . **Inconel (trademark)**
 RT chromium alloys

iron alloys

increasing
 RT accumulations
 augmentation
 growth
 magnification
 promotion
 swelling

indene
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **indene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **indene**

indentation
 GS **indentation**
 . nanoindentation
 RT deformation
 hardness

independent variables
 DEF Any of those variables of a problem, chosen according to convenience, which may arbitrarily be specified, and which then determine the other or dependent variables of the problem. The independent variables are often called the coordinates, particularly in problems involving motion in space. Dependent and independent variables can be interchanged, e. g. , height and pressure. Used for arguments (mathematics) and parameters.
 UF *arguments (mathematics)*
parameters
 GS **independent variables**
 . lattice parameters
 RT dependent variables
 distributed parameter systems
 observability (systems)
 parameter identification
 ∞ variable

∞ **indexes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT indexes (documentation)
 indexes (ratios)
 KP index
 KWIC indexes

indexes (documentation)
 DEF Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents.
 GS classifications
 . **indexes (documentation)**
 . . KWIC indexes
 . . Wiswesser notations
 RT abstracts
 bibliographies
 ∞ catalogs
 documentation
 documents
 handbooks
 ∞ indexes
 indexing (information science)
 information dissemination
 information retrieval
 lists
 literature
 ∞ reference systems
 selective dissemination of information
 sky surveys (astronomy)
 space glossaries
 summaries
 supplements
 thesauri

indexes (ratios)
 GS ratios
 . **indexes (ratios)**

. . KP index
 . . morphological indexes
 . . vegetative index
 . . . leaf area index
 . . . normalized difference vegetation index
 RT efficiency
 ∞ indexes
 mass to light ratios

indexing (information science)
 (added April 2000)
 DEF The representation of document content in a systematic, organized form to support information location, retrieval, or analysis.
 UF *automatic indexing*
document indexing
machine aided indexing
 GS information analysis
 . **indexing (information science)**
 RT indexes (documentation)
 information management
 information retrieval
 terminology
 terms
 thesauri

India
 GS nations
 . **India**
 RT Asia
 Bangladesh
 Bhutan
 Himalayas
 Indian spacecraft
 ISRO
 Sikkim

Indian Ocean
 GS oceans
 . **Indian Ocean**
 RT Arabian Sea
 Indonesia
 Madagascar
 Mauritius
 mid-ocean ridges
 Seychelles

Indian space program
 GS programs
 . space programs
 . . **Indian space program**
 RT communication satellites
 manned space flight
 ∞ research projects
 satellite design
 space missions
 ∞ spacecraft
 spacecraft design
 technology utilization

Indian Space Research Organization
 USE **ISRO**

Indian spacecraft
 UF *Aryabhata*
INSAT satellites
IRS (Indian spacecraft)
SEO (Indian spacecraft)
 RT India
 ∞ spacecraft

Indiana
 GS nations
 . United States
 . . **Indiana**
 RT Ohio River (US)
 Wabash River Basin (IL-IN-OH)

indicating instruments
 UF *temperature indicators*
 GS measuring instruments
 . **indicating instruments**
 . . approach indicators
 . . astrolabes
 . . attitude indicators

indication

- . . . gyro horizons
- . . . cloud height indicators
- . . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . . flow direction indicators
- . . . wind vanes
- . . . position indicators
- . . . plan position indicators
- . . . radio direction finders
- . . . spacecraft position indicators
- . . . smoke detectors
- . . . speed indicators
- . . . tachometers
- . . . weight indicators
- . . . microbalances
- . . . strain gage balances
- . . . thermobalances
- RT aircraft instruments
- control moment gyroscopes
- ∞ detectors
- dials
- display devices
- flat panel displays
- gas detectors
- head-up displays
- helmet mounted displays
- ∞ indication
- ∞ indicators
- instrument receivers
- ∞ instruments
- radarscopes
- recording instruments
- thermocouples
- thermopiles

∞ **indication**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT evaluation
- indicating instruments
- probability theory
- signs and symptoms

∞ **indicators**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft guidance
- chemical indicators
- indicating instruments
- methylene blue
- rate of climb indicators

indigenous space materials utilization
(added August 2001)
USE **in situ resource utilization**

indium

- GS chemical elements
- . **indium**
- metals
- . **indium**

indium alloys

- GS alloys
- . **indium alloys**
- RT aluminum alloys
- gallium alloys
- lead alloys
- tin alloys

indium aluminum arsenides

- (added November 1994)
- GS aluminum compounds
- . aluminum arsenides
- . . . **indium aluminum arsenides**
- arsenic compounds
- . arsenides
- . . . aluminum arsenides
- . . . **indium aluminum arsenides**
- . . . indium arsenides
- . . . **indium aluminum arsenides**
- indium compounds
- . indium arsenides

. . **indium aluminum arsenides**

- RT ∞ chemical compounds
- field effect transistors
- high electron mobility transistors
- molecular beam epitaxy
- p-type semiconductors

indium antimonides

- GS antimony compounds
- . antimonides
- . . **indium antimonides**
- indium compounds
- . **indium antimonides**
- RT semiconductors (materials)

indium arsenides

- GS arsenic compounds
- . arsenides
- . . **indium arsenides**
- . . . indium aluminum arsenides
- . . . indium gallium arsenides
- indium compounds
- . **indium arsenides**
- . . indium aluminum arsenides
- . . indium gallium arsenides
- RT MODFETS

indium compounds

- GS **indium compounds**
- . indium antimonides
- . indium arsenides
- . . indium aluminum arsenides
- . . indium gallium arsenides
- . indium oxides
- . indium phosphates
- . indium phosphides
- . indium selenides
- . . copper indium selenides
- . indium sulfides
- . indium tellurides
- RT ∞ chemical compounds
- ∞ Group 3A compounds
- ∞ metal compounds

indium gallium arsenides

- (added May 1991)
- GS arsenic compounds
- . arsenides
- . . gallium arsenides
- . . . **indium gallium arsenides**
- . . indium arsenides
- . . . **indium gallium arsenides**
- gallium compounds
- . gallium arsenides
- . . **indium gallium arsenides**
- indium compounds
- . indium arsenides
- . . **indium gallium arsenides**
- RT intermetallics
- quantum well lasers
- semiconductors (materials)

indium isotopes

- GS chemical elements
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- **indium isotopes**
- metals
- . **indium isotopes**

indium oxides

- (added July 1995)
- GS chalcogenides
- . oxides
- . . **indium oxides**
- indium compounds
- . **indium oxides**
- RT ∞ chemical compounds

indium phosphates

- GS indium compounds
- . **indium phosphates**
- phosphorus compounds
- . phosphates

. . **indium phosphates**

indium phosphides

- GS indium compounds
- . **indium phosphides**
- phosphorus compounds
- . phosphides
- . . **indium phosphides**
- RT quantum well lasers
- transferred electron devices

indium selenides

- (added June 1995)
- GS chalcogenides
- . selenides
- . . **indium selenides**
- . . . copper indium selenides
- indium compounds
- . **indium selenides**
- . . copper indium selenides
- selenium compounds
- . selenides
- . . **indium selenides**
- . . . copper indium selenides
- RT semiconductors (materials)
- solar cells
- thin films

indium sulfides

- GS chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **indium sulfides**
- indium compounds
- . **indium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **indium sulfides**

indium tellurides

- GS chalcogenides
- . tellurides
- . . **indium tellurides**
- indium compounds
- . **indium tellurides**
- tellurium compounds
- . tellurides
- . . **indium tellurides**
- RT semiconductors (materials)

indium-tin-oxide semiconductors

USE **ITO (semiconductors)**

indoles

- GS organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . azoles
- pyrroles
- **indoles**
- tryptophan
- RT methoxy systems

Indonesia

- GS landforms
- . islands
- . . **Indonesia**
- nations
- . **Indonesia**
- RT Indian Ocean
- Indonesian space program
- Pacific Ocean

Indonesian space program

- GS programs
- . space programs
- . . **Indonesian space program**
- RT Indonesia
- Palapa 2 satellite
- Palapa satellites

indoor air pollution

DEF Pollution found in enclosed spaces often compounded by insufficient air mixing which intensifies the concentration of pollutants

caused by outdoor and/or indoor sources.

- GS pollution
 - . environment pollution
 - . . air pollution
 - . . . **indoor air pollution**
- RT air quality
 - air sampling
 - buildings
 - volatile organic compounds

induced drag

(added July 1992)

- GS dynamic characteristics
 - . drag
 - . . **induced drag**
- RT aerodynamic characteristics
 - aerodynamic drag
 - aircraft design
 - drag reduction

induced fluid flow

USE **fluid flow**

inductance

- GS electrical properties
 - . **inductance**
 - . . proximity effect (electricity)
 - electromagnetic properties
 - . **inductance**
 - . . proximity effect (electricity)
- RT capacitance
 - electrical impedance
 - LC circuits
 - magnetic induction
 - magnetic properties
 - reactance
 - RL circuits
 - transformers

∞ induction

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arc generators
 - derivation
 - induction (mathematics)
 - inference
 - initiation
 - magnetic induction
 - number theory

induction (mathematics)

- GS number theory
 - . **induction (mathematics)**
- RT ∞ induction
 - mathematical logic

induction heating

DEF The generation of heat in any conducting material by means of magnetic flux-induced currents.

- GS heating
 - . **induction heating**
- RT furnaces
 - magnetic induction
 - magnetic pumping
 - melting
 - plasma heating
 - radio frequency heating
 - vacuum melting

induction motors

DEF Ac motors in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel-cage secondary winding on the other member (usually the rotor) carries induced current.

- GS electromechanical devices
 - . electric motors
 - . . **induction motors**
 - motors
 - . electric motors
 - . . **induction motors**
- RT alternating current
 - armatures
 - asynchronous motors

- ∞ electric power
 - electric power supplies
 - power factor controllers
- ∞ rotating electrical machines
 - synchronous motors

induction systems

USE **intake systems**

inductively coupled plasma mass spectrometry

(added March 2001)

DEF Multi-element analytical technique that uses high temperature plasma, commonly argon, to dissociate molecules and ionize atoms, which are passed into a vacuum, and sorted based on their atomic mass-to-charge ratios.

- UF *ICP-MS (spectrometry)*
- LA-ICP-MS (spectrometry)
- GS spectroscopy
 - . mass spectrometry
 - . . **inductively coupled plasma mass spectrometry**
- RT chemical analysis
 - microanalysis
 - qualitative analysis
 - spectroscopic analysis
 - vacuum spectroscopy

inductors

- RT arc generators
 - ballasts (impedances)
 - circuits
- ∞ coils
 - electric energy storage
 - energy storage
 - magnet coils
 - toroids

industrial areas

- RT cities
 - commerce
 - construction industry
- ∞ facilities
 - industries
 - land use
 - marketing
 - megalopolises
 - regional planning
 - shipyards
 - site selection
 - urban development
 - urban transportation

industrial energy

- RT allocations
 - commercial energy
 - distributing
 - domestic energy
 - economic factors
- ∞ energy
 - energy consumption
 - energy conversion
 - transportation energy

industrial management

- UF *business management*
- GS management
 - . **industrial management**
 - . . engineering management
 - . . inventory management
 - . . . inventory controls
 - . . personnel management
- RT concurrent engineering
 - group technology (manufacturing)
 - production management
 - research management
 - systems management
 - total quality management

industrial plants

- UF *factories*
- plants (industries)*
- GS **industrial plants**
 - . foundries
- RT construction industry

- ∞ facilities
 - pilot plants

industrial safety

- GS safety
 - . **industrial safety**
- RT accidents
 - benzene poisoning
 - beryllium poisoning
 - carbon tetrachloride poisoning
 - health physics
 - hydrocarbon poisoning
 - industries
 - occupation
 - reactor safety

industrial wastes

- GS wastes
 - . **industrial wastes**
- RT heavy metals
 - industries
 - landfills
 - liquid wastes
 - soil pollution
 - solid wastes
 - waste disposal
 - waste utilization
 - waste water

industries

- GS **industries**
 - . aerospace industry
 - . . aircraft industry
 - . construction industry
 - . defense industry
 - . . weapons industry
- RT aircraft production costs
 - commerce
 - commercial spacecraft
 - contract negotiation
 - contractors
 - economic development
 - economic impact
 - fishing
 - gross national product
 - industrial areas
 - industrial safety
 - industrial wastes
 - manufacturing
 - personnel subsystems
 - retirement
 - shipyards
 - space industrialization
 - space manufacturing
 - technologies
 - technology assessment
 - technology utilization
 - tourism
 - utilities

inelastic bodies

USE **rigid structures**

inelastic collisions

DEF Collisions between two particles in which changes occur both in the internal energy of one or both of the particles and in the sums, before and after collisions, of their kinetic energies.

- GS collisions
 - . **inelastic collisions**
- RT scattering

inelastic scattering

- GS scattering
 - . **inelastic scattering**
- RT coherent scattering
 - Compton effect
 - elastic scattering
 - electron scattering
 - Mandelstam representation
 - nuclear scattering
 - quark parton model

inelastic stress

DEF A force acting on a solid and producing

inequalities

a deformation such that the original shape and size of the solid are not restored after the force is removed.

- RT cyclic loads
- mathematical models
- metal fatigue
- stress analysis
- stress-strain diagrams

inequalities

- GS **inequalities**
 - . Schwartz inequality
- RT ∞ mathematics

inert atmosphere

DEF A gaseous medium that because of its lack of chemical reaction is used to enclose tests or equipment.

- GS controlled atmospheres
 - . **inert atmosphere**

inert gases

USE **rare gases**

inertia

DEF Resistance to acceleration. Used for inertial forces.

- UF *inertial forces*
- GS **inertia**
 - . inertia principle
 - . . Mach inertia principle
- RT ∞ force
 - Froude number
 - mass
 - moments of inertia
- ∞ motion
- similitude law

inertia bonding

DEF The joining of materials with friction and pressure.

- GS bonding
 - . **inertia bonding**
- RT ∞ joining
 - metal-metal bonding

inertia moments

USE **moments of inertia**

inertia principle

- GS inertia
 - . **inertia principle**
 - . . Mach inertia principle
- RT equations of motion
- moments of inertia

inertia wheels

USE **counter-rotating wheels**
reaction wheels

inertial confinement fusion

DEF The process of using intense beams of heavy ions to convey the energy needed to compress and heat small pellets containing deuterium-tritium fuels to achieve ignition of the pellets.

- GS **inertial confinement fusion**
 - . impact fusion
- RT fusion propulsion
- strongly coupled plasmas

inertial coordinates

- GS coordinates
 - . **inertial coordinates**
- RT Astroguide Navigation System
- geocentric coordinates
- inertialess steerable antennas

inertial forces

USE **inertia**

inertial fusion (reactor)

DEF Reactors in which pellet fusion is initiated by high energy sources including lasers.

- RT ∞ fusion

- fusion reactors
- ion beams
- laser fusion
- laser plasmas
- nuclear fuels
- plasma compression
- pulsed lasers
- relativistic electron beams

inertial guidance

DEF Guidance by means of the measurement and integration of acceleration from within the craft.

- GS guidance (motion)
 - . **inertial guidance**
 - . . strapdown inertial guidance
- RT injection guidance
- midcourse guidance
- reentry guidance
- satellite guidance
- spacecraft guidance
- stabilized platforms
- terminal guidance

inertial measuring units

USE **inertial platforms**

inertial navigation

DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integration of accelerations since leaving a starting point.

- GS navigation
 - . **inertial navigation**
 - . . Astroguide Navigation System
 - . . gimballess inertial navigation
- RT acceleration measurement
- air navigation
- all-weather air navigation
- celestial navigation
- dead reckoning
- digital navigation
- hyperbolic navigation
- navigation aids
- polar navigation
- radar navigation
- radio navigation
- Schuler tuning
- space navigation
- star trackers
- strapdown inertial guidance
- surface navigation

inertial platforms

- UF *inertial measuring units*
 - RT gimballess inertial navigation
 - gyroscopic stability
 - Kalman-Schmidt filtering
 - navigation instruments
- ∞ platforms
- three axis stabilization

inertial reference systems

- RT celestial reference systems
- ∞ reference systems
- relativity
- ∞ systems

Inertial Upper Stage

DEF A solid propulsive upper stage designed to place spacecraft on high Earth orbits or on escape trajectories for planetary missions.

- UF *interim upper stage (STS)*
- IUS*
- GS interim stages (spacecraft)
 - . **Inertial Upper Stage**
- RT orbit transfer vehicles
- recoverable spacecraft
- reusable spacecraft
- Space Shuttle orbiters
- space shuttles
- space transportation
- space transportation system
- space tugs
- Ulysses mission

upper stage rocket engines

inertialess steerable antennas

- GS antennas
 - . directional antennas
 - . . steerable antennas
 - . . . **inertialess steerable antennas**
- arrays
 - . antenna arrays
 - . . steerable antennas
 - . . . **inertialess steerable antennas**
- RT communication equipment
- inertial coordinates

infarction

- GS diseases
 - . heart diseases
 - . . **infarction**
 - . . . myocardial infarction
- RT embolisms
- thrombosis
- tissues (biology)

infections

USE **infectious diseases**

infectious diseases

- UF *infections*
- GS diseases
 - . **infectious diseases**
 - . . airborne infection
 - . . bacterial diseases
 - . . . cholera
 - . . . diphtheria
 - . . . keratitis
 - . . . syphilis
 - . . . tuberculosis
 - . . . typhoid
 - . . . typhus
 - . . conjunctivitis
 - . . dermatitis
 - . . contact dermatitis
 - . . fungal diseases
 - . . hepatitis
 - . . meningitis
 - . . parasitic diseases
 - . . viral diseases
 - . . . acquired immunodeficiency syndrome
 - . . . influenza
 - . . . poliomyelitis
 - . . . smallpox
- RT antiseptics
- Aspergillus
- biological weapons
- ∞ blisters
- epidemiology
- immunity
- leukopenia

inference

- RT assumptions
- deduction
- hypotheses
- implication
- ∞ induction

infestation

- UF *insect damage*
- RT beetles
- boll weevils
- bollworms
- chironomus flies
- flatworms
- insects
- larvae
- locusts
- moths
- parasites
- plants (botany)
- silkworms
- worms

infiltration

- GS **infiltration**
 - . chemical vapor infiltration

RT air conditioning
permeability
porosity
resin film infusion
voids
warfare

infinite impulse response filters
(added December 2002)
USE **IIR filters**

infinite span wings

GS airfoils
. thin airfoils
. thin wings
. . . **infinite span wings**
. wings
. slender wings
. . . **infinite span wings**
. thin wings
. . . **infinite span wings**
. unswept wings
. . . **infinite span wings**
planforms
. wing planforms
. . **infinite span wings**
RT flexible wings

infinity

DEF A point, line, or region, beyond measurable limits.
RT functions (mathematics)
geometry
number theory
probability theory
real variables
series (mathematics)

inflatable devices
USE **inflatable structures**

inflatable gliders

GS expandable structures
. inflatable structures
. . **inflatable gliders**
gliders
. paragliders
. . **inflatable gliders**
RT ∞ aircraft

inflatable space structures

(added August 1996)
GS **inflatable space structures**
. inflatable spacecraft
. Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT antennas
folding structures
space erectable structures

inflatable spacecraft

GS expandable structures
. inflatable structures
. . **inflatable spacecraft**
. . . Beacon satellites
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
inflatable space structures
. **inflatable spacecraft**
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
space erectable structures
. **inflatable spacecraft**
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT artificial satellites
orbital assembly
self erecting devices
∞ spacecraft
unmanned spacecraft

inflatable structures

UF *deflating*

inflatable devices
expandable structures
GS **inflatable structures**
. air bag restraint devices
. balloons
. . high altitude balloons
. . . jimsphere balloons
. . . skyhook balloons
. . . superpressure balloons
. . . meteorological balloons
. . . jimsphere balloons
. . . ROBIN balloons
. . microballoons
. . tethered balloons
. ballutes
. gas bags
. inflatable gliders
. inflatable spacecraft
. Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite

RT airships
boats
buildings
flexible bodies
flexible wings
floats
folding structures
inflating
life rafts
lunar shelters
pneumatic equipment
pressure suits
radomes
self erecting devices
space erectable structures
space stations
∞ structures
tires
variable geometry structures

inflating

SN (EXCLUDES ECONOMIC INFLATION)
RT expansion
gas injection
growth
inflatable structures
pressure reduction
pressurizing
swelling

inflection points

GS geometry
. Euclidean geometry
. . points (mathematics)
. . . **inflection points**
RT curves (geometry)
functions (mathematics)
line shape
real variables

in-flight monitoring

RT crew procedures (inflight)
crew procedures (preflight)
flight control
flight tests
monitors
telemetry

inflight simulation
(added November 1998)
USE **in-flight simulation**

in-flight simulation

(added October 1998)
DEF The use of a specialized test aircraft to simulate the flight characteristics of another vehicle. The test aircraft is typically capable of duplicating the computed responses of the simulated vehicle through special aerodynamic and control system features.
UF *inflight simulation*
GS simulation
. flight simulation
. . **in-flight simulation**
RT aircraft control

flight characteristics
flight control
flight simulators
flight tests
training simulators

in-flight starting
USE **air start**

influence coefficient

GS coefficients
. **influence coefficient**
. . structural influence coefficients
RT aeroelasticity
discharge coefficient
elastic properties
flutter
force distribution
∞ hydraulics
moment distribution
nozzle thrust coefficients
plastic properties
pressure distribution
stress analysis
structural analysis

influenza

GS diseases
. infectious diseases
. . viral diseases
. . . **influenza**
. respiratory diseases
. . **influenza**

information

DEF Any facts or data which can be used, transferred, or communicated.
RT annotations
audio tapes
communicating
communication
∞ data
documentation
mathematical tables
news media
presentation
privacy
reports
video tapes

information adaptive system

DEF The spaceborne portion of the NASA End-to-End Data System.
GS information systems
. **information adaptive system**
RT communication equipment
∞ systems

information analysis

(added April 2000)
GS **information analysis**
. data mining
. indexing (information science)
. scientific visualization
. . numerical flow visualization
. trend analysis
RT information resources management
information retrieval
natural language processing

information dissemination

GS communicating
. **information dissemination**
. . messages
. . selective dissemination of information
RT bibliographies
catalogs (publications)
documentation
electronic publishing
extraterrestrial communication
indexes (documentation)
information transfer
integrated library systems
Internet resources
libraries

information flow

privacy
reports
summaries
websites

information flow

RT aerospace technology transfer
communicating
communication
∞ flow
information transfer
management
message processing
selective dissemination of information
technology transfer

information management

GS management
. **information management**
. . information resources management
. . records management
RT communicating
communication
data base management systems
data retrieval
data storage
indexing (information science)
information transfer
integrated library systems
technology transfer

Information Power Grid

(added December 2003)

USE **grid computing (computer networks)**

information processing (biology)

DEF An approach to the study of perception, memory, language and/or thought that considers organisms to be complex systems that receive, transform, store and transmit information.

RT artificial intelligence
bioelectricity
brain
cognition
cognitive psychology
electrophysiology
human performance
neurophysiology
perception
psychophysiology

information resources management

(added September 1995)

DEF A comprehensive strategy for managing an organization's information resources throughout the information life cycle, including creation, collection, use, processing, and dissemination.

UF *IRM*

GS management
. information management
. . **information resources management**
. . resources management
. . **information resources management**

RT computer information security
data management
data processing
documentation
information analysis
information transfer
Internet resources
libraries
records management
websites

information retrieval

GS retrieval
. **information retrieval**
RT abstracts
bibliographies
CD-ROM
command languages

computers
data processing
data retrieval
documentation
documents
hypertext
indexes (documentation)
indexing (information science)
information analysis
information transfer
integrated library systems
interservice data exchange program
libraries
management information systems
numerical data bases
on-line systems
query languages
search profiles
selective dissemination of information
space glossaries
Starsite program
subjects
thesauri

information systems

GS **information systems**
. Atmospheric & Oceanographic Inform Sys
. Earth Resources Information System
. EOS data and information system
. geographic information systems
. information adaptive system
. integrated library systems
. knowledge based systems
. . expert systems
. cockpit weather information systems
. decision support systems
. management information systems
. pilot support systems
RT CD-ROM
Earth Observing System (EOS)
grid computing (computer networks)
information transfer
Internet resources
libraries
management systems
multimedia
networks
on-line systems
records management
selective dissemination of information
∞ systems
systems management
websites

information theory

UF *Shannon information theory*
RT ∞ applications of mathematics
automata theory
∞ automation
BCH codes
coding
combinatorial analysis
communication theory
computers
correction
correlation
cryptography
cybernetics
data processing
data transmission
decision theory
ergodic process
error detection codes
Fourier analysis
game theory
∞ logic
machine translation
management information systems
∞ mathematics
maximum entropy method
messages
∞ noise
operations research
parity
Petri nets
phase shift keying

probability theory
random processes
redundancy
Shannon-Wiener measure
statistical analysis
∞ statistics
stochastic processes
systems engineering
telecommunication terms
∞ theories

information transfer

RT document markup languages
information dissemination
information flow
information management
information resources management
information retrieval
information systems
international cooperation
interoperability
technology transfer
technology utilization
World Wide Web

information transmission

USE **data transmission**

infrared absorption

DEF The taking up of energy from infrared radiation by a medium through which the radiation is passing.

GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **infrared absorption**

RT ∞ absorption
atmospheric attenuation
atmospheric optics
infrared radiation
light scattering
optical properties
thermal emission
transmittance
wave attenuation

infrared astronomy

GS astronomy
. **infrared astronomy**
RT astronomical photography
blazars
Infrared Astronomy Satellite
infrared cirrus (astronomy)
infrared photometry
infrared sources (astronomy)
Infrared Space Observatory (ISO)
James Webb Space Telescope
Kuiper Airborne Observatory
Large Deployable Reflector
SOFIA (airborne observatory)
Space Infrared Telescope Facility

Infrared Astronomy Satellite

DEF A joint NASA-Netherlands-Great Britain spacecraft designed to perform astronomical observations in the infrared spectral region. It was launched on January 25, 1983. Used for IRAS.

UF *IRAS*

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Infrared Astronomy Satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Infrared Astronomy Satellite**

RT geosynchronous orbits
infrared astronomy
infrared sources (astronomy)
IRAS-Araki-Alcock comet
Netherlands space program

- UK satellites
- infrared cirrus (astronomy)**
(added September 1989)
RT ∞ clouds
cosmic dust
galactic radiation
infrared astronomy
infrared radiation
infrared sources (astronomy)
interstellar matter
molecular clouds
- infrared detectors**
UF *signal-processing-in-the-element detectors*
SPRITE detectors
GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . . radiometers
. **infrared detectors**
. FLIR detectors
. infrared radiometers
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. infrared instruments
. **infrared detectors**
. FLIR detectors
. infrared radiometers
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
RT bolometers
 ∞ detectors
electromagnetic measurement
focal plane devices
forest fire detection
infrared signatures
mercury cadmium tellurides
x ray detectors
- infrared filters**
GS electromagnetic wave filters
. optical filters
. . . **infrared filters**
RT electric filters
ultraviolet filters
- infrared horizon scanners*
USE **horizon scanners**
infrared scanners
- infrared imagery**
GS imagery
. photography
. . . **infrared imagery**
RT color infrared photography
lunar equator
thermography
x ray imagery
- infrared inspection**
GS inspection
. **infrared inspection**
RT nondestructive tests
quality control
- infrared instruments**
GS measuring instruments
. radiation measuring instruments
. . . **infrared instruments**
. . . . infrared detectors
. FLIR detectors
. infrared radiometers
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. infrared interferometers
- . . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . infrared spectrophotometers
RT Advanced Very High Resolution Radiometer
forest fire detection
- infrared interferometers**
GS measuring instruments
. interferometers
. . . **infrared interferometers**
. . . radiation measuring instruments
. . . . infrared instruments
. **infrared interferometers**
RT astronomical interferometry
interferometry
optical equipment
optical measurement
optical measuring instruments
speckle interferometry
- infrared lasers**
UF *infrared masers*
IR lasers
irasers
GS stimulated emission devices
. lasers
. . . **infrared lasers**
RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
chemical lasers
dye lasers
gas lasers
HF lasers
liquid lasers
organic lasers
quantum cascade lasers
solid state lasers
waveguide lasers
YLF lasers
- infrared masers*
USE **infrared lasers**
- infrared photography**
GS imagery
. photography
. . . multispectral photography
. . . . **infrared photography**
. color infrared photography
RT aerial photography
astronomical photography
black and white photography
cinematography
faint object camera
forest fire detection
geographic information systems
ice mapping
lunar photography
meteorological satellites
METEOSAT satellite
multispectral band cameras
Nimbus satellites
radiometers
satellite-borne photography
timber inventory
ultraviolet photography
- infrared photometry**
DEF Photometry in the infrared region.
GS optical measurement
. photometry
. . . **infrared photometry**
RT astronomical photometry
infrared astronomy
infrared spectra
near infrared radiation
stellar spectrophotometry
- infrared radar**
DEF Radar covering a range from the limit of the visible spectrum to the shortest microwaves.
- GS radar
. **infrared radar**
RT FLIR detectors
optical radar
radar imagery
- infrared radiation**
DEF Electromagnetic radiation lying in the wavelength interval from 75 microns to an indefinite upper boundary sometimes arbitrarily set at 1000 microns (0. 01 centimeter).
GS electromagnetic radiation
. **infrared radiation**
. . far infrared radiation
. . . near infrared radiation
RT beams (radiation)
black body radiation
coherent electromagnetic radiation
energy absorption
evaporography
exhaust emission
heat
infrared absorption
infrared cirrus (astronomy)
infrared signatures
infrared sources (astronomy)
light (visible radiation)
microwaves
monochromatic radiation
planetary radiation
polarized electromagnetic radiation
 ∞ radiation
Seyfert galaxies
solar radiation
sunlight
terrestrial radiation
thermal radiation
wavelengths
xenon lamps
- infrared radiometers**
GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . . radiometers
. infrared detectors
. **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. infrared instruments
. infrared detectors
. **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
RT aerial reconnaissance
atmospheric correction
data acquisition
Earth Resources Program
environmental monitoring
forest fire detection
pressure modulator radiometers
radiometric correction
satellite-borne instruments
thermal mapping
- infrared reflection**
GS reflection
. **infrared reflection**
RT optical reflection
radiative heat transfer
radio echoes
spread reflection
ultraviolet reflection
- infrared scanners**
UF *infrared horizon scanners*
GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . . radiometers

infrared signatures

- ... infrared detectors
- ... infrared radiometers
- ... **infrared scanners**
- ... infrared instruments
- ... infrared detectors
- ... infrared radiometers
- ... **infrared scanners**
- scanners
- infrared scanners**
- RT forest fire detection
- horizon scanners
- multispectral band scanners
- optical equipment
- Scanner project
- thermal mapping

infrared signatures

DEF The infrared spectral characteristics of an object or uniform land surface which uniquely defines it.

GS signatures

- infrared signatures**

RT infrared detectors

infrared radiation

infrared spectra

signature analysis

infrared sources (astronomy)

DEF Celestial bodies or astronomical regions emitting a large amount of radiation in the infrared portion of the electromagnetic spectrum.

GS celestial bodies

- infrared sources (astronomy)**
- ... infrared stars

RT astronomy

Herbig-Haro objects

infrared astronomy

Infrared Astronomy Satellite

infrared cirrus (astronomy)

infrared radiation

Infrared Space Observatory (ISO)

DEF An astronomical satellite observatory funded by ESA operating at wavelengths from 3 to 200 microns. The observatory is comprised of a 60 cm Cassegrain telescope, a CCD infrared camera, two Michelson interferometers, and a photopolarimeter.

GS artificial satellites

- ESA satellites
- ... **Infrared Space Observatory (ISO)**
- ... scientific satellites
- ... astronomical satellites
- ... **Infrared Space Observatory (ISO)**

ESA spacecraft

- ESA satellites
- ... **Infrared Space Observatory (ISO)**

observatories

- ... astronomical observatories
- ... astronomical satellites
- ... **Infrared Space Observatory (ISO)**

telescopes

- ... spaceborne telescopes
- ... **Infrared Space Observatory (ISO)**

RT European space programs

infrared astronomy

spaceborne astronomy

infrared spectra

GS spectra

- ... radiation spectra
- ... electromagnetic spectra
- ... **infrared spectra**

RT ∞ absorption

emission spectra

infrared photometry

infrared signatures

line spectra

microwave spectra

molecular spectra

solar spectra

stellar spectra

infrared spectrometers

GS measuring instruments

- ... optical measuring instruments
- ... **infrared spectrometers**
- ... filter wheel infrared spectrometers
- ... radiation measuring instruments
- ... actinometers
- ... **infrared spectrometers**
- ... filter wheel infrared spectrometers
- ... infrared instruments
- ... **infrared spectrometers**
- ... filter wheel infrared spectrometers
- ... spectrometers
- ... **infrared spectrometers**
- ... filter wheel infrared spectrometers
- ... optical equipment
- ... optical measuring instruments
- ... **infrared spectrometers**
- ... filter wheel infrared spectrometers

RT Ebert spectrometers

solar spectrometers

infrared spectrophotometers

GS measuring instruments

- ... optical measuring instruments
- ... spectrophotometers
- ... **infrared spectrophotometers**
- ... radiation measuring instruments
- ... actinometers
- ... spectrophotometers
- ... **infrared spectrophotometers**
- ... infrared instruments
- ... **infrared spectrophotometers**
- ... optical equipment
- ... optical measuring instruments
- ... spectrophotometers
- ... **infrared spectrophotometers**

RT chemical analysis

filter wheel infrared spectrometers

photometers

infrared spectroscopy

GS spectroscopy

- ... **infrared spectroscopy**

RT absorption spectroscopy

astronomical spectroscopy

chemical analysis

electron spectroscopy

laser spectrometers

molecular spectroscopy

molecular structure

optogalvanic spectroscopy

Raman spectroscopy

spectrometers

spectroscopic analysis

sulfur hexafluoride

vacuum spectroscopy

infrared stars

GS celestial bodies

- ... infrared sources (astronomy)
- ... **infrared stars**
- ... stars
- ... **infrared stars**

RT Herbig-Haro objects

infrared suppression

DEF The shielding and/or protection of aircraft engines and exhausts from heat-seeking missiles and/or detecting devices.

RT afterburning

aircraft detection

aircraft engines

cooling systems

exhaust gases

exhaust nozzles

heat shielding

jet engines

jet exhaust

reaction products

suppressors

temperature control

infrared telescopes

DEF Special optical instruments for astronomical observations in the range from one micron to one millimeter.

GS telescopes

- ... **infrared telescopes**
- ... Large Deployable Reflector
- ... Space Infrared Telescope Facility

RT astronomy

Astroplane

James Webb Space Telescope

Next Generation Space Telescope project

infrared tracking

GS tracking (position)

- ... **infrared tracking**

RT antimissile missiles

compensatory tracking

homing devices

missile tracking

optical tracking

pursuit tracking

radiometers

infrared windows

DEF A frequency region in the infrared where there is good transmission of electromagnetic radiation through the atmosphere.

RT apertures

lasers

optical materials

∞ windows

infrasonic frequencies

DEF Frequencies below the audiofrequency range.

GS frequencies

- ... **infrasonic frequencies**

RT acoustics

∞ ingestion

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW.))

RT ingestion (biology)

ingestion (engines)

ingestion (biology)

GS **ingestion (biology)**

- ... drinking
- ... eating
- ... grazing

RT ∞ ingestion

swallowing

ingestion (engines)

RT bird-aircraft collisions

engine failure

∞ ingestion

ingots

DEF Cast metals in forms intended for subsequent fabrication.

GS castings

- ... **ingots**

RT billets

casting

molds

solidification

ingredients

RT admixtures

∞ components

∞ composition

content

formulations

mixtures

ingress (spacecraft passageway)

RT air locks

doors

egress

hatches

- openings
- inhabitants**
 GS communities
 . **inhabitants**
 . . mountain inhabitants
 RT aborigines
 cities
 demography
 personnel
 residential areas
- inhalation*
 USE **respiration**
- ∞ **inhibition**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT attenuation
 corrosion prevention
 detachment
 disabilities
 dithers
 frustration
 inhibition (psychology)
 inhibitors
 introversion
 lethargy
 passivity
 prevention
 ∞ reduction
 stopping
- inhibition (psychology)**
 RT conditioning (learning)
 ∞ inhibition
- inhibitors**
 DEF Things that inhibit; specifically, substances bonded, taped, or dip dried onto a solid propellant to restrict the burning surface and to give direction to the burning process.
 GS **inhibitors**
 . wear inhibitors
 RT additives
 antidotes
 antifouling
 antiicing additives
 antioxidants
 case bonded propellants
 catalysts
 coatings
 corrosion prevention
 ∞ inhibition
 neutralizers
 packaging
 passivity
 propellant additives
 propellant decomposition
 propellant storability
 retardants
 silencers
 solid propellant ignition
 solid propellants
 suppressors
- inhomogeneity**
 UF *nonhomogeneity*
 RT defects
 heterogeneity
 nonuniformity
- inhour equation**
 RT ∞ equations
 nuclear reactions
 nuclear reactors
 reactivity
- reactor physics
- initial value problems*
 USE **boundary value problems**
- initialisms*
 USE **abbreviations**
- initiation**
 RT activation
 actuation
 detonation
 ∞ generation
 ∞ induction
 inoculation
 nucleation
 ∞ priming
 reactor startup tests
 starting
 stimulation
- ∞ **initiators**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT catalysts
 initiators (explosives)
 styphnates
- initiators (explosives)**
 UF *electroexplosive devices*
 GS explosive devices
 . **initiators (explosives)**
 . . boosters (explosives)
 . . caps (explosives)
 . . detonators
 . . exploding wires
 . . primers (explosives)
 igniters
 . **initiators (explosives)**
 . . boosters (explosives)
 . . caps (explosives)
 . . detonators
 . . exploding wires
 . . primers (explosives)
 RT fuses (ordnance)
 ∞ initiators
 pyrotechnics
 styphnates
- injection**
 GS **injection**
 . carrier injection
 . fluid injection
 . . gas injection
 . . liquid injection
 . . . deep well injection (wastes)
 . . . water injection
 . fuel injection
 . ion injection
 . secondary injection
 . transearth injection
 . translunar injection
 RT Barritt diodes
 blowing
 boundary layer separation
 ∞ charging
 feeding (supplying)
 filling
 fluid flow
 implantation
 injectors
 input
 perforating
 supplying
- injection carburetors*
 USE **carburetors**
fuel injection
- injection guidance**
 GS guidance (motion)
 . **injection guidance**
 RT ascent trajectories
 celestial navigation
 command guidance
 inertial guidance
- midcourse guidance
 rendezvous guidance
 satellite guidance
 spacecraft guidance
 transearth injection
 translunar injection
- injection lasers**
 DEF Lasers that use a forward biased semiconductor junction as the active lasing medium.
 GS stimulated emission devices
 . lasers
 . . **injection lasers**
 . . . quantum cascade lasers
 RT aluminum gallium arsenide lasers
 gallium arsenide lasers
 gallium arsenides
 injection locking
 semiconductor lasers
- injection locking**
 RT carrier injection
 injection lasers
 laser mode locking
- injection molding**
 DEF A forming process in which a heat softened or plasticized material is forced from a cylinder into a relatively cool cavity which gives the product a desired shape. A similar process is used for forming solid propellants from quick cure ingredients.
 GS forming techniques
 . **injection molding**
 RT ceramics
 dies
 extruding
 melting
 molding materials
 molds
 plastics
 resin transfer molding
- injectors**
 DEF Devices that propel fuel or propellant into a combustion chamber under pressure other than atmospheric.
 GS **injectors**
 . vortex injectors
 RT blowers
 carburetors
 ejectors
 feeders
 fuel injection
 fuel systems
 injection
 jet flow
 jet mixing flow
 jet nozzles
 ∞ jets
 ∞ jets
 nozzle flow
 ∞ nozzles
 orifices
 pumps
 spray nozzles
- Injun 1 satellite**
 GS artificial satellites
 . Injun satellites
 . . **Injun 1 satellite**
- Injun 3 satellite**
 GS artificial satellites
 . Injun satellites
 . . **Injun 3 satellite**
- Injun 4 satellite**
 GS artificial satellites
 . Injun satellites

Injun satellites

. . **Injun 4 satellite**

Injun 5 satellite

USE **Explorer 40 satellite**

Injun Explorer

USE **Explorer 25 satellite**

Injun satellites

GS artificial satellites
. **Injun satellites**
. . Explorer 25 satellite
. . Injun 1 satellite
. . Injun 3 satellite
. . Injun 4 satellite

injuries

GS **injuries**
. back injuries
. barotrauma
. brain damage
. burns (injuries)
. crash injuries
. ejection injuries
. frostbite
. lesions
. . . pulmonary lesions
. noise injuries
. parachuting injury
. paralysis
. radiation injuries
. whiplash injuries
RT accidents
∞ blisters
chemical defense
damage
death
diagnosis
foreign bodies
hazards
hemorrhages
impairment
necrosis
sabotage
veterinary medicine
wound healing

inks

RT drawings
graphic arts
pigments
printing

inland waters

GS water
. **inland waters**
. . ground water
RT Great Lakes (North America)
Great Salt Lake (UT)
lakes
rivers
springs (water)
water pollution
water resources
water runoff

inlet airframe configurations

DEF Optimum locations of engine inlets for various purposes.
GS intake systems
. air intakes
. . **inlet airframe configurations**
RT bypass ratio
engine inlets
flow geometry
hypersonic inlets
inlet flow
inlet nozzles
nose inlets
side inlets
supersonic inlets

inlet flow

GS fluid flow
. internal flow
. . **inlet flow**

RT bypass ratio
choked flow
∞ diffusers
dump combustors
flow geometry
fluid injection
head flow
inlet airframe configurations
intake systems
∞ pressure drop
supersonic inlets
vortex generators

inlet nozzles

RT air intakes
annular nozzles
bypass ratio
conical nozzles
∞ diffusers
engine inlets
exhaust nozzles
inlet airframe configurations
intake systems
internal compression inlets
∞ nozzles
openings
pipe nozzles

inlet pressure

DEF In connection with performance data on pumps, when not otherwise specified, the total static pressure measured in a standard testing chamber by a vacuum gage located near the inlet port.

GS pressure
. **inlet pressure**
RT pressure gradients
pressure recovery
stagnation pressure
water pressure

inlet temperature

DEF A location for measuring the temperature of fluids, particles, etc. , entering a heat system, an engine, or other machine.

GS temperature
. **inlet temperature**
RT air intakes
engine inlets
fuel systems
gas temperature
intake systems

inlets (devices)

USE **intake systems**

inlets (topography)

DEF Small narrow openings, recesses, indentations, or other entrances into coastlines or shores of lakes or rivers, through which water penetrates into land.

GS landforms
. **inlets (topography)**
. . bayous
. . Cook Inlet (AK)
RT bays (topographic features)
Delaware Bay (US)
fiords
gulfs
lagoons
Persian Gulf
Saginaw Bay (MI)
sounds (topographic features)

inliers (landforms)

DEF Areas or groups of rocks surrounded by rocks of younger age.

GS landforms
. **inliers (landforms)**
RT erosion
geological faults
geology
petrography
petrology
rock intrusions
rocks

structural properties (geology)

INMARSAT satellites

(added September 1994)

GS artificial satellites
. **INMARSAT satellites**
RT communication satellites
international cooperation
Marisat satellites
NAVSTAR satellites
telecommunication

inner radiation belt

GS environments
. **inner radiation belt**
particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . **inner radiation belt**
. . . . corpuscular radiation
. . . . radiation belts
. . . . **inner radiation belt**
. . . . trapped particles
. . . . magnetically trapped particles
. . . . radiation belts
. . . . **inner radiation belt**
RT artificial radiation belts
outer radiation belt
proton belts
∞ radiation
single event upsets

inoculation

UF *seeding (inoculation)*
RT crystal growth
crystallization
immunity
initiation
nucleation
vaccines

inoculum

GS serums
. **inoculum**
vaccines
. **inoculum**
RT antibodies
antigens
physiological defenses

inorganic chemistry

DEF The study of the composition, properties, structure, and reactions of the chemical elements and all their compounds with the exception of hydrocarbons and their derivatives.

RT analytical chemistry
∞ chemistry

inorganic coatings

GS coatings
. **inorganic coatings**
. . anodic coatings
. . ceramic coatings
RT antiradar coatings
protective coatings

inorganic compounds

GS **inorganic compounds**
. ammonia
. . liquid ammonia
RT acids
∞ bases
∞ chemical compounds
flame retardants
intermetallics
molten salts
∞ salts

∞ inorganic materials

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
RT ∞ materials
nonflammable materials
refractory materials
thermochromatic materials

- vitreous materials
- inorganic nitrates**
- GS nitrogen compounds
 . nitrates
 . . **inorganic nitrates**
 . . . ammonium nitrates
 . . . hydrazine nitrate
 . . . potassium nitrates
 . . . silver nitrates
 . . . sodium nitrates
- inorganic peroxides**
- UF *superoxides*
 GS chalcogenides
 . oxides
 . . anhydrides
 . . . peroxides
 **inorganic peroxides**
 hydrogen peroxide
 RT organic peroxides
- inorganic sulfides**
- GS chalcogenides
 . sulfides
 . . **inorganic sulfides**
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinblend
 sulfur compounds
 . sulfides
 . . **inorganic sulfides**
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinblend
- inositols**
- GS organic compounds
 . carbohydrates
 . . sugars
 . . . **inositols**
- input**
- RT accumulations
 collection
 feeding (supplying)
 filling
 injection
 ∞ loading
 output
 reading
 replenishment
 supplying
- input/output routines**
- GS computer programs
 . computer systems programs
 . . **input/output routines**
 RT data transfer (computers)
 disk operating system (DOS)
 operating systems (computers)
 random access
- ∞ routines
- INSAT satellites*
 USE **Indian spacecraft**
- insect damage*
 USE **infestation**
- insecticides**
- GS poisons
 . pesticides
 . . **insecticides**
 . . . Carbamates (tradename)
 urethanes
 . . . DDT
 . . . dieldrin
 . . . phenothiazines
 RT endrin
 entomology
 toxicology
- insects**
- GS animals
 . invertebrates
 . . arthropods
 . . . **insects**
 bees
 bollworms
 chironomus flies
 cockroaches
 Coleoptera
 beetles
 tribolia
 boll weevils
 crickets
 Drosophila
 fireflies
 grasshoppers
 locusts
 moths
 silkworms
 RT entomology
 infestation
 larvae
 pupa
- insensitivity*
 USE **sensitivity**
- insertion**
- GS **insertion**
 . orbit insertion
 RT collating
 embedding
 grafting
 implantation
 impregnating
 inserts
 network analysis
 transmission loss
- insertion loss**
- RT energy dissipation
 losses
 transmission loss
- inserts**
- GS **inserts**
 . nozzle inserts
 RT accessories
 bushings
 fasteners
 fittings
 insertion
 linings
 spacers
 spools
 washers (spacers)
- inshore zones*
 USE **beaches**
- insolation**
- DEF In general, solar radiation received at the Earth's surface. The rate at which direct solar radiation is incident upon a unit horizontal
- surface at any point on or above the surface of Earth. (Contracted from INcoming SOLar radiATION).
- GS solar energy
 . **insolation**
 RT greenhouse effect
 meteorology
 photosynthetically active radiation
 solar heating
 solar radiation
 sunlight
- insomnia**
- GS sleep
 . **insomnia**
 RT sleep deprivation
- inspection**
- DEF The process of measuring, examining, testing, gaging, or making other determinations with respect to materials, products, services, systems, or environments.
- GS **inspection**
 . infrared inspection
 . x ray inspection
 RT acceptability
 checkout
 chemical tests
 construction
 detection
 endoscopes
 evaluation
 examination
 identifying
 nondestructive tests
 performance tests
 preventive maintenance
 quality control
 sampling
 specifications
 standards
 static tests
 statistical analysis
 surveillance
 tolerances (mechanics)
 ultrasonic flaw detection
- Inspector satellite**
- GS artificial satellites
 . **Inspector satellite**
 military spacecraft
 . reconnaissance spacecraft
 . . **Inspector satellite**
- inspiration**
- RT intellect
 mental performance
 psychology
- instability*
 USE **stability**
- installation*
 USE **installing**
- installation manuals**
- GS documents
 . manuals
 . . **installation manuals**
- installing**
- UF *installation*
 RT assembling
 construction
 look angles (electronics)
 maintenance
 relocation
 replacing
 retrofitting
- instantons**
- DEF Field configurations of Yang-Mills theory which are localized in space and time. These configurations are solutions of the Yang-Mills field equations in Euclidean space time which allow the transitions (tunneling) from one

institutions

vacuum state to another.
RT elementary particles
plasma physics
quantum chromodynamics
quarks

institutions

GS **institutions**
. bureaux (organizations)
RT federations
teams

instruction sets (computers)

RT alphanumeric characters
Boolean algebra
computer programs
mathematical logic

instructions

USE **education**

instructors

UF *teachers*
GS personnel
. **instructors**
RT education
learning
schools
students
training evaluation
universities

instrument approach

DEF A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

GS approach
. **instrument approach**
RT aircraft approach spacing
aircraft instruments
approach control
approach indicators
blind landing
flight control
flight instruments
glide paths
landing aids
landing radar
night flights (aircraft)

instrument compensation

GS **instrument compensation**
. temperature compensation
RT adaptive optics
calibrating
∞ compensation
error correcting devices
laser guide stars
systematic errors

instrument drift

USE **drift (instrumentation)**

instrument errors

GS errors
. **instrument errors**
RT bias
boresight error
calibrating
drift (instrumentation)
linearity
optical correction procedure
spectral sensitivity
systematic errors

instrument flight rules

UF *IFR (rules)*
GS rules
. flight rules
. . **instrument flight rules**
RT air navigation
air traffic control
approach control
beacons

blind landing
flight conditions
flight instruments
flight plans
landing
low visibility

instrument landing systems

DEF A system which provides, in the aircraft, a display of the lateral, longitudinal, and vertical references necessary for a landing. Used for ILS (landing systems).

UF *ILS (landing systems)*

GS landing aids

. **instrument landing systems**

. . all-weather landing systems

RT air traffic control
aircraft guidance
aircraft instruments
aircraft landing
airports
approach control
approach indicators
automatic landing control
blind landing
display devices
flight control
flight instruments
glide paths
ground based control
∞ instruments
landing
landing instruments
night flights (aircraft)
radar
radar approach control
radio altimeters
radio beacons
∞ systems
tracking (position)

instrument orientation

RT alignment
attitude (inclination)
bearing (direction)
directivity
look angles (electronics)
∞ orientation
positioning

instrument packages

GS packages
. **instrument packages**
. . Apollo Lunar Surface Experiments Package
. . EASEP
. . EREP
RT AMPS (satellite payload)
automatic weather stations
data collection platforms
local scientific survey module
modules
molecular shields
ocean data acquisitions systems
Orbiting Frog Otolith
payload assist module
payloads
satellite-borne instruments
SIM
spacecraft instruments
weather stations

instrument receivers

RT controllers
∞ detectors
display devices
indicating instruments
∞ instruments
isotropic turbulence
measuring instruments
receivers
recording instruments
transducers

instrument transformers

GS transformers

. **instrument transformers**

RT ∞ converters
resolvers

instrument transmitters

GS transmitters
. **instrument transmitters**
RT controllers
∞ instruments
measuring instruments
recording instruments
transducers

instrumental analysis

USE **analyzing automation**

instrumentation

USE **instruments**

∞ instruments

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *instrumentation*
RT actuators
Advanced Range Instrumentation Ship
aircraft instruments
Apollo Lunar Surface Experiments Package
automatic control
bioinstrumentation
bubble technique
controllers
densimeters
display devices
drag force anemometers
EASEP
EREP
flight instruments
force vector recorders
haploscopes
heliostats
helmet mounted displays
indicating instruments
instrument landing systems
instrument receivers
instrument transmitters
laser altimeters
measuring instruments
meteorological instruments
microwave sensors
monitors
navigation instruments
oculometers
packages
propellant actuated instruments
recording instruments
remote control
rocket-borne instruments
satellite instruments
satellite-borne instruments
scatterometers
SIM
sodar
sound detecting and ranging
spacecraft instruments
surgical instruments
transducers
transmitters
tribometers
turbine instruments
ultrasonic densimeters
∞ **insulated structures**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT dielectrics
electrical insulation
heat radiators
heat shielding
hypersonic vehicles
insulation
radiation shielding
reentry shielding
reentry vehicles

- spacecraft shielding
- insulating materials*
USE **insulation**
- insulation**
SN (MATERIAL)
UF *insulating materials*
GS **insulation**
. electrical insulation
. multilayer insulation
. thermal insulation
RT absorbers (materials)
asbestos
ceilings (architecture)
composite materials
concretes
∞ construction materials
damping
honeycomb structures
∞ insulated structures
insulators
interlayers
isolation
isolators
jackets
lining processes
linings
∞ materials
micarta
oxides
potting compounds
protection
suppressors
vermiculite
waterproofing
- insulators**
SN (EXCLUDES THERMAL INSULATION—LIMITED TO DEVICES COMPOSED OF ELECTRICALLY INSULATIVE MATERIALS)
RT attenuators
dielectrics
electric conductors
electrical insulation
insulation
transmission lines
- insulin**
GS drugs
. **insulin**
secretions
. endocrine secretions
. . **insulin**
RT diabetes mellitus
- insurance (contracts)**
DEF Coverage by contract whereby one party undertakes to indemnify or guarantee another against loss by a specified contingency or peril.
GS contracts
. **insurance (contracts)**
RT agreements
air law
aircraft accident investigation
aircraft accidents
assurance
economic factors
extensions
grants
legal liability
public law
space commercialization
space law
- intake systems**
UF *induction systems inlets (devices)*
GS **intake systems**
. air intakes
. . engine inlets
. . hypersonic inlets
. . inlet airframe configurations
. . supersonic inlets
. conical inlets
. helical inducers
. internal compression inlets
. nose inlets
. side inlets
RT aerodynamic configurations
annular ducts
bypass ratio
cooling systems
duct geometry
ducted bodies
ducts
entrances
exhaust systems
feed systems
feeders
fuel systems
inlet flow
inlet nozzles
inlet temperature
manifolds
openings
pipe nozzles
plenum chambers
ramps (structures)
scoops
∞ systems
∞ water intakes
- Intasat satellite**
GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . **Intasat satellite**
RT Earth ionosphere
lower atmosphere
magnetic fields
troposphere
- Integ Med and Behavioral Lab Measur System*
USE **IMBLMS**
- Integ Program for Aerospace Veh Design*
USE **IPAD**
- integers**
DEF Whole numbers; numbers that are not a fraction.
GS number theory
. **integers**
real numbers
. **integers**
RT arithmetic
complex numbers
congruences
digits
∞ numbers
- integral calculus**
GS analysis (mathematics)
. calculus
. . **integral calculus**
. real variables
. . measure and integration
. . . **integral calculus**
RT area
differential calculus
integrals
J integral
numerical integration
operational calculus
- integral equations**
UF *integrodifferential equations*
GS analysis (mathematics)
. functional analysis
. . **integral equations**
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
RT asymptotic properties
calculus of variations
differential equations
distributed parameter systems
∞ equations
- ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
Mellin transforms
method of moments
nonlinear equations
Percus method
range (extremes)
Schmidt method
transport theory
- integral functions*
USE **entire functions**
- integral rocket ramjets**
DEF A combination of a solid propellant rocket and a ramjet which uses the empty booster case as a ramjet combustor.
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **integral rocket ramjets**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **integral rocket ramjets**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **integral rocket ramjets**
RT rocket-based combined-cycle engines
solid propellant rocket engines
turbine engines
- integral transformations**
UF *transform integrals*
GS analysis (mathematics)
. functional analysis
. . **integral transformations**
. . . Fourier transformation
. . . . fast Fourier transformations
. . . . Fourier-Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
transformations (mathematics)
. **integral transformations**
. . Fourier transformation
. . . fast Fourier transformations
. . . Fourier-Bessel transformations
. . Hilbert transformation
. . Laplace transformation
RT convolution integrals
Lighthill method
operators (mathematics)
- integrals**
DEF Of or pertaining to an integer.
GS **integrals**
. convolution integrals
RT differential equations
functionals
integral calculus
∞ mathematics
- integrated circuits**
DEF Combinations of interconnected circuit elements inseparably associated on or within continuous substrates. To further define the nature of integrated circuits, additional modifiers may be prefixed.
UF *monolithic circuits*
GS circuits
. **integrated circuits**
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . field-programmable gate arrays
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits

integrated energy systems

. . very large scale integration
. . VHSIC (circuits)
RT burn-in
charge flow devices
chips (electronics)
chips (memory devices)
electronic packaging
evolvable hardware
hardware description languages
integrated optics
ion implantation
latch-up
microchannel plates
microminiaturization
microprocessors
microstrip devices
molecular electronics
optoelectronic devices
photomasks
photoresists
printed circuits
reconfigurable hardware
thick films
thin films
transistor circuits

integrated energy systems
DEF Community systems for energy generation and distribution.
RT communities
electric power plants
energy conversion
energy distribution
heating
∞ systems
total energy systems
utilities

integrated global ocean station systems
UF *IGOSS*
RT data collection platforms
Global Atmospheric Research Program
ground stations
international cooperation
oceanographic parameters
∞ systems
weather stations

integrated library systems
GS information systems
. **integrated library systems**
RT information dissemination
information management
information retrieval
libraries
on-line systems

Integrated Maneuvering Life Support Sys
USE **IMLSS**

integrated mission control center
UF *IMCC (control center)*
GS stations
. ground stations
. . **integrated mission control center**
RT ∞ control
Gemini project
ground based control
real time operation

integrated optics
DEF Thin film devices containing tiny lenses, prisms, and switches to transmit very thin laser beams, which serve the same purposes as the manipulation of electrons in thin film devices of integrated electronics.
RT electro-optics
free-space optical interconnects
integrated circuits
Langmuir-Blodgett films
lenses
light transmission
monomolecular films
optical bistability

optical interconnects
optical switching
optical waveguides
∞ optics
optoelectronic devices
thin films

Integrated Truss Structure P1

(added November 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the UHF-band communications subsystem, and portions of the rail system for the Mobile Servicing System.

GS space station structures

. **Integrated Truss Structure P1**

RT International Space Station
large space structures
trusses

Integrated Truss Structure S1

(added October 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the S-band communications subsystem, and portions of the rail system for the Mobile Servicing System.

GS space station structures

. **Integrated Truss Structure S1**

RT International Space Station
large space structures
trusses

Integrated Truss Structure Z1

(added June 2000)

DEF An early exterior framework for the International Space Station to allow the first U. S. solar arrays to be temporarily installed on the Unity module for early power.

UF *Z1 truss structure*

GS space station structures

. **Integrated Truss Structure Z1**

RT International Space Station
trusses
Unity connecting module

integration (real variables)

USE **measure and integration**

integrators

DEF In digital computers, devices for accomplishing a numeric approximation of the mathematical process of integration. Devices whose output is proportional to the integral of an input signal.

GS **integrators**

. digital integrators

RT circuits
differentiators
solions

integrity

GS **integrity**

. computer program integrity

RT completeness
privacy
security
vulnerability

integrodifferential equations

USE **differential equations**
integral equations

Intel 8080 microprocessor

GS computer components

. microprocessors

. . **Intel 8080 microprocessor**

data processing equipment

. microprocessors

. . **Intel 8080 microprocessor**

RT computers

intellect

GS intelligence

. **intellect**
RT artificial intelligence
inspiration
mental performance
psychology

intellectual property

(added October 1995)

GS **intellectual property**

. copyrights

. patents

RT computer programs
inventions
law (jurisprudence)
legal liability
licensing
open source licensing (computers)
patent policy
procurement policy

intelligence

GS **intelligence**

. artificial intelligence

. extraterrestrial intelligence

. intellect

RT abilities
cognitive psychology
intelligence tests
mental health
mental performance

intelligence tests

(added September 1992)

RT abilities

human performance

intelligence

mental performance

personality tests

psychological tests

personnel selection

psychological tests

∞ tests

intelligent materials

(added March 1998)

USE **smart materials**

intelligent structures

USE **smart structures**

intelligibility

GS **intelligibility**

. speech recognition

RT ambiguity

∞ coherence

communication theory

∞ interpretation

messages

orthography

phonemics

phonetics

psycholinguistics

scrambling (communication)

Intelsat satellites

GS artificial satellites

. communication satellites

. . **Intelsat satellites**

intensification

USE **amplification**

intensifier tubes

USE **image intensifiers**

intensifiers

GS **intensifiers**

. image intensifiers

. . image orthicons

RT amplifiers

∞ **intensity**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF In general, the degree or amount, usually expressed by the elemental time rate or

spatial distribution of some condition or physical quantity, such as electric field, sound, magnetism, etc. With respect to electromagnetic radiation, a measure of the radiant flux per unit solid angle emanating from some source. Frequently, it is desirable to specify this as radiant intensity in order to distinguish it clearly from luminous intensity.

- RT amplitudes
- brightness
- flux (rate)
- flux density
- level (quantity)
- loudness
- luminance
- luminous intensity
- magnitude
- noise intensity
- radiance
- stellar magnitude

interacting galaxies

(added November 1988)

- UF galaxy interaction
- GS celestial bodies

. . . **interacting galaxies**

- RT galactic structure
- ∞ interactions
 - retrograde orbits
 - ring galaxies
 - shell galaxies
 - stellar systems

interactional aerodynamics

- GS fluid mechanics
 - . fluid dynamics
 - . . gas dynamics
 - . . . **interactional aerodynamics**

- RT airfoils
- blade-vortex interaction
- computational fluid dynamics
- ∞ flow
 - laminar boundary layer
 - rotor stator interactions
 - shock wave interaction

∞ **interactions**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT air land interactions
- air sea ice interactions
- air water interactions
- atomic collisions
- atomic interactions
- beam interactions
- blade-vortex interaction
- configuration interaction
- electromagnetic interactions
- electron phonon interactions
- electroweak interactions (field theory)
- elementary particle interactions
- fluid-solid interactions
- gas-gas interactions
- gas-ion interactions
- gas-liquid interactions
- gas-metal interactions
- gas-solid interactions
- high energy interactions
- interacting galaxies
- ion atom interactions
- laser plasma interactions
- laser target interactions
- man environment interactions
- meson-meson interactions
- meson-nucleon interactions
- molecular collisions
- molecular interactions
- nuclear capture
- nuclear interactions
- nuclear reactions
- nucleon-nucleon interactions
- particle interactions
- particle theory
- photon-electron interaction
- plasma interaction experiment

- plasma interactions
- plasma-electromagnetic interaction
- plasma-particle interactions
- proton-proton reactions
- shock wave interaction
- solar terrestrial interactions
- sound-sound interactions
- spin-orbit interactions
- strong interactions (field theory)
- wave interaction
- weak energy interactions
- weak interactions (field theory)

interactive control

DEF The sending of multiple commands that are selected on the basis of data received from an experiment in real time.

- RT active control
- ∞ control
 - control theory
 - numerical control

interactive graphics

USE **computer graphics**

interactive multimedia

USE **multimedia**

interannual variations

(added September 2000)

USE **annual variations**

interatomic forces

- RT atomic force microscopy
- atomic structure
- embedded atom method
- lattice energy
- Van der Waals forces

intercalation

DEF Production of layer type semiconducting as well as other conducting materials (also called synthetic metals).

- GS stratification
 - . **intercalation**
- RT ∞ chemical compounds
 - graphite
 - interlayers
 - ∞ layers

intercalibration

(added January 1999)

DEF Calibration between two or more data sources, including (1) the comparison of data sets acquired by different types of measurement systems for the purpose of deducing the calibration values for one of the measurement systems; (2) the mutual calibration of data from different measurement systems through the comparison of the data with model calculations; and (3) the calibration of multiple detectors on a single instrument through the comparison of data from each detector.

- GS calibrating
 - . **intercalibration**
- RT comparison
 - correction
 - multisensor applications
 - standardization

interception

- RT proportional navigation
- pursuit-evasion games
- rendezvous
- spacecraft docking

Interceptor aircraft

USE **fighter aircraft**

∞ **interceptors**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fighter aircraft
- satellite interceptors

YF-12 aircraft

interconnection

USE **joining**

intercontinental ballistic missiles

- UF *ICBM (missiles)*
- GS missiles
 - . ballistic missiles
 - . . **intercontinental ballistic missiles**
 - . . . Atlas ICBM
 - Atlas D ICBM
 - Atlas E ICBM
 - Atlas F ICBM
 - . . . Minuteman ICBM
 - . . . MX missile
 - . . . Titan ICBM
 - Titan 1 ICBM
 - Titan 2 ICBM
 - . surface to surface missiles
 - . . **intercontinental ballistic missiles**
 - . . . Atlas ICBM
 - Atlas D ICBM
 - Atlas E ICBM
 - Atlas F ICBM
 - . . . Minuteman ICBM
 - . . . MX missile
 - . . . Titan ICBM
 - Titan 1 ICBM
 - Titan 2 ICBM
- RT fleet ballistic missiles
- intermediate range ballistic missiles
- Mark 1 reentry body
- Mark 2 reentry body
- Mark 3 reentry body
- Mark 4 reentry body
- Mark 5 reentry body
- Mark 6 reentry body
- Mark 11 reentry body
- Mark 12 reentry body
- Mark 17 reentry body
- transoceanic systems

Intercosmos satellites

- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Intercosmos satellites**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Intercosmos satellites**

intercranial circulation

- GS circulation
 - . blood circulation
 - . . **intercranial circulation**
- RT cranium
- skull

interdigital transducers

- GS transducers
 - . **interdigital transducers**
- RT digital transducers
- electroacoustic transducers
- piezoelectric transducers
- surface acoustic wave devices

interface stability

- GS stability
 - . **interface stability**
- RT fluid boundaries
- gas-solid interfaces
- interfaces
- liquid sloshing
- liquid-liquid interfaces
- liquid-solid interfaces
- liquid-vapor interfaces
- Taylor instability
- ullage

interfaces

DEF A common boundary between two parts of a system, whether material or non material. Specifically, in a rocket vehicle or other mechanical assembly, a common boundary between two components. Specifically, in fluid dy-

interfacial energy

namics, a surface separating two fluids across which there is a discontinuity of some fluid property such as density or velocity or of some derivative of these properties in a direction normal to the interface. The equations of motion do not apply at the interface but are replaced by the boundary conditions.

- GS **interfaces**
 - . fiber-matrix interfaces
 - . fluid boundaries
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - . graphical user interface
 - . . windows (computer programs)
 - . human-computer interface
 - . solid-solid interfaces
- RT boundaries
 - coordination
 - data processing equipment
 - free boundaries
 - interface stability
 - management planning
 - project management
 - surface properties
 - surface reactions
- ∞ surfaces
 - telecommunication

interfacial energy

- RT adhesion
 - antiphase boundaries
 - electron energy
- ∞ energy
 - fiber pullout
 - fiber pushout
 - fiber-matrix interfaces
 - liquid-liquid interfaces
 - shear strength
 - stiction
 - surface energy

interfacial strain

- USE **interfacial tension**

interfacial tension

DEF That property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent the liquid from spreading. Used for interfacial strain and surface tension.

- UF *interfacial strain*
 - surface tension*
- GS surface properties
 - . **interfacial tension**
- RT Bond number
 - capillary waves
 - gas-liquid interactions
 - Gibbs adsorption equation
 - globules
 - liquid bridges
 - liquid surfaces
 - liquid-liquid interfaces
 - Marangoni convection
 - mechanical properties
 - ripples
 - sliding
 - spreading
 - surface energy
 - surface stability
 - surface tension driven convection
- ∞ surfaces
 - tensile stress
- ∞ tension
 - thermocapillary migration
 - tribology
 - vapor pressure
 - wetting

∞ interference

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT aerodynamic interference
 - coherence coefficient
 - crosstalk

disrupting
electromagnetic compatibility
electromagnetic interference
hum
incompatibility
interference factor table
interference grating
intersymbolic interference
jamming
nonsynchronization
radio frequency interference
Ramsauer effect
support interference
wave diffraction
wave front deformation

interference drag

- GS aerodynamic characteristics
 - . **interference drag**
 - dynamic characteristics
 - . drag
 - . . pressure drag
 - . . . wave drag
 - **interference drag**
- RT propeller slipstreams
 - supersonic drag
 - upwash

interference factor table

- GS tables (data)
 - . **interference factor table**
- RT ∞ interference
 - modulation
 - multichannel communication

interference fit

DEF The condition where the diameter of the fastener is larger than the hole that it is to fit in.

- GS joints (junctions)
 - . **interference fit**
- RT aircraft structures
 - fasteners
 - fatigue life
 - fitting
 - mechanical properties
 - stress analysis

interference grating

- RT fringe multiplication
- ∞ gratings
- ∞ interference
 - Moire effects
 - Moire fringes
 - radio filters
 - radio frequency interference

interference immunity

- RT electromagnetic interference
 - noise reduction
 - radio frequency interference
 - signal processing
 - signal to noise ratios
 - space-time adaptive processing

interference lift

- GS aerodynamic characteristics
 - . lift
 - . . **interference lift**
 - aerodynamic forces
 - . lift
 - . . **interference lift**
 - distribution (property)
 - . **interference lift**
 - dynamic characteristics
 - . lift
 - . . **interference lift**
- RT upwash

interference monochromatization

- USE **diffraction**
 - monochromatization**

interferograms

- USE **interferometry**

interferometers

- DEF Apparatus used to produce and mea-

sure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.

- GS measuring instruments
 - . **interferometers**
 - . . etalons
 - . . Fabry-Perot interferometers
 - . . infrared interferometers
 - . . Mach-Zehnder interferometers
 - . . Michelson interferometers
 - . . microwave interferometers
 - . . phase switching interferometers
 - . . radio interferometers
- RT astronomical interferometry
 - Bragg gratings
 - diffractometers
 - flatness
 - goniometers
 - optical equipment
 - optical measurement
 - optical measuring instruments
 - photogoniometers
 - Ronchi test
 - Sagnac effect
 - very long base interferometry

interferometry

- UF *interferograms*
- GS **interferometry**
 - . astronomical interferometry
 - . differential interferometry
 - . holographic interferometry
 - . laser interferometry
 - . Moire interferometry
 - . Ronchi test
 - . shearography
 - . speckle interferometry
 - . very long base interferometry
- RT diffraction patterns
 - Fresnel diffraction
 - Fresnel reflectors
 - infrared interferometers
 - isochromatics
 - null zones
 - plasma flux measurement
 - Sagnac effect
 - scatter plates (optics)

interferon

DEF A protein (lymphokine) released by cells in response to virus infection. When taken up by other cells, interferon inhibits the replication of viruses within them.

- RT acquired immunodeficiency syndrome
 - bacteriophages
 - biochemistry
- ∞ biology
 - human immunodeficiency virus
 - physiological defenses
 - viruses

intergalactic media

- UF *extragalactic media*
- GS media
 - . **intergalactic media**
- RT cooling flows (astrophysics)
 - cosmic dust
 - cosmic gases
 - cosmic plasma
 - dark matter
 - galactic halos
 - mass distribution
 - stellar winds
 - Sunyaev-Zeldovich effect

intergranular corrosion

DEF Corrosion that occurs preferentially at grain boundaries.

- GS chemical attack
 - . **intergranular corrosion**
 - corrosion
 - . **intergranular corrosion**
- RT grain boundaries

- stress corrosion
- transgranular corrosion
- interim stages (spacecraft)**
 - GS **interim stages (spacecraft)**
 - . Inertial Upper Stage
 - RT multistage rocket vehicles
 - recoverable spacecraft
 - reusable spacecraft
 - space shuttles
 - stage separation
- interim upper stage (STS)*
 - USE **Inertial Upper Stage**
- interior ballistics**
 - DEF That branch of ballistics that deals with the propulsion of projectiles, i. e. , the motion and behavior of projectiles in a gun barrel, the temperatures and pressures developed inside a gun barrel or rocket.
 - GS ballistics
 - . **interior ballistics**
 - RT propellant tests
- interlacing drainage*
 - USE **drainage patterns**
- interlaminar stress**
 - (added July 1992)
 - GS stresses
 - . **interlaminar stress**
 - RT composite materials
 - delaminating
 - interlayers
 - laminates
 - shear stress
 - stress distribution
 - stress-strain relationships
- interlayers**
 - GS **interlayers**
 - . multilayer insulation
 - RT barrier layers
 - fabrics
 - insulation
 - intercalation
 - interlaminar stress
 - laminates
 - ∞ layers
 - ply orientation
 - sandwich structures
 - ∞ transition layers
- interlocking*
 - USE **locking**
- intermedia*
 - USE **multimedia**
- intermediate frequencies**
 - DEF The beat frequencies used in heterodyne receivers, usually the difference between the received radiofrequency signal and a locally generated signal.
 - GS frequencies
 - . radio frequencies
 - . . . **intermediate frequencies**
 - RT high frequencies
 - low frequencies
- intermediate frequency amplifiers**
 - GS amplifiers
 - . **intermediate frequency amplifiers**
 - RT beat frequencies
 - crystal filters
 - heterodyning
 - logarithmic receivers
 - preamplifiers
 - radio receivers
 - transistor amplifiers
- intermediate range ballistic missiles**
 - UF *IRBM (missiles)*
 - GS missiles
 - . ballistic missiles
- . . . **intermediate range ballistic missiles**
 - . . . Blue Streak missile
 - . . . Jupiter missile
 - . . . polaris missiles
 - Polaris A1 missile
 - Polaris A2 missile
 - Polaris A3 missile
 - . surface to surface missiles
- intermediate range ballistic missiles**
 - . . . Blue Streak missile
 - . . . Jupiter missile
 - . . . polaris missiles
 - Polaris A1 missile
 - Polaris A2 missile
 - Polaris A3 missile
 - RT field army ballistic missiles
 - fleet ballistic missiles
 - intercontinental ballistic missiles
 - Mark 1 reentry body
 - Mark 2 reentry body
 - Mark 3 reentry body
 - short range ballistic missiles
- intermetallics**
 - SN (COMPOUNDS CONSISTING OF ONLY METALLIC ELEMENTS)
 - UF *electron compounds*
 - GS **intermetallics**
 - . heavy fermion systems
 - . . heavy fermion superconductors
 - RT alloying
 - alloys
 - aluminides
 - ammines
 - antiphase boundaries
 - arsenides
 - borides
 - cluster variation method
 - indium gallium arsenides
 - inorganic compounds
 - iron aluminides
 - metalloids
 - metals
 - mischmetal
 - nickel aluminides
 - phase diagrams
 - photoelectromagnetic effects
 - semiconductors (materials)
 - silicides
 - tellurides
 - titanium aluminides
- intermittency**
 - RT cycles
 - pulses
 - random processes
- intermittency hypothesis**
 - GS hypotheses
 - . **intermittency hypothesis**
 - RT photographic recording
- intermodulation**
 - DEF The modulation of the components of a complex wave by each other in a nonlinear system.
 - GS modulation
 - . **intermodulation**
 - RT demodulation
 - discriminators
 - frequency analyzers
 - frequency modulation
 - remodulation
 - sound-sound interactions
 - wave interaction
- intermolecular forces**
 - GS level (quantity)
 - . energy levels
 - . . molecular energy levels
 - . . . **intermolecular forces**
 - RT configuration interaction
 - excimers
 - Lennard-Jones potential
 - molecular interactions
- molecular structure
- Van der Waals forces
- virial coefficients
- intermontane floors*
 - USE **valleys**
- internal combustion engines**
 - SN (EXCLUDES ROCKET ENGINES)
 - GS engines
 - . **internal combustion engines**
 - . . diesel engines
 - . . gas turbine engines
 - . . . hydrogen engines
 - . . . jet engines
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines
 - T-58 engine
 - helicopter engines
 - rotary engines
 - Wankel engines
 - RT afterburning
 - aircraft engines
 - automobile engines
 - automobile fuels
 - ∞ bearing
 - bearings
 - booster rocket engines
 - cams
 - carburetors
 - combustion
 - combustion chambers
 - diesel fuels
 - distributors
 - ducted rocket engines
 - electric hybrid vehicles
 - engine parts
 - engine primers
 - engine starters
 - exhaust systems
 - external combustion engines
 - fuel consumption

internal compression inlets

fuel injection
fuel pumps
fuel systems
gas turbines
hybrid propellant rocket engines
ignition systems
liquid propellant rocket engines
lubrication systems
piston engines
pistons
retrorocket engines
rocket engines
solid propellant rocket engines
spark plugs
superchargers
sustainer rocket engines
thermodynamic cycles
thermodynamic efficiency
torpedo engines
Verrier engines

internal compression inlets

GS intake systems
. **internal compression inlets**
RT air intakes
compressing
engine inlets
inlet nozzles
supersonic inlets

internal conversion

RT ∞ conversion
nuclear reactions

internal energy

DEF A mathematically defined thermodynamic function of state, interpretable through statistical mechanics as a measure of the molecular activity of the system.

RT chemical energy
 ∞ energy
free energy
Gibbs-Helmholtz equations
kinetic energy
 ∞ level
molecular energy levels
particle energy
potential energy
thermal energy
thermodynamics

internal flow

(added January 1995)

GS fluid flow
. **internal flow**
.. cavity flow
.. channel flow
... open channel flow
.. ducted flow
... Knudsen flow
.. inlet flow
.. nozzle flow
.. pipe flow
RT Couette flow
fluidics
hydrodynamics
pipes (tubes)

internal friction

GS friction
. **internal friction**
RT anelasticity
attenuation
cohesion
damping
density (mass/volume)
eddy viscosity
hysteresis
mechanical properties
 ∞ physical properties
plastic flow
viscosity

internal pressure

SN (LIMITED TO PRESSURE INSIDE A PORTION OF MATTER DUE TO ATTRACTION BETWEEN MOLECULES)

DEF The pressure inside a portion of matter due to the attraction between molecules.

GS pressure
. **internal pressure**
RT adhesion
cohesion
gas pressure
partial pressure
pressure distribution
spreading
temperature inversions

internal stress

USE **residual stress**

internal waves

DEF In fluid mechanics, wave motions of stably stratified fluids in which the maximal vertical motions occur below the surface of the fluids.

GS **internal waves**
. planetary waves
RT evanescent waves
surface waves
 ∞ waves

International Cometary Explorer

USE **International Sun Earth Explorer 3**

International Computers Limited

USE **ICL computers**

international cooperation

GS policies
. foreign policy
.. international relations
... **international cooperation**
... outer space treaty
RT A-300 aircraft
A-310 aircraft
A-320 aircraft
A-330 aircraft
A-340 aircraft
Anik 1
Anik 2
Anik 3
Anik satellites
Apollo Soyuz test project
Arabsat
Arcomsat
Azur satellite
Cassini mission
Cluster Mission
Committee on Space Research
Communications Technology Satellite
conventions
 ∞ cooperation
Cosmos 782 satellite
Cosmos 936 satellite
Cosmos 1129 satellite
disarmament
EISCAT radar system (Europe)
Energiya launch vehicle
ESA satellites
European Airbus
European Southern Observatory
federations
French space program
GLONASS
Granat satellite
information transfer
INMARSAT satellites
integrated global ocean station
systems
International Hydrological Decade
International Satellite Geodesy
Experiment
International Space Station
North Atlantic Treaty Organization
(NATO)
Orbiting Frog Otolith
Palapa 2 satellite
Palapa satellites
peacetime
politics
Proton launch vehicle

ROSAT mission
Russian Space Program
sea law
SOHO Mission
sovereignty
Symphonie satellites
U. S. S. R. space program
United Nations
user requirements
Vega project
World Meteorological Organization

International Field Year for Great Lakes

RT Canada
Great Lakes (North America)
United States

International Geophysical Year

DEF By international agreement, a period during which greatly increased observation of worldwide geophysical phenomena is undertaken through the cooperative effort of participating nations. July 1957 to December 1958 was the first such year; however, precedent was set by the International Polar Years of 1882 and 1932. Used for IGY (geophysical year).

UF *IGY (geophysical year)*
RT geophysics
Vanguard satellites
world data centers

International Geosphere-Biosphere program

GS programs
. **International Geosphere-Biosphere program**
RT biogeochemistry
biosphere
Earth observations (from space)
geophysics
man environment interactions
solar terrestrial interactions

International Hydrological Decade

DEF A ten-year program, 1965-74, patterned after the International Geophysical Year, aimed at training hydrologists and technicians, and at the establishment of networks for measuring hydrologic data. The idea originated in the United States, but the program was sponsored by UNESCO, and a large proportion of membership of the United Nations participated. Used for IHD (hydrological decade).

UF *IHD (hydrological decade)*
RT Canada
foreign policy
hydrology
international cooperation
international relations
precipitation (meteorology)
river basins
streams
United States
water resources
watersheds

international law

GS law (jurisprudence)
. **international law**
.. air law
.. sea law
.. space law
RT conventions
legal liability
nations
outer space treaty
peacetime
politics
sovereignty
United Nations
warfare

International Magnetospheric Explorer

UF *IME satellite*
GS artificial satellites
. scientific satellites

.. Explorer satellites
 ... **International Magnetospheric Explorer**
 RT Delta launch vehicle
 Earth magnetosphere

International Magnetospheric Study

DEF Joint US, ESA, Japanese, and Canadian effort (1976-1979) for observation and measurement of magnetospheric and ionospheric phenomena and involving spacecraft, aircraft, balloons, and rockets, as well as ground based equipment. Used for IMS.

UF *IMS*
 GS investigation
 . **International Magnetospheric Study**
 RT atmospheric physics
 Earth magnetosphere
 European space programs
 geomagnetism
 interplanetary magnetic fields

international practical temperature

USE **temperature scales**

International Quiet Sun Year

DEF An international cooperative program during 1964-65 of studying solar-terrestrial phenomena during a quiet sun, i. e. , sunspot minimum, period. It is related to the International Geophysical Year and to the International Active Sun Years. Used for IQSY (international year)

UF *IQSY (international year)*
 RT solar activity
 solar cycles
 solar physics

international relations

GS policies
 . foreign policy
 . . **international relations**
 . . . international cooperation
 . . . outer space treaty
 RT Apollo Soyuz test project
 International Hydrological Decade
 International Space Year
 U. S. S. R. space program

International Satellite Cloud Climatology

USE **ISCCP Project**

International Satellite Geodesy Experiment

UF *ISAGEX*
 RT celestial geodesy
 European space programs
 geodetic coordinates
 international cooperation
 satellite tracking
 U. S. S. R. space program

International Sats for Ionospheric Study

USE **ISIS satellites**

International Solar Polar Mission

USE **Ulysses mission**

International Space Station

(*added December 1994*)
 UF *ISS (space station)*
 GS artificial satellites
 . space stations
 . . **International Space Station**
 stations
 . space stations
 . . **International Space Station**
 RT Alpha Magnetic Spectrometer
 Assured Crew Return Vehicle
 Columbus space station
 Crew Equipment Translation Aid (ISS)
 Destiny Laboratory Module
 Integrated Truss Structure P1
 Integrated Truss Structure S1
 Integrated Truss Structure Z1
 international cooperation
 large space structures

manned orbital laboratories
 Mir space station
 Service Module (ISS)
 space shuttles
 Space Station Freedom
 Space Station Mobile Servicing System
 space station modules
 spaceborne experiments
 Unity connecting module
 Zarya control module

International Space Year

(*added April 1993*)
 UF *ISY*
 RT ∞ aerospace sciences
 international relations
 NASA space programs
 space exploration
 space programs

International Sun Earth Explorer 1

DEF First joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . International Sun Earth Explorers
 . . . **International Sun Earth Explorer 1**

International Sun Earth Explorer 2

DEF Second joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . International Sun Earth Explorers
 . . . **International Sun Earth Explorer 2**

International Sun Earth Explorer 3

DEF The last in a series of three spacecraft developed by NASA and ESA for the study of the magnetosphere. ISEE C was launched into a heliocentric orbit and will make observations in the solar wind up stream of the Earth. Used for International Cometary Explorer.

UF *International Cometary Explorer*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . International Sun Earth Explorers
 . . . **International Sun Earth Explorer 3**

International Sun Earth Explorers

UF *ISEE*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **International Sun Earth Explorers**
 . . . International Sun Earth Explorer 1
 . . . International Sun Earth Explorer 2
 . . . International Sun Earth Explorer 3

International System of Units

DEF The metric system of units based on the meter, kilogram, second, ampere, kelvin degree, and candela. Other SI units are hertz, radian, newton, joule, watt, coulomb, volt, ohm, farad, weber and tesla. Used for metric system and SI.

UF *metric system*
SI
 GS units of measurement
 . **International System of Units**
 RT conversion tables
 ∞ measurement
 measuring instruments

metrication
 metrology
 ∞ systems

international trade

UF *exports*
foreign trade
 RT economics
 revenue

International Ultraviolet Explorer

USE **IUE**

Internet resources

(*added January 1997*)
 SN (USE FOR SOURCES OF INFORMATION, DATA, OR COMPUTER SOFTWARE ACCESSIBLE VIA THE INTERNET; FOR DESIGN OR FUNCTIONAL ASPECTS OF COMPUTER INTERNETWORKS USE "INTERNETS")
 DEF Sources of information, data, or computer software accessible via the Internet.
 GS resources
 . **Internet resources**
 . . websites
 RT electronic bulletin boards
 electronic commerce
 electronic mail
 information dissemination
 information resources management
 information systems
 internets
 news media
 services

internets

(*added January 1994*)
 SN (REFERS TO ANY INTERLINKED SYSTEM OF SEPARATE COMPUTER NETWORKS)
 GS networks
 . communication networks
 . . **internets**
 . . . ARPA computer network
 . . . World Wide Web
 . computer networks
 . . **internets**
 . . . ARPA computer network
 . . . World Wide Web
 RT client server systems
 computer security
 electronic bulletin boards
 electronic mail
 Internet resources
 Java (programming language)
 websites

internuclear properties

RT molecular interactions
 ∞ molecular physics

interoperability

(*added July 2001*)
 DEF The ability of different systems, devices, or software to exchange information or otherwise operate effectively together.
 RT commonality
 data transfer (computers)
 information transfer
 protocol (computers)
 standards
 systems compatibility
 systems integration

interorbital trajectories

GS trajectories
 . **interorbital trajectories**
 RT interplanetary trajectories
 round trip trajectories
 spacecraft trajectories

interpersonal relations

USE **human relations**

interphones

GS communication equipment
 . **interphones**
 RT earphones

interplanetary communication

- microphones
- telecommunication
- interplanetary communication**
 - GS telecommunication
 - . space communication
 - . . . **interplanetary communication**
 - RT circumlunar communication
 - extraterrestrial communication
 - facsimile communication
 - lasers
 - lunar communication
 - optical communication
 - radio communication
 - satellite communication
 - spacecraft communication
- interplanetary dust**
 - GS extraterrestrial matter
 - . interstellar matter
 - . . . cosmic dust
 - **interplanetary dust**
 - meteoroid dust clouds
 - zodiacal dust
 - media
 - . interplanetary medium
 - . . . **interplanetary dust**
 - meteoroid dust clouds
 - zodiacal dust
 - particles
 - . dust
 - . . cosmic dust
 - **interplanetary dust**
 - meteoroid dust clouds
 - zodiacal dust
 - RT meteoroids
 - micrometeoroids
- Interplanetary Explorer*
 - USE **Explorer 18 satellite**
- interplanetary flight**
 - UF *planetary space flight*
 - GS space flight
 - . **interplanetary flight**
 - RT asteroid missions
 - astrodynamics
 - Earth-Venus trajectories
 - flyby missions
 - interstellar spacecraft
 - long duration space flight
 - magnetic sails
 - manned Mars missions
 - manned space flight
 - Mariner Jupiter-Saturn flyby
 - Mariner Jupiter-Uranus flyby
 - Mariner Mark 2 Spacecraft
 - Mars exploration
 - matter-antimatter propulsion
 - negative matter propulsion
 - orbits
 - outer planets explorers
 - planetary landing
 - return to Earth space flight
 - round trip trajectories
 - space exploration
 - space navigation
 - spacecraft guidance
 - TOPS (spacecraft)
- interplanetary gas**
 - GS extraterrestrial matter
 - . cosmic gases
 - . . . **interplanetary gas**
 - gases
 - . rarefied gases
 - . . cosmic gases
 - **interplanetary gas**
 - media
 - . interplanetary medium
 - . . . **interplanetary gas**
 - RT cosmic plasma
 - interstellar gas
 - neutral gases
- solar wind
 - . . Mariner 4 space probe
 - . . Mariner 6 space probe
 - . . Mariner 7 space probe
 - . . Mariner 8 space probe
 - . . Mariner 9 space probe
 - . . Mars 1 spacecraft
 - . . Mars 2 spacecraft
 - . . Mars 3 spacecraft
 - . . Mars 4 Spacecraft
 - . . Mars 5 spacecraft
 - . . Mars 6 spacecraft
 - . . Mars 7 spacecraft
 - . . Mars Observer
 - . . Mars Pathfinder
 - . . Viking 1975 entry vehicle
 - . . Viking spacecraft
 - . . . Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - . . Mars Climate Orbiter
 - . . Mars Express
 - . . Mars Global Surveyor
 - . . Mars Polar Lander
 - . . Nozomi Mars Orbiter
 - . . Phobos spacecraft
 - . . Zond 2 space probe
 - . . Pioneer space probes
 - . . Pioneer 1 space probe
 - . . Pioneer 2 space probe
 - . . Pioneer 3 space probe
 - . . Pioneer 4 space probe
 - . . Pioneer 5 space probe
 - . . Pioneer 6 space probe
 - . . Pioneer 7 space probe
 - . . Pioneer 8 space probe
 - . . Pioneer 9 space probe
 - . . Pioneer 10 space probe
 - . . Pioneer 11 space probe
 - . . Pioneer Venus 2 entry probes
 - . . . Pioneer Venus 2 night probe
 - . . . Pioneer Venus 2 sounder probe
 - . . Pioneer Venus spacecraft
 - . . Pioneer Venus 1 spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . . TOPS (spacecraft)
 - . . Venus probes
 - . . Magellan spacecraft (NASA)
 - . . Mariner 1 space probe
 - . . Mariner 2 space probe
 - . . Mariner 5 space probe
 - . . Mariner 10 space probe
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . . Venera satellites
 - . . . Venera 2 satellite
 - . . . Venera 3 satellite
 - . . . Venera 4 satellite
 - . . . Venera 5 satellite
 - . . . Venera 6 satellite
 - . . . Venera 7 satellite
 - . . . Venera 8 satellite
 - . . . Venera 9 satellite
 - . . . Venera 10 satellite
 - . . . Venera 11 satellite
 - . . . Venera 12 satellite
 - . . Zond 1 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
- interplanetary magnetic fields**
 - GS magnetic fields
 - . **interplanetary magnetic fields**
 - RT Chapman-Ferraro problem
 - flux transfer events
 - International Magnetospheric Study
 - magnetic clouds
 - magnetic field reconnection
 - solar magnetic field
 - Wind/GGS spacecraft
- interplanetary medium**
 - GS media
 - . **interplanetary medium**
 - . . interplanetary dust
 - . . . meteoroid dust clouds
 - zodiacal dust
 - . . interplanetary gas
 - RT Advanced Composition Explorer
 - magnetic clouds
 - mass distribution
 - meteoroids
 - plasma clouds
 - solar wind
- Interplanetary Monitoring Platform*
 - USE **IMP**
- interplanetary navigation**
 - GS navigation
 - . space navigation
 - . . **interplanetary navigation**
 - RT astronavigation
 - celestial navigation
 - celestial reference systems
 - radar navigation
 - radio navigation
- interplanetary propulsion*
 - USE **interplanetary spacecraft rocket engines**
- interplanetary space**
 - UF *translunar space*
 - GS environments
 - . aerospace environments
 - . . deep space
 - . . . **interplanetary space**
 - . . extraterrestrial environments
 - . . . deep space
 - **interplanetary space**
 - RT cislunar space
 - heliosphere
 - interstellar space
 - polar cusps
- interplanetary spacecraft**
 - UF *interplanetary propulsion planetary spacecraft*
 - GS **interplanetary spacecraft**
 - . Explorer 18 satellite
 - . Jupiter probes
 - . . Galileo probe
 - . . Galileo spacecraft
 - . . Mariner space probes
 - . . . Mariner 1 space probe
 - . . . Mariner 2 space probe
 - . . . Mariner 3 space probe
 - . . . Mariner 4 space probe
 - . . . Mariner 5 space probe
 - . . . Mariner 6 space probe
 - . . . Mariner 7 space probe
 - . . . Mariner 8 space probe
 - . . . Mariner 9 space probe
 - . . . Mariner 10 space probe
 - . . . Mariner 11 space probe
 - . . . Mariner R 2 space probe
 - . . Mariner spacecraft
 - . . Mariner C spacecraft
 - . . Mariner Venus 67 spacecraft
 - . . Mars probes
 - . . Advanced Recon Electric Spacecraft
 - . . Mariner 3 space probe

- . . Zond 7 space probe
 - . . Zond 8 space probe
 - . Voyager 1 spacecraft
 - . Voyager 2 spacecraft
 - . Zond space probes
 - . . Zond 1 space probe
 - . . Zond 2 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - RT artificial satellites
 - Deep Space 1 Mission
 - interstellar spacecraft
 - landing modules
 - maneuverable spacecraft
 - manned Mars missions
 - manned spacecraft
 - matter-antimatter propulsion
 - rendezvous spacecraft
 - reusable spacecraft
 - space capsules
 - space exploration
 - space probes
 - ∞ spacecraft
 - unmanned spacecraft
 - Voyager 1977 mission
- interplanetary trajectories**
- GS trajectories
 - . spacecraft trajectories
 - . . **interplanetary trajectories**
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - RT Earth-Moon trajectories
 - Goddard Trajectory Determination System
 - interorbital trajectories
 - orbital launching
 - orbital mechanics
 - parking orbits
 - planetary orbits
 - rendezvous trajectories
 - round trip trajectories
 - solar orbits
 - space navigation
 - spacecraft guidance
 - transfer orbits
 - Viking 1 spacecraft
 - Viking 2 spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking lander spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
- interplanetary transfer orbits**
- GS orbits
 - . elliptical orbits
 - . . transfer orbits
 - . . . **interplanetary transfer orbits**
 - . . . spacecraft orbits
 - . . . transfer orbits
 - . . . **interplanetary transfer orbits**
 - RT aeroassist
 - aerobraking
 - aerocapture
 - aeromaneuvering
 - low Earth orbits
 - orbital mechanics
 - swingby technique
- interpolation**
- GS analysis (mathematics)
 - . numerical analysis
 - . . **interpolation**
 - RT commutation
 - computation
 - extrapolation
 - finite difference theory
- statistical analysis
- interpolators*
- USE **repeaters**
- ∞ **interpretation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT decoding
 - intelligibility
 - perception
 - photointerpretation
 - reading
 - recognition
 - syntax
 - translating
- interprocessor communication**
- DEF Communication between two or more processors in a computer system.
- RT computer networks
- computer systems design
 - Connection Machine
 - Dining Philosophers Problem
 - distributed memory
 - free-space optical interconnects
 - hypercube multiprocessors
 - local area networks
 - MIMD (computers)
 - multiprocessing (computers)
 - parallel processing (computers)
 - SIMD (computers)
 - transmission rate (communications)
 - transputers
 - VSAT (network)
- interrelationships*
- USE **relationships**
- interrogation**
- RT data processing
- IFF systems (identification)
 - secondary radar
 - transmitter receivers
 - transponders
- interruption**
- RT electric relays
- packet switching
 - sequencing
 - switches
 - switching
- intersections**
- SN (EXCLUDES BOOLEAN LOGICAL PRODUCTS)
- DEF In Boolean algebra, the operation in which concepts are described by stating that they have all the characteristics of the classes involved. Intersection is expressed as AND.
- RT crossings
- crossovers
 - highways
 - ∞ junctions
 - ramps (structures)
 - roads
 - streets
 - transportation networks
- interservice data exchange program**
- UF *IDEP (data exchange)*
- RT ∞ data
- data retrieval
 - data storage
 - information retrieval
 - libraries
 - military technology
 - research
- interstellar chemistry**
- DEF Molecular formation/dissociation in interstellar space due to radiation, collision, and other forces.
- RT association reactions
- chemical reactions
 - ∞ chemistry
- cosmochemistry
 - diffuse interstellar bands
 - formyl ions
 - interstellar matter
 - isotope ratios
 - molecular clouds
 - molecular interactions
 - reaction kinetics
 - Submillimeter Wave Astronomy Satellite
- interstellar communication**
- GS communicating
- . **interstellar communication**
- RT extraterrestrial intelligence
- radio communication
 - space communication
- interstellar extinction**
- UF *interstellar reddening*
- GS extinction
- . **interstellar extinction**
- RT astrophysics
- diffuse interstellar bands
 - evolution (development)
 - interstellar gas
 - radiation absorption
 - stellar evolution
 - stellar radiation
- interstellar gas**
- GS extraterrestrial matter
- . cosmic gases
 - . . **interstellar gas**
 - . . . interstellar matter
 - . . . **interstellar gas**
 - gases
 - . rarefied gases
 - . . cosmic gases
 - . . . **interstellar gas**
- RT cooling flows (astrophysics)
- galactic halos
 - H I regions
 - H II regions
 - heliosphere
 - interplanetary gas
 - interstellar extinction
 - magnetic clouds
 - methylidyne
 - molecular clouds
 - neutral gases
 - Ophiuchi clouds
 - Orion nebula
 - spin temperature
 - star formation
 - stellar mass accretion
 - stellar winds
- interstellar magnetic fields**
- UF *galactic magnetic fields*
- GS magnetic fields
- . **interstellar magnetic fields**
- RT magnetic clouds
- stellar magnetic fields
- interstellar masers**
- GS stimulated emission devices
- . masers
 - . . **interstellar masers**
- RT coherent electromagnetic radiation
- gas masers
 - lasers
 - microwave amplifiers
 - molecular clouds
 - radiation sources
 - stimulated emission
 - water masers
- interstellar matter**
- GS extraterrestrial matter
- . **interstellar matter**
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - zodiacal dust
 - . . dark matter

interstellar radiation

. . interstellar gas
RT Alpha Magnetic Spectrometer
celestial bodies
diffuse interstellar bands
formyl ions
gravitational instability
H I regions
H II regions
infrared cirrus (astronomy)
interstellar chemistry
mass distribution
metallicity
methylidyne
molecular clouds
nebulae
Ophiuchi clouds
Orion nebula
polycyclic aromatic hydrocarbons
Population I stars
reflection nebulae
spin temperature
star formation
Stardust Mission
stellar envelopes
stellar mass accretion
Submillimeter Wave Astronomy
Satellite

interstellar microwave spectra
USE **interstellar radiation
microwave spectra**

interstellar radiation
UF *interstellar microwave spectra*
GS extraterrestrial radiation
. **interstellar radiation**
RT corpuscular radiation
cosmic noise
cosmic rays
electromagnetic radiation
galactic radiation
gamma ray bursts
∞ radiation
radiative transfer
stellar radiation

interstellar reddening
USE **interstellar extinction**

interstellar space
GS environments
. aerospace environments
. . . deep space
. . . **interstellar space**
. extraterrestrial environments
. . . deep space
. . . **interstellar space**
RT interplanetary space

interstellar spacecraft
RT interplanetary flight
interplanetary spacecraft
interstellar travel
space exploration

interstellar travel
GS space flight
. **interstellar travel**
RT astronavigation
celestial reference systems
extraterrestrial intelligence
interstellar spacecraft
long duration space flight
magnetic sails
manned space flight
matter-antimatter propulsion
negative matter propulsion

interstices
RT cavities
cracks
grain boundaries
percolation
permeability
pinholes
porosity

porous materials
voids

interstitials

RT additives
antisite defects
crystal defects
crystal structure
grain boundaries
Laves phases

intersymbolic interference

RT cochannel interference
data transmission
∞ interference
signal distortion
transmission efficiency

intertropical convergent zones

GS regions
. tropical regions
. . **intertropical convergent zones**
RT atmospheric circulation
fronts (meteorology)
GARP Atlantic Tropical Experiment
tropical meteorology
zonal flow (meteorology)

intervals

RT alternations
consecutive events
spacing
step functions
time
topology

intervehicle spacecrew transfer
USE **spacecrew transfer**

intervertebral disks

GS disks (shapes)
. **intervertebral disks**
RT ∞ disks
musculoskeletal system
vertebrae

intestines

GS anatomy
. digestive system
. . gastrointestinal system
. . . **intestines**
. . . . rectum
RT abdomen
appendix (anatomy)
colic

intoxication

RT ∞ poisoning
toxicity and safety hazard
toxicology

intracloud discharges

(added August 1999)
GS electric current
. electric discharges
. . lightning
. . . **intracloud discharges**

intracranial cavity

GS anatomy
. head (anatomy)
. . skull
. . . cranium
. . . . **intracranial cavity**
. musculoskeletal system
. . bones
. . . skull
. . . . cranium
. **intracranial cavity**

intracranial pressure

GS pressure
. **intracranial pressure**

RT brain

intramolecular structures

RT molecular structure
∞ structures

intraocular pressure

UF *tonometry*
GS pressure
. **intraocular pressure**
RT glaucoma

intraorbit transfer vehicles

DEF Small scooter type tugs that would move men and materials within an orbit.
RT Columbus space station
large space structures
space platforms
space shuttles
∞ vehicles

intraseasonal oscillations

(added September 2000)
USE **intraseasonal variations**

intraseasonal variations

(added September 2000)
UF *intraseasonal oscillations*
GS variations
. periodic variations
. . **intraseasonal variations**
. . . Madden-Julian Oscillation
RT annual variations
atmospheric circulation
atmospheric models
climatology
tropical meteorology

intravascular system

RT blood circulation
∞ systems

intravehicular activity

RT ∞ activity
astronaut locomotion
astronaut maneuvering equipment
astronaut performance
extravehicular activity
human performance
manned space flight
pilot performance
spacecraft environments
weightlessness

intravenous procedures

RT bioavailability
catheterization
in vivo methods and tests
medical services

introversion

RT ∞ depression
detachment
human behavior
∞ inhibition
psychology

Intruder aircraft

USE **A-6 aircraft**

intrusion

RT contamination
extruding
leakage
seepage

intrusion detection (computers)

(added January 2003)
DEF Manual or software-based detection of unauthorized entries or attempted break-ins into a computer system or network. The detection analysis is typically conducted using logs or other internal system information.
GS security
. computer security

- . . **intrusion detection (computers)**
 RT access control
 computer networks
 computer viruses
 firewalls (computers)
- Invader aircraft*
 USE **B-26 aircraft**
- invalidity*
 USE **errors**
- invariance**
 GS **invariance**
 . gauge invariance
 RT ∞ constant
 Lorentz transformations
- invariant imbeddings**
 GS geometry
 . topology
 . . imbeddings (mathematics)
 . . . **invariant imbeddings**
 RT anisotropic fluids
 calculus of variations
 conformal mapping
 coordinate transformations
 differential geometry
 ∞ imbeddings
 isotropic turbulence
- inventions**
 RT intellectual property
 patent applications
 patent policy
 patents
 product development
- inventories**
 GS **inventories**
 . crop inventories
 . timber inventory
 RT Large Area Crop Inventory
 Experiment
 reserves
 ∞ storage
- inventory controls**
 GS management
 . industrial management
 . . inventory management
 . . . **inventory controls**
 . logistics management
 . . inventory management
 . . . **inventory controls**
 RT ∞ control
 distributing
 mathematical models
 optimal control
 reserves
 risk
 ∞ storage
 time lag
- inventory management**
 GS management
 . industrial management
 . . **inventory management**
 . . . inventory controls
 . logistics management
 . . **inventory management**
 . . . inventory controls
 RT downtime
 logistics
 procurement management
 resources
 retirement for cause
 services
 spare parts
 stockpiling
 ∞ storage
- inverse kinematics**
 (added December 1990)
 GS kinematics
 . **inverse kinematics**
- RT dynamic control
 feedback control
 manipulators
 robot control
 robot dynamics
 robotics
- inverse scattering**
 DEF Method for analyzing some classic
 wave scattering.
 GS scattering
 . **inverse scattering**
 RT forward scattering
 resonance scattering
- inversions**
 GS **inversions**
 . magnetic field inversions
 . population inversion
 . temperature inversions
- invertebrates**
 GS animals
 . **invertebrates**
 . . arthropods
 . . . artemia
 . . . crabs
 . . . insects
 bees
 bollworms
 chironomus flies
 cockroaches
 Coleoptera
 beetles
 tribolia
 boll weevils
 crickets
 Drosophila
 fireflies
 grasshoppers
 locusts
 moths
 silkworms
 . . . spiders
 . . mollusks
 . . cephalopods
 . . . octopuses
 . . snails
 . . Rotifera
 . . sea urchins
 . . worms
 . . flatworms
 RT bacteria
 hemocytes
 larvae
 microorganisms
 poikilothermia
- inverted converters (DC to AC)**
 RT alternating current
 ∞ converters
 current converters (AC to DC)
 direct current
 electric current
- inverters**
 SN (EXCLUDES AC TO DC INVERTERS)
 GS **inverters**
 . static inverters
 RT attenuators
 oscillators
- investigation**
 UF *studies*
 GS **investigation**
 . accident investigation
 . . aircraft accident investigation
 . International Magnetospheric Study
 RT examination
 experimentation
 exploration
 geophysical fluid flow cells
 OSS-1 payload
 programs
 research
 research and development
- sampling
 university program
- ∞ **investment**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT commerce
 investment casting
 investments
- investment casting**
 UF *lost wax process*
 GS forming techniques
 . casting
 . . **investment casting**
 RT centrifugal casting
 ∞ investment
- investments**
 RT depreciation
 economic impact
 economics
 finance
 ∞ investment
- inviscid flow**
 UF *nonviscous flow*
 GS fluid flow
 . **inviscid flow**
 . . stagnation flow
 RT aerodynamics
 Crocco method
 Crocco-Lee theory
 ∞ flow
 flow characteristics
 gas flow
 laminar flow
 potential flow
 Prandtl number
 Reynolds number
 stagnation temperature
 turbulent flow
 viscous flow
- invisibility*
 USE **visibility**
- involuntariness*
 USE **involuntary actions**
- involuntary actions**
 UF *involuntariness*
 RT autonomic nervous system
 sneezing
 spasms
 twitching
- Io**
 DEF A satellite of Jupiter orbiting at a mean
 distance of 421,800 kilometers. Also called Ju-
 piter I.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . Galilean satellites
 **Io**
 RT Callisto
 Charon
 Ganymede
 Jupiter (planet)
- iodates**
 GS halogen compounds
 . iodine compounds
 . . **iodates**
 . . . lithium iodates
- iodides**
 GS halogen compounds
 . iodine compounds
 . . **iodides**
 . . . cesium iodides
 . . . gallamine triethiodide
 . . . hafnium iodides
 . . . niobium iodides

iodimetry

- . . . potassium iodides
- . . . silver iodides
- . . . sodium iodides
- . . . zirconium iodides

iodimetry

- GS chemical tests
- . chemical analysis
- . . **iodimetry**
- RT quantitative analysis
- ∞ reduction
- . titration

iodine

- GS chemical elements
- . halogens
- . . **iodine**
- . . . iodine isotopes
- iodine 125
- iodine 131
- iodine 132

iodine 125

- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 125**
- nuclides
- isotopes
- iodine isotopes
- **iodine 125**
- radioactive isotopes
- **iodine 125**

iodine 131

- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 131**
- nuclides
- isotopes
- iodine isotopes
- **iodine 131**
- radioactive isotopes
- **iodine 131**

iodine 132

- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 132**
- nuclides
- isotopes
- iodine isotopes
- **iodine 132**
- radioactive isotopes
- **iodine 132**

iodine compounds

- GS halogen compounds
- . **iodine compounds**
- . . iodates
- . . . lithium iodates
- . . . iodides
- cesium iodides
- gallamine triiodide
- hafnium iodides
- niobium iodides
- potassium iodides
- silver iodides
- sodium iodides
- zirconium iodides
- iodoacetic acid
- RT ∞ chemical compounds
- . halocarbons

iodine isotopes

- GS chemical elements
- . halogens
- . . iodine
- . . . **iodine isotopes**
- iodine 125
- iodine 131

- iodine 132
- nuclides
- isotopes
- **iodine isotopes**
- iodine 125
- iodine 131
- iodine 132

iodine lasers

- GS stimulated emission devices
- . lasers
- . . **iodine lasers**
- . . . chemical oxygen-iodine lasers

iodoacetic acid

- GS acids
- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **iodoacetic acid**
- halogen compounds
- . iodine compounds
- . . **iodoacetic acid**
- organic compounds
- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **iodoacetic acid**

ion accelerators

- GS particle accelerators
- . **ion accelerators**
- RT ∞ accelerators
- . synchrotrons

ion acoustic waves

- GS elastic waves
- . sound waves
- . . **ion acoustic waves**
- RT plasma oscillations
- . plasma waves
- . wave propagation

ion atom interactions

- GS particle interactions
- . **ion atom interactions**
- RT atomic interactions
- . charge exchange
- . elementary particle interactions
- ∞ interactions

ion beams

DEF Directed fluxes of charged atoms or molecules.

- GS beams (radiation)
- . particle beams
- . . **ion beams**
- . ion currents
- . . **ion beams**
- RT atomic beams
- . beam injection
- . beam neutralization
- . inertial fusion (reactor)
- . ion optics
- . molecular beams

ion chambers

- USE **ionization chambers**

ion channels (biology)

(added August 2002)

DEF Glycoprotein components of biomembranes that control the passage of hydrophilic solutes such as inorganic ions.

- UF *potassium channels (biology)*
- . *sodium channels (biology)*
- RT bioelectric potential
- . bioelectricity
- . cell membranes (biology)
- . electrophysiology
- . neurophysiology

ion charge

- GS electric charge
- . **ion charge**
- RT charge exchange

- charged particles
- ionization
- valence

ion concentration

- RT acidity
- ∞ bases
- . Earth ionosphere
- . pH factor
- . titration

ion currents

- UF *ionic conductivity*
- GS **ion currents**
- . ion beams
- . Pedersen currents
- RT solions

ion cyclotron radiation

- GS electromagnetic radiation
- . nonthermal radiation
- . . cyclotron radiation
- . . . **ion cyclotron radiation**
- RT cyclotron resonance
- . ionic waves
- . magnetic pumping
- . plasma radiation
- . plasma waves
- ∞ radiation

ion density (concentration)

DEF In atmospheric electricity, the number of ions per unit volume of a given sample of air; more particularly, the number of ions of a given type (positive small ion, negative small ion, positive large ion, or negative large ion) per unit volume of air.

- GS density (number/volume)
- . particle density (concentration)
- . . **ion density (concentration)**
- . . . ionospheric ion density
- . . . magnetospheric ion density
- magnetospheric proton density
- proton density (concentration)
- magnetospheric proton density

- RT atmospheric density
- . atom concentration
- . cosmic rays
- . Earth ionosphere
- . electron density (concentration)
- . Gerdien condensers
- . ionization
- . ionograms
- . plasma density
- . positive ions
- . Saha equations
- . space density

ion distribution

- GS distribution (property)
- . **ion distribution**
- RT charge distribution
- . current distribution
- . electrohydrodynamics
- . ionic mobility
- . spatial distribution
- . vertical distribution

ion emission

- GS emission
- . particle emission
- . . **ion emission**
- RT ionization
- . thermionic emission
- . thermionics

ion engines

DEF Reaction engines in which ions, accelerated in an electrostatic field, are used as propellants. Used for ionic propellants and thermionic reactors. Also called electrostatic engines. Used for ionic propellants and thermionic reactors.

- UF *ionic propellants*
- . *thermionic reactors*
- GS engines

- . rocket engines
- . . . electric rocket engines
- electrostatic engines
- **ion engines**
- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- RT beam switching
- electrothermal engines
- ion optics
- ionizers
- nuclear rocket engines
- plasma engines
- restartable rocket engines
- space station propulsion
- sustainer rocket engines
- ∞ thrusters

ion exchange membrane electrolytes

- GS conductors
- . electrolytes
- . . **ion exchange membrane electrolytes**
- membranes
- . **ion exchange membrane electrolytes**
- RT fuel cells
- separators

ion exchange resins

- GS resins
- . **ion exchange resins**
- RT plastics
- zeolites

ion exchanging

- GS exchanging
- . **ion exchanging**
- RT beds (process engineering)
- charge transfer
- demineralizing
- glass electrodes
- hydrometallurgy
- isotope separation
- kaolinite
- metathesis
- ∞ separation
- softening
- water treatment

ion extraction

- GS extraction
- . **ion extraction**
- RT isotope separation
- ∞ separation
- solvent extraction

ion gages

- USE **ionization gages**

ion impact

- GS impact
- . **ion impact**
- RT electron impact
- point impact
- recoil ions
- toroids
- Townsend avalanche
- Townsend discharge

ion implantation

- GS implantation
- . **ion implantation**
- RT avalanche diodes
- carrier mobility
- diodes
- doping (materials)
- field effect transistors
- integrated circuits
- ions
- ITO (semiconductors)
- junction transistors
- metal ions
- metal oxide semiconductors
- microelectronics

- MODFETS
- modulation doping
- MOM (semiconductors)
- photodiodes
- semiconductor devices
- transistors

ion injection

- GS injection
- . **ion injection**
- RT carrier injection
- ionic mobility
- plasma accelerators
- plasma generators
- plasma jets

ion irradiation

- GS irradiation
- . **ion irradiation**
- . . deuteron irradiation
- . . proton irradiation
- RT auroral irradiation
- electron irradiation
- ionic collisions
- neutron irradiation

ion microscopes

- GS microscopes
- . **ion microscopes**
- RT electron microscopes
- electron microscopy
- scanning electron microscopy
- transmission electron microscopy

ion mobility spectroscopy

- (added September 1995)
- UF *plasma chromatography*
- GS spectroscopy
- . **ion mobility spectroscopy**
- RT airport security
- explosives detection
- mass spectrometers

ion motion

- RT ionic waves
- ∞ motion
- Penning discharge
- plasma composition
- plasma diffusion

ion optics

- (added June 1998)
- RT atom optics
- beam waveguides
- beamforming
- electron optics
- ion beams
- ion engines
- ion propulsion
- mass spectrometers
- ∞ optics

ion oscillation

- USE **plasma oscillations**

ion plating

- GS plating
- . **ion plating**
- RT ions
- metal coatings
- metal ions
- sputtering
- thin films
- vacuum deposition

ion probes

- GS measuring instruments
- . **ion probes**
- RT ionosondes
- radio frequency impedance probes

ion production rates

- GS ionization
- . **ion production rates**
- rates (per time)
- . **ion production rates**

- RT avalanches
- charge exchange
- recoil ions
- thermionic converters

ion propulsion

- GS propulsion
- . electric propulsion
- . . electrostatic propulsion
- . . . **ion propulsion**
- . . . low thrust propulsion
- . . . electrostatic propulsion
- **ion propulsion**
- spacecraft propulsion
- electrostatic propulsion
- **ion propulsion**
- RT Deep Space 1 Mission
- duoplasmatrons
- electromagnetic propulsion
- high temperature propellants
- ion optics
- magnetic sails
- nuclear electric propulsion
- plasma propulsion

ion pumps

- GS pumps
- . vacuum pumps
- . . **ion pumps**
- vacuum apparatus
- . vacuum pumps
- . . **ion pumps**
- getters
- RT

ion recombination

- GS chemical reactions
- . **ion recombination**
- recombination reactions
- . **ion recombination**
- RT atomic recombination
- deionization
- electron recombination
- electron-ion recombination
- recombination coefficient

ion scattering

- GS scattering
- . **ion scattering**
- RT electron scattering
- ionic collisions
- ionic diffusion
- proton scattering
- recoil ions

ion selective electrodes

- GS electrodes
- . **ion selective electrodes**
- RT chemical analysis

ion sheaths

- GS sheaths
- . **ion sheaths**
- RT plasma clouds
- plasma probes
- plasma sheaths

ion sources

- GS **ion sources**
- . plasmatrons
- . . duoplasmatrons
- RT electron sources
- ionization
- ionizing radiation
- linear accelerators
- particle accelerators
- plasma generators
- radiation sources
- ∞ sources
- sputtering

ion spectrometers

- USE **mass spectrometers**

ion storage

- DEF Ions within an electromagnetic trap and cooled to sub-Kelvin temperatures with la-

ion stripping

sers. Potential uses are for frequency standards.

- RT frequency standards
- ∞ storage
- trapping

ion stripping

DEF A procedure following the focusing of ion beams in the target chamber of a reactor to be used for particle beam pellet fusion.

- RT heavy ions
- particle beams
- particle density (concentration)
- particles
- ∞ separation
- ∞ stripping

ion temperature

- GS temperature
- . ion temperature
- RT auroral temperature
- ionospheric temperature
- plasma temperature
- space temperature
- specific heat

ion traps (instrumentation)

- GS measuring instruments
- . ion traps (instrumentation)
- traps
- . ion traps (instrumentation)
- RT radiation counters
- vapor traps

ion-gas interactions

- USE gas-ion interactions

ionic collisions

- UF heavy ion collisions
- GS collisions
- . ionic collisions
- RT atomic collisions
- ion irradiation
- ion scattering
- particle collisions
- recoil ions

ionic conductivity

- USE ion currents

ionic crystals

- GS crystals
- . ionic crystals
- RT chemical bonds
- crystal lattices
- excitons
- lattice energy
- polarons

ionic diffusion

- GS diffusion
- . particle diffusion
- . ionic diffusion
- RT ambipolar diffusion
- diffusion waves
- electron diffusion
- ion scattering
- plasma diffusion
- self diffusion (solid state)

ionic mobility

DEF In gaseous electric conduction, the average velocity with which a given ion drifts through a specified gas under the influence of an electric field of unit strength. Mobilities are commonly expressed in units of centimeters per second per volt per centimeter.

- GS mobility
- . ionic mobility
- transport properties
- . ionic mobility
- RT ambipolar diffusion
- anions
- atomic mobilities
- cations
- electrohydrodynamics

- electrolysis
- electrolytic cells
- electromigration
- ion distribution
- ion injection
- ions
- ∞ motion
- NDM semiconductor devices
- negative ions
- positive ions

ionic propellants

- USE ion engines

ionic reactions

- RT charge transfer
- molecular interactions

ionic waves

- GS elastic waves
- . ionic waves
- RT collisionless plasmas
- electrostatic waves
- ion cyclotron radiation
- ion motion
- ionospheric conductivity
- ionospheric propagation
- plasma waves
- ∞ waves

ionization

DEF The process by which electrons are lost from or transferred to neutral molecules or atoms to form positively or negatively charged particles. Used for electron ionization.

- UF electron ionization
- GS ionization
- . autoionization
- . gas ionization
- . . . atmospheric ionization
- . . . auroral ionization
- . . . flame ionization
- . ion production rates
- . nonequilibrium ionization
- . photoionization
- . surface ionization
- RT atomic collisions
- atomic excitations
- coronas
- disintegration
- dissociation
- electric arcs
- electric corona
- electric discharges
- electric sparks
- electron attachment
- excitation
- ion charge
- ion density (concentration)
- ion emission
- ion sources
- ionospheric composition
- magnetohydrodynamics
- molecular excitation
- oxygen recombination
- Schwarzschild metric
- single event upsets
- stellar coronas
- thermal dissociation

ionization chambers

DEF Apparatus used to study the production of small ions in the atmosphere by cosmic rays and radioactive bombardment of air molecules.

- UF ion chambers
- GS ionization chambers
- . bubble chambers
- . cloud chambers
- . Geiger counters
- . proportional counters
- . spark chambers
- RT ∞ chambers
- counters
- dosimeters
- electron counters

- ionizers
- neutron counters
- radiation counters
- radiation measuring instruments
- threshold detectors (dosimeters)

ionization coefficients

- GS coefficients
- . ionization coefficients

ionization counters

- USE radiation counters

ionization cross sections

- RT absorption cross sections
- ∞ cross sections
- nonadiabatic theory
- scattering cross sections

ionization frequencies

- GS frequencies
- . ionization frequencies

ionization gages

DEF Vacuum gages with a means of ionizing the gas molecules and a means of correlating the number and type of ions produced with the pressure of the gas. Various types of ionization gages are distinguished according to the method of producing the ionization. Used for ion gages.

- UF ion gages
- GS measuring instruments
- . pressure gages
- . . . vacuum gages
- . . . ionization gages
- alphatrons
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- vacuum apparatus
- . vacuum gages
- . . ionization gages
- . . . alphatrons
- . . . Bayard-Alpert ionization gages
- . . . Penning gages
- . . . Philips ionization gages
- RT hot cathodes
- Knudsen gages
- Mcleod gages
- orbitrons
- Pirani gages
- pressure measurement

ionization potentials

DEF The energy required to ionize an atom or molecule. The energy is usually given in terms of electron volts.

- GS potential energy
- . ionization potentials
- RT activation
- electric potential
- nuclear binding energy
- ∞ potential
- Saha equations
- work functions

ionized gases

- SN (LIMITED TO PARTIALLY IONIZED GASES; SEE PLASMAS (PHYSICS) FOR COMPLETELY IONIZED MATTER)
- GS gases
- . ionized gases
- . . Lorentz gas
- particles
- . charged particles
- . . ionized gases
- . . . Lorentz gas
- RT cosmic gases
- electron gas
- Fokker-Planck equation
- gas ionization
- gas temperature
- H II regions
- high temperature gases
- neutral gases
- plasmas (physics)

recombination coefficient

space plasmas
Venus atmosphere

plasma conductivity

ionized plasmas

USE **plasmas (physics)**

ionizers

DEF Filaments, grids, or porous bodies in ion engines or other devices which strip electrons from the outer shells of neutral atoms to form positively charged ions.

RT ∞ filaments
gas ionization
∞ grids
ion engines
ionization chambers
surface ionization
tube grids

ionizing radiation

DEF Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter.

GS **ionizing radiation**

. alpha particles
. beta particles
. cosmic rays
. . cosmic ray showers
. . galactic cosmic rays
. . gamma ray bursts
. . primary cosmic rays
. . . solar cosmic rays
. . secondary cosmic rays
. gamma ray beams
. gamma rays
. . gamma ray bursts
. x rays
. . cosmic x rays
. . solar x-rays

RT absorption spectra
avalanches
beams (radiation)
coherent electromagnetic radiation
corpuscular radiation
electromagnetic radiation
electron beams
elementary particles
emission
extreme ultraviolet radiation
fluence
gamma ray absorption
gamma ray spectra
ion sources
irradiation
linear energy transfer (LET)
monochromatic radiation
nuclear radiation
particle trajectories
∞ radiation
radiation belts
radiation counters
radiation damage
radiation hazards
radioactive materials
radioactivity
radiochemistry
relativistic electron beams
solar radiation
sterilization
system generated electromagnetic pulses

ionograms

RT ion density (concentration)
ionosondes
riometers

ionopause

SN (EXCLUDES PLASMAPAUSE)

DEF The upper boundary of the ionosphere of certain planets (excluding the Earth) and comets where electrons decline sharply. The Earth's ionopause is referred to as the plasmopause. (Excludes plasmopause.)

RT cometary atmospheres
planetary atmospheres
plasmopause

ionosondes

DEF An HF radar that sweeps or steps through all or part of the frequency range from 0.3 to 30 MHz (medium and high frequency band). Transmitting pulse modulated or continuous frequency variation signals with a vertical looking antenna, it measures the delay time of echos from the ionosphere as a function of frequency. Modern digital pulse ionosondes measure not only the amplitude, but also phase or Doppler frequency, polarization, and arrival angle of the echoes.

GS measuring instruments
. meteorological instruments
. . radiosondes
. . . **ionosondes**
. sondes
. . radiosondes
. . . **ionosondes**
radio equipment
. radio transmitters
. . radiosondes
. . . **ionosondes**
transmitters
. radio transmitters
. . radiosondes
. . . **ionosondes**
RT ion probes
ionograms
ionospheric sounding
riometers
satellite sounding
sounding rockets

Ionosphere Explorer A

USE **Explorer 20 satellite**

ionosphere-magnetosphere coupling

USE **magnetosphere-ionosphere coupling**

∞ **ionospheres**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT THE TERMS LISTED BELOW)
RT Earth ionosphere
magnetosphere-ionosphere coupling
planetary ionospheres

ionospheric absorption

USE **electromagnetic absorption ionospheric propagation**

ionospheric blackout

USE **blackout (propagation)**

ionospheric composition

GS composition (property)
. atmospheric composition
. . **ionospheric composition**
RT atom concentration
chemical composition
gas composition
ionization
particle density (concentration)
plasma composition
satellite atmospheres

ionospheric conductivity

GS electrical properties
. electrical resistivity
. . **ionospheric conductivity**
transport properties
. atmospheric conductivity
. . **ionospheric conductivity**
. electrical resistivity
. . **ionospheric conductivity**

RT ∞ conductivity
electrojets
ionic waves

ionospheric cross modulation

GS electromagnetic interference
. crosstalk
. . **ionospheric cross modulation**
. radio frequency interference
. . **ionospheric cross modulation**
modulation
. **ionospheric cross modulation**
RT Luxembourg effect

ionospheric currents

GS electric current
. **ionospheric currents**
. Birkeland currents
. electrojets
. . auroral electrojets
. . equatorial electrojet
. Pedersen currents
electricity
. atmospheric electricity
. . **ionospheric currents**
. . Birkeland currents
. . electrojets
. . . auroral electrojets
. . . equatorial electrojet
. . Pedersen currents
RT field aligned currents
plasma currents
traveling ionospheric disturbances

ionospheric disturbances

GS **ionospheric disturbances**
. ionospheric storms
. sudden ionospheric disturbances
. traveling ionospheric disturbances
RT Birkeland currents
blackout (propagation)
∞ disturbances
ionospheric noise
magnetic variations
space weather

ionospheric drift

RT ∞ drift
drift rate
electrojets
magnetic rigidity
polarization (charge separation)
radiation belts

ionospheric electron density

GS density (number/volume)
. particle density (concentration)
. electron density (concentration)
. . **ionospheric electron density**
RT Ariel 4 satellite
magnetospheric electron density

ionospheric F-scatter propagation

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **ionospheric F-scatter propagation**
transmission
. electromagnetic wave transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. scatter propagation
. . . **ionospheric F-scatter propagation**
. signal transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. wave propagation
. . ionospheric propagation
. . . **ionospheric F-scatter propagation**
. scatter propagation

ionospheric heating

... **ionospheric F-scatter propagation**

ionospheric heating

- GS heating
 - . **ionospheric heating**
- RT atmospheric radiation
 - plasma heating

ionospheric ion density

- GS density (number/volume)
 - . particle density (concentration)
 - . . ion density (concentration)
 - . . . **ionospheric ion density**
- RT magnetospheric ion density
 - positive ions

ionospheric noise

- GS atmospheric radiation
 - . **ionospheric noise**
 - . . whistlers
 - electromagnetic interference
 - . radio frequency interference
 - . . electromagnetic noise
 - . . . **ionospheric noise**
 - whistlers
- RT background noise
 - background radiation
 - ionospheric disturbances
 - riometers
 - sky waves

ionospheric propagation

- UF *ionospheric absorption*
 - ionospheric reflection*
- GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **ionospheric propagation**
 - ionospheric F-scatter propagation
 - . signal transmission
 - . . radio transmission
 - . . . **ionospheric propagation**
 - ionospheric F-scatter propagation
 - . wave propagation
 - . . **ionospheric propagation**
 - . . . ionospheric F-scatter propagation
- RT antipodes
 - Earth ionosphere
 - Earth-ionosphere waveguide
 - EISCAT radar system (Europe)
 - ionic waves
 - lossy media
 - Luxembourg effect
 - magnetoionics
 - ORBIS
 - ORBIS CAL satellite
 - polar radio blackout
 - riometers
 - scatter propagation
 - signal measurement
 - traveling ionospheric disturbances

ionospheric reflection

- USE **ionospheric propagation**

ionospheric sounding

- GS sounding
 - . **ionospheric sounding**
- RT Alouette 1 satellite
 - Alouette 2 satellite
 - Alouette project
 - Ariel 4 satellite
 - atmospheric sounding
 - ionosondes
 - ORBIS
 - ORBIS CAL satellite
 - rocket sounding
 - satellite sounding

ionospheric storms

- DEF Disturbances of the ionosphere, resulting in anomalous variations in its characteristics and effects on radio communication.

- GS ionospheric disturbances
 - . **ionospheric storms**
 - . . sudden ionospheric disturbances storms
 - . . . **ionospheric storms**
 - sudden ionospheric disturbances
- RT ∞ disturbances
 - Earth ionosphere
 - ionospheric
 - noise storms
 - solar storms
 - spread F
 - traveling ionospheric disturbances

ionospheric temperature

- GS temperature
 - . atmospheric temperature
 - . . **ionospheric temperature**
- RT auroral temperature
 - electron energy
 - ion temperature

ionospheric tilts

- DEF Ionospheric conditions where the variability of the number of the electrons as a function of altitude is present. Ionospheric tilts are sometimes created by traveling ionospheric disturbances (TID's) and ionospheric tilts deflect radio waves in unexpected directions adversely affecting radio reception.
- RT traveling ionospheric disturbances

ionospherics

- GS electromagnetic interference
 - . radio frequency interference
 - . . electromagnetic noise
 - . . . atmospherics
 - **ionospherics**
 - dawn chorus
 - hiss
- RT ionospheric storms
 - radio auroras

ions

- DEF Charged atoms or molecularly bound groups of atoms; sometimes also free electrons or other charged subatomic particles. In atmospheric electricity, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures.

- UF *multicharged ions*
- GS **ions**
 - . cesium ions
 - . deuterons
 - . heavy ions
 - . helium ions
 - . hydrogen ions
 - . light ions
 - . metal ions
 - . . ferric ions
 - . . manganese ions
 - . . molecular ions
 - . . . formyl ions
 - . . hydronium ions
 - . . vanadyl radical
 - . . negative ions
 - . . anions
 - . . nitrogen ions
 - . . oxygen ions
 - . . positive ions
 - . . . cations
 - formyl ions
 - vanadyl radical
 - . . hydronium ions
 - . . recoil ions
 - . . tritons
 - . . trivalent ions
- RT alpha particles

- atoms
- chemical elements
- corpuscular radiation
- electrolytes
- free radicals
- hydroxyl radicals
- ion implantation
- ion plating
- ionic mobility
- molecules
- monatomic molecules
- nuclei (nuclear physics)
- particles
- plasmas (physics)
- polyatomic molecules
- protons
- valence

Iowa

- GS nations
 - . United States
 - . . **Iowa**
- RT Cedar Rapids (IA)
 - Missouri River (US)

IP (impact prediction)

- USE **computerized simulation**

IPAD

- SN (INTEGRATED PROGRAM FOR AEROSPACE VEHICLE DESIGN)
- UF *Integ Program for Aerospace Veh Design*
- GS computer techniques
 - . computer aided design
 - . . **IPAD**
 - . . . spacecraft design
 - **IPAD**
- RT ∞ design

IPG (NASA Information Power Grid)
(added December 2003)

- USE **grid computing (computer networks)**

IQSY (international year)

- USE **International Quiet Sun Year**

IR lasers

- USE **infrared lasers**

Iran

- GS nations
 - . **Iran**
- RT Asia

Iraq

- GS nations
 - . **Iraq**
- RT Asia

IRAS

- USE **Infrared Astronomy Satellite**

IRAS-Araki-Alcock comet

- DEF The closest known approaching comet to the Earth since 1770, it was the fourth comet discovered in 1983 and is named after its first three discoverers: The infrared astronomy satellite, Genichi Araki (a Japanese school teacher) and George Alcock (a veteran English amateur observer).
- GS celestial bodies
 - . comets
 - . . **IRAS-Araki-Alcock comet**
- RT Infrared Astronomy Satellite

- solar system
- satellite communication
- telephony
- wireless communication
- . iron
- . . iron isotopes
- . . . **iron 59**
- . nuclides
- . . isotopes
- . . . iron isotopes
- **iron 59**
- radioactive isotopes
- **iron 59**
- metals
- . transition metals
- . . iron
- . . . iron isotopes
- **iron 59**
- iron alloys**
- UF *ferroalloys*
- GS alloys
- . **iron alloys**
- . . steels
- . . . bainitic steel
- . . . carbon steels
- low carbon steels
- . . . chromium steels
- . . . Croloy
- . . . high strength steels
- . . . maraging steels
- . . . nickel steels
- . . . stainless steels
- austenitic stainless steels
- ferritic stainless steels
- martensitic stainless steels
- RT austenite
- bainite
- bearing alloys
- cementite
- ferrites
- Hastelloy (trademark)
- Inconel (trademark)
- iron aluminides
- kamacite
- martensite
- monimonic alloys
- pearlite
- Permalloys (trademark)
- silicon alloys
- Zircalloys (trademark)
- iron aluminides**
- (added December 2000)
- GS aluminum compounds
- . aluminides
- . . **iron aluminides**
- iron compounds
- . **iron aluminides**
- RT aluminide alloys
- intermetallics
- iron alloys
- iron chlorides**
- GS halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **iron chlorides**
- . halides
- . . chlorides
- . . . **iron chlorides**
- . . metal halides
- . . . **iron chlorides**
- iron compounds
- . **iron chlorides**
- iron compounds**
- GS **iron compounds**
- . cohenite
- . cordierite
- . fayalite
- . ferrates
- . . barium ferrates
- . ferrites
- . ferrocenes
- . . alkylferrocene
- . iron chlorides
- . iron cyanides
- . iron oxides
- . . hematite
- irasers
- USE **infrared lasers**
- IRBM (missiles)
- USE **intermediate range ballistic missiles**
- Ireland**
- GS landforms
- . islands
- . . **Ireland**
- nations
- . **Ireland**
- iridescence**
- GS electromagnetic properties
- . optical properties
- . . color
- . . . **iridescence**
- RT opalescence
- iridium**
- GS chemical elements
- . **iridium**
- . . iridium isotopes
- metals
- . refractory metals
- . . **iridium**
- . . . iridium isotopes
- . transition metals
- . . **iridium**
- . . . iridium isotopes
- refractory materials
- . refractory metals
- . . **iridium**
- . . . iridium isotopes
- iridium alloys**
- (added July 1991)
- GS alloys
- . **iridium alloys**
- RT platinum alloys
- iridium compounds**
- (added July 1991)
- RT ∞ chemical compounds
- ∞ Group 8 compounds
- ∞ metal compounds
- iridium isotopes**
- GS chemical elements
- . iridium
- . . **iridium isotopes**
- . nuclides
- . . isotopes
- . . . **iridium isotopes**
- metals
- . refractory metals
- . . iridium
- . . . **iridium isotopes**
- . transition metals
- . . iridium
- . . . **iridium isotopes**
- refractory materials
- . refractory metals
- . . iridium
- . . . **iridium isotopes**
- Iridium network**
- (added December 1998)
- DEF A 66-satellite wireless personal telecommunications network designed to provide worldwide telephone, paging, facsimile and data services to handheld or mobile equipment.
- UF *Iridium satellites*
- GS networks
- . communication networks
- . . **Iridium network**
- . satellite networks
- . . satellite constellations
- . . . **Iridium network**
- RT communication satellites
- facsimile communication
- mobile communication systems
- Iridium satellites**
- (added December 1998)
- USE **communication satellites**
- Iridium network**
- IRIS satellites**
- GS artificial satellites
- . **IRIS satellites**
- RT European space programs
- satellite observation
- solar activity
- solar cycles
- solar energy
- solar flares
- solar radiation
- solar sensors
- irises (mechanical apertures)**
- GS openings
- . apertures
- . . **irises (mechanical apertures)**
- RT camera shutters
- waveguide windows
- waveguides
- IRM**
- USE **information resources management**
- iron**
- GS chemical elements
- . **iron**
- . . iron isotopes
- . . . iron 57
- . . . iron 58
- . . . iron 59
- metals
- . transition metals
- . . **iron**
- . . . iron isotopes
- iron 57
- iron 58
- iron 59
- RT ferric ions
- ferrous metals
- hydrogen embrittlement
- low carbon steels
- siderophile elements
- iron 57**
- GS chemical elements
- . iron
- . . iron isotopes
- . . . **iron 57**
- . nuclides
- . . isotopes
- . . . iron isotopes
- **iron 57**
- metals
- . transition metals
- . . iron
- . . . iron isotopes
- **iron 57**
- iron 58**
- DEF A radioactive isotope of iron.
- GS chemical elements
- . iron
- . . iron isotopes
- . . . **iron 58**
- . nuclides
- . . isotopes
- . . . iron isotopes
- **iron 58**
- metals
- . transition metals
- . . iron
- . . . iron isotopes
- **iron 58**
- iron 59**
- GS chemical elements

iron cyanides

- . . ilmenite
- . . magnetite
- . limonite
- . pyrites
- . pyrrhotite
- . . troilite
- . iron aluminides
- . schreibersite
- . siderites
- RT ∞ chemical compounds
- ∞ Group 8 compounds
- ∞ metal compounds

iron cyanides

- GS cyanides
 - . iron cyanides
 - iron compounds
 - . iron cyanides

iron isotopes

- GS chemical elements
 - . iron
 - . . iron isotopes
 - . . . iron 57
 - . . . iron 58
 - . . . iron 59
 - . nuclides
 - . . isotopes
 - . . . iron isotopes
 - iron 57
 - iron 58
 - iron 59
 - metals
 - . transition metals
 - . . iron
 - . . . iron isotopes
 - iron 57
 - iron 58
 - iron 59
- RT ferrous metals

iron meteorites

- UF *siderite meteorites*
- GS celestial bodies
 - . meteorites
 - . . iron meteorites
 - . . . Aroos meteorite
 - . . . Lazarev meteorite
 - . . . Odessa meteorite
 - . . . Sikhote-Alin meteorite
- RT achondrites
 - Harleton meteorite
 - kamacite
 - meteoritic composition
 - meteoritic microstructures
 - Okhansk meteorite
 - schreibersite
 - stony meteorites
 - stony-iron meteorites
 - troilite
 - Widmanstätten structure

iron ores

- GS minerals
 - . iron ores
 - . . hematite

iron oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . iron oxides
 - hematite
 - ilmenite
 - magnetite
 - iron compounds
 - . iron oxides
 - . . hematite
 - . . ilmenite
 - . . magnetite

Iroquois helicopter

- USE UH-1 helicopter

irradiance

- SN (LIMITED TO DETECTION RATE PER

UNIT AREA OF RADIATION)
DEF The detection rate per unit area of radiation.

- GS rates (per time)
 - . flux density
 - . . radiant flux density
 - . . . irradiance
 - illuminance
 - solar constant
- RT electron flux density
- luminance
- luminous intensity
- neutron flux density
- photosynthetically active radiation
- proton flux density
- radiance
- Solar Backscatter UV Spectrometer
- solar flux density

irradiation

- GS irradiation
 - . auroral irradiation
 - . electron irradiation
 - . ion irradiation
 - . . deuteron irradiation
 - . . proton irradiation
 - . neutron irradiation
 - . x ray irradiation
- RT activation
- beams (radiation)
- ∞ bombardment
- dosimeters
- electromagnetic absorption
- electron probes
- emission
- excitation
- exposure
- flux density
- ionizing radiation
- laser induced fluorescence
- nuclear capture
- nuclear fusion
- nuclear radiation
- preserving
- ∞ radiation
- radiation dosage
- radiation effects
- radiation measurement
- radiation tolerance
- radiobiology
- radiography
- targets

irrationality

- RT disorientation
- dithers
- mental performance
- prejudices
- psychoses
- schizophrenia

irregular galaxies

DEF Galaxies with amorphous structure and with relatively low mass (10 to the 8th to 10 to the 10th solar masses). Fewer than 10 per cent of all galaxies are classified as irregular.

- GS celestial bodies
 - . galaxies
 - . . irregular galaxies
- RT BL Lacertae objects
- galactic radiation
- galactic rotation
- galactic structure
- Gum nebula
- Hubble constant
- Hubble diagram
- nebulae
- Orion nebula
- Population I stars
- quasars
- radio sources (astronomy)
- red shift
- star clusters
- stars

irregular variable stars

- GS celestial bodies

- . stars
 - . . variable stars
 - . . . irregular variable stars
 - R Coronae Borealis stars
- RT carbon stars
- semiregular variable stars

irregularities

- RT abnormalities
- defects
- deviation
- nonuniformity
- regularity

irreversible processes

- RT nonequilibrium thermodynamics
- Onsager relationship
- reaction kinetics
- thermodynamics
- thermoviscoelasticity
- variational principles

irrigation

- RT agriculture
- alfalfa
- barley
- canals
- citrus trees
- corn
- crop vigor
- ditches
- drainage
- drainage patterns
- farm crops
- farmlands
- oats
- orchards
- ponds
- seepage
- sugar beets
- sugar cane
- troughs
- vegetation growth
- vineyards
- water consumption

irritation

- GS irritation
 - . toxicity and safety hazard
- RT ∞ reaction

irrotational flow

- USE potential flow

IRS (Indian spacecraft)

- USE Indian spacecraft

ISAGEX

- USE International Satellite Geodesy Experiment

ISCCP Project

- (added August 1991)
- UF *International Satellite Cloud Climatology*
- GS programs
 - . projects
 - . . ISCCP Project
- RT climatology
- cloud cover
- clouds (meteorology)
- GOES satellites
- METEOSAT satellite
- remote sensing
- satellite observation

ischemia

- RT anemias
- blood circulation
- congestion

- vasoconstriction
- ISEE*
USE **International Sun Earth Explorers**
- isentrope**
DEF A line of equal or constant pressure, with respect to either space or time.
RT adiabatic conditions
isentropic processes
Mollier diagram
Poisson equation
- isentropic processes**
GS **isentropic processes**
. nonisentropic
RT Bernoulli theorem
isentrope
isoenergetic processes
isopycnic processes
∞ processes
thermodynamic equilibrium
- Ising model**
RT antiferromagnetism
cluster variation method
crystal lattices
ferromagnetism
particle spin
phase transformations
statistical mechanics
- ISIS satellites**
SN (INTERNATIONAL SATELLITES FOR IONOSPHERIC STUDY)
UF *International Sats for Ionospheric Study*
GS artificial satellites
. **ISIS satellites**
. . Alouette 2 satellite
. . ISIS-A
. . ISIS-B
. . ISIS-X
RT Alouette satellites
- ISIS-A**
GS artificial satellites
. ISIS satellites
. . **ISIS-A**
RT Alouette project
- ISIS-B**
GS artificial satellites
. ISIS satellites
. . **ISIS-B**
- ISIS-X**
GS artificial satellites
. ISIS satellites
. . **ISIS-X**
RT Alouette B satellite
- Iskra aircraft*
USE **TS-11 aircraft**
- island arcs**
GS landforms
. **island arcs**
RT Aleutian Islands (US)
∞ arcs
barriers (landforms)
islands
keys (islands)
lagoons
reefs
- islands**
DEF Tracts of land smaller than a continent, surrounded by the water of oceans, seas, lakes, or streams. The term has been loosely applied to land-tied and submerged areas, and to land cut off on two or more sides by water, such as peninsulas.
GS landforms
. **islands**
. . Aleutian Islands (US)
- . . Assateague Island (MD-VA)
. . atolls
. . Azores
. . Bahrain
. . Bermuda
. . Canary Islands
. . Cyprus
. . Greenland
. . Hawaii
. . Iceland
. . Indonesia
. . Ireland
. . keys (islands)
. . Long Island (NY)
. . Madagascar
. . Maldives Islands
. . Malta
. . Mauritius
. . Merritt Island (FL)
. . Newfoundland
. . nunataks
. . Pacific islands
. . . Guam
. . . Japan
. . . Johnston Island
. . . Kurile Islands
. . . New Guinea (island)
. . . New Zealand
. . . Philippines
. . . Samoa
. . . Prince Edward Island
. . . Seychelles
. . . Sicily
. . . Tasmania
. . . Wallops Island
. . West Indies
. . . Antigua and Barbuda
. . . Bahamas
. . . Barbados
. . . Cuba
. . . Dominica
. . . Grenada
. . . Guadeloupe
. . . Haiti
. . . Jamaica
. . . Lesser Antilles
. . . Martinique
. . . Puerto Rico
. . . Trinidad and Tobago
. . . Virgin Islands
RT archipelagoes
Cape Verde
coral reefs
island arcs
lagoons
Outer Banks (NC)
reefs
seamounts
- ISMU (resource utilization)*
(added August 2001)
USE **in situ resource utilization**
- ∞ **isobars**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT baroclinity
barotropism
isobars (pressure)
nuclear isobars
polytropic processes
- isobars (pressure)**
DEF Lines of equal or constant pressure, specifically, such lines on a weather map.
RT atmospheric pressure
geostrophic wind
gradients
∞ isobars
isochoric processes
isopycnic processes
isothermal processes
meteorological charts
pressure
pressure distribution
- pressure gradients
- isobutane*
(added March 1996)
USE **butanes**
- isobutylene*
USE **butenes**
- isochoric processes**
RT isobars (pressure)
isopycnic processes
thermodynamic equilibrium
volume
- isochromatics**
RT color
dichroism
diffraction
interferometry
refraction
speckle interferometry
- isocyanates**
GS esters
. **isocyanates**
. . diisocyanates
. . fulminates
nitrogen compounds
. cyano compounds
. . **isocyanates**
. . . diisocyanates
. . . fulminates
- isoelectronic sequence**
RT atomic structure
spectra
spectroscopy
- isoenergetic processes**
RT adiabatic conditions
isentropic processes
thermodynamic equilibrium
- isolation**
GS **isolation**
. social isolation
RT confinement
confining
deprivation
disposal
exclusion
exclusion
gnotobiotics
insulation
isolators
∞ separation
spacing
- isolators**
GS **isolators**
. vibration isolators
RT attenuators
insulation
isolation
noise reduction
shock absorbers
spacers
suppressors
vibration
- isomerization**
DEF Process for converting hydrocarbon or other organic compound to an isomer.
GS **isomerization**
. ortho para conversion
RT ∞ conversion
refining
- isomers**
DEF Nuclides having the same mass number A and atomic number Z, but existing for measurable times in different quantum states with different energies and radioactive properties. Molecules having the same atomic composition and molecular weight, but differing in

isomorphism

geometrical configuration.

- GS **isomers**
 - . enantiomers
- RT atoms
 - congeners
 - isopropyl alcohol
 - nuclear chemistry
 - phenanthrene
 - stereochemistry
 - tautomers

isomorphism

- UF *morphotropism*
- GS morphology
 - . **isomorphism**
- RT crystal lattices
 - crystal structure
 - duality theorem
 - enantiomers
 - homomorphisms

isoparametric finite elements

DEF The basis for the calculation of physical properties of structural shapes including stress analyses.

- RT conformal mapping
 - coordinate transformations
- ∞ elements
 - finite element method
 - fracture mechanics
 - numerical analysis
 - stress analysis

isoperimetric problem

- RT analytic functions
 - continuity (mathematics)
 - Lagrange multipliers
 - matrices (mathematics)
- ∞ problems
 - topology

isophotes

- RT ∞ illumination

isopleths

- USE **nomographs**

isopropyl alcohol

- GS hydroxyl compounds
 - . alcohols
 - . . **isopropyl alcohol**
- isopropyl compounds
 - . **isopropyl alcohol**
- RT isomers

isopropyl compounds

- GS **isopropyl compounds**
 - . isopropyl alcohol
- RT ∞ chemical compounds

isopropyl nitrate

- GS alkyl compounds
 - . **isopropyl nitrate**
- esters
 - . nitrate esters
 - . . **isopropyl nitrate**
- nitrogen compounds
 - . nitrate esters
 - . . **isopropyl nitrate**

isopycnic processes

- UF *isosteric processes*
- RT density (mass/volume)
 - isentropic processes
 - isobars (pressure)
 - isochoric processes

isostasy

DEF A supposed equality existing in vertical sections of the Earth, whereby the weight of any column from the surface of the Earth to a constant depth is approximately the same as that of any other column of equal area, the equilibrium being maintained by plastic flow from one part of the Earth to another.

- RT ∞ equilibrium

geomorphology
geophysics
glaciology
gravitation
hydrostatics
orography
seismology
subsidence

isostatic pressure

- GS pressure
 - . **isostatic pressure**
- RT atmospheric pressure
 - hot isostatic pressing
 - hydrostatic pressure
 - static pressure

isosteric processes

- USE **isopycnic processes**

isotenoid structures

DEF Filamentary structures in which the filaments are uniformly stressed throughout for the design loading conditions.

- RT composite wrapping
 - filament winding
 - pressure vessels
 - prestressing
 - shells (structural forms)
 - spiral wrapping
- ∞ structures
 - tensegrity structures

isothermal flow

- GS fluid flow
 - . **isothermal flow**
- RT flow distribution
 - isotherms
 - temperature distribution

isothermal layers

- RT isotherms
 - laminar boundary layer
 - stratosphere
 - stratospheric warming
 - temperature distribution
 - temperature gradients
 - thermal mapping
 - tropopause

isothermal processes

DEF Thermodynamic changes of state of a system that take place at constant temperature.

- RT adiabatic conditions
 - isobars (pressure)
 - isotherms
 - thermodynamic equilibrium

isotherms

DEF Lines connecting points of equal temperature.

- RT Atmospheric & Oceanographic Inform Sys
 - atmospheric temperature gradients
 - isothermal flow
 - isothermal layers
 - isothermal processes
 - meteorological parameters
 - meteorology
 - temperature
 - temperature distribution
 - temperature gradients
 - thermal mapping
 - thermodynamics

isotonicity

- RT body fluids
 - osmosis

isotope abundance ratios

- USE **isotope ratios**

isotope effect

- UF *isotope shift*
- RT ∞ effects

isotopes
radioactive isotopes

isotope ratios

- (added March 1995)
- UF *isotope abundance ratios*
 - isotopic analysis (quantitative)*
- GS composition (property)
 - . **isotope ratios**
 - ratios
 - . **isotope ratios**
- RT atmospheric composition
 - cosmochemistry
 - geochemistry
 - geochronology
 - interstellar chemistry
 - meteoritic composition
 - stellar composition

isotope separation

- RT atoms
 - heavy ions
 - ion exchanging
 - ion extraction
 - isotopes
 - jet membrane process

isotope shift

- USE **isotope effect**

isotopes

DEF Different forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope.

- GS chemical elements
 - . nuclides
 - . . **isotopes**
 - . . . aluminum isotopes
 - aluminum 26
 - aluminum 27
 - . . . antimony isotopes
 - . . . argon isotopes
 - . . . arsenic isotopes
 - . . . barium isotopes
 - . . . beryllium isotopes
 - beryllium 7
 - beryllium 9
 - beryllium 10
 - . . . bismuth isotopes
 - . . . boron isotopes
 - boron 10
 - . . . bromine isotopes
 - . . . cadmium isotopes
 - . . . calcium isotopes
 - . . . carbon isotopes
 - carbon 12
 - carbon 13
 - carbon 14
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . . cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . . . cesium vapor
 - . . . chromium isotopes
 - . . . cobalt isotopes
 - cobalt 58
 - cobalt 60
 - . . . dysprosium isotopes
 - . . . erbium isotopes
 - . . . europium isotopes
 - . . . fluorine isotopes
 - . . . gadolinium isotopes
 - . . . gallium isotopes
 - . . . germanium isotopes
 - . . . gold isotopes
 - gold 198
 - . . . hafnium isotopes
 - . . . helium isotopes
 - . . . holmium isotopes
 - . . . hydrogen isotopes
 - deuterium

- ... hydrogen 4
 - ... metallic hydrogen
 - ... tritium
 - ... iodine isotopes
 - ... iodine 125
 - ... iodine 131
 - ... iodine 132
 - ... iridium isotopes
 - ... iron isotopes
 - ... iron 57
 - ... iron 58
 - ... iron 59
 - ... krypton isotopes
 - ... krypton 85
 - ... lanthanum isotopes
 - ... lead isotopes
 - ... lithium isotopes
 - ... lutetium
 - ... lutetium isotopes
 - ... magnesium isotopes
 - ... manganese isotopes
 - ... mercury isotopes
 - ... molybdenum isotopes
 - ... neodymium isotopes
 - ... neon isotopes
 - ... nickel isotopes
 - ... niobium isotopes
 - ... niobium 95
 - ... nitrogen isotopes
 - ... nitrogen 15
 - ... nitrogen 16
 - ... nobelium isotopes
 - ... osmium isotopes
 - ... oxygen isotopes
 - ... oxygen 17
 - ... oxygen 18
 - ... palladium isotopes
 - ... phosphorus isotopes
 - ... phosphorus 32
 - ... platinum isotopes
 - ... polonium isotopes
 - ... polonium 208
 - ... polonium 209
 - ... polonium 210
 - ... potassium isotopes
 - ... potassium 38
 - ... potassium 39
 - ... potassium 40
 - ... praseodymium isotopes
 - ... promethium isotopes
 - ... protactinium isotopes
 - ... radioactive isotopes
 - ... astatine isotopes
 - ... beryllium 7
 - ... beryllium 9
 - ... beryllium 10
 - ... carbon 14
 - ... cerium 137
 - ... cerium 144
 - ... cesium 134
 - ... cesium 137
 - ... cesium 144
 - ... cobalt 58
 - ... cobalt 60
 - ... copper isotopes
 - ... gold 198
 - ... indium isotopes
 - ... iodine 125
 - ... iodine 131
 - ... iodine 132
 - ... iron 59
 - ... krypton 85
 - ... niobium 95
 - ... nitrogen 16
 - ... phosphorus 32
 - ... polonium 208
 - ... polonium 209
 - ... polonium 210
 - ... potassium 38
 - ... potassium 40
 - ... rubidium 86
 - ... sodium 22
 - ... sodium 24
 - ... strontium 85
 - ... strontium 88
 - ... strontium 89
 - ... strontium 90
 - ... transuranium elements
 - ... americium
 - ... americium isotopes
 - ... americium 241
 - ... berkelium
 - ... californium
 - ... californium isotopes
 - ... curium
 - ... curium isotopes
 - ... curium 242
 - ... curium 244
 - ... einsteinium
 - ... fermium
 - ... lawrencium
 - ... mendelevium
 - ... neptunium
 - ... neptunium isotopes
 - ... nobelium
 - ... plutonium
 - ... plutonium isotopes
 - ... plutonium 238
 - ... plutonium 239
 - ... plutonium 240
 - ... plutonium 241
 - ... plutonium 244
 - ... sergenium
 - ... tritium
 - ... uranium 232
 - ... uranium 233
 - ... uranium 238
 - ... xenon 133
 - ... xenon 135
 - ... zirconium 95
 - ... radium isotopes
 - ... radium 226
 - ... radon isotopes
 - ... rhenium isotopes
 - ... rhodium isotopes
 - ... rubidium isotopes
 - ... rubidium 86
 - ... ruthenium isotopes
 - ... samarium isotopes
 - ... scandium isotopes
 - ... selenium isotopes
 - ... silicon isotopes
 - ... silver isotopes
 - ... sodium isotopes
 - ... sodium 22
 - ... sodium 24
 - ... strontium isotopes
 - ... strontium 85
 - ... strontium 87
 - ... strontium 89
 - ... strontium 90
 - ... sulfur isotopes
 - ... tantalum isotopes
 - ... technetium isotopes
 - ... tellurium
 - ... tellurium isotopes
 - ... terbium isotopes
 - ... thallium isotopes
 - ... thorium isotopes
 - ... thulium isotopes
 - ... tin isotopes
 - ... titanium isotopes
 - ... tungsten isotopes
 - ... uranium isotopes
 - ... uranium 232
 - ... uranium 233
 - ... uranium 234
 - ... uranium 235
 - ... uranium 238
 - ... vanadium isotopes
 - ... xenon isotopes
 - ... xenon 129
 - ... xenon 133
 - ... xenon 135
 - ... ytterbium isotopes
 - ... yttrium isotopes
 - ... zinc isotopes
 - ... zirconium isotopes
 - ... zirconium 95
- RT atoms
heavy ions
isotope effect
isotope separation
isotopic enrichment
- isotopic labeling
jet membrane process
metals
nuclear isobars
nuclei (nuclear physics)
radioactive materials
- isotopic analysis (quantitative)*
USE **isotope ratios**
- isotopic enrichment**
DEF Process by which the relative abundance of the isotopes of a given element are altered in a batch to produce a form of the element enriched in a particular isotope.
GS enrichment
. **isotopic enrichment**
. jet membrane process
RT beneficiation
chemical elements
∞ concentration
isotopes
nuclides
- isotopic labeling**
GS marking
. **isotopic labeling**
RT chemical analysis
isotopes
radioactive isotopes
radiochemistry
trace elements
∞ tracers
- isotopic spin**
GS spin
. particle spin
. **isotopic spin**
- isotropic media**
GS isotropy
. **isotropic media**
RT anisotropic media
- isotropic turbulence**
DEF Turbulence in which the products and squares of the velocity components and their derivatives are independent of direction, or, more precisely, invariant with respect to rotation and reflection of the coordinate axes in a coordinate system moving with the mean motion of the fluid.
GS turbulence
. **isotropic turbulence**
RT atmospheric turbulence
coordinate transformations
homogeneous turbulence
instrument receivers
invariant imbeddings
Kolmogorov theory
magneto-hydrodynamic turbulence
turbulent flow
- isotropism**
RT refractivity
symmetry
- isotropy**
DEF Having the same properties in all directions. Used for spatial isotropy.
UF *spatial isotropy*
GS **isotropy**
. isotropic media
RT anisotropic fluids
anisotropy
Bragg angle
crystal structure
crystallography
crystals
dendritic crystals
directivity
field strength
mechanical properties
metallography
optical properties
∞ orientation

Israel

∞ physical properties

Israel

- GS nations
 - . **Israel**
- RT Asia
 - Israeli space program
 - Israeli spacecraft

Israeli space program

- (added March 1989)
- GS programs
 - . space programs
 - . . **Israeli space program**
- RT Israel
 - Israeli spacecraft

Israeli spacecraft

- (added May 1993)
- RT Israel
 - Israeli space program
- ∞ spacecraft

ISRO

- UF *Indian Space Research Organization*
- GS organizations
 - . **ISRO**
- RT India
 - space programs

ISRU (resource utilization)

- (added August 2001)
- USE **in situ resource utilization**

ISS (space station)

- (added June 2000)
- USE **International Space Station**

isthmuses

DEF Narrow strips or necks of land, bordering on both sides by water, connecting two larger land areas, such as peninsulas and the mainland or two continents (Isthmus of Panama).

- GS land
 - . **isthmuses**
 - landforms
 - . **isthmuses**
- RT geology
 - oceanography
 - peninsulas
 - topography
 - water

ISY

- USE **International Space Year**

Italian space program

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Italian space program**
- RT Italy
 - Orbiting Frog Otolith
 - SIRIO satellite

Italy

- GS nations
 - . **Italy**
- RT Adriatic Sea
 - Alps Mountains (Europe)
 - Europe
 - Italian space program
 - San Marino
 - Sicily
 - SIRIO satellite
 - Vatican City

itching

- RT contact dermatitis

dermatitis
histamines
sensitivity
sensory perception

iteration

- GS analysis (mathematics)
 - . numerical analysis
 - . . **iteration**
 - . . . conjugate gradient method
 - . . . iterative solution
 - . . . Newton methods
 - Newton-Raphson method
 - . . . predictor-corrector methods
- RT multigrid methods
 - probability theory
 - problem solving

iterative networks

- GS circuits
 - . **iterative networks**
 - networks
 - . **iterative networks**
- RT impedance matching

iterative solution

- GS analysis (mathematics)
 - . numerical analysis
 - . . iteration
 - . . . **iterative solution**
 - . . . problem solving
 - . . . **iterative solution**
- RT asymptotic methods
 - Cholesky factorization
 - conjugate gradient method
 - finite element method
 - ill-posed problems (mathematics)
 - multigrid methods
 - Newton methods
 - predictor-corrector methods
 - sorting algorithms
 - strange attractors

ITO (semiconductors)

DEF Semiconductor devices consisting of a layer of tin sandwiched between an indium layer and an oxide layer. Used for indium-tin-oxide semiconductors.

- UF *indium-tin-oxide semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . metal oxide semiconductors
 - **ITO (semiconductors)**
 - semiconductors (materials)
 - . metal oxide semiconductors
 - . . **ITO (semiconductors)**
- RT charge coupled devices
 - charge transfer devices
 - CMOS
 - heterojunction devices
 - ion implantation
 - rectifiers
 - SOS (semiconductors)

ITOS 1

- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 1**
- RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system

ITOS 2

- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites

. . . . **ITOS 2**
RT TIROS M

- TIROS N series satellites
- TIROS operational satellite system

ITOS 3

- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 3**
- RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system

ITOS 4

- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 4**
- RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system

ITOS satellites

(added August 1990)
DEF Second generation, polar orbiting, environmental satellite used to augment NOAA's world-wide weather observation capabilities.

- UF *Improved TIROS Operational Satellites*
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . **ITOS satellites**
 - ITOS 1
 - ITOS 2
 - ITOS 3
 - ITOS 4
- RT TIROS M
 - TIROS N series satellites

IUE

- UF *International Ultraviolet Explorer SAS-D*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **IUE**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **IUE**
- RT Explorer satellites
 - Extreme Ultraviolet Explorer satellite
 - radio astronomy
 - spaceborne astronomy
 - ultraviolet radiation

IUS

- USE **Inertial Upper Stage**

Ivory Coast

- USE **Cote d'Ivoire**

Ivuna meteorite

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . carbonaceous meteorites
 - carbonaceous chondrites
 - **Ivuna meteorite**
 - chondrites
 - carbonaceous chondrites
 - **Ivuna meteorite**

Izsak ellipsoid

- USE **ellipsoids**
geodesy

J

J integral

DEF A contour energy integral formulated by Rice and used for evaluating fracture toughness of elastoplastic materials.

- GS analysis (mathematics)
 - . functional analysis
 - . integral equations
 - **J integral**
 - . real variables
 - measure and integration
 - **J integral**

- RT crack initiation
- crack propagation
- cracking (fracturing)
- creep rupture strength
- elastoplasticity
- fracture mechanics
- fracture strength
- integral calculus
- mechanical properties
- plastic deformation
- structural analysis
- toughness
- yield strength

J-2 engine

- GS engines
 - . rocket engines
 - . . . liquid propellant rocket engines
 - . . . hydrogen oxygen engines
 - **J-2 engine**

- RT Nova launch vehicles
- Saturn 1B launch vehicles
- Saturn 5 launch vehicles

J-33 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-33 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-33 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-33 engine**
 - turbomachinery
 - . **J-33 engine**

- RT Mace missiles

J-34 engine

- UF *XJ-34-WE-32 engine*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-34 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-34 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-34 engine**

J-47 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines

- **J-47 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **J-47 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **J-47 engine**

J-52 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-52 engine**
 - . aircraft engines
 - . . **J-52 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-52 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-52 engine**

J-57 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-57 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-57 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-57 engine**

- RT afterburning

J-58 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-58 engine**
 - . aircraft engines
 - . . **J-58 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-58 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-58 engine**

J-65 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-65 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines

- turbojet engines
- **J-65 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **J-65 engine**

- RT A-4 aircraft

J-69-T-25 engine

- UF *Marbore 2 engine*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-69-T-25 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-69-T-25 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-69-T-25 engine**

J-71 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-71 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-71 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-71 engine**

J-73 engine

- UF *YJ-73-GE-3 engine*
- YJ73 turbojet engine*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-73 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-73 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-73 engine**

J-75 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-75 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **J-75 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines

J-79 engine

. . . . turbojet engines
. **J-75 engine**

J-79 engine

UF *XJ-79-GE-1 engine*
YJ-79 engine
GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-79 engine**
. internal combustion engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-79 engine**
. turbine engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-79 engine**
RT F-4 aircraft

J-85 engine

UF *YJ-85 engine*
GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-85 engine**
. internal combustion engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-85 engine**
. turbine engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-85 engine**
RT Blue Goose missile
Osprey missile

J-93 engine

UF *J93-MJ252H engine*
J93-MJ280G engine
YJ-93 engine
YJ-93-GE-3 engine
GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-93 engine**
. internal combustion engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-93 engine**
. turbine engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **J-93 engine**

J93-MJ252H engine
USE **J-93 engine**

J93-MJ280G engine
USE **J-93 engine**

J-97 engine

GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . turbofan engines
. **J-97 engine**
. aircraft engines
. . **J-97 engine**
. internal combustion engines
. gas turbine engines
. jet engines

. . . . turbojet engines
. turbofan engines
. **J-97 engine**
. turbine engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . turbofan engines
. **J-97 engine**

Jabiru rocket vehicle

USE **Jaguar rocket vehicle**

jackets

SN (EXCLUDES CLOTHING)
DEF Coverings or casings of some kind. Specifically, a shell around the combustion chamber of a liquid fuel rocket, through which the propellant is circulated in regenerative cooling. Coatings of one material over another to prevent damage such as oxidation or micrometeoroid penetration.
RT absorbers (materials)
∞ casing
cooling
coverings
heating
insulation
linings
sheaths

jacking equipment

USE **jacks (lifts)**

∞ jacks

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT electric connectors
elevators (lifts)
jacks (lifts)

jacks (electrical)

USE **electric connectors**

jacks (lifts)

UF *jacking equipment*
RT ∞ jacks
∞ lifts
positioning devices (machinery)
tunneling (excavation)

Jacobi integral

GS analysis (mathematics)
. real variables
. . **Jacobi integral**
RT conformal mapping
diffusion theory
elliptic functions
Green's functions
potential theory
Weierstrass functions

Jacobi matrix method

GS analysis (mathematics)
. real variables
. . **Jacobi matrix method**
RT calculus of variations
eigenvalues
eigenvectors
Hermitian polynomial
∞ methodology

Jacobi polynomials

USE **hypergeometric functions**

Jaguar aircraft

GS attack aircraft
. fighter aircraft
. . **Jaguar aircraft**
single engine aircraft
. **Jaguar aircraft**
supersonic aircraft
. **Jaguar aircraft**
RT ∞ aircraft
Breguet aircraft

∞ military aircraft

Jaguar rocket vehicle

UF *Jabiru rocket vehicle*
GS rocket vehicles
. multistage rocket vehicles
. . **Jaguar rocket vehicle**
. sounding rockets
. . **Jaguar rocket vehicle**
RT solid propellant rocket engines

Jahn-Teller effect

DEF The effect whereby, except for linear molecules, degenerate orbital states in molecules are unstable.

RT ∞ effects
electron paramagnetic resonance
electron transitions
orbitals

Jamaica

GS landforms
. islands
. . West Indies
. . . **Jamaica**
nations
. **Jamaica**
RT Caribbean region

James Webb Space Telescope

(added October 2003)

DEF Orbiting infrared observatory comprised of an optical telescope element, integrated science instrument module, and a space support module. Successor telescope to the Hubble Space Telescope.

UF *JWST (observatory)*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **James Webb Space Telescope**
observatories
. astronomical observatories
. . astronomical satellites
. . . **James Webb Space Telescope**
telescopes
. spaceborne telescopes
. . **James Webb Space Telescope**
RT Hubble Space Telescope
infrared astronomy
infrared telescopes
Next Generation Space Telescope project
spaceborne astronomy

jammers

RT air defense
jamming
radar equipment
radio equipment

jamming

DEF Intentional transmission or reradiation of radio signals in such a way as to interfere with reception of desired signals by the intended receiver.

GS countermeasures
. **jamming**
electromagnetic interference
. **jamming**

RT clutter
electronic countermeasures
electronic warfare
frequency hopping
∞ interference
jammers
radio frequency interference
space-time adaptive processing
white noise

Janus

DEF One of the natural satellites of Saturn.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Janus**

- RT Saturn (planet)
- Janus Reactor**
 - GS nuclear reactors
 - . nuclear research and test reactors
 - .. **Janus Reactor**
- Janus spacecraft**
 - GS gliders
 - . **Janus spacecraft**
 - lifting bodies
 - . lifting reentry vehicles
 - .. **Janus spacecraft**
 - maneuverable spacecraft
 - . **Janus spacecraft**
 - manned spacecraft
 - . **Janus spacecraft**
 - reentry vehicles
 - . maneuverable reentry bodies
 - .. lifting reentry vehicles
 - ... **Janus spacecraft**
 - soft landing spacecraft
 - . **Janus spacecraft**
- Japan**
 - GS landforms
 - . islands
 - .. Pacific islands
 - ... **Japan**
 - nations
 - . **Japan**
 - RT Asia
 - . Japanese space program
 - . Japanese spacecraft
- Japanese space program**
 - GS programs
 - . space programs
 - .. **Japanese space program**
 - RT Ginga satellite
 - . HOPE aerospace plane
 - . Japan
 - . Japanese spacecraft
 - . meteorological satellites
 - ∞ research projects
 - satellite design
 - space missions
 - space transportation
 - ∞ spacecraft
 - spacecraft design
 - . Tenma satellite
- Japanese spacecraft**
 - DEF Spacecraft operated by the Japanese government. Used for MOS (Japanese spacecraft).
 - UF *MOS (Japanese spacecraft)*
 - GS **Japanese spacecraft**
 - . EXOS satellites
 - .. EXOS-A satellite
 - .. EXOS-B satellite
 - .. EXOS-C satellite
 - .. EXOS-D satellite
 - . Engineering Test Satellites
 - . Ginga satellite
 - . Nozomi Mars Orbiter
 - . Tenma satellite
 - RT Japan
 - . Japanese space program
 - ∞ spacecraft
- jarring*
 - USE **mechanical shock**
- JAS-39 aircraft**
 - (added June 1995)
 - UF *Gripen aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - .. **JAS-39 aircraft**
 - RT ∞ aircraft
 - . canard configurations
 - . Sweden
- JATO engines**
 - UF *jet assisted takeoff*
- GS engines
 - . **JATO engines**
 - launchers
 - . aircraft launching devices
 - .. **JATO engines**
- RT short takeoff aircraft
 - . solid propellant rocket engines
 - . takeoff
- Java (programming language)**
 - (added December 1998)
 - GS languages
 - . programming languages
 - .. high level languages
 - ... **Java (programming language)**
 - RT C++ (programming language)
 - . client server systems
 - . internets
 - . object-oriented programming
 - . World Wide Web
- Javelin aircraft*
 - USE **GA-5 aircraft**
- Javelin rocket vehicle**
 - GS rocket vehicles
 - . multistage rocket vehicles
 - .. **Javelin rocket vehicle**
 - RT Argo rocket vehicles
 - . rocket propelled sleds
 - . solid propellant rocket engines
 - . sounding rockets
- Jayhawk helicopter*
 - USE **H-60 Helicopter**
- JC-130 aircraft*
 - USE **C-130 aircraft**
- Jeans theory**
 - RT gravitational instability
 - ∞ theories
- jeeps*
 - USE **automobiles**
- jerboas**
 - GS animals
 - . vertebrates
 - .. mammals
 - ... rodents
 - mice
 - **jerboas**
- jet aircraft**
 - UF *jet flight*
 - turbojet aircraft*
 - GS **jet aircraft**
 - . A-2 aircraft
 - . A-3 aircraft
 - . A-4 aircraft
 - . A-5 aircraft
 - . A-6 aircraft
 - . Alpha jet aircraft
 - . AVRO 707 aircraft
 - . B-1 aircraft
 - . B-2 aircraft
 - . B-47 aircraft
 - . B-52 aircraft
 - . B-57 aircraft
 - . B-58 aircraft
 - . B-66 aircraft
 - . B-70 aircraft
 - . Boeing 747 aircraft
 - . Boeing 777 aircraft
 - . Boeing 2707 aircraft
 - . Buccaneer aircraft
 - . C-5 aircraft
 - . C-8A augmentor wing aircraft
 - . C-9 aircraft
 - . C-135 aircraft
 - . C-140 aircraft
 - . Canberra aircraft
 - . CL-41 aircraft
 - . CL-823 aircraft
 - . Comet 4 aircraft
 - . CV-880 aircraft
 - . D-558 aircraft
 - . DC 9 aircraft
 - . DC 10 aircraft
 - . DH 112 aircraft
 - . DH 115 aircraft
 - . DH 125 aircraft
 - . DHC 2 aircraft
 - . European Airbus
 - .. A-300 aircraft
 - .. A-310 aircraft
 - .. A-320 aircraft
 - .. A-330 aircraft
 - .. A-340 aircraft
 - . F-2 aircraft
 - . F-4 aircraft
 - . F-8 aircraft
 - . F-9 aircraft
 - . F-14 aircraft
 - . F-15 aircraft
 - . F-16 aircraft
 - . F-17 aircraft
 - . F-18 aircraft
 - . F-20 aircraft
 - . F-22 aircraft
 - . F-84 aircraft
 - . F-86 aircraft
 - . F-89 aircraft
 - . F-94 aircraft
 - . F-100 aircraft
 - . F-101 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-105 aircraft
 - . F-106 aircraft
 - . F-117A aircraft
 - . FD 2 aircraft
 - . G-91 aircraft
 - . G-95/4 aircraft
 - . GA-5 aircraft
 - . H-17 helicopter
 - . H-126 aircraft
 - . HFB-320 aircraft
 - . HP-115 aircraft
 - . HS-801 aircraft
 - . IL-76 aircraft
 - . IL-86 aircraft
 - . IL-96 aircraft
 - . jet provost aircraft
 - . Jetstream aircraft
 - . Jindivik target aircraft
 - . L-29 jet trainer
 - . L-1011 aircraft
 - . L-2000 aircraft
 - . Lear jet aircraft
 - . MD 11 aircraft
 - . MD 80 aircraft
 - . Mirage aircraft
 - .. Mirage 3 aircraft
 - . Mystere 50 aircraft
 - . Nord 1500 aircraft
 - . P-308 aircraft
 - . PD-808 aircraft
 - . S-3 aircraft
 - . SC-1 aircraft
 - . Scimitar aircraft
 - . T-2 aircraft
 - . T-33 aircraft
 - . T-37 aircraft
 - . T-38 aircraft
 - . T-39 aircraft
 - . TS-11 aircraft
 - . TSR-2 aircraft
 - . TU-104 aircraft
 - . TU-124 aircraft
 - . TU-154 aircraft
 - . TU-204 aircraft
 - . turbofan aircraft
 - .. A-7 aircraft
 - .. BAC 111 aircraft
 - .. Boeing 707 aircraft
 - .. Boeing 717 aircraft
 - .. Boeing 720 aircraft
 - .. Boeing 727 aircraft
 - .. Boeing 733 aircraft
 - .. Boeing 737 aircraft
 - .. Boeing 757 aircraft

jet aircraft noise

- .. Boeing 767 aircraft
- .. C-141 aircraft
- .. CL-600 challenger aircraft
- .. Concorde aircraft
- .. CV-990 aircraft
- .. DC 8 aircraft
- .. DH 121 aircraft
- .. DO-31 aircraft
- .. F-5 aircraft
- .. F-28 transport aircraft
- .. F-111 aircraft
- .. IL-62 aircraft
- .. Mystere 20 aircraft
- .. P-1127 aircraft
- .. P-1154 aircraft
- .. Saab 37 aircraft
- .. Saab 105 aircraft
- .. SE-210 aircraft
- .. TU-134 aircraft
- .. TU-144 aircraft
- .. turboprop aircraft
- .. AN-22 aircraft
- .. AN-24 aircraft
- .. Argosy MK-1 aircraft
- .. ATR-72 aircraft
- .. Breguet 941 aircraft
- .. Breguet 1150 aircraft
- .. C-2 aircraft
- .. C-130 aircraft
- .. C-133 aircraft
- .. C-160 aircraft
- .. CL-44 aircraft
- .. CL-84 aircraft
- .. DHC 5 aircraft
- .. DO-328 aircraft
- .. E-2 aircraft
- .. Electra aircraft
- .. F-27 aircraft
- .. G-222 aircraft
- .. HS-748 aircraft
- .. MH-262 aircraft
- .. OV-1 aircraft
- .. OV-10 aircraft
- .. P-3 aircraft
- .. SC-5 aircraft
- .. Viscount aircraft
- .. YS-11 aircraft
- .. U-2 aircraft
- .. Valiant aircraft
- .. Vampire MK 35 aircraft
- .. VC-10 aircraft
- .. Victor MK-1 aircraft
- .. VJ-101 aircraft
- .. Vulcan aircraft
- .. X-3 aircraft
- .. X-5 aircraft
- .. X-13 aircraft
- .. X-14 aircraft
- .. X-21 aircraft
- .. X-21A aircraft
- .. X-31 aircraft
- .. X-32 aircraft
- .. X-35 aircraft
- .. XC-142 aircraft
- .. XV-4 aircraft
- .. XV-5 aircraft
- .. XV-9A aircraft
- .. Yak 40 aircraft
- RT ∞ aircraft
- aircraft noise
- attack aircraft
- bomber aircraft
- cargo aircraft
- commercial aircraft
- fighter aircraft
- flying platforms
- general aviation aircraft
- hypersonic aircraft
- ∞ jets
- ∞ low wing aircraft
- ∞ military aircraft
- passenger aircraft
- reconnaissance aircraft
- research aircraft
- short takeoff aircraft
- ∞ subsonic aircraft
- supersonic aircraft

- tailless aircraft
- tandem wing aircraft
- training aircraft
- transport aircraft
- turbojet engines
- V/STOL aircraft
- ∞ winged vehicles
- YF-12 aircraft

jet aircraft noise

- UF *jet noise*
- GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . aircraft noise
 - **jet aircraft noise**
- RT acoustic retrofitting
- ∞ aerodynamic noise
- ∞ aircraft
 - aircraft runup
 - engine noise
 - mufflers
 - noise measurement
 - noise reduction
 - quiet engine program
 - screech tones
 - sonic booms

jet airstreams

- USE **jet streams (meteorology)**

jet amplifiers

- UF *fluid jet amplifiers*
- GS amplifiers
 - . fluid amplifiers
 - . . **jet amplifiers**
- RT Coanda effect
- ∞ fluid jets
- ∞ jet nozzles
- nozzle walls

jet assisted takeoff

- USE **JATO engines**

jet augmented wing flaps

- USE **jet flaps**
- wing flaps**

jet blast effects

- RT ∞ blasts
- ∞ effects
 - exhaust gases
 - ground effect (aerodynamics)
 - noise (sound)
 - pressure effects
 - temperature effects

jet boundaries

- GS boundaries
 - . fluid boundaries
 - . . **jet boundaries**
 - interfaces
 - . fluid boundaries
 - . . **jet boundaries**
- RT free jets
- liquid surfaces
- wall jets

jet condensers

- GS condensers (liquefiers)
 - . **jet condensers**
- RT ∞ condensers
 - liquefaction
 - nucleation
 - spray condensers
 - working fluids

jet control

- RT automatic control
- boundary layer control
- ∞ control
 - directional control
 - satellite attitude control
 - satellite control
 - thrust control

- variable thrust

jet damping

- USE **damping**
- spin reduction**

Jet Dragon aircraft

- USE **DH 125 aircraft**

jet drive

- USE **jet propulsion**

jet engine fuels

- UF *jet fuels*
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **jet engine fuels**
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . liquid fuels
 - . . . **jet engine fuels**
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
- RT aircraft fuels
 - antimisting fuels
 - gasoline
 - kerosene
 - turbines

jet engines

- SN (EXCLUDES HYDROJET ENGINES)
- DEF Broadly, engines that eject jets or streams of gas or fluids, obtaining all or most of their thrust by reaction to the ejection. Specifically, aircraft engines that derive all or most of their thrust by reaction to their ejection of combustion products (or heated air) in a jet and that obtains oxygen from the atmosphere for the combustion of their fuel (or outside air for heating, as in the case of the nuclear jet engine), distinguished in this sense from a rocket engine. Jet engines of this kind may have compressors, commonly turbine driven, to take in and compress air (turbojets), or they may be compressorless, taking in and compressing air by other means (pulsejets, ramjets).

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . **jet engines**
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turbo-ramjet engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine

jet nozzles

- fuel injection
- injectors
- ∞ jets
- mixing
- mixing layers (fluids)
- premixing
- screech tones
- two dimensional jets

jet noise

USE **jet aircraft noise**

∞ jet nozzles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT carburetors
conical nozzles
exhaust diffusers
exhaust nozzles
fuel injection
injectors
jet amplifiers
jet engines
skirts

jet pilots

USE **aircraft pilots**

jet propulsion

UF *jet drive*

GS propulsion

. **jet propulsion**

RT aircraft engines
chemical propulsion
helicopter propeller drive
marine propulsion
rocket engines
SQUID project
turbines

jet provost aircraft

UF *Hunting P-84 aircraft*
P-84 aircraft

GS attack aircraft
. fighter aircraft
. . **jet provost aircraft**
BAC aircraft
. **jet provost aircraft**
jet aircraft
. **jet provost aircraft**
monoplanes
. **jet provost aircraft**
single engine aircraft
. **jet provost aircraft**
training aircraft
. **jet provost aircraft**

RT ∞ aircraft

jet pumps

SN (EXCLUDES DEVICES USING A LIQUID OR GAS TO INDUCE MOVEMENT OF A GAS SUCH AS AIR EJECTORS)

GS pumps

. **jet pumps**

RT ejectors
fuel pumps

∞ jets

∞ pumping

turbine pumps
vacuum pumps

Jet Star aircraft

USE **C-140 aircraft**

jet streams (meteorology)

DEF Strong bands of wind or winds in the upper troposphere or in the stratosphere, moving in a general direction from west to east and often reaching velocities of hundreds of miles an hour. Used for jet airstreams.

UF *jet airstreams*

GS fluid flow

. gas flow

. . air flow

. . . air currents

. . . . **jet streams (meteorology)**

mesoscale phenomena

. **jet streams (meteorology)**

wind (meteorology)

. winds aloft

. . **jet streams (meteorology)**

RT air jets
atmospheric circulation
circumpolar westerlies
clear air turbulence
Coanda effect
fluid jets
free boundaries
turbulent jets
zonal flow (meteorology)

jet thrust

DEF The thrust of a fluid, especially as distinguished from the thrust of a propeller. Used for reaction jets.

UF *reaction jets*

GS thrust

. **jet thrust**

RT cold gas
convertible fan-shaft engines
high thrust
low thrust
microthrust
rocket thrust
static thrust
thrust loads
variable thrust

jet vanes

DEF Vanes either fixed or movable, used in a jetstream, especially in the jetstream of a rocket, for purposes of stability or control under conditions where external aerodynamic controls are ineffective. Also called blast vane.

GS control surfaces

. guide vanes

. . **jet vanes**

vanes

. guide vanes

. . **jet vanes**

RT airfoils
thrust vector control
wall jets

jetavators

USE **guide vanes**

∞ jets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT air jets
fluid jets
free jets
gas jets
injectors
jet aircraft
jet flow
jet mixing flow
jet pumps
plasma jets
sprayers
turbulent jets
two dimensional jets
wall jets

Jetstream aircraft

GS commercial aircraft

. **Jetstream aircraft**
Grumman aircraft
. **Jetstream aircraft**
jet aircraft
. **Jetstream aircraft**
passenger aircraft
. **Jetstream aircraft**

RT ∞ aircraft

jetties

USE **breakwaters**

jettison systems

RT bailout
ejection

ejection seats
escape (abandonment)
escape systems
jettisoning

∞ systems
wing tanks

jettisoning

RT bailout
disposal
dumping
ejection
emptying
escape (abandonment)
expulsion
jettison systems
spilling

JF 101 aircraft

USE **F-101 aircraft**

JFET

DEF Junction field effect transistors in which semiconductor channels of low conductivity join the source and drain and in which these channels are reduced and cut off by the junction depletion regions, which reduce the conductivity and cause a voltage to be applied between the gate electrodes. Used for junction field effect transistors.

UF *junction field effect transistors*

GS electronic equipment

. solid state devices

. . semiconductor devices

. . . transistors

. . . . field effect transistors

. **JFET**

. junction transistors

. **JFET**

RT barrier layers

∞ junctions

jigs

GS positioning devices (machinery)

. **jigs**

RT clamps
fixtures
holders
mechanical devices
tools

Jikiken satellite

USE **EXOS-B satellite**

jimsphere balloons

GS expandable structures

. inflatable structures

. . balloons

. . . high altitude balloons

. . . . **jimsphere balloons**

. . . . meteorological balloons

. **jimsphere balloons**

RT wind (meteorology)

Jindivik target aircraft

GS drone vehicles

. drone aircraft

. . target drone aircraft

. . . **Jindivik target aircraft**
jet aircraft
. **Jindivik target aircraft**
monoplanes
. **Jindivik target aircraft**
pilotless aircraft
. drone aircraft

. . target drone aircraft

. . . **Jindivik target aircraft**
targets
. **Jindivik target aircraft**

RT ∞ aircraft

remotely piloted vehicles

jitter
USE **vibration**

jobs
USE **tasks**

Jodrell Bank Observatory
DEF A large radio telescope, located near Manchester, England.
GS observatories
 . **Jodrell Bank Observatory**
RT astronomical observatories
 ground stations
 radio telescopes
 tracking stations

Johnston Island
GS landforms
 . islands
 . . Pacific islands
 . . . **Johnston Island**

joined wings
GS airfoils
 . wings
 . . **joined wings**
RT aircraft configurations
 dual wing configurations
 research aircraft
 tandem wing aircraft
 wing tips

∞ **joining**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *interconnection*
 linking
RT adhesion
 adhesive bonding
 assembling
 beam leads
 binding
 bonding
 brazing
 cold working
 couplings
 crosslinking
 fitting
 fusion (melting)
 inertia bonding
 joints (junctions)
 locking
 mooring
 mounting
 positioning
 retaining
 riveting
 sealing
 soldering
 splicing
 ultrasonic soldering
 welding
 yokes

Joint European Torus
GS nuclear reactors
 . tokamak devices
 . . **Joint European Torus**
 plasma generators
 . tokamak devices
 . . **Joint European Torus**
RT controlled fusion reactor technology

joints (anatomy)
GS anatomy
 . musculoskeletal system
 . . **joints (anatomy)**
 . . . elbow (anatomy)
 . . . knee (anatomy)
 . . . wrist
RT arthritis
 bones

connective tissue
flexors
ligaments
shoulders

joints (junctions)
UF *connections*
 shanks
GS **joints (junctions)**
 . bolted joints
 . bonded joints
 . butt joints
 . interference fit
 . lap joints
 . metal joints
 . . soldered joints
 . . welded joints
 . . . spot welds
 . riveted joints
 . scarf joints
 . seams (joints)
RT adapters
 adhesives
 balls
 barrier layers
 bellows
 bonding
 clamped structures
 closures
 connectors
 corners
 couplings
 fasteners
 fillets
 fittings
 ∞ joining
 ∞ junctions
 linkages
 metal bonding
 sleeves
 structural members
 swivels
 unions (connectors)

Jordan
GS nations
 . **Jordan**

Jordan form
GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **Jordan form**
RT eigenvalues
 linear transformations
 tensors

Josephson effect
(added April 1999)
UF *Josephson tunneling*
RT electron tunneling
 Josephson junctions
 SIS (superconductors)
 superconducting devices
 superconductors (materials)

Josephson junctions
RT high temperature superconductors
 Josephson effect
 SIS (superconductors)
 squid (detectors)
 superconductivity
 tunnel junctions

Josephson tunneling
(added April 1999)
USE **Josephson effect**

Joukowski transformation
RT airfoil profiles
 complex variables
 coordinate transformations
 Kutta-Joukowski condition

Theodorsen transformation

Joule heating
USE **ohmic dissipation**
 resistance heating

Joule-Thomson effect
DEF A change of temperature in a gas undergoing Joule-Thomson expansion.
RT cryogenics
∞ effects
 enthalpy
 gas expansion
 gas flow
 kinetic theory
 ohmic dissipation
 thermodynamic properties
 thermodynamics
 throttling

journal bearings
DEF Bearings that support the cylindrical journal of a shaft in rotating machinery.
GS bearings
 . **journal bearings**
RT antifriction bearings
 foil bearings

∞ **journals**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT news media
 periodicals
 shafts (machine elements)

journals (documents)
USE **periodicals**

journals (shafts)
USE **shafts (machine elements)**

JP-4 jet fuel
GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . jet engine fuels
 **JP-4 jet fuel**
 . . liquid fuels
 . . . jet engine fuels
 **JP-4 jet fuel**
RT JP-6 jet fuel
 JP-8 jet fuel
 RP-1 rocket propellants

JP-5 jet fuel
GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . jet engine fuels
 **JP-5 jet fuel**
 . . liquid fuels
 . . . jet engine fuels
 **JP-5 jet fuel**

JP-6 jet fuel
GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . jet engine fuels
 **JP-6 jet fuel**
 . . liquid fuels
 . . . jet engine fuels
 **JP-6 jet fuel**
RT JP-4 jet fuel
 JP-8 jet fuel

JP-7 jet fuel
(added September 1995)
GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . jet engine fuels
 **JP-7 jet fuel**
 . . liquid fuels
 . . . jet engine fuels

- RT launch vehicles
- Jupiter red spot**
 - RT gas giant planets
 - Jupiter (planet)
 - planetary surfaces
 - planets
 - surface properties
 - topography
- Jupiter rings**
 - DEF Ring structures around the planet Jupiter discovered on March 4, 1979 by Voyager 1.
 - GS celestial bodies
 - . planetary rings
 - .. **Jupiter rings**
 - RT Jupiter (planet)
 - Jupiter atmosphere
 - Jupiter satellites
 - moonlets
- planetary composition
- planetary structure
- planetology
- ∞ rings
 - Saturn rings
 - space exploration
 - Uranus rings
 - Voyager 1 spacecraft
- Jupiter satellites**
 - DEF Any or all of the natural satellites surrounding the planet Jupiter.
 - GS celestial bodies
 - . natural satellites
 - .. **Jupiter satellites**
 - ... Adrastea
 - ... Amalthea
 - ... Carme
 - ... Elara
 - ... Galilean satellites
- ... Callisto
- ... Europa
- ... Ganymede
- ... Io
- ... Himalia
- ... Leda
- ... Lysithea
- ... Metis
- ... Pasiphae
- ... Sinope
- ... Thebe
- RT icy satellites
- Jupiter (planet)
- Jupiter rings
- solar system
- JWST (observatory)*
(added October 2003)
- USE **James Webb Space Telescope**

K

K band
USE **extremely high frequencies**

K lines
GS spectra
. radiation spectra
. . . electromagnetic spectra
. . . . line spectra
. . . . **K lines**
RT absorption spectra
emission spectra
H lines

K stars
GS celestial bodies
. stars
. . . late stars
. . . . cool stars
. . . . **K stars**
RT dwarf stars
giant stars
main sequence stars
stellar spectra
supergiant stars

KA band
USE **extremely high frequencies**

Kakutani theorem
GS theorems
. **Kakutani theorem**
RT lattices (mathematics)
stochastic processes
vector spaces

Kalahari Basin (Africa)
GS landforms
. structural basins
. . . **Kalahari Basin (Africa)**
RT Africa
deserts
Republic of South Africa

Kalman filters
GS linear filters
. **Kalman filters**
RT electric filters
 ∞ filters
linear quadratic Gaussian control
linear quadratic regulator
navigation aids
optimization
reduced order filters
state estimation

Kalman-Schmidt filtering
RT ∞ applications of mathematics
feedback control
inertial platforms
navigation instruments
optimal control
optimization
remote control
stochastic processes
time series analysis

kamacite
GS alloys
. nickel alloys
. . . **kamacite**
minerals
. **kamacite**
RT iron alloys
iron meteorites
meteoritic composition

Kaman aircraft
GS **Kaman aircraft**
. H-43 helicopter
. HH-43 helicopter

. UH-2 helicopter
RT ∞ aircraft

Kaman UH-2A helicopter
USE **UH-2 helicopter**

Kampuchea
USE **Cambodia**

Kansas
GS nations
. United States
. . . **Kansas**
RT Missouri River (US)

kaolinite
DEF A hydrous silicate of aluminum. It constitutes the principle mineral in kaolin.
GS aluminum compounds
. aluminum silicates
. . . **kaolinite**
clays
. **kaolinite**
minerals
. **kaolinite**
silicon compounds
. silicates
. . . aluminum silicates
. . . . **kaolinite**
RT aluminum oxides
ion exchanging
soils

kaon production
GS particle production
. **kaon production**
RT kaons
particle accelerators

kaons
UF *k-mesons*
GS particles
. elementary particles
. . . bosons
. . . . mesons
. **kaons**
. . . hadrons
. . . . mesons
. **kaons**
. nuclear particles
. . . bosons
. . . . mesons
. **kaons**
RT baryons
charged particles
kaon production
pions
Pomeranchuk theorem

Kapitza resistance
RT ∞ resistance

Kapoeta achondrite
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . achondrites
. **Kapoeta achondrite**

Kappa 8 rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . . Kappa rocket vehicles
. . . . **Kappa 8 rocket vehicle**
. sounding rockets
. . . Kappa rocket vehicles
. . . . **Kappa 8 rocket vehicle**

RT solid propellant rocket engines

Kappa 9 rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . . Kappa rocket vehicles
. . . . **Kappa 9 rocket vehicle**
. sounding rockets
. . . Kappa rocket vehicles
. . . . **Kappa 9 rocket vehicle**
RT solid propellant rocket engines

Kappa rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . . **Kappa rocket vehicles**
. . . . Kappa 8 rocket vehicle
. . . . Kappa 9 rocket vehicle
. . . . sounding rockets
. . . . **Kappa rocket vehicles**
. . . . Kappa 8 rocket vehicle
. . . . Kappa 9 rocket vehicle
RT solid propellant rocket engines
 ∞ vehicles

kappa-epsilon turbulence model
USE **k-epsilon turbulence model**

kappa-omega turbulence model
(added June 1997)
USE **k-omega turbulence model**

Kapton (trademark)
GS nitrogen compounds
. amides
. . . polyimides
. . . . **Kapton (trademark)**
polymeric films
. **Kapton (trademark)**
RT ∞ films
plastics
 ∞ polymers

Karhunen-Loeve expansion
GS data processing
. **Karhunen-Loeve expansion**
expansion
. **Karhunen-Loeve expansion**
RT principal components analysis

Karl Fischer reagent
GS chemical tests
. chemical analysis
. . . **Karl Fischer reagent**
RT dioxides
methyl alcohol
pyridines
quantitative analysis

Karman vortex street
DEF A double trail of vortices formed alternately on both sides of a cylinder of similar body moving at right angles to its axis through a fluid, the vortices in one row rotating in a direction opposite to that of the other row. (After Theodore von Karman, 1881-1963, Hungarian born American scientist).

GS vortex streets
. **Karman vortex street**
RT aeolian tones
subsonic flow
Von Karman equation
vorticity equations

Karman-Bodewadt flow
GS fluid flow
. axisymmetric flow
. . . **Karman-Bodewadt flow**
. parallel flow
. . . three dimensional flow

- ... **Karman-Bodewadt flow**
 - . viscous flow
 - ... **Karman-Bodewadt flow**
 - translational motion
 - . three dimensional motion
 - ... three dimensional flow
 - ... **Karman-Bodewadt flow**
- RT rotating disks
- rotating fluids
- karst**
- GS landforms
- . structural basins
- ... **karst**
- ... sinkholes
- RT caves
- cavities
- kettles (geology)
- ∞ ridges
- rocks
- Kawasaki aircraft**
- RT ∞ aircraft
- Kazakhstan**
- (added August 1993)
- GS nations
- . **Kazakhstan**
- RT Asia
- KC-130 aircraft**
- USE **C-130 aircraft**
- KC-135 aircraft**
- USE **C-135 aircraft**
- keels**
- GS hydrofoils
- . **keels**
- RT boats
- hulls (structures)
- longerons
- ships
- stabilizers (fluid dynamics)
- KEL-F**
- GS halogen compounds
- . fluorine compounds
- ... fluoro compounds
- ... fluorine organic compounds
- ... fluoropolymers
- ... **KEL-F**
- organic compounds
- . fluorine organic compounds
- ... fluoropolymers
- ... **KEL-F**
- RT copolymers
- ∞ polymers
- kelp**
- USE **seaweeds**
- Kelvin waves**
- (added July 1994)
- RT atmospheric circulation
- Coriolis effect
- gravity waves
- ocean currents
- planetary waves
- ∞ waves
- Kelvin-Helmholtz instability**
- RT collisionless plasmas
- flow stability
- ∞ Helmholtz equations
- magnetohydrodynamic flow
- magnetohydrodynamic stability
- mass flow
- nonuniform plasmas
- plasmas (physics)
- superfluidity
- Kentucky**
- GS nations
- . United States
- ... **Kentucky**
- RT Ohio River (US)
- Tennessee Valley (AL-KY-TN)
- Kenya**
- GS nations
- . **Kenya**
- RT Africa
- Kepler laws**
- DEF The three empirical laws governing the motions of the planets in their orbits, discovered by Johannes Kepler (1571-1630). These are: (a) the orbits of the planets are ellipses, with the sun at a common focus; (b) as a planet moves in its orbit, the line joining the planet and the sun sweeps over equal areas in equal intervals of time (also called law of equal areas); (c) the squares of the periods of revolution of any two planets are proportional to the cubes of their mean distances from the sun.
- GS classical mechanics
- . space mechanics
- . . orbital mechanics
- ... **Kepler laws**
- laws
- . **Kepler laws**
- k-epsilon turbulence model**
- (added September 1988)
- UF *kappa-epsilon turbulence model*
- GS models
- . mathematical models
- . . turbulence models
- ... **k-epsilon turbulence model**
- RT closure law
- computational fluid dynamics
- flow equations
- k-omega turbulence model
- turbulent boundary layer
- turbulent flow
- keratins**
- GS biopolymers
- . proteins
- ... **keratins**
- organic compounds
- . proteins
- ... **keratins**
- RT hair
- wool
- keratitis**
- GS diseases
- . eye diseases
- ... **keratitis**
- . infectious diseases
- . . bacterial diseases
- ... **keratitis**
- RT conjunctiva
- cornea
- kernel functions**
- GS analysis (mathematics)
- . real variables
- ... **kernel functions**
- functions (mathematics)
- . **kernel functions**
- RT Mellin transforms
- kerogen**
- DEF Fossilized insoluble organic material found in sedimentary rocks, usually shales, which can be converted to petroleum products by distillation.
- GS organic compounds
- . **kerogen**
- resources
- . Earth resources
- ... **kerogen**
- RT fuel oils
- fuels
- gasoline
- greases
- hydrocarbon fuels
- kerosene
- lubricants
- oils
- petroleum products
- shale oil
- kerosene**
- GS fuels
- . chemical fuels
- . . liquid fuels
- ... **kerosene**
- RT antimisting fuels
- diesel fuels
- fuel oils
- gasoline
- hydrocarbon fuels
- jet engine fuels
- JP-7 jet fuel
- JP-8 jet fuel
- kerogen
- paraffins
- RP-1 rocket propellants
- shale oil
- Kerr cells**
- RT camera shutters
- ∞ cells
- ∞ electric cells
- polarized electromagnetic radiation
- polarizers
- ∞ **Kerr effects**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ effects
- electro-optical effect
- Kerr electrooptical effect
- Kerr magnetooptical effect
- magnetic fields
- Kerr electrooptical effect**
- GS electromagnetic properties
- . optical properties
- . . birefringence
- ... **Kerr electrooptical effect**
- refraction
- . birefringence
- ... **Kerr electrooptical effect**
- RT ∞ effects
- electromagnetic radiation
- electro-optics
- ∞ Kerr effects
- Kerr magnetooptical effect
- lasers
- light modulation
- polarization (waves)
- Kerr magnetooptical effect**
- GS electromagnetic properties
- . **Kerr magnetooptical effect**
- RT ∞ effects
- Faraday effect
- ∞ Kerr effects
- Kerr electrooptical effect
- magneto-optics
- optical properties
- polarization (waves)
- polarized light
- Kestrel aircraft**
- USE **P-1127 aircraft**
- ketenes**
- RT ketones
- ketones**
- DEF A class of organic compounds possessing a carbonyl group attached to two hydrocarbon groups.
- GS **ketones**
- . acetone
- . acetylacetone
- . anthraquinones
- . camphor
- . Nembutal (trademark)
- . pentanone
- . trimethadione
- RT ketenes

kettles (geology)

PEEK
quinones

kettles (geology)

DEF Steepsided, usually basin or bowlshaped holes or depressions, commonly without surface drainage, in glacial drift deposits (especially outwash and kame fields). Kettles often contain lakes or swamps; formed by the melting of large detached blocks of stagnant ice (left behind by retreating glaciers) that had been wholly or partly buried by glacial drift. Kettles range in depth from about a meter to as much as 13 km. Thoreau's Walden Pond is an example.

GS geology
. **kettles (geology)**
landforms
. structural basins
. . . **kettles (geology)**
RT caves
cavities
Earth resources
glacial drift
karst
lakes
sinkholes

Kevlar (trademark)

DEF A Dupont synthetic textile material, lightweight and nonflammable, and with high impact resistance.

GS fibers
. reinforcing fibers
. . . aramid fibers
. . . . **Kevlar (trademark)**
. synthetic fibers
. . . aramid fibers
. . . . **Kevlar (trademark)**
plastics
. synthetic resins
. . . thermosetting resins
. . . . furan resins
. polyamide resins
. **Kevlar (trademark)**
resins
. synthetic resins
. . . thermosetting resins
. . . . furan resins
. polyamide resins
. **Kevlar (trademark)**
RT aramid fiber composites
nonflammable materials
synthetic fibers

keying

GS **keying**
. frequency shift keying
. phase shift keying
. . . binary phase shift keying
. . . . quadrature phase shift keying
RT Morse code
radio telegraphy
teleprinters
teletypewriters

keys (islands)

UF *cays*
GS landforms
. islands
. . . **keys (islands)**
RT coral reefs
Earth resources
island arcs
oceans

kidney diseases

GS diseases
. **kidney diseases**
. . . nephritis
RT cholera

kidneys

GS anatomy
. genitourinary system
. . . **kidneys**
. . . . glomerulus

RT renal function
urine
uroolithiasis
urology

kilometer wave orbiting telescope

GS radio equipment
. radio telescopes
. . . **kilometer wave orbiting telescope**
telescopes
. radio telescopes
. . . **kilometer wave orbiting telescope**

kilometric waves

DEF Electromagnetic waves with wavelengths between 1,000 and 10,000 meters.

GS electromagnetic radiation
. **kilometric waves**
RT ∞ waves

kimberlite

USE **biotite**
peridotite

kinematic equations

GS equations of motion
. kinetic equations
. . . **kinematic equations**
RT ∞ equations

kinematics

DEF The branch of mechanics dealing with the description of the motion of bodies or fluids without reference to the forces producing the motion.

GS **kinematics**
. body kinematics
. inverse kinematics
RT acceleration (physics)
∞ dynamics
equations of motion
hodographs
kinetics
∞ mechanics (physics)
microwave reflectometers
∞ motion
nutation
velocity

kinescopes

USE **picture tubes**

kinesthesia

GS perception
. sensory perception
. . . **kinesthesia**
RT proprioception

kinesthesia

USE **proprioception**

kinetic energy

DEF The energy which a body possesses as a consequence of its motion. Used for momentum energy.

UF *momentum energy*
GS kinetics
. **kinetic energy**
RT chemical energy
electron energy
∞ energy
equipartition theorem
Froude number
hydrodynamic ram effect
internal energy
Lagrange similarity hypothesis
Lagrangian function
particle energy
potential energy
proton energy
thermal energy
virial theorem
work

zero point energy

kinetic equations

GS equations of motion
. **kinetic equations**
. . . hydrodynamic equations
. . . . Burnett equations
. . . . Helmholtz vorticity equation
. . . kinematic equations
RT BBGKY hierarchy
Bethe-Salpeter equation
BGK model
Einstein equations
∞ equations
partial differential equations
virial theorem

kinetic friction

GS friction
. **kinetic friction**
. . . sliding friction
RT coefficient of friction
dry friction
friction measurement
static friction

kinetic heating

GS heating
. **kinetic heating**
. . . aerodynamic heating
. . . . shock heating
RT gas heating
magnetic pumping
plasma heating

kinetic theory

DEF The derivation of the bulk properties of fluids from the properties of their constituent molecules, their motions and interactions.

GS **kinetic theory**
. transport theory
. . . Chapman-Enskog theory
. . . Eyring theory
. . . mixing length flow theory
RT BGK model
binary fluids
Boltzmann distribution
Boltzmann transport equation
diffusion
diffusion theory
diffusion waves
dynamic pressure
equations of state
free molecular flow
gas transport
gaseous self-diffusion
ideal gas
Joule-Thomson effect
Knudsen flow
Krook equation
Lorentz gas
mass flow
Maxwell-Boltzmann density function
mobility
momentum transfer
Morse potential
real gases
∞ theories
transport properties

kinetics

GS **kinetics**
. electrokinetics
. kinetic energy
. Newton second law
. Newton Theory
. reaction kinetics
. variable mass systems
RT acceleration (physics)
angular momentum
body kinematics
∞ dynamics
fluid dynamics
fluid mechanics
∞ force
gas dynamics

hydromechanics
ideal gas
kinematics
∞ mechanics (physics)
momentum transfer
motion aftereffects
newton
particle collisions
∞ physics
velocity

kink bands

(added March 1998)

RT buckling
compression loads
edge dislocations
failure modes
fiber composites
microstructure
plastic deformation
reinforcing fibers
single crystals

kinking

(added April 1998)

RT bending
buckling
compression loads
cracking (fracturing)
deformation
displacement
failure modes
fiber composites
folding
heaving
twisting
wrinkling

kinofom

GS display devices
. **kinofom**
imagery
. **kinofom**
RT computer programming
holography
wave front reconstruction

∞ **Kirchhoff law**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Kirchhoff law of networks
Kirchhoff law of radiation

Kirchhoff law of networks

RT circuits
electric current
electric potential
∞ Kirchhoff law
∞ nets
network analysis
network synthesis

Kirchhoff law of radiation

DEF The radiation law which states that at a given temperature the ratio of the emissivity to the absorptivity for a given wavelength is the same for all bodies and is equal to the emissivity of an ideal black body at that temperature and wavelength.

GS laws
. radiation laws
. . **Kirchhoff law of radiation**
RT absorptivity
black body radiation
∞ Kirchhoff law
∞ radiation
Stefan-Boltzmann law
thermodynamics

*Kirchhoff-Helmholtz flow*USE **pipe flow***Kirchhoff-Huygens principle*USE **diffraction**
wave propagation**Kirkendall effect**

RT diffusion theory

diffusion welding
diffusivity
∞ effects
thermal diffusion

*kite balloons*USE **tethered balloons****kits**

RT first aid
survival
tools

KIWI B reactors

GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear power reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear research and test reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor

KIWI B-1 Reactor

GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
. nuclear research and test reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**

KIWI B-4 Reactor

GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
. nuclear research and test reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**

KIWI reactors

UF *KIWI rocket reactors*
GS nuclear electric power generation
. nuclear power reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
nuclear reactors

. gas cooled reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear power reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear research and test reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
RT NRX reactors
nuclear engine for rocket vehicles
Phoebus nuclear reactor
Rover project

*KIWI rocket reactors*USE **KIWI reactors****Kjeldahl method**

GS chemical tests
. chemical analysis
. . quantitative analysis
. . . **Kjeldahl method**
RT ammonia
∞ methodology
nitrogen
titration

Klebsiella

GS microorganisms
. bacteria
. . **Klebsiella**

Klein-Dunham potential

RT ∞ potential
quantum theory

Klein-Gordon equation

GS wave equations
. **Klein-Gordon equation**
RT Dirac equation
∞ equations

*klippen*USE **outliers (landforms)****klystrons**

DEF Electron tubes for converting direct current energy into radio frequency energy by alternately speeding up and slowing down the electrons.

GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **klystrons**
microwave equipment
. microwave tubes
. . **klystrons**
RT amplifiers
catchers
cavity resonators
cyclotron resonance devices
electron bunching
electron cyclotron heating
electrostatic generators
magnetrons
microwave oscillators

*k-mesons*USE **kaons****knee (anatomy)**

GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . **knee (anatomy)**
. musculoskeletal system
. . joints (anatomy)
. . . **knee (anatomy)**
appendages
. leg (anatomy)

knobs

RT . . **knee (anatomy)**
femur

knight shift
USE **nuclear magnetic resonance**

knobs
RT handles
levers
manual control

Knoop hardness
DEF Relative microhardness as determined by the Knoop diamond-pyramid indentation test.
GS mechanical properties
. hardness
. . microhardness
. . . **Knoop hardness**
RT hardness tests
nanoindentation

knowledge
GS **knowledge**
. philosophy
. . paradoxes
RT axioms
documentation
education
learning
literature
perception
textbooks
training evaluation

knowledge based systems
(added April 1993)
GS information systems
. **knowledge based systems**
. . expert systems
RT artificial intelligence
computer techniques
data structures
decision support systems
knowledge bases (artificial intelligence)
knowledge representation
natural language processing
pilot support systems

knowledge bases (artificial intelligence)
(added November 1988)
DEF Facts, assumptions, beliefs, and heuristics, used in dealing with a database to achieve desired results such as a diagnosis, an interpretation, or a solution to a problem.
GS data bases
. **knowledge bases (artificial intelligence)**
RT artificial intelligence
expert systems
knowledge based systems
knowledge representation

knowledge discovery
(added April 2000)
USE **data mining**

knowledge extraction
(added April 2000)
USE **data mining**

knowledge representation
DEF The use of symbolic data structures to represent knowledge so that a computer can manipulate them.
RT artificial intelligence
belief networks
cognition
expert systems
hypertext
knowledge based systems
knowledge bases (artificial intelligence)

natural language (computers)

Knudsen cells
USE **Knudsen gages**

Knudsen flow
UF *Knudsen number*
GS fluid flow
. gas flow
. . **Knudsen flow**
. internal flow
. . ducted flow
. . . **Knudsen flow**
RT BGK model
boundary layer transition
free molecular flow
kinetic theory
mean free path
molecular flow
pressure gradients
rarefied gas dynamics
transition points
vacuum
viscous flow

Knudsen gages
DEF Gages which measure pressure in terms of the net rate of transfer of momentum by molecules between two surfaces maintained at different temperatures and separated by a distance smaller than the mean free path of the gas molecules. Used for Knudsen cells.
UF *Knudsen cells*
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Knudsen gages**
vacuum apparatus
. vacuum gages
. . **Knudsen gages**
RT ionization gages
McLeod gages
Pirani gages
pressure measurement
radiometers

Knudsen number
USE **Knudsen flow**

knurling
RT grooving
machining
metal cutting

Kohoutek comet
GS celestial bodies
. comets
. . **Kohoutek comet**
RT Bessel-Bredichin theory
∞ coma
radiation pressure
solar system

Kolmogorov theory
(added July 1993)
RT isotropic turbulence
Lagrange similarity hypothesis
shear flow
∞ theories
turbulent flow
vortices

Kolmogorov-Smirnov test
(added July 1993)
GS statistical analysis
. statistical tests
. . **Kolmogorov-Smirnov test**
RT probability theory
statistical distributions

k-omega turbulence model
(added June 1997)
UF *kappa-omega turbulence model*
GS models
. mathematical models
. . turbulence models

. . . **k-omega turbulence model**
RT computational fluid dynamics
k-epsilon turbulence model
turbulent boundary layer
turbulent flow

Kondo effect
DEF Change in superconductivity characteristics resulting from magnetic impurities in the compounds involved.
GS electrical properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
transport properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
RT alloys
∞ effects
low temperature physics
magnetic materials
nuclear spin
transition temperature

∞ **Korea**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT North Korea
South Korea

Korteweg-Devries equation
DEF The mathematical representation describing the propagation of long waves of small but finite amplitude.
GS wave equations
. **Korteweg-Devries equation**
RT ∞ equations

Kossel pattern
GS distribution (property)
. radiation distribution
. . diffraction patterns
. . . **Kossel pattern**
RT crystal lattices

Kovar (trademark)
GS alloys
. **Kovar (trademark)**
RT cobalt alloys

KP index
GS ratios
. indexes (ratios)
. . **KP index**
RT Earth magnetosphere
geomagnetic pulsations
geomagnetism
∞ indexes
magnetic disturbances
magnetic properties
magnetic variations

Kraft process (woodpulp)
DEF Woodpulping process in which sodium sulfate is used in the caustic soda pulp-digestion liquor. Also known as sulfate pulping or Kraft pulping.
RT manufacturing
paper (material)
∞ processes

Kramers-Kronig formula
DEF The relationship between the attenuation coefficient and the dispersion (frequency dependent phase velocity) for viscoelastic waves.
RT ∞ dispersion
∞ formulas
opacity
spectrum analysis

Krebs cycle
RT cells (biology)

metabolism

kreep

DEF A yellow-brown glassy lunar mineral enriched in potassium, rare earth elements, and phosphate.

GS minerals
 . **kreep**
 rocks
 . lunar rocks
 . . **kreep**

RT geology
 lunar soil
 phosphates
 potassium
 rare earth elements

kriging

DEF A method of providing unbiased estimates of variables in regions where the available data exhibit spatial autocorrelation, and these estimates are obtained in such a way that they have minimum variance.

RT variance (statistics)

Kronecker product

USE **orthogonality**

Krook equation

RT ∞ equations
 hydrodynamics
 kinetic theory
 shear flow
 shock wave profiles

Krueger flaps

USE **leading edge flaps**

krypton

GS chemical elements
 . rare gases
 . . **krypton**
 . . . krypton isotopes
 krypton 85
 gases
 . rare gases
 . . **krypton**
 . . . krypton isotopes
 krypton 85

krypton 85

GS chemical elements
 . nuclides
 . . isotopes
 . . . krypton isotopes
 **krypton 85**
 radioactive isotopes
 **krypton 85**
 . rare gases
 . . krypton
 . . . krypton isotopes
 **krypton 85**

gases

. rare gases
 . . krypton
 . . . krypton isotopes
 **krypton 85**

krypton fluoride lasers

DEF Rare gas halide ultraviolet stimulated emission devices in which krypton fluoride is the active lasing medium.

GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . rare gas-halide lasers
 **krypton fluoride lasers**

RT coherent electromagnetic radiation
 lasing
 masers
 optical pumping

krypton isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **krypton isotopes**
 krypton 85
 . rare gases
 . . krypton
 . . . **krypton isotopes**
 krypton 85
 gases
 . rare gases
 . . krypton
 . . . **krypton isotopes**
 krypton 85

KS-3 aircraft

USE **S-3 aircraft**

K-T boundary

USE **Cretaceous-Tertiary boundary**

KU band

USE **superhigh frequencies**

Kuiper Airborne Observatory

(added June 1990)

GS observatories
 . **Kuiper Airborne Observatory**
 RT airborne equipment
 astronomical spectroscopy
 C-141 aircraft
 infrared astronomy
 SOFIA (airborne observatory)

Kuiper belt

(added June 1997)

RT asteroids
 comets
 Oort cloud
 Quaoar
 solar system

solar system evolution

Kurile Islands

GS landforms
 . islands
 . . Pacific islands
 . . . **Kurile Islands**
 RT U. S. S. R.

kurtosis

DEF In statistics, the extent to which a frequency distribution is peaked or concentrated about the mean; it is sometimes defined as the ratio of the fourth moment of the distribution to the square of the second moment.

GS distribution (property)
 . frequency distribution
 . . **kurtosis**
 RT ∞ distribution
 Fourier analysis
 ∞ patterns
 statistical distributions

Kutta-Joukowski condition

GS conditions
 . **Kutta-Joukowski condition**
 RT airfoil profiles
 boundary layer separation
 Joukowski transformation

Kuwait

GS nations
 . **Kuwait**
 RT Asia

Kvant modules

(added April 1995)

GS modules
 . space station modules
 . . **Kvant modules**
 RT Mir space station
 Russian Space Program
 Soyuz spacecraft
 space station structures
 x ray telescopes

KWIC indexes

GS classifications
 . indexes (documentation)
 . . **KWIC indexes**
 RT ∞ indexes
 thesauri

Kyokko satellite

USE **EXOS-A satellite**

Kyrgyzstan

(added August 1993)

GS nations
 . **Kyrgyzstan**
 RT Asia

L

L band
USE **ultrahigh frequencies**

L-28 aircraft
USE **U-10 aircraft**

L-29 aircraft
USE **L-29 jet trainer**

L-29 jet trainer
UF *Delfin aircraft*
L-29 aircraft
Omnipol L-29 aircraft
GS jet aircraft
 . **L-29 jet trainer**
 monoplanes
 . **L-29 jet trainer**
 single engine aircraft
 . **L-29 jet trainer**
 tilt wing aircraft
 . **L-29 jet trainer**
 training aircraft
 . **L-29 jet trainer**
 V/STOL aircraft
 . **L-29 jet trainer**

L-1011 aircraft
GS commercial aircraft
 . **L-1011 aircraft**
 jet aircraft
 . **L-1011 aircraft**
 Lockheed aircraft
 . **L-1011 aircraft**
 passenger aircraft
 . **L-1011 aircraft**
 transport aircraft
 . **L-1011 aircraft**
RT ∞ aircraft
 turbofan engines

L-2000 aircraft
UF *Lockheed L-2000 aircraft*
GS jet aircraft
 . **L-2000 aircraft**
 Lockheed aircraft
 . **L-2000 aircraft**
 passenger aircraft
 . **L-2000 aircraft**
 supersonic aircraft
 . supersonic transports
 . . **L-2000 aircraft**
 transport aircraft
 . **L-2000 aircraft**
RT ∞ aircraft

labeling (marking)
USE **marking**

labor
RT manpower
 mediation
 personnel selection

laboratories
GS **laboratories**
 . engine testing laboratories
 . environmental laboratories
 . human factors laboratories
 . lunar laboratories
 . . lunar receiving laboratory
 . lunar mobile laboratories
 . space laboratories
 . . Advanced Technology Laboratory
 . . Atmospheric Cloud Physics Lab
 (Spacelab)
 . . Earth Viewing Applications
 Laboratory
 . . Long Duration Exposure Facility
 . . manned orbital laboratories
 . . . Destiny Laboratory Module

. . . Skylab 1
. . . Skylab 2
. . . Skylab 3
. . . Skylab 4
. . . Spacelab
 . underwater research laboratories
RT experiment design
 experimentation
 nuclear research
 research facilities
 SAIL project
 test facilities
∞ tests

laboratory equipment
GS **laboratory equipment**
 . image furnaces
 . syringes
RT ampoules
∞ equipment
 glassware
 measuring instruments
 pipettes

Labrador
RT Canada

labyrinth
GS anatomy
 . sense organs
 . . ear
 . . . **labyrinth**
 . . . cochlea
 Corti organ
 otolith organs
 semicircular canals
 vestibules

labyrinth seals
DEF Minimum leakage seals that offer resistance to fluid flow while providing radial or axial clearance.
GS seals (stoppers)
 . **labyrinth seals**
RT fluid flow
 gaskets
 glands (seals)
 hermetic seals
 leakage
 O ring seals
 packings (seals)
 plugs
 pump seals
 rotor speed

labyrinthectomy
GS medical science
 . surgery
 . . **labyrinthectomy**
RT ear

LACATE (experiment)
DEF A NASA balloonborne experiment conducted from a balloon platform carried by a balloon over 400 feet in diameter. The acronym stands for the Lower Atmospheric Composition and Temperature Experiment. The experiment was conducted in 1974. Used for Lower Atmospheric Composition Experiment.
UF *Lower Atmospheric Composition Experiment*
RT atmospheric composition
 atmospheric temperature
 lower atmosphere

LACE (engine)
USE **liquid air cycle engines**

lacquers
GS coatings

. **lacquers**
 finishes
 . **lacquers**
RT metal coatings
 primers (coatings)
 protective coatings
 sprayed coatings

lactates
GS esters
 . **lactates**

lactic acid
GS acids
 . carboxylic acids
 . . **lactic acid**
 organic compounds
 . carboxylic acids
 . . **lactic acid**

lactose
GS organic compounds
 . carbohydrates
 . . sugars
 . . . **lactose**

lacunas
RT lichens
 plants (botany)

ladders
RT escalators
 stairways

lag (delay)
USE **time lag**

LAGEOS (satellite)
UF *Laser Geodynamic Satellite*
GS artificial satellites
 . passive satellites
 . . **LAGEOS (satellite)**
RT laser range finders
 retroreflection
 satellite laser ranging

lagoons
DEF Shallow stretches of seawater, such as sounds, channels, bays (topographic features), or saltwater lakes, near or communicating with seas and partly or completely separated from them by low, narrow, elongated strips of land, such as reefs, barrier islands, sandbanks, or spits. Lagoons are often used to describe sheets of water between offshore coral reefs and the mainland. They often extend roughly parallel to the coast and are little affected by tides. Lagoons are also considered shallow freshwater ponds or lakes near or communicating with larger lakes or rivers.
GS landforms
 . **lagoons**
RT atolls
 bars (landforms)
 beaches
 coasts
 dunes
 inlets (topography)
 island arcs
 islands
 lakes
 ponds
 reservoirs
 topography

Lagrange coordinates
DEF Systems of coordinates by which fluid parcels are identified for all times by assigning them coordinates which do not vary with time. Examples of such coordinates are: (a) the val-

ues of any properties of the fluid conserved in the motion; or (b) more generally, the positions in space of the parcels at some arbitrarily selected moment. Subsequent positions in space of the parcels are then the dependent variables, functions of time and of the Lagrange coordinates. Also called material coordinates.

- GS coordinates
 - . **Lagrange coordinates**
- RT classical mechanics
 - hydrodynamics
 - Lagrangian function
 - librational motion

Lagrange equations of motion

- USE **Euler-Lagrange equation**

Lagrange multipliers

- RT chiral dynamics
 - differential equations
 - isoperimetric problem
 - Lagrangian function
 - multipliers
 - operations research
 - optimization

Lagrange similarity hypothesis

- GS hypotheses
 - . **Lagrange similarity hypothesis**
 - theorems
 - . similarity theorem
 - . . **Lagrange similarity hypothesis**
- RT energy dissipation
 - energy transfer
 - kinetic energy
 - Kolmogorov theory
 - turbulent flow

Lagrangian

- USE **Lagrangian function**

Lagrangian equilibrium points

- GS gravitational effects
 - . **Lagrangian equilibrium points**
- RT celestial mechanics
 - gravitational fields
 - orbital mechanics
 - Trojan asteroids

Lagrangian function

- (added April 1993)
- UF *Lagrangian*
- GS functions (mathematics)
 - . **Lagrangian function**
- RT Euler-Lagrange equation
 - kinetic energy
 - Lagrange coordinates
 - Lagrange multipliers
 - potential energy

Laguerre functions

- GS analysis (mathematics)
 - . complex variables
 - . . **Laguerre functions**
 - functions (mathematics)
 - . **Laguerre functions**
- RT orthogonal functions

LA-ICP-MS (spectrometry)

(added March 2001)

- USE **inductively coupled plasma mass spectrometry**

lake beds

- USE **beds (geology)**

Lake Champlain Basin (NY-VT)

- GS landforms
 - . structural basins
 - . . **Lake Champlain Basin (NY-VT)**
- RT Canada
 - lakes
 - New York

Vermont

Lake Erie

- GS lakes
 - . Great Lakes (North America)
 - . . **Lake Erie**
- RT hydrology
 - rivers
 - streams
 - water
 - water management

Lake Huron

- GS lakes
 - . Great Lakes (North America)
 - . . **Lake Huron**
- RT hydrology
 - rivers
 - Saginaw Bay (MI)
 - streams
 - water
 - water management

lake ice

DEF Ice formed on lakes, regardless of observed location; it is usually freshwater ice.

- GS ice
 - . **lake ice**
 - . . ice floes
- RT bay ice
 - ice formation
 - lakes
 - land ice
 - sea ice
 - water

Lake Michigan

- GS lakes
 - . Great Lakes (North America)
 - . . **Lake Michigan**
- RT hydrology
 - rivers
 - streams
 - water
 - water management

Lake Ontario

- GS lakes
 - . Great Lakes (North America)
 - . . **Lake Ontario**
- RT hydrology
 - rivers
 - streams
 - water
 - water management

Lake Pontchartrain (LA)

- GS lakes
 - . **Lake Pontchartrain (LA)**
- RT Louisiana

Lake Superior

- GS lakes
 - . Great Lakes (North America)
 - . . **Lake Superior**
- RT hydrology
 - rivers
 - streams
 - water
 - water management

Lake Tahoe (CA-NV)

- GS lakes
 - . **Lake Tahoe (CA-NV)**
- RT California
 - Nevada

Lake Texoma (OK-TX)

- GS lakes
 - . **Lake Texoma (OK-TX)**
- RT limnology
 - Oklahoma
 - reservoirs
 - texas

vadose water

lakes

DEF Inland bodies of standing water occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding sub-aqueous vegetation) to take root completely across the expanse of water; the water may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by water.

GS lakes

- . Great Lakes (North America)
 - . . Lake Erie
 - . . Lake Huron
 - . . Lake Michigan
 - . . Lake Ontario
 - . . Lake Superior
 - . Great Salt Lake (UT)
 - . Lake Pontchartrain (LA)
 - . Lake Tahoe (CA-NV)
 - . Lake Texoma (OK-TX)
 - . Pyramid Lake (NV)

RT

- aquifers
- bayous
- beaches
- coasts
- Earth hydrosphere
- eutrophication
- inland waters
- kettles (geology)
- lagoons
- Lake Champlain Basin (NY-VT)
- lake ice
- limnology
- playas
- ponds
- regional planning
- reservoirs
- river basins
- shoals
- shorelines
- springs (water)
- straits
- surface water
- thermal pollution
- water circulation
- water color
- water depth
- water resources
- waterways

Lallemand cameras

- GS optical equipment
 - . cameras
 - . . **Lallemand cameras**
 - photographic equipment
 - . cameras
 - . . **Lallemand cameras**
- RT astronomical photography
 - electro-optical photography
 - image converters
 - image intensifiers
 - image transducers
 - light amplifiers
 - spectroscopy
 - television cameras

Lamb waves

DEF Waves that propagate within the thickness of a thin plate, and that can only be generated at particular values of angle of incidence, frequency, and plate thickness. The velocity of the wave is dependent on the mode and the product of plate thickness and frequency.

GS elastic waves

- . sound waves
- . . **Lamb waves**

RT

- acoustic properties
- acoustics
- Sturm-Liouville theory

Lambda rocket vehicles

ultrasonic tests

Lambda rocket vehicles

- GS rocket vehicles
 - . multistage rocket vehicles
 - . . . **Lambda rocket vehicles**
 - . sounding rockets
 - . . . **Lambda rocket vehicles**
- RT solid propellant rocket engines
- ∞ vehicles

Lambda Tauri stars

- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - eclipsing binary stars
 - **Lambda Tauri stars**
 - . . variable stars
 - . . . **Lambda Tauri stars**

Lambert law

- USE **Bouguer law**

Lambert surface

- RT reflection
- ∞ surface geometry
- ∞ surfaces

Lame functions

- GS functions (mathematics)
 - . **Lame functions**
- RT boundary value problems
- differential equations

Lame wave equations

- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **Lame wave equations**
 - wave equations
 - . **Lame wave equations**
- RT acoustics
- elastic waves
- ∞ equations
- Sturm-Liouville theory
- wave propagation

lamella

- RT bones

lamella (metallurgy)

- DEF Crystalline materials whose grains are in the form of thin sheets.
- RT aluminum alloys
- copper alloys
- crystallography
- eutectic alloys
- microstructure

lamina

- USE **layers**

laminar boundary layer

DEF In fluid flow, layer next to the fixed boundary. The fluid velocity is zero at the boundary layer but the molecular viscous stress is large because the velocity gradient normal to the wall is large. Used for laminar boundary layer separation and laminar flow control.

- UF *laminar boundary layer separation*
laminar flow control
- GS boundary layers
 - . **laminar boundary layer**
- RT boundary layer combustion
- boundary layer transition
- compressible boundary layer
- Goertler instability
- hypersonic boundary layer
- incompressible boundary layer
- interactional aerodynamics
- isothermal layers
- Pohlhausen method
- supersonic boundary layers
- thermal boundary layer
- three dimensional boundary layer

turbulent boundary layer
two dimensional boundary layer
X-21 aircraft

laminar boundary layer separation

- USE **boundary layer separation**
laminar boundary layer

laminar flames

- USE **flames**
laminar flow

laminar flow

DEF In fluid flow, a smooth flow in which no crossflow of fluid particles occurs between adjacent stream lines; hence, a flow conceived as made up of layers -- commonly distinguished from turbulent flow. Used for laminar flames, laminar jets, Poiseuille flow, and streamline flow.

- UF *laminar flames*
laminar jets
Poiseuille flow
streamline flow

GS fluid flow

- . **laminar flow**
- . . Blasius flow
- . . Hartmann flow
- . . stratified flow

RT

- aerodynamics
- atmospheric turbulence
- boundary layer transition
- capillary flow
- critical flow
- Falkner-Skan equation
- flow characteristics
- flow geometry
- flow stability
- forced convection
- free convection
- gas flow
- gas streams
- inviscid flow
- liquid flow
- low Reynolds number
- mass flow
- multiphase flow
- Newton pressure law
- open channel flow
- orifice flow
- parallel flow
- pipe flow
- Prandtl-Meyer expansion
- Rayleigh-Benard convection
- Reynolds number
- Roshko prediction
- single-phase flow
- steady flow
- steam flow
- Tollmien-Schlichting waves
- ∞ transition layers
- turbulent flow
- two phase flow
- uniform flow
- unsteady flow
- viscous drag
- viscous flow
- wedge flow
- X-21A aircraft

laminar flow airfoils

- GS airfoils
- . **laminar flow airfoils**

laminar flow control

- USE **boundary layer control**
laminar boundary layer

laminar heat transfer

- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . **laminar heat transfer**
- RT conductive heat transfer
- convective heat transfer
- thermohydraulics

turbulent heat transfer

laminar jets

- USE **jet flow**
laminar flow

laminar mixing

- GS mixing
 - . **laminar mixing**
- RT fluid injection
- gas mixtures
- mixing layers (fluids)
- turbulent mixing

laminar wakes

- GS wakes
 - . **laminar wakes**
- RT aircraft wakes
- turbulent wakes

laminated materials

- USE **laminates**

laminates

DEF Products made by bonding together two or more layers of material or materials. Used for laminated materials, laminations, and multi-layer structures.

- UF *laminated materials*
laminations
multilayer structures
- GS composite structures
 - . **laminates**
 - . . Boral
 - . . plywood
- RT bonding
- boron-epoxy composites
- cladding
- clamped structures
- coatings
- composite materials
- debonding (materials)
- fabrics
- fiber composites
- filament winding
- ∞ films
- formica
- glass fiber reinforced plastics
- honeycomb structures
- hybrid composites
- interlaminar stress
- interlayers
- ∞ layers
- lay-up
- magnetic cores
- ∞ materials
- matrix materials
- metal bonding
- metallizing
- multilayer insulation
- netting (materials/structures)
- papers
- plating
- ply orientation
- polymer matrix composites
- prepregs
- reinforced plastics
- reinforced plates
- sandwich structures
- ∞ sheets
- stacking sequence (composite materials)
- substrates
- thermosetting resins
- veneers

laminations

- USE **laminates**

lamps

- USE **luminaires**

LAMPS program

- USE **Light Airborne Multipurpose System**

LAN (computer networks)

- USE **local area networks**

Lance missile

- GS missiles

- . surface to surface missiles
- . . **Lance missile**
- RT liquid propellant rocket engines
- Trailblazer 1 reentry vehicle
- TX-77 engine

land

DEF In a general sense, that part of the Earth's surface that stands above mean sea level. The inclusion of Antarctica's permanent ice in calculating the land surface of the Earth is controversial.

GS **land**

- . Allegheny Plateau (US)
- . arid lands
- . badlands
- . barren land
- . Cascade Range (CA-OR-WA)
- . Colorado Plateau (US)
- . deserts
- . . Gobi desert
- . . Libyan desert
- . . Mojave Desert (CA)
- . . Sahara Desert (Africa)
- . farmlands
- . grasslands
- . . Llanos Orientales (Colombia)
- . isthmuses
- . parks
- . . national parks
- . . . Yellowstone National Park (ID-MT-WY)
- . plains
- . . coastal plains
- . . flood plains
- . . Llanos Orientales (Colombia)
- . . pampas
- . . playas
- . . tundra
- . rangelands
- . wetlands
- . . marshlands

RT capes (landforms)

- desertification
- desertline
- peninsulas
- residential areas
- rural areas
- rural land use
- sites
- sod
- soils
- topography

land ice

DEF Any ice masses formed from snow, rain or other freshwater on land, as ice shelves or glaciers, even though they may be floating in seas as icebergs.

- UF *ice shelves*
- GS ice

- . **land ice**
- resources
- . Earth resources
- . . **land ice**

RT Antarctic regions

- glacial drift
- glaciers
- icebergs
- lake ice
- sea ice

land management

- GS management
- . resources management
- . . **land management**
- RT environment management
- regional planning
- rural land use
- urban planning
- wilderness

land mobile satellite service

DEF A proposed radio relay satellite system for serving thinly populated or large geographical areas.

- GS mobile communication systems
- . **land mobile satellite service**
- RT communication satellites
- ground stations
- MSAT
- radio communication

land surface temperature

(added February 1993)

- GS surface properties
- . surface temperature
- . . **land surface temperature**
- temperature
- . surface temperature
- . . **land surface temperature**
- RT air land interactions
- atmospheric temperature
- sea surface temperature

land use

- GS **land use**
- . rural land use
- RT AgRISTARS project
- airport planning
- barren land
- change detection
- conservation
- desertification
- ∞ development
- Earth resources
- economic development
- energy policy
- environment management
- exploitation
- ∞ facilities
- farmlands
- forest management
- grasslands
- industrial areas
- landfills
- leasing
- residential areas
- site selection
- SPOT (French satellite)
- Starsite program
- suburban areas
- urban development
- urban planning
- urban research

Landau damping

DEF The damping of a space charge wave by electrons which move at the phase velocity of the wave and gain energy transferred from the wave.

- GS damping
- . **Landau damping**
- RT electron plasma
- Landau factor
- phase velocity
- plasma waves
- space charge

Landau factor

- RT atomic energy levels
- atomic theory
- Landau damping
- plasma (physics)
- superconductivity

Landau-Ginzburg equations

- RT ∞ equations
- quantum electrodynamics
- superconductivity

landfills

DEF Disposal sites for solid wastes which are buried in layers of earth.

- RT industrial wastes
- land use
- methane
- solid wastes
- waste disposal
- waste management
- waste utilization

water pollution

landforms

DEF Any physical recognizable forms or features of the Earth's surface, having characteristic shapes, and produced by natural causes. Landforms include major forms such as plains, plateaus, and mountains and minor forms such as hills, valleys, slopes, glacial drift, and dunes. Taken together, landforms make up the surface configuration of the Earth.

GS **landforms**

- . arroyos
- . barriers (landforms)
- . . Outer Banks (NC)
- . . reefs
- . bars (landforms)
- . beds (geology)
- . . salt beds
- . bridges (landforms)
- . calderas
- . canals
- . canyons
- . . Grand Canyon (AZ)
- . capes (landforms)
- . . Cape Hatteras (NC)
- . cones (volcanoes)
- . cusps (landforms)
- . Death Valley (CA)
- . deltas
- . . Mississippi Delta (LA)
- . . Rhone Delta (France)
- . divides (landforms)
- . dunes
- . escarpments
- . fans (landforms)
- . fiords
- . flats (landforms)
- . . tidal flats
- . gaps (geology)
- . inlets (topography)
- . . bayous
- . . Cook Inlet (AK)
- . inliers (landforms)
- . island arcs
- . islands
- . . Aleutian Islands (US)
- . . Assateague Island (MD-VA)
- . . atolls
- . . Azores
- . . Bahrain
- . . Bermuda
- . . Canary Islands
- . . Cyprus
- . . Greenland
- . . Hawaii
- . . Iceland
- . . Indonesia
- . . Ireland
- . . keys (islands)
- . . Long Island (NY)
- . . Madagascar
- . . Maldive Islands
- . . Malta
- . . Mauritius
- . . Merritt Island (FL)
- . . Newfoundland
- . . nunataks
- . . Pacific islands
- . . . Guam
- . . . Japan
- . . . Johnston Island
- . . . Kurile Islands
- . . . New Guinea (island)
- . . . New Zealand
- . . . Philippines
- . . . Samoa
- . . . Prince Edward Island
- . . Seychelles
- . . Sicily
- . . Tasmania
- . . Wallops Island
- . . West Indies
- . . . Antigua and Barbuda
- . . . Bahamas
- . . . Barbados
- . . . Cuba

landing

- . . . Dominica
- . . . Grenada
- . . . Guadeloupe
- . . . Haiti
- . . . Jamaica
- . . . Lesser Antilles
- . . . Martinique
- . . . Puerto Rico
- . . . Trinidad and Tobago
- . . . Virgin Islands
- . isthmuses
- . lagoons
- . Magdalena-Cauca Valley (Colombia)
- . massifs
- . mountains
- . . Adirondack Mountains (NY)
- . . Alps Mountains (Europe)
- . . Andes Mountains (South America)
- . . Appalachian Mountains (North America)
- . . Bighorn Mountains (MT-WY)
- . . Black Hills (SD-WY)
- . . Carpathian Mountains (Europe)
- . . Cascade Range (CA-OR-WA)
- . . Caucasus Mountains (U. S. S. R.)
- . . coastal ranges (CA)
- . . Great Smoky Mountains (NC-TN)
- . . Himalayas
- . . Peninsular Ranges (CA)
- . . Pyrenees Mountains (Europe)
- . . Rocky Mountains (North America)
- . . San Juan Mountains (CO)
- . . Sierra Nevada Mountains (CA)
- . . Wind River Range (WY)
- . . Wrangell Mountains (AK)
- . muskegs
- . outliers (landforms)
- . peaks (landforms)
- . . Pike's Peak (CO)
- . peninsulas
- . . Delmarva Peninsula (DE-MD-VA)
- . Phoenix quadrangle (AZ)
- . plains
- . . coastal plains
- . . flood plains
- . . Llanos Orientales (Colombia)
- . . pampas
- . . playas
- . . tundra
- . ravines
- . St Lawrence Valley (North America)
- . steppes
- . structural basins
- . . cirques (landforms)
- . . Great Basin (US)
- . . Kalahari Basin (Africa)
- . . karst
- . . . sinkholes
- . . kettles (geology)
- . . Lake Champlain Basin (NY-VT)
- . . river basins
- . . . Atchafalaya River Basin (LA)
- . . . Chena River Basin (AK)
- . . . Columbia River Basin (ID-OR-WA)
- . . . Delaware River Basin (US)
- . . . Feather River Basin (CA)
- . . . Missouri River Basin (US)
- . . . Susquehanna River Basin (MD-NY-PA)
- . . . Wabash River Basin (IL-IN-OH)
- . . . wadis
- . . watersheds
- . . Williston Basin (North America)
- . terraces (landforms)
- . plateaus
- . . Allegheny Plateau (US)
- . . Colorado Plateau (US)
- . . Great Basin (US)
- . . . mesas
- . . . buttes
- . . . piedmonts
- . . . Central Piedmont (US)
- . volcanoes
- . . Mars volcanoes
- RT archipelagoes
- crossbedding (geology)

- ditches
- earthquake resistance
- ∞ faults
- geological faults
- glacial drift
- landmarks
- landslides
- ∞ platforms
- ∞ ridges
- seamounts
- slopes
- structural properties (geology)
- terrain
- topography

landing

- GS **landing**
 - . aircraft landing
 - . blind landing
 - . glide landings
 - . . horizontal spacecraft landing
 - . hard landing
 - . soft landing
 - . spacecraft landing
 - . . horizontal spacecraft landing
 - . . lunar landing
 - . . planetary landing
 - . . . Mars landing
 - . ditching (landing)
 - . emergency landing
 - . touchdown
 - . vertical landing
 - . water landing
- RT air traffic control
- approach
- approach and landing tests (STS)
- arrivals
- guidance (motion)
- instrument flight rules
- instrument landing systems
- maneuvers
- runways
- takeoff
- visual flight

landing aids

- UF *landing systems*
- GS **landing aids**
 - . airport beacons
 - . . discrete address beacon system
 - . airport lights
 - . . runway lights
 - . arresting gear
 - . instrument landing systems
 - . . all-weather landing systems
 - . landing instruments
 - . . approach indicators
 - . landing radar
 - . microvision landing aid
 - . microwave landing systems
 - . . microwave scanning beam landing system
- RT ∞ aids
 - air traffic control
 - air traffic controllers (personnel)
 - airborne radar approach
 - aircraft equipment
 - aircraft instruments
 - aircraft landing
 - aircraft safety
 - airport towers
 - airports
 - antiskid devices
 - approach
 - approach control
 - automatic pilots
 - enhanced vision
 - ground based control
 - ground support equipment
 - head-up displays
 - heliports
 - instrument approach
 - military air facilities
 - National Aviation System
 - navigation aids
 - PLAT system
 - radar approach control

- radio beacons
- runways
- safety devices
- solar compasses

landing gear

DEF The apparatus comprising those components of an aircraft or spacecraft that support and provide mobility for the craft on land, water, or other surface. The landing gear consists of wheels, floats, skis, bogies, and treads, or other devices, together with all associated struts, bracing, or shock absorbers. Used for retractable landing gear.

- UF *retractable landing gear*
- RT aircraft parts
- aircraft tires
- airframes
- ∞ bicycle
- brakes (for arresting motion)
- carriages
- fairings
- floats
- ∞ gear
- hydrofoils
- nose wheels
- retractable equipment
- self alignment
- shock absorbers
- skidding
- skis
- spray ingestion
- tires
- undercarriages
- vehicle wheels
- wheel brakes
- wheels

landing instruments

- GS landing aids
- . **landing instruments**
 - . . approach indicators
- RT air traffic control
- aircraft equipment
- aircraft instruments
- altimeters
- automatic control
- blind landing
- flight instruments
- instrument landing systems
- manual control
- measuring instruments
- radar approach control
- speed indicators

landing loads

- GS loads (forces)
 - . dynamic loads
 - . . transient loads
 - . . . **landing loads**
- RT deceleration
- impact loads
- shock loads
- structural design criteria

landing mats

- RT aircraft landing
- airports
- military air facilities
- runways

landing modules

- GS modules
 - . spacecraft modules
 - . . **landing modules**
 - . . . lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - . . . Mars Excursion Module
 - . soft landing spacecraft
 - . **landing modules**
 - . . lunar landing modules

- . . . Lunar Module
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- . . Mars Excursion Module spacecraft components
- . spacecraft modules
- . **landing modules**
- . . . lunar landing modules
- Lunar Module
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- . . Mars Excursion Module
- RT Apollo spacecraft
- interplanetary spacecraft
- launch vehicles
- maneuverable spacecraft
- manned spacecraft
- reentry vehicles
- reusable spacecraft
- space capsules
- spacecraft docking modules

landing radar

- GS landing aids
- . **landing radar**
- radar
- . **landing radar**
- RT air traffic control
- aircraft landing
- aircraft safety
- approach control
- instrument approach
- radar approach control

landing simulation

- GS simulation
- . **landing simulation**
- RT altitude simulation
- atmospheric entry simulation
- computerized simulation
- flight simulation
- spacecraft landing
- training simulators

landing sites

- GS sites
- . **landing sites**
- . . lunar landing sites
- . . Mars landing sites
- RT heliports
- Mars Pathfinder
- recovery zones
- runways
- trajectory control

landing speed

- GS rates (per time)
- . **landing speed**
- velocity
- . **landing speed**
- RT high speed
- low speed

landing systems

USE **landing aids**

landmarks

- RT landforms
- terrain
- topography

Landsat 1

- UF *Earth Resources Technology Satellite 1*
- ERTS-A*
- GS artificial satellites
- . Landsat satellites

. . Landsat 1**Landsat 2**

- UF *Earth Resources Technology Satellite B*
- ERTS-B*
- GS artificial satellites
- . Landsat satellites
- . . **Landsat 2**

Landsat 3

- DEF The third Landsat satellite (Landsat C) successfully launched and in orbit. Used for Earth Resources Technology Satellite C and ERTS-C.
- UF *Earth Resources Technology Satellite C*
- ERTS-C*
- GS artificial satellites
- . Landsat satellites
- . . **Landsat 3**
- RT plasma interaction experiment

Landsat 4

- UF *Earth Resources Technology Satellite D*
- ERTS-D*
- GS artificial satellites
- . Landsat satellites
- . . **Landsat 4**
- RT thematic mappers (LANDSAT)

Landsat 5

- GS artificial satellites
- . Landsat satellites
- . . **Landsat 5**
- RT thematic mappers (LANDSAT)

Landsat 6

- (added April 1995)
- GS artificial satellites
- . Landsat satellites
- . . **Landsat 6**
- RT Earth Observing System (EOS)
- remote sensing
- spectral resolution

Landsat 7

- (added April 1995)
- GS artificial satellites
- . Landsat satellites
- . . **Landsat 7**
- RT Earth Observing System (EOS)
- remote sensing
- spectral resolution

Landsat E

- UF *Earth Resources Technology Satellite E*
- EOS-A*
- ERTS-E*
- GS artificial satellites
- . Landsat satellites
- . . **Landsat E**

Landsat F

- UF *Earth Resources Technology Satellite F*
- EOS-B*
- ERTS-F*
- GS artificial satellites
- . Landsat satellites
- . . **Landsat F**

Landsat follow-on missions

- UF *LFO*
- RT ∞ missions
- multimission modular spacecraft

Landsat satellites

- UF *Earth Resources Technology Satellites*
- ERTS*
- GS artificial satellites
- . **Landsat satellites**
- . . Landsat 1

- . . Landsat 2
- . . Landsat 3
- . . Landsat 4
- . . Landsat 5
- . . Landsat 6
- . . Landsat 7
- . . Landsat E
- . . Landsat F
- RT AgRISTARS project
- Earth observations (from space)
- Earthnet
- Mapsat
- NASA programs
- oceanography
- satellite observation
- SEASAT 1
- SEASAT program
- SEASAT satellites
- SEASAT-B satellite
- Synchronous Earth Observatory satellite

landscape

USE **terrain topography**

landslides

DEF A general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse. Usually the displaced material moves over a relatively confined zone or surface of shear.

GS Earth movements

. **landslides**

- RT cliffs
- flood damage
- landforms
- rain erosion
- rocks
- slopes
- soil erosion
- soils
- storm damage

lanes

USE **paths**

Langevin formula

- RT dispersing
- ferromagnetism
- magnetic moments

Langley complex coordinator

- GS simulators
- . environment simulators
- . . space simulators
- . . . **Langley complex coordinator**
- RT flight simulators
- gravitational effects
- rotating environments
- space environment simulation
- weightlessness simulation

Langmuir monolayers

(added March 2001)
USE **monomolecular films**

Langmuir probes

USE **electrostatic probes**

Langmuir turbulence

(added August 1994)

- GS turbulence
- . magnetohydrodynamic turbulence
- . . plasma turbulence
- . . . **Langmuir turbulence**
- RT Auger effect
- magnetohydrodynamic stability
- plasma dynamics
- plasma heating
- plasma oscillations
- plasma waves

Langmuir-Blodgett films

thin films

Langmuir-Blodgett films
(added March 1993)
GS thin films
. monomolecular films
. . . **Langmuir-Blodgett films**

RT coatings
∞ films
integrated optics
molecular electronics
polymeric films

language programming
GS computer programming
. **language programming**

RT computer assisted instruction
data processing
high level languages
languages
machine oriented languages
machine translation
symbolic programming
∞ translators

languages
GS **languages**
. command languages
. . . query languages
. document markup languages
. English language
. hardware description languages
. programming languages
. . . ALGOL
. . . APL (programming language)
. . . Assembly language
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
. . . BASIC (programming language)
. . . Cobol
. . . COGO (programming language)
. . . context free languages
. . . Forth (programming language)
. . . FORTRAN
. . . HAL/S (language)
. . . high level languages
. . . Ada (programming language)
. . . C (programming language)
. . . C++ (programming language)
. . . Java (programming language)
. . . LISP (programming language)
. . . machine oriented languages
. . . natural language (computers)
. . . Pascal (programming language)
. . . PL/1
. . . Prolog (programming language)

RT alphabets
articulation (speech)
coding
communication theory
grammars
language programming
linguistics
machine translation
orthography
phonemes
phonemics
phonetics
semantics
sentences
speech
symbols
syntax
translating
verbal communication
vowels
words (language)

lanthanide series metals
USE **rare earth elements**

lanthanum
GS chemical elements
. rare earth elements

. . . **lanthanum**
. . . . lanthanum isotopes
metals
. rare earth elements
. . . **lanthanum**
. . . . lanthanum isotopes

RT didymium

lanthanum 140
USE **lanthanum isotopes**

lanthanum alloys
GS alloys
. rare earth alloys
. . . **lanthanum alloys**

lanthanum chlorides
GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **lanthanum chlorides**
. halides
. . . chlorides
. . . . **lanthanum chlorides**
. . . metal halides
. . . . **lanthanum chlorides**
lanthanum compounds
. **lanthanum chlorides**

lanthanum compounds
GS **lanthanum compounds**
. lanthanum chlorides
. lanthanum fluorides
. lanthanum oxides
. lanthanum tellurides
RT ∞ chemical compounds
∞ metal compounds

lanthanum fluorides
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . metal fluorides
. **lanthanum fluorides**
. halides
. . . fluorides
. . . . metal fluorides
. **lanthanum fluorides**
. . . metal halides
. . . . metal fluorides
. **lanthanum fluorides**
lanthanum compounds
. **lanthanum fluorides**

lanthanum isotopes
UF *lanthanum 140*
GS chemical elements
. nuclides
. . . isotopes
. . . . **lanthanum isotopes**
. rare earth elements
. . . lanthanum
. . . . **lanthanum isotopes**
metals
. rare earth elements
. . . lanthanum
. . . . **lanthanum isotopes**

lanthanum oxides
GS chalcogenides
. oxides
. . . metal oxides
. . . . **lanthanum oxides**
lanthanum compounds
. **lanthanum oxides**

lanthanum tellurides
GS chalcogenides
. tellurides
. . . **lanthanum tellurides**
lanthanum compounds
. **lanthanum tellurides**
rare earth compounds
. **lanthanum tellurides**
tellurium compounds
. tellurides

. . . **lanthanum tellurides**

Laos
GS nations
. **Laos**

RT Asia

lap joints
GS joints (junctions)
. **lap joints**

RT bolted joints
butt joints
metal joints
riveted joints
scarf joints
soldered joints
welded joints

Laplace equation
RT ∞ equations
harmonic functions
partial differential equations
Poisson equation
Stokes-Beltrami equation

Laplace operators
USE **Laplace transformation**

Laplace transformation
UF *Laplace operators*
GS analysis (mathematics)
. functional analysis
. . . integral transformations
. . . . **Laplace transformation**
functions (mathematics)
. **Laplace transformation**
transformations (mathematics)
. integral transformations
. . . **Laplace transformation**
RT differential equations
operators (mathematics)

lapse rate
DEF The decrease of an atmospheric variable with height, the variable being temperature, unless otherwise specified. The term applies ambiguously to the environmental lapse rate and the process lapse rate, and the meaning must often be ascertained from the context.
RT humidity
temperature
temperature inversions
tephigrams

LARA aircraft
USE **COIN aircraft**

large aperture seismic array
GS arrays
. **large aperture seismic array**

RT Earth movements
earthquakes
measuring instruments
seismic waves
seismology

Large Area Crop Inventory Experiment
RT agriculture
agrophysical units
crop growth
crop inventories
∞ crops
Earth resources
Earth Resources Program
farm crops
inventories

Large Deployable Reflector
(added September 1988)
UF *LDR (telescope)*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . . **Large Deployable Reflector**
observatories
. astronomical observatories

- . . . astronomical satellites
- . . . **Large Deployable Reflector** telescopes
- . infrared telescopes
- . . . **Large Deployable Reflector** reflecting telescopes
- . . . **Large Deployable Reflector** spaceborne telescopes
- . . . **Large Deployable Reflector** infrared astronomy
- RT large space structures reflectors space erectable structures submillimeter waves

- large eddy simulation** *(added October 1997)*
- UF *LES (mathematics)*
- GS simulation
- . **large eddy simulation**
- RT atmospheric models computational fluid dynamics dynamic models eddy viscosity mathematical models Navier-Stokes equation Reynolds averaging turbulence models turbulent flow vortices

- Large Infrared Telescope on Spacelab*
- USE **LIRTS (telescope)**

- large scale integration**
- UF *LSI*
- GS circuits
- . integrated circuits
- . . **large scale integration** microelectronics
- . **large scale integration**
- RT application specific integrated circuits chips (electronics) DTL integrated circuits electronic packaging linear integrated circuits medium scale integration microminiaturization microprocessors molecular electronics printed circuits systems-on-a-chip TTL integrated circuits very large scale integration VHSIC (circuits)

- large space structures**
- RT Columbus space station continuum modeling expandable structures flexible spacecraft hoop column antennas Integrated Truss Structure P1 Integrated Truss Structure S1 International Space Station intraorbit transfer vehicles Large Deployable Reflector laser gyroscopes maypole antennas megamechanics orbital servicing orbital space tests self shadowing shape control smart structures solar power satellites space erectable structures Space Operations Center (NASA) Space Station Freedom space station structures space stations space technology experiments spacecraft structures

- ∞ structures
- Large Space Telescope*
- USE **Hubble Space Telescope**

- large-scale structure of the universe** *(added May 2002)*
- DEF Distribution of matter in the universe at the largest scale including the distribution of galactic clusters and superclusters.
- UF *LSS (cosmology)*
- RT big bang cosmology cosmology dark matter galactic clusters galactic evolution missing mass (astrophysics) relic radiation string theory universe

- LARGOS satellite**
- GS artificial satellites . geodetic satellites . . **LARGOS satellite**
- RT Explorer 29 satellite Explorer 36 satellite GEOS 1 satellite GEOS 2 satellite GEOS 3 satellite

- Larissa** *(added July 1995)*
- DEF A natural satellite of Neptune, orbiting at a mean distance of 73,600 kilometers.
- GS celestial bodies . natural satellites . . Neptune satellites . . . **Larissa**
- RT Neptune (planet)

- Larmor precession**
- GS gyration . precession . . **Larmor precession**
- RT cyclotron frequency cyclotron radiation

- Larmor radius**
- DEF For a charged particle moving transversely in a uniform magnetic field, the radius of curvature of the projection of its path on a plane perpendicular to the field. Named after the English mathematician Sir Joseph Larmor (1857-1942).
- GS dimensions . radii . . **Larmor radius** geometry . Euclidean geometry . . radii . . . **Larmor radius**
- RT cyclotron radiation gyromagnetism plasma physics precession

- larvae**
- GS **larvae** . bollworms . silkworms
- RT animals arthropods infestation insects invertebrates pupa worms

- larynx**
- GS anatomy . respiratory system . . **larynx** . . . glottis . . . vocal cords

- RT cartilage

- laser ablation** *(added February 1992)*
- GS ablation . **laser ablation** utilization . laser applications . . **laser ablation**
- RT laser annealing laser beams laser damage laser drilling laser heating laser plasmas laser target interactions laser welding nanostructure growth

- laser altimeters**
- GS measuring instruments . distance measuring equipment . . altimeters . . . **laser altimeters**
- RT aircraft instruments altitude control Ice, Cloud and Land Elevation Satellite
- ∞ instruments lasers optical radar satellite instruments spacecraft instruments

- laser anemometers**
- DEF Measuring instruments in which the wind being measured passes through two perpendicular light beams and the resulting change in velocity of one or both beams is measured.
- GS measuring instruments . anemometers . . **laser anemometers**
- RT flow velocity velocity measurement

- laser annealing**
- DEF Rapid heating of metals and/or alloys with the use of lasers.
- GS heat treatment . annealing . . **laser annealing** utilization . laser applications . . **laser annealing**
- RT heating laser ablation laser cutting lasers normalizing (heat treatment) recrystallization simulated annealing tempering

- laser applications**
- GS utilization . **laser applications** . . laser ablation . . laser annealing . . laser cooling . . laser cutting . . laser deposition . . . pulsed laser deposition . . laser drilling . . laser fusion . . laser guidance . . laser guide stars . . laser heating . . laser induced fluorescence . . laser interferometry . . laser machining . . laser microscopy . . laser power beaming . . laser propulsion . . laser spectroscopy . . . optogalvanic spectroscopy . . laser ranging

laser arrays

.. laser weapons
.. laser welding
... satellite laser ranging

RT airborne lasers
data transmission
hole burning
laser-induced breakdown spectroscopy
metal working
optical data storage materials
optical disks
optical radar
optical relay systems
photoacoustic spectroscopy
plasmadynamic lasers
production engineering
rapid ballistics identification
spaceborne lasers
speckle holography
speckle interferometry
technology utilization
ultrashort pulsed lasers

laser arrays
(added January 1991)
DEF A group of laser emitters arranged to give a desired combined output.
GS arrays
.. **laser arrays**
RT coupled modes
far fields
laser beams
laser modes
laser outputs
lasers
linear arrays
near fields
optical coupling
phased arrays
semiconductor lasers
stimulated emission devices
surface emitting lasers

laser beam defocusing
USE **thermal blooming**

laser beams
(added September 1988)
SN (LIMITED TO THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION; FOR THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER USE 'LASER OUTPUTS')
UF *laser radiation*
GS beams (radiation)
. light beams
.. **laser beams**
coherent radiation
. coherent electromagnetic radiation
.. **laser beams**
electromagnetic radiation
. coherent electromagnetic radiation
.. **laser beams**
. light beams
.. **laser beams**
RT beam steering
beamforming
four-wave mixing
free-space optical communication
holographic optical elements
laser ablation
laser arrays
thermal lensing

laser cavities
UF *optical generators*
GS cavities
.. **laser cavities**
RT amplifiers
laser stability
lasers
light amplifiers
∞ optics
pulse generators
semiconductor lasers
solid state devices
solid state lasers

stimulated emission devices

laser communication
USE **optical communication**

laser cooling
(added March 1995)
SN ((COOLING OF ATOMIC PARTICLES BY LASERS, NOT COOLING OF LASERS))
GS cooling
.. **laser cooling**
utilization
. laser applications
.. **laser cooling**
RT atom optics
atomic energy levels
optical pumping
Penning effect
quenching (atomic physics)
trapped particles

laser cutting
DEF The cutting of material by means of lasers.
GS cutting
.. **laser cutting**
utilization
. laser applications
.. **laser cutting**
RT blanking (cutting)
cutters
focusing
forming techniques
laser annealing
laser drilling
laser heating
laser machining
laser outputs
laser target interactions
machining
∞ materials science
metal cutting
micromachining
splitting
thermal blooming

laser damage
GS damage
. radiation damage
.. **laser damage**
radiation effects
. radiation damage
.. **laser damage**
RT burns (injuries)
laser ablation
pulsed radiation
radiation hazards

laser deposition
(added December 1992)
GS deposition
.. **laser deposition**
.. pulsed laser deposition
utilization
. laser applications
.. **laser deposition**
.. . pulsed laser deposition
RT crystal growth
epitaxy
excimer lasers
laser heating
nanostructure growth
superconducting films
vapor deposition

laser diodes
USE **semiconductor lasers**

laser doppler velocimeters
GS measuring instruments
.. **laser doppler velocimeters**
optical equipment
.. **laser doppler velocimeters**
RT flow measurement
nonintrusive measurement
optical measuring instruments

particle image velocimetry
velocity measurement

laser drilling
GS drilling
.. **laser drilling**
utilization
. laser applications
.. **laser drilling**
RT focusing
laser ablation
laser cutting
micromachining

laser fusion
GS utilization
. laser applications
.. **laser fusion**
RT aspheric optics
∞ fusion
glass lasers
high power lasers
inertial fusion (reactor)
Nova Laser System
plasmas (physics)
Shiva laser system

Laser Geodynamic Satellite
USE **LAGEOS (satellite)**

laser guidance
DEF Guidance system for rockets or projectiles, utilizing a laser beam for a precise trajectory to a designated target.
GS guidance (motion)
. terminal guidance
.. **laser guidance**
utilization
. laser applications
.. **laser guidance**
RT computer programs
homing devices
impact prediction
laser guide stars
missile control

laser guide stars
(added November 1994)
DEF Use of a laser to excite either Rayleigh backscattering or the mesospheric sodium layer to create artificial references for adaptive optics.
GS utilization
. laser applications
.. **laser guide stars**
RT adaptive optics
celestial reference systems
image processing
instrument compensation
laser guidance
reference stars
star trackers

laser gyroscopes
DEF Ring-laser angular rotation sensors for stabilizing and controlling large space structures, for space vehicle guidance, etc.
GS gyroscopes
.. **laser gyroscopes**
RT large space structures
optical gyroscopes
Sagnac effect
∞ sensors
spacecraft guidance
stabilization
Titan 4B launch vehicle

laser heating
GS heating
.. **laser heating**
utilization
. laser applications
.. **laser heating**
RT heat sources
laser ablation
laser cutting
laser deposition

pulse heating
 pulsed laser deposition
 pulsed lasers
 thermal blooming
 YAG lasers

laser induced fluorescence

DEF Emission of electromagnetic radiation that is caused by the flow of laser radiation into the emitting body and which ceases abruptly with the excitation. Used for LIF (fluorescence).

- UF *LIF (fluorescence)*
- GS emission
 - . light emission
 - . . luminescence
 - . . . fluorescence
 - **laser induced fluorescence**
- utilization
 - . laser applications
 - . . **laser induced fluorescence**
- RT electromagnetic absorption
 - excitation
 - extinction
 - irradiation
 - laser outputs
 - laser spectroscopy
 - Mossbauer effect
 - phosphors
 - photoionization
 - photoluminescence
 - plasma radiation

Laser Interferometer Gravitational-Wave Observatory

(added December 2000)
 USE **LIGO (observatory)**

Laser Interferometer Space Antenna
 (added December 2000)

USE **LISA (observatory)**

laser interferometry

DEF The design and use of interferometers in which a laser is the light source. The monochromaticity and brilliance of the laser light enables the differentiation between interfering beams of hundreds of meters, in contrast to a maximum of 20 centimeters for the classical interferometers.

- GS interferometry
 - . **laser interferometry**
 - utilization
 - . laser applications
 - . . **laser interferometry**
- RT LIGO (observatory)
 LISA (observatory)
 Sagnac effect

laser machining

- (added June 1995)
- UF *laser micromachining*
- GS machining
 - . **laser machining**
 - utilization
 - . laser applications
 - . . **laser machining**
- RT laser cutting
 metal working

laser materials

- RT alexandrite
 fiber lasers
 gadolinium-gallium garnet
 maser materials
- ∞ materials
 - metal vapor lasers
 - quantum well lasers
 - rhodamine
 - sulfur hexafluoride
 - xenon chloride lasers
 - xenon fluoride lasers

YAG lasers

laser micromachining
 USE **laser machining**

laser microscopy

DEF The application of a laser microscope having a ceramic tube in which a metal vapor is formed at 1600 degrees C. Copper (or other metal atoms) are excited and amplify light so that, when used with a projection microscope, the object to be magnified is illuminated. The power of the emitted beam on the screen remains constant.

- GS microscopy
 - . **laser microscopy**
 - utilization
 - . laser applications
 - . . **laser microscopy**
- RT electro-optics
 light amplifiers
 metal vapor lasers
 microelectronics

laser mode locking

- GS locking
 - . **laser mode locking**
- RT injection locking
 lasers
 optical coupling

laser modes

- GS modes
 - . **laser modes**
- RT axial modes
 field mode theory
 helium-neon lasers
 laser arrays
 laser stability
 optical resonators
 TEA lasers
 waveguide lasers
 wavelengths

laser outputs

- SN (LIMITED TO THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER; FOR THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION USE 'LASER BEAMS')
- GS output
 - . **laser outputs**
- RT atmospheric lasers
- ∞ coherence
 - coherent light
 - diffraction radiation
 - distributed feedback lasers
 - dye lasers
 - excimer lasers
 - frequency pulling
 - gasdynamic lasers
 - glass lasers
 - helium-neon lasers
 - high power lasers
 - holographic interferometry
 - laser arrays
 - laser cutting
 - laser induced fluorescence
 - laser stability
 - maser outputs
 - Nova Laser System
 - optical resonators
 - optical waveguides
 - phase matching
 - photon beams
 - picosecond pulses
 - pulse duration
 - quantum efficiency
 - radiant flux density
 - Shiva laser system
 - speckle patterns
 - thermal blooming
 - tube lasers
 - two-wavelength lasers
 - ultraviolet lasers
 - volumetric efficiency
 - waveguide lasers

wavelengths
 x ray lasers
 xenon chloride lasers
 xenon fluoride lasers
 YAG lasers

laser plasma interactions

DEF The results of the actions of laser beams on electrically ducting fluids, such as plasmas or ionized gases.

- GS electromagnetic interactions
 - . plasma-electromagnetic interaction
 - . . **laser plasma interactions**
 - plasma interactions
 - . plasma-electromagnetic interaction
 - . . **laser plasma interactions**
- RT backscattering
 electromagnetic coupling
 glass lasers
- ∞ interactions
 - plasmas (physics)
 - theta pinch

laser plasmas

- SN (EXCLUDES LASER OUTPUTS)
- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **laser plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **laser plasmas**
- RT inertial fusion (reactor)
 laser ablation
 laser-induced breakdown
 spectroscopy
 lasers

laser power beaming

(added November 1989)

DEF Space-to-Earth power transmission utilizing a laser.

- UF *power transmission (lasers)*
- GS power beaming
 - . **laser power beaming**
 - utilization
 - . laser applications
 - . . **laser power beaming**
- RT energy conversion
 laser propulsion
 microwave power beaming
 microwave transmission
 satellite power transmission
 spacecraft power supplies

laser propulsion

DEF The use of high power lasers for aircraft, rocket, or spacecraft propulsion by indirect conversion of laser heated propellants or working fluids to produce thrust; direct thrust generation with laser light pressure on the vehicle; direct conversion of laser energy into electricity for propulsion.

- GS propulsion
 - . electric propulsion
 - . . **laser propulsion**
 - . low thrust propulsion
 - . . photonic propulsion
 - . . . **laser propulsion**
 - . spacecraft propulsion
 - . . photonic propulsion
 - . . . **laser propulsion**
 - utilization
 - . laser applications
 - . . **laser propulsion**
- RT aircraft engines
 hybrid propulsion
 laser power beaming
 optical pumping
 power beaming
 propulsion system configurations
 propulsive efficiency
 Rankine cycle
 rocket engines
 spacecraft propulsion

laser pumping

thermodynamic cycles

laser pumping

DEF The application of a laser beam of appropriate frequency to a laser medium so that absorption of the radiation increases the population of atoms or molecules in higher energy states.

GS optical pumping
. **laser pumping**

RT fiber lasers
lasers
maser pumping
∞ pumping
rare gas-halide lasers
solar-pumped lasers
stimulated emission devices
wiggler magnets

laser radar

USE **optical radar**

laser radiation

USE **laser beams**

laser range finders

GS measuring instruments
. distance measuring equipment
. . . range finders
. . . . optical range finders
. **laser range finders**
. optical measuring instruments
. . optical range finders
. . . **laser range finders**
optical equipment
. optical measuring instruments
. . optical range finders
. . . **laser range finders**

RT LAGEOS (satellite)
laser ranging
lunar rangefinding
lunar retroreflectors
navigation aids
navigation instruments
satellite laser ranging

laser rangefinding

(added July 2001)

USE **laser ranging**

laser ranger/tracker

RT airborne lasers
range finders
rangefinding
tracking (position)

laser ranging

(added July 2001)

DEF A technique for determining the distance to a target by measuring the absolute time-of-flight of a laser pulse traveling from a transmitter to a reflector on the target and back to a detector at the transmission site.

UF *laser rangefinding*
LLR (ranging)
lunar laser ranging

GS rangefinding
. **laser ranging**
. . satellite laser ranging
utilization
. laser applications
. . **laser ranging**
. . . satellite laser ranging

RT laser range finders
lunar rangefinding
retroreflection
retroreflectors

laser spark spectroscopy

(added June 2001)

USE **laser-induced breakdown spectroscopy**

laser spectrometers

DEF Spectrometers that use a laser.
GS measuring instruments

. spectrometers
. . **laser spectrometers**
RT absorption spectra
infrared spectroscopy
laser spectroscopy

laser spectroscopy

DEF The use of lasers for spectroscopic analysis; particularly in Raman spectroscopy.

GS spectroscopy
. optical emission spectroscopy
. . **laser spectroscopy**
. . . optogalvanic spectroscopy
utilization
. laser applications
. . **laser spectroscopy**
. . . optogalvanic spectroscopy

RT chemical analysis
laser induced fluorescence
laser spectrometers
laser-induced breakdown spectroscopy
photoacoustic spectroscopy
spectroscopic analysis
spectrum analysis

laser stability

DEF Characteristic of a laser beam free from oscillations.

GS stability
. **laser stability**
RT continuous wave lasers
frequency pulling
frequency stability
laser cavities
laser modes
laser outputs

laser target designators

DEF Laser equipment aboard spacecraft for identifying satellites, missiles, and objects in space.

RT ∞ detectors
missile tracking
satellite tracking
target recognition
targets

laser target interactions

DEF Interactions where lasers are used to produce heating, fusion, or damage in targets.

RT ∞ interactions
laser ablation
laser cutting
lasers
pulsed lasers
targets

laser targets

DEF Objects subjected to laser radiation, especially for laser fusion applications.

GS targets
. **laser targets**
RT glass lasers
lasers

laser weapons

DEF Military applications of high power lasers (mainly gasdynamic and chemical mixing lasers).

GS utilization
. laser applications
. . **laser weapons**
weapon systems
. **laser weapons**
weapons
. **laser weapons**
RT fusion weapons
lasers
military technology
space weapons
stimulated emission devices

laser welding

DEF Microspot welding with a laser beam.
GS utilization

. laser applications
. . **laser welding**
welding
. fusion welding
. . **laser welding**

RT bonding
heating
laser ablation
pulsed lasers
soldering

laser windows

GS windows (intervals)
. **laser windows**
RT bandwidth
energy bands
lasers

laser-induced breakdown spectroscopy

(added June 2001)

DEF A non-intrusive, spectroscopic technique wherein a laser pulse is focused on the target sample to form a laser spark or plasma. The emitted light from the spark is then used to identify elemental constituents and quantify abundances of measured species.

UF *laser spark spectroscopy*
LASS (spectroscopy)
LIFS (spectroscopy)
GS spectroscopy
. **laser-induced breakdown spectroscopy**

RT absorption spectroscopy
emission spectra
laser applications
laser plasmas
laser spectroscopy
plasma diagnostics
Raman spectroscopy
spectroscopic analysis

lasers

DEF Devices for producing light by emission of energy stored in a molecular or atomic system when stimulated by light or an electric discharge. (From Light Amplification by Stimulated Emission of Radiation.) Used for Fabry-Perot lasers, natural lasers, and optical masers.

UF *Fabry-Perot lasers*
natural lasers
optical masers
GS stimulated emission devices

. **lasers**
. . airborne lasers
. . argon lasers
. . atmospheric lasers
. . carbon lasers
. . chemical lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . chemical oxygen-iodine lasers
. . continuous wave lasers
. . distributed feedback lasers
. . free electron lasers
. . gamma ray lasers
. . gas lasers
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium-neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas-halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
. . gasdynamic lasers
. . glass lasers
. . high power lasers
. . . Nova Laser System
. . . Shiva laser system

- . . infrared lasers
- . . injection lasers
- . . . quantum cascade lasers
- . . iodine lasers
- . . . chemical oxygen-iodine lasers
- . . liquid lasers
- . . metal vapor lasers
- . . neodymium lasers
- . . nuclear pumped lasers
- . . organic lasers
- . . . dye lasers
- . . plasmadynamic lasers
- . . pulsed lasers
- . . . Q switched lasers
- . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- . . Raman lasers
- . . ring lasers
- . . semiconductor lasers
- . . . aluminum gallium arsenide lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . YLF lasers
- . . solar-pumped lasers
- . . solid state lasers
- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- . . . YAG lasers
- . . . YLF lasers
- . . spaceborne lasers
- . . surface emitting lasers
- . . tunable lasers
- . . two-wavelength lasers
- . . waveguide lasers
- . . . fiber lasers
- . . x ray lasers
- RT alkali vapor lamps
- amplifiers
- beam switching
- ∞ coherence
- coherent electromagnetic radiation
- coherent light
- electron pumping
- gadolinium-gallium garnet
- garnets
- hole burning
- holography
- infrared windows
- interplanetary communication
- interstellar masers
- Kerr electrooptical effect
- laser altimeters
- laser annealing
- laser arrays
- laser cavities
- laser mode locking
- laser plasmas
- laser pumping
- laser target interactions
- laser targets
- laser weapons
- laser windows
- lasing
- light amplifiers
- light modulation
- light sources
- light transmission
- lunar communication
- masers
- microballoons
- molecular oscillators
- nuclear pumping
- optical communication
- optical data processing
- optical memory (data storage)
- optical pumping
- optical resonators
- ∞ optics
- phase matching
- photodiodes
- photonics
- pulse generators
- pulsed radiation
- quantum amplifiers
- quantum electronics
- rapid ballistics identification
- Senarmont polariscopes
- solid state devices
- space communication
- stimulated emission
- thermal blooming
- threshold currents
- transient oscillations
- traveling wave modulation
- lasing**
- DEF Generation of visible or IR light waves having very nearly a single frequency by pumping or exciting electrons into high energy states in a stimulated emission device (laser).
- RT distributed feedback lasers
- electron transitions
- excimer lasers
- hole burning
- krypton fluoride lasers
- lasers
- nitrogen lasers
- optical transition
- rare gas-halide lasers
- stimulated emission devices
- surface emitting lasers
- LASS (spectroscopy)**
(added June 2001)
- USE **laser-induced breakdown spectroscopy**
- LASV**
- USE **F-111 aircraft**
- latches**
- DEF Devices that fasten one thing to another, as a rocket to a launcher, but are subject to ready release so that things may be separated.
- RT fasteners
- holders
- linkages
- pins
- latch-up**
- DEF A p-n-p-n self-sustaining low impedance state which is a type of electronic malfunction.
- RT CMOS
- electrical impedance
- integrated circuits
- p-n-p-n junctions
- switching circuits
- late stars**
- GS celestial bodies
- . stars
- . . **late stars**
- . . . cool stars
- carbon stars
- flare stars
- K stars
- M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- RT asymptotic giant branch stars
- dwarf stars
- early stars
- giant stars
- main sequence stars
- red dwarf stars
- red giant stars
- stellar evolution
- subgiant stars
- lateness**
- RT delay
- scheduling
- latent heat**
- DEF The unit quantity of heat required for isothermal change in a state of a unit mass of matter. Latent heat is termed heat of fusion, heat of sublimation, heat of vaporization, depending on the change of state involved.
- GS chemical properties
- . thermochemical properties
- . . **latent heat**
- . . . heat of fusion
- . . . heat of vaporization
- heat
- . enthalpy
- . . **latent heat**
- . . . heat of fusion
- . . . heat of vaporization
- thermodynamic properties
- . enthalpy
- . . **latent heat**
- . . . heat of fusion
- . . . heat of vaporization
- thermochemical properties
- . . **latent heat**
- . . . heat of fusion
- . . . heat of vaporization
- thermophysical properties
- . . **latent heat**
- . . . heat of fusion
- . . . heat of vaporization
- latent heat of fusion**
- USE **heat of fusion**
- lateral control**
- UF *lateralization*
- roll control*
- GS attitude control
- . **lateral control**
- RT ailerons
- aircraft control
- altitude control
- automatic control
- ∞ control
- directional control
- elevons
- helicopter control
- longitudinal control
- manual control
- missile control
- roll
- satellite attitude control
- satellite control
- lateral oscillation**
- UF *snaking*
- RT directional stability
- roll
- stability augmentation
- transverse oscillation
- turning flight
- wing rock
- yaw
- yawing moments
- lateral stability**
- UF *dihedral effect*
- laterality*
- GS dynamic characteristics
- . dynamic stability
- . . motion stability
- . . . attitude stability
- **lateral stability**
- stability
- . dynamic stability
- . . motion stability
- . . . attitude stability
- **lateral stability**
- RT aerodynamic stability
- aircraft stability
- dihedral angle
- directional stability
- flow stability
- handedness
- hovering stability

laterites

longitudinal stability
roll
rolling moments
rotary stability
spacecraft stability
turning flight
vertical orientation

laterality

USE **lateral stability**

lateralization

USE **lateral control**

laterites

GS soils
. **laterites**
RT decomposition
rocks
tropical regions
water

latex

RT acrylic resins
elastomers
rubber
synthetic rubbers

lathes

GS tools
. machine tools
. . **lathes**
. . . turret lathes
RT ∞ construction materials
grinding machines

Latin square method

DEF In mathematics, the use of an $n \times n$ square array of n different symbols, each symbol appearing once in each row and once in each column.

RT ∞ mathematics
 ∞ methodology
 ∞ variable

latitude

DEF Angular distance from a primary great circle or plane.

GS **latitude**
. geomagnetic latitude
RT coordinates
geodetic coordinates
longitude
position (location)

latitude measurement

RT longitude measurement
 ∞ measurement
navigation
positioning

lattice energy

(added March 2002)

DEF A measure of the stability of a crystal lattice, given by the energy that would be released in bringing constituent ions from an infinite distance apart to their locations in a stable lattice.

RT binding energy
crystal lattices
 ∞ energy
interatomic forces
ionic crystals
lattice parameters
lattice vibrations

lattice imperfections

USE **crystal defects**

lattice parameters

GS independent variables
. **lattice parameters**
RT crystal lattices
crystallography
lattice energy
Patterson map

superlattices
x ray analysis

lattice vibrations

GS vibration
. **lattice vibrations**
RT crystal defects
crystal lattices
forbidden bands
lattice energy
particle motion
phonons
random vibration
spin-lattice relaxation
thermal energy

∞ lattices

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT crystal lattices
lattices (mathematics)

lattices (mathematics)

UF *sublattices*
GS mathematical logic
. **lattices (mathematics)**
. . Boolean algebra
. . . Boolean functions
RT communication theory
Kakutani theorem
 ∞ lattices
 ∞ mathematics
 ∞ matrices
set theory
vortex lattice method

Latvia

GS nations
. **Latvia**
RT Baltic sea
Europe

Laue method

GS x ray analysis
. **Laue method**
RT crystal lattices
crystallography
diffraction
 ∞ methodology
x ray diffraction

laughing

RT emotions
human reactions

launch clouds

USE **exhaust clouds**

launch complexes

USE **launching bases**

launch costs

(added December 1995)

GS costs
. **launch costs**
RT cost reduction
financial management
launch vehicles
spacecraft launching

launch dates

RT launching
spacecraft launching
time
turnaround (STS)

launch escape systems

UF *LES (escape systems)*
GS escape systems
. **launch escape systems**
RT escape capsules
escape rockets

∞ systems

launch time

USE **launch windows**

launch vehicle configurations

RT Advanced Launch System (STS)
aerodynamic configurations
 ∞ configurations
HOTOL launch vehicle
missile configurations
propulsion system configurations
recoverable launch vehicles
spacecraft configurations

launch vehicles

DEF Rockets or other vehicles used to transport satellites, space probes, or other payloads from the Earth (or other terrestrial surfaces) to space.

UF *carrier rockets*

GS **launch vehicles**

. Ablestar launch vehicle
. Ariane launch vehicle
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle
. Atlas launch vehicles
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
. Blue Scout rocket vehicle
. Blue Streak launch vehicle
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
. Delta launch vehicle
. . Delta 3 launch vehicle
. . Delta 4 launch vehicle
. Diamant launch vehicle
. Eldo launch vehicle
. Europa launch vehicles
. . Europa 1 launch vehicle
. . Europa 2 launch vehicle
. . Europa 3 launch vehicle
. . Europa 4 launch vehicle
. heavy lift launch vehicles
. . Energiya launch vehicle
. . Proton launch vehicle
. Hyla-Star rocket vehicle
. Juno launch vehicles
. . Juno 1 launch vehicle
. . Juno 2 launch vehicle
. Little Joe 2 launch vehicle
. Nomad launch vehicle
. Nova launch vehicles
. Pegasus air-launched booster
. RAM B launch vehicle
. recoverable launch vehicles
. reusable launch vehicles
. . single stage to orbit vehicles
. . . Delta Clipper
. . . HOTOL launch vehicle
. . X-33 reusable launch vehicle
. . X-34 reusable launch vehicle
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . Saturn 1 SA-1 launch vehicle
. . . Saturn 1 SA-10 launch vehicle
. . . Saturn 1 SA-2 launch vehicle
. . . Saturn 1 SA-3 launch vehicle
. . . Saturn 1 SA-4 launch vehicle
. . . Saturn 1 SA-5 launch vehicle
. . . Saturn 1 SA-6 launch vehicle
. . . Saturn 1 SA-7 launch vehicle
. . . Saturn 1 SA-8 launch vehicle
. . . Saturn 1 SA-9 launch vehicle
. . Saturn 1B launch vehicles
. . Saturn 2 launch vehicles
. . Saturn 5 launch vehicles
. . Saturn D launch vehicle
. Scout launch vehicle
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
. Thor launch vehicles
. . Thor Able rocket vehicle

- . . Thor Agena launch vehicle
- . . Thor Delta launch vehicle
- . Thorad launch vehicles
- . . Thor Able rocket vehicle
- . . Thor Agena launch vehicle
- . . Thor Delta launch vehicle
- . Titan Centaur launch vehicle
- . Titan launch vehicles
- . . Titan 3 launch vehicle
- . . Titan 4 launch vehicle
- . . . Titan 4B launch vehicle
- . Long March launch vehicles
- . vanguard 2 launch vehicle
- . Vega launch vehicle
- . Zenit launch vehicles
- RT Advanced Launch System (STS)
- aerospace planes
- booster rocket engines
- ∞ booster rockets
- ∞ boosters
- Centaur project
- exhaust clouds
- flight test vehicles
- Jupiter C rocket vehicle
- Jupiter project
- landing modules
- launch costs
- launchers
- launching
- missile launchers
- missiles
- multiengine vehicles
- multistage rocket vehicles
- National Launch Vehicle Program
- rocket catapults
- rocket engines
- rocket launchers
- rocket launching
- rocket vehicles
- ∞ rockets
- Saturn project
- Scout project
- Space Processing Applications
- Rocket
- ∞ spacecraft
- spacecraft launching
- sustainer rocket engines
- test vehicles
- Titan project
- ∞ vehicles
- Vernier engines
- ∞ winged vehicles

launch windows

DEF The postulated openings in the continuum of time or of space, through which a spacecraft or missile must be launched in order to achieve a desired encounter, rendezvous, impact or the like. Used for launch time.

UF *launch time*

GS windows (intervals)

. **launch windows**

RT launching

rocket launching

spacecraft launching

launchers

DEF Specifically, structures or devices, often incorporating tubes, a group of tubes, or a set of tracks, from which self-propelled missiles are sent forth and by means of which the missiles usually are aimed or imparted initial guidance -- distinguished in this specific sense the catapult. Broadly, structures, machines, or devices, including catapults, by means of which airplanes, rockets, or the like are directed, hurled, or sent forth. Used for launching devices.

UF *launching devices*

GS **launchers**

. aircraft launching devices

. . JATO engines

. catapults

. . rocket catapults

. gun launchers

. hypervelocity launchers

. missile launchers

. . mobile missile launchers

- . rocket launchers
- . . rocket catapults
- RT launch vehicles
- launching
- launching pads
- launching sites
- mass drivers
- National Launch Vehicle Program
- rocket launching
- Titan project

launching

GS **launching**

. air launching

. rocket launching

. . liftoff (launching)

. . lunar launch

. . orbital launching

. sea launching

. spacecraft launching

. . liftoff (launching)

RT

countdown

exhaust clouds

launch dates

launch vehicles

launch windows

launchers

missile launchers

National Launch Vehicle Program

prelaunch tests

rocket launchers

∞ shot

starting

Titan project

launching bases

DEF Areas such as Cape Kennedy or Vandenberg Air Force Base that have several launch sites. Used for launch complexes.

UF *launch complexes*

GS **launching bases**

. Cape Kennedy launch complex

RT ∞ facilities

ground support equipment

launching devices

USE **launchers**

launching pads

DEF The load-bearing base or platform from which a rocket vehicle is launched.

GS sites

. launching sites

. . **launching pads**

RT

flame deflectors

gantry cranes

ground support equipment

launchers

liftoff (launching)

∞ pad

∞ platforms

spacecraft launching

umbilical towers

launching sites

DEF Defined areas from which a rocket vehicle is launched, either, operationally or for test purposes; specifically, at Cape Kennedy or Vandenberg, any of the several areas equipped to launch a rocket.

GS sites

. **launching sites**

. . launching pads

RT

exhaust clouds

gantry cranes

ground support equipment

launchers

missile launchers

missile silos

missiles

National Launch Vehicle Program

rocket catapults

rocket launchers

lava

DEF A general term for a molten extrusive;

also, for the rock that is solidified from it.

GS effusives

. **lava**

geophysical fluids

. **lava**

RT aggregates

calderas

cones (volcanoes)

Earth resources

igneous rocks

magma

maria

Mars volcanoes

minerals

regolith

rhyolite

rocks

soils

volcanic eruptions

volcanoes

volcanology

Laval number

GS dimensionless numbers

. **Laval number**

ratios

. **Laval number**

Laves phases

(added August 1998)

GS solid phases

. **Laves phases**

RT

alloys

crystal lattices

crystal structure

cubic lattices

interstitials

microstructure

phase transformations

∞ law

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

claiming

law (jurisprudence)

laws

law (jurisprudence)

DEF A written rule or collection of rules for action or conduct binding upon the population of a community.

UF *forensic sciences*

statutes

GS **law (jurisprudence)**

. international law

. . air law

. . sea law

. . space law

. public law

. . liabilities

. . . legal liability

. . penalties

RT

constitution

crime

intellectual property

∞ law

politics

regulations

voting

lawrencium

GS chemical elements

. actinide series

. . transuranium elements

. . . **lawrencium**

. nuclides

. . isotopes

. . . radioactive isotopes

. . . . transuranium elements

. . . . **lawrencium**

metals

. actinide series

. . transuranium elements

laws

. . . **lawrencium**

laws

GS

laws

- . Child-Langmuir law
- . closure law
- . Coffin-Manson law
- . conservation laws
- . Fourier law
- . Hookes law
- . Kepler laws
- . Newton pressure law
- . Newton second law
- . Newton-Busemann law
- . Ohms law
- . radiation laws
- . . Kirchhoff law of radiation
- . . Stefan-Boltzmann law
- . . Stokes law of radiation
- . Biot-Savart law
- . scaling laws
- . similitude law
- . Snells law
- . Tafel law
- . Weber-Fechner law

RT

- ∞ law
- rules
- ∞ Stokes law

∞ **layers**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF

lamina

RT

- plies*
- anticlines
- atmospheric boundary layer
- barrier layers
- boundary layers
- coatings
- deep scattering layers
- Earth ionosphere
- Ekman layer
- flat layers
- folds (geology)
- formations
- geosynclines
- intercalation
- interlayers
- laminates
- membranes
- mixing layers (fluids)
- monomolecular films
- multilayer insulation
- plasma layers
- ply orientation
- regions
- sedimentary rocks
- shear layers
- shock layers
- strata
- stratification
- substrates
- surface layers
- synclines
- three dimensional boundary layer
- turbulent boundary layer

layouts

RT

- blueprints
- circuit diagrams
- construction
- descriptive geometry
- ∞ design
- ∞ drawing
- drawings
- engineering drawings
- models
- ∞ plans
- surveys

lay-up

DEF

Production of reinforced plastics by positioning the reinforced material (such as glass) in the mold prior to impregnation with resin.

RT

aramid fibers

- carbon fiber reinforced plastics
- composite materials
- composite structures
- epoxy resins
- fiber orientation
- laminates
- reinforcing fibers
- stacking sequence (composite materials)

Lazarev meteorite

GS

- celestial bodies
- . meteorites
- . . iron meteorites
- . . . **Lazarev meteorite**

RT

stony meteorites

LC circuits

GS

- circuits
 - . **LC circuits**
- RT
- inductance
 - network analysis
 - network synthesis
 - parametric amplifiers
 - RC circuits
 - RL circuits
 - RLC circuits
 - time constant

LCRE Reactor

USE

Lithium Cooled Reactor Experiment

LDEF

USE

Long Duration Exposure Facility

LDR (telescope)

USE

Large Deployable Reflector

leaching

RT

- autoclaving
- beneficiation
- dissolving
- elution
- extraction
- flushing
- hydrometallurgy
- percolation
- permeability
- ∞ separation

lead (metal)

GS

- chemical elements
- . **lead (metal)**
- . . lead isotopes
- metals
- . **lead (metal)**
- . . lead isotopes

RT

heavy metals

lead acetates

GS

- acetates
- . **lead acetates**
- esters
- . **lead acetates**
- lead compounds
- . **lead acetates**
- organic compounds
- . lead organic compounds
- . . **lead acetates**

lead acid batteries

DEF The common automobile batteries in which the electrodes are grids of metallic lead containing lead oxides that change in composition during charging and discharging. The electrolyte generally is dilute sulfuric acid.

GS

- electrochemical cells
- . electric batteries
- . . storage batteries
- . . . **lead acid batteries**

RT

chemical auxiliary power units

∞ electric cells

- electrolytic cells
- energy storage
- nickel iron batteries

∞ power supplies

lead alloys

GS

- alloys
 - . **lead alloys**
- RT
- bearing alloys
 - indium alloys
 - solders

lead chlorides

GS

- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **lead chlorides**
- . halides
- . . chlorides
- . . . **lead chlorides**
- . metal halides
- . . . **lead chlorides**
- lead compounds
- . **lead chlorides**

lead compounds

UF

plumbane

GS

lead compounds

- . lead acetates
- . lead chlorides
- . lead molybdates
- . lead oxides
- . lead selenides
- . lead sulfides
- . lead tellurides
- . lead titanates
- . . lead zirconate titanates
- . lead tungstates

RT

- ∞ chemical compounds
- ∞ Group 4A compounds
- ∞ metal compounds

lead isotopes

GS

- chemical elements
- . lead (metal)
- . . **lead isotopes**
- . nuclides
- . . isotopes
- . . . **lead isotopes**
- metals
- . lead (metal)
- . . **lead isotopes**

lead molybdates

GS

- lead compounds
- . **lead molybdates**
- molybdenum compounds
- . molybdates
- . . **lead molybdates**

lead organic compounds

GS

- organic compounds
- . **lead organic compounds**
- . . lead acetates

RT

- ∞ chemical compounds
- ∞ metal compounds

lead oxides

GS

- chalcogenides
- . oxides
- . . metal oxides
- . . . **lead oxides**
- lead compounds
- . **lead oxides**

lead poisoning

GS

- diseases
- . toxic diseases
- . . **lead poisoning**
- toxicity
- . **lead poisoning**

RT

- occupational diseases
- ∞ poisoning
- smog

lead selenides

GS

- chalcogenides
- . selenides
- . . **lead selenides**

- lead compounds
 - . **lead selenides**
 - selenium compounds
 - . selenides
 - . . **lead selenides**
- lead sulfides**
 - GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **lead sulfides**
 - lead compounds
 - . **lead sulfides**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **lead sulfides**
- lead tellurides**
 - GS chalcogenides
 - . tellurides
 - . . **lead tellurides**
 - lead compounds
 - . **lead tellurides**
 - tellurium compounds
 - . tellurides
 - . . **lead tellurides**
- lead titanates**
 - GS lead compounds
 - . **lead titanates**
 - . . lead zirconate titanates
 - titanium compounds
 - . titanates
 - . . **lead titanates**
 - . . . lead zirconate titanates
- lead tungstates**
 - GS lead compounds
 - . **lead tungstates**
 - tungsten compounds
 - . tungstates
 - . . **lead tungstates**
- lead zirconate titanates**
 - DEF Dense ceramics with high piezoelectric coefficients and a high relative permittivity.
 - GS ceramics
 - . **lead zirconate titanates**
 - lead compounds
 - . lead titanates
 - . . **lead zirconate titanates**
 - titanium compounds
 - . titanates
 - . . lead titanates
 - . . . **lead zirconate titanates**
 - . . zirconium titanates
 - . . . **lead zirconate titanates**
 - zirconium compounds
 - . zirconium titanates
 - . . **lead zirconate titanates**
 - RT ferroelectric materials
 - . piezoelectric ceramics
- leaders (meteorology)**
 - (added August 1999)
 - GS electric current
 - . electric discharges
 - . . lightning
 - . . . **leaders (meteorology)**
 - stepped leaders
- leadership**
 - RT morale
 - . personnel management
- leading edge flaps**
 - DEF Control surfaces at the leading edges of airfoils. Hinged panels deflected downward to induce and control separation of the air flow.
 - UF *Krueger flaps*
 - GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge flaps**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge flaps**
 - aircraft brakes
 - . . wing flaps
 - . . . **leading edge flaps**
 - control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge flaps**
 - drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge flaps**
 - aircraft structures
 - . vortex flaps
 - . . winged vehicles
 - . wings
- leading edge slats**
 - UF *wing slats*
 - GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - aircraft brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - boundary layer control
 - . split flaps
 - . spoilers
 - . trailing edge flaps
 - . wing slots
- leading edge sweep**
 - GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . sweep angle
 - sweepback
 - **leading edge sweep**
- leading edge thrust**
 - DEF The increase in lift produced by highly swept, low-aspect ratio wings which develop a strong separation vortex; however, an even larger increase in drag is produced.
 - GS thrust
 - . **leading edge thrust**
 - RT aerodynamic forces
 - . airfoils
 - . leading edges
 - . lift
 - . wing loading
- leading edges**
 - GS edges
 - . **leading edges**
 - . . blunt leading edges
 - . . sharp leading edges
 - RT airfoils
 - . forebodies
 - . leading edge thrust
 - . thrust distribution
 - . trailing edges
 - . vortex flaps
 - . wing rock
- leaf area index**
 - GS ratios
 - . indexes (ratios)
 - . . vegetative index
 - . . . **leaf area index**
 - RT canopies (vegetation)
- crop identification
 - . crop inventories
 - . leaves
 - . photosynthetically active radiation
 - . remote sensing
 - . spectral reflectance
- leakage**
 - RT brush seals
 - . cavities
 - . cracks
 - . defects
 - ∞ escape
 - . fluid flow
 - . intrusion
 - . labyrinth seals
 - . loss of coolant
 - . losses
 - . permeability
 - . pinholes
 - . porosity
 - ∞ reduction
 - . seepage
 - . wastes
- Lear jet aircraft**
 - GS commercial aircraft
 - . **Lear jet aircraft**
 - . jet aircraft
 - . **Lear jet aircraft**
 - RT ∞ aircraft
- learning**
 - GS **learning**
 - . astronaut training
 - . conditioning (learning)
 - . habituation (learning)
 - . maze learning
 - . transfer of training
 - RT achievement
 - . aptitude
 - . behavior
 - . child device
 - . deconditioning
 - . education
 - . educational television
 - . habits
 - . instructors
 - . knowledge
 - . memory
 - . motivation
 - . reinforcement (psychology)
 - . responses
 - . retention (psychology)
 - . students
 - . teaching machines
 - . textbooks
 - . training analysis
 - . training evaluation
 - . universities
- learning curves**
 - RT asymptotic methods
 - ∞ curves
- learning machines*
 - USE **machine learning**
- learning theory**
 - RT child device
 - . education
 - . problem solving
 - ∞ theories
- leasing**
 - DEF Contracting for the use and possession of land, buildings, etc. , for a specified time and fixed payments.
 - GS procurement
 - . **leasing**
 - RT contracts
 - . land use
 - . NASA programs
 - . resources management

least squares method

site selection

least squares method

DEF Any statistical procedure that involves minimizing the sum of squared differences.

GS analysis (mathematics)
. numerical analysis
. . . approximation

. . . **least squares method**

RT backpropagation (artificial intelligence)
correlation
curve fitting
Gauss-Markov theorem
mean square values
∞ methodology
optimization
parameter identification
quality control
regression analysis
simultaneous equations

leather

RT clothing
collagens
shoes
skin (anatomy)

leaves

RT brown wave effect
canopies (vegetation)
deciduous trees
defoliant
defoliation
foliage
green wave effect
herbicides
leaf area index
plants (botany)

Lebanon

GS nations
. **Lebanon**
RT Asia

Lebesgue theorem

GS analysis (mathematics)
. real variables
. . . measure and integration
. . . **Lebesgue theorem**
theorems
. **Lebesgue theorem**
RT set theory

lectures

UF *speeches*
RT education
public speaking
speech
verbal communication

LED (diodes)

USE **light emitting diodes**

Leda

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 11,094,000 kilometers.

GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . **Leda**
RT Jupiter (planet)

ledges

RT cliffs
rocks
topography

lee waves

DEF Internal waves occurring on the down-stream sides of submarine ridges.

RT air currents
barotropic flow
surface waves
tropospheric waves

vertical air currents

leg (anatomy)

GS anatomy
. limbs (anatomy)
. . **leg (anatomy)**
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
appendages
. **leg (anatomy)**
. . feet (anatomy)
. . knee (anatomy)
. . thigh
RT femur
gait
tibia

legal liability

GS law (jurisprudence)
. public law
. . liabilities
. . . **legal liability**
RT air law
contracts
insurance (contracts)
intellectual property
international law
judgments
losses
penalties
prohibition

Legendre code

USE **computer programming**
neutron scattering

Legendre functions

UF *Legendre polynomials*
Legendre transformation
GS analysis (mathematics)
. complex variables
. . **Legendre functions**
functions (mathematics)
. **Legendre functions**
RT orthogonal functions
spherical harmonics

Legendre polynomials

USE **Legendre functions**

Legendre transformation

USE **Legendre functions**

legibility

RT character recognition
contrast
perception
printing
reading
resolution
symbols
visibility
vision

leguminous plants

GS farm crops
. **leguminous plants**
. . soybeans
plants (botany)
. **leguminous plants**
. . soybeans
RT agriculture
botany
Earth resources
∞ food
hay
nitrogenation
nodules
vegetables

Leidenfrost phenomenon

GS phase transformations
. vaporizing
. . boiling
. . . nucleate boiling

. . . **Leidenfrost phenomenon**

RT film boiling
heat transfer

LEM (lunar module)

USE **Lunar Module**

lemmas

USE **theorems**

length

DEF The larger of the two dimensions of the open face.

GS dimensions
. **length**
. . diffusion length
RT distance
thickness

Lennard-Jones gas

RT binary fluids
gas viscosity
Lennard-Jones potential

Lennard-Jones potential

RT computerized simulation
intermolecular forces
Lennard-Jones gas
molecular interactions
potential theory

lens antennas

GS antennas
. directional antennas
. . **lens antennas**
radio antennas
. . microwave antennas
. . . **lens antennas**
microwave equipment
. microwave antennas
. . **lens antennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **lens antennas**
RT antenna design
dipole antennas
horn antennas
lenses
multibeam antennas
radar antennas
waveguide antennas
wire grid lenses

lens design

RT antireflection coatings
aspheric optics
computer aided design
∞ design
gradient index optics
lenses
optical correction procedure
∞ optics
product development
stigmatism
zoom lenses

lenses

DEF Transparent optical elements, so constructed that they serve to change the degree of convergence of the transmitted rays.

GS **lenses**
. aspheric optics
. contact lenses
. Fresnel lenses
. gravitational lenses
. magnetic lenses
. wide angle lenses
. wire grid lenses
. zoom lenses
RT astigmatism
cameras
cataracts
circumsolar telescopes
eye (anatomy)
eyepieces

focusing
 gradient index optics
 integrated optics
 lens antennas
 lens design
 magnification
 numerical aperture
 optical equipment
 optical filters
 optical materials
 ∞ optics
 panoramic cameras
 photographic equipment
 refracting telescopes
 refraction
 reticles
 stigmatism
 streak cameras
 telescopes
 vignetting

lenticular bodies
 GS symmetrical bodies
 . **lenticular bodies**
 RT axisymmetric bodies
 ∞ bodies
 convexity

LEO
 USE **low Earth orbits**

LEO environments
 USE **Earth orbital environments**

Leonid meteoroids
 GS celestial bodies
 . meteoroid showers
 . . **Leonid meteoroids**
 . meteoroids
 . . **Leonid meteoroids**

leptons
 DEF In the classification of subatomic particles according to mass, the lightest of all particles; examples of leptons are the electron and positron.
 GS particles
 . elementary particles
 . . fermions
 . . . **leptons**
 antineutrinos
 electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 muons
 neutrinos
 solar neutrinos
 positrons
 RT charged particles
 charm (particle physics)
 gluons
 mesons
 partons
 quantum chromodynamics
 quark parton model

LES (escape systems)
 USE **launch escape systems**

LES (mathematics)
 (added October 1997)
 USE **large eddy simulation**

LES (satellites)
 USE **Lincoln Experimental Satellites**

LESA (lunar exploration system)
 USE **Lunar Exploration System for Apollo**

lesions
 GS injuries

. **lesions**
 . . pulmonary lesions
 RT abrasion
 burns (injuries)

Lesotho
 GS nations
 . **Lesotho**
 RT Africa
 Republic of South Africa

Lesser Antilles
 GS landforms
 . islands
 . . West Indies
 . . . **Lesser Antilles**
 RT Atlantic Ocean

lethality
 RT carbon monoxide poisoning
 damage
 destruction

lethargy
 RT boredom
 ∞ depression
 detachment
 frustration
 human behavior
 ∞ inhibition
 monotony

letters (symbols)
 USE **symbols**

leucine
 GS acids
 . amino acids
 . . **leucine**
 . . . norleucine
 organic compounds
 . amino acids
 . . **leucine**
 . . . norleucine

leukemias
 GS diseases
 . tumors
 . . neoplasms
 . . . cancer
 **leukemias**
 RT bone marrow
 occupational diseases

leukocytes
 UF *white blood cells*
 GS cells (biology)
 . blood cells
 . . **leukocytes**
 . . . eosinophils
 . . . lymphocytes
 RT biocompatibility
 bone marrow
 erythrocytes
 immune systems

leukopenia
 GS signs and symptoms
 . **leukopenia**
 RT infectious diseases

∞ **level**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT chemical energy
 free energy
 height
 internal energy
 level (horizontal)
 level (quantity)

level (horizontal)
 GS **level (horizontal)**
 . liquid levels
 RT ∞ grade

gradients
 ∞ level
 slopes

level (quantity)
 GS **level (quantity)**
 . effective perceived noise levels
 . energy levels
 . . atomic energy levels
 . . electron states
 . . ground state
 . . molecular energy levels
 . . . intermolecular forces
 . . . rotational states
 . . . vibrational states
 . . yrast state
 RT amplitudes
 displacement
 ∞ flux
 flux (rate)
 flux density
 ∞ intensity
 ∞ level
 loudness
 magnitude
 value

leveling
 SN (EXCLUDES METAL WORKING)
 RT adjusting
 consistency
 datum (elevation)
 flattening
 metal working
 ∞ rolling
 smoothing
 winding

levers
 RT cantilever members
 handles
 knobs
 ∞ machinery
 manual control
 mechanical devices
 pedals

levitation
 GS **levitation**
 . acoustic levitation
 RT buoyancy
 electrostatic gyroscopes
 flotation
 frictionless environments
 levitation melting
 magnetic bearings
 magnetic levitation vehicles
 suspension systems (vehicles)
 vacuum melting

levitation melting
 DEF A metallurgical process in which a piece of metal placed above a coil carrying a high frequency current can be supported against gravity by the Lorentz force caused by the induced surface currents in the metal. At the same time, the heat produced by Joule dissipation melts the metal.
 GS phase transformations
 . melting
 . . **levitation melting**
 RT electric current
 external surface currents
 levitation
 liquid metals
 low gravity manufacturing
 magnetic suspension
 ∞ metallurgy
 ohmic dissipation
 resistance heating
 space manufacturing
 space processing

Lewis base
 RT amines

Lewis numbers

electrons

Lewis numbers

- GS dimensionless numbers
 - . **Lewis numbers**
- ratios
 - . **Lewis numbers**
- RT density (mass/volume)
 - diffusion coefficient
 - fluid flow
 - heat transfer
 - mass flow
 - mass transfer
 - specific heat
 - thermal conductivity

Lexan (trademark)

- GS carbon compounds
 - . carbonates
 - . . polycarbonates
 - . . . **Lexan (trademark)**
- esters
 - . polycarbonates
 - . . **Lexan (trademark)**
- RT ∞ polymers
 - resins

LFA thrusters

(added April 2001)

USE **magnetoplasmadynamic thrusters**

LFO

USE **Landsat follow-on missions**

liabilities

- GS law (jurisprudence)
 - . public law
 - . . **liabilities**
 - . . . legal liability
- RT air law
 - commerce
 - disciplining
 - losses
 - penalties
 - regulations

Liapunov functions

- UF *Lyapunov functions*
- GS analysis (mathematics)
 - . real variables
 - . . **Liapunov functions**
- functions (mathematics)
 - . **Liapunov functions**
- RT differential equations

Liberia

- GS nations
 - . **Liberia**
- RT Africa

libraries

- RT bibliographies
 - catalogs (publications)
 - data retrieval
 - documentation
 - documents
 - information dissemination
 - information resources management
 - information retrieval
 - information systems
 - integrated library systems
 - interservice data exchange program
 - literature
 - museums
 - ∞ reference systems
 - selective dissemination of information
 - textbooks
 - world data centers

libration

DEF A real or apparent oscillatory motion, particularly the apparent oscillation of the moon. Because of libration more than half of the moon's surface is revealed to an observer on the Earth even though the same side of the moon is always toward the Earth, because the moon's

periods of rotation and revolution are the same. Other motions regarded as librations are long period orbital motions and periodic perturbations in orbital elements.

- RT Earth limb
 - Lissajous figures
 - lunar far side
 - lunar limb
- ∞ motion
 - nutations
 - orbital resonances (celestial mechanics)
 - precession
 - rotation

librational motion

- RT Lagrange coordinates
 - ∞ motion
 - nutations
 - orbital resonances (celestial mechanics)

LIBS (spectroscopy)

(added June 2001)

USE **laser-induced breakdown spectroscopy**

Libya

- UF *Lybia*
- GS nations
 - . **Libya**
- RT Africa

Libyan desert

- GS land
 - . deserts
 - . . **Libyan desert**
- RT Africa

licensing

- GS **licensing**
 - . open source licensing (computers)
- RT copyrights
 - intellectual property
 - patent applications
 - policies
 - regulations

lichens

- GS plants (botany)
 - . **lichens**
- RT algae
 - fungi
 - lacunas
 - symbiosis

lidar

USE **optical radar**

lie groups

- GS algebra
 - . **lie groups**
 - . . spinor groups
 - geometry
 - . differential geometry
 - . . **lie groups**
 - . . . spinor groups
- RT group theory
 - supergravity
 - supersymmetry

Liechtenstein

- GS nations
 - . **Liechtenstein**
- RT Europe

Lienard potential

- GS potential energy
 - . electric potential
 - . . **Lienard potential**
- RT electric current
 - electric fields

lies

- RT galvanic skin response

mental performance

LIF (fluorescence)

USE **laser induced fluorescence**

life (biology)

USE **life sciences**

life (durability)

- UF *lifetime (durability)*
- GS **life (durability)**
 - . carrier lifetime
 - . fatigue life
 - . half life
 - . plasma lifetime
 - . satellite lifetime
 - . service life
 - . storage stability
- RT accelerated life tests
 - aircraft survivability
 - depletion
 - depreciation
 - durability
 - failure analysis
 - long term effects
 - ∞ longevity
 - Mills ratio
 - MTBF
 - ∞ resistance
 - retirement for cause
 - systems health monitoring
 - vulnerability

life cycle costs

DEF The sum of the acquisition costs and maintenance costs for the life of a system.

- GS costs
 - . **life cycle costs**
- RT concurrent engineering
 - cost analysis
 - cost effectiveness
 - design to cost
 - financial management
 - management planning
 - production costs
 - systems engineering
 - value engineering

life detectors

- RT biomarkers
 - biosatellites
- ∞ detectors
 - extraterrestrial life

life rafts

- GS rafts
 - . **life rafts**
- RT floats
 - inflatable structures
 - lifeboats

life sciences

DEF A collective discipline encompassing biology, physiology, psychology, medicine, and sometimes sociology and other related areas. Used for life (biology).

- UF *life (biology)*
- GS **life sciences**
 - . extraterrestrial life
 - . molecular biology
- RT abiogenesis
 - aging (biology)
 - biological evolution
- ∞ biology
 - chemical evolution
 - environmental engineering
 - neurology
- ∞ physical sciences
 - psychopharmacology
- ∞ science

life span

- SN (LIMITED TO THE LIFE SCIENCES)
- RT age factor
 - aging (biology)
 - death

- existence
- gerontology
- ∞ longevity
- mortality
- ∞ span
- life support systems**
 - GS support systems
 - . **life support systems**
 - .. biopaks
 - .. closed ecological systems
 - .. emergency life sustaining systems
 - ... AEPS
 - .. portable life support systems
 - ... AEPS
 - ... IMLSS
 - RT aerospace environments
 - air conditioning
 - artificial gravity
 - astronaut locomotion
 - ∞ atmospheres
 - biosatellites
 - breathing apparatus
 - Chlorella
 - environmental engineering
 - environments
 - exobiology
 - extravehicular mobility units
 - human factors engineering
 - long term effects
 - lunar environment
 - lunar logistics
 - lunar shelters
 - manned maneuvering units
 - ∞ nutrients
 - onboard equipment
 - oxygen masks
 - oxygen supply equipment
 - planetary environments
 - pressure suits
 - pressurized cabins
 - provisioning
 - rebreathing
 - Service Module (ISS)
 - space flight feeding
 - space habitats
 - spacecraft environments
 - survival
 - ∞ sustaining
 - ∞ systems
 - thermal environments
 - underwater breathing apparatus
 - vapor barrier clothing
 - ventilation
 - waste management
 - water
 - weightlessness

- lifeboats**
 - GS surface vehicles
 - . boats
 - .. **lifeboats**
 - water vehicles
 - . boats
 - .. **lifeboats**
 - RT Assured Crew Return Vehicle
 - life rafts
 - rafts
 - survival equipment
 - X-38 crew return vehicle

lifetime (durability)
 USE **life (durability)**

lift
 DEF That component of the total aerodynamic force acting on a body perpendicular to the undisturbed airflow relative to the body. To lift off, to take off in vertical ascent. Said of rocket vehicles. Used for aerodynamic lift, lift coefficients, lift distribution, lift forces, and variable lift.
 UF *aerodynamic lift*
lift coefficients
lift distribution
lift forces
variable lift

- GS aerodynamic characteristics
 - . **lift**
 - .. interference lift
 - .. jet lift
 - .. rotor lift
 - .. zero lift
 - aerodynamic forces
 - . **lift**
 - .. interference lift
 - .. jet lift
 - .. rotor lift
 - .. zero lift
 - dynamic characteristics
 - . **lift**
 - .. interference lift
 - .. jet lift
 - .. rotor lift
 - .. zero lift
- RT aerodynamic coefficients
 - aerodynamic configurations
 - aerodynamic drag
 - aerodynamics
 - airfoils
 - angle of attack
 - aspect ratio
 - camber
 - distribution (property)
 - drag
 - externally blown flaps
 - gliding
 - ground effect (aerodynamics)
 - hypersonic forces
 - leading edge thrust
 - pressure distribution
 - sweep effect
 - under surface blowing
 - upper surface blowing

- lift augmentation**
 - RT boundary layer control
 - circulation control airfoils
 - downwash
 - peripheral jet flow
 - spanwise blowing
 - STOVL aircraft
 - tangential blowing
 - upper surface blown flaps
 - vortex flaps

lift coefficients
 USE **aerodynamic coefficients**
lift

- lift devices**
 - UF *lifting surfaces*
 - RT boundary layer control
 - ∞ devices
 - direct lift controls
 - drag devices
 - externally blown flaps
 - flaps (control surfaces)
 - magnetic levitation vehicles
 - slots
 - upper surface blown flaps

lift distribution
 USE **force distribution**
lift

- lift drag ratio**
 - DEF The ratio of lift to drag obtained by dividing the lift by the drag or the lift coefficient by the drag coefficient. Used for drag balance.
 - UF *drag balance*
 - GS ratios
 - . **lift drag ratio**
 - RT aerodynamic balance
 - aerodynamic coefficients
 - aerodynamic drag
 - aerodynamic stalling
 - boundary layer separation
 - drag reduction
 - force distribution

- pressure ratio
- lift fans**
 - UF *fanlift devices*
 - RT ducted fans
 - fan in wing aircraft
 - lifting rotors
 - propeller fans
 - rotary wings
 - short takeoff aircraft
 - turbofans
 - vertical takeoff aircraft
 - XV-11A aircraft

lift forces
 USE **lift**

- lifting bodies**
 - UF *lifting surfaces*
 - GS **lifting bodies**
 - . lifting reentry vehicles
 - .. FDL-5 reentry vehicle
 - .. HL-10 reentry vehicle
 - .. HLD-35 reentry vehicle
 - .. Janus spacecraft
 - .. M-2 lifting body
 - ... M-2F2 lifting body
 - .. X-20 aircraft
 - .. X-24 aircraft
 - . M-2F3 lifting body
 - RT aerodynamic configurations
 - airfoils
 - bluff bodies
 - ∞ bodies
 - ∞ devices
 - lunar flying vehicles
 - reentry vehicles
 - towed bodies
 - waveriders

- lifting reentry vehicles**
 - UF *reentry gliders*
 - space gliders*
 - GS lifting bodies
 - . **lifting reentry vehicles**
 - .. FDL-5 reentry vehicle
 - .. HL-10 reentry vehicle
 - .. HLD-35 reentry vehicle
 - .. Janus spacecraft
 - .. M-2 lifting body
 - ... M-2F2 lifting body
 - .. X-20 aircraft
 - .. X-24 aircraft
 - reentry vehicles
 - . maneuverable reentry bodies
 - . **lifting reentry vehicles**
 - ... FDL-5 reentry vehicle
 - ... HL-10 reentry vehicle
 - ... HLD-35 reentry vehicle
 - ... Janus spacecraft
 - ... M-2 lifting body
 - ... M-2F2 lifting body
 - ... X-20 aircraft
 - ... X-24 aircraft
 - RT aerospace planes
 - ∞ aircraft
 - ASSET gliders
 - Astro vehicle
 - boostglide vehicles
 - gliders
 - HOPE aerospace plane
 - hypersonic gliders
 - manned reentry
 - manned spacecraft
 - recoverable spacecraft
 - reentry
 - spacecraft reentry

- lifting rotors**
 - GS airfoils
 - . wings
 - .. rotary wings
 - ... **lifting rotors**
 - ... bearingless rotors
 - rotating bodies
 - . rotors

liftoff (launching)

- . . . rotary wings
- **lifting rotors**
- bearingless rotors
- RT ground effect machines
- lift fans
- rotary wing aircraft
- short takeoff aircraft
- vertical takeoff aircraft

lifting surfaces

- USE **lift devices**
- lifting bodies**
- surfaces**

liftoff (launching)

- GS launching
- . rocket launching
- . . **liftoff (launching)**
- . spacecraft launching
- . . **liftoff (launching)**
- RT booster rocket engines
- countdown
- launching pads
- rocket firing
- rocket thrust

∞ lifts

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conveyors
- cranes
- elevators (lifts)
- escalators
- jacks (lifts)
- winches

ligaments

- RT connective tissue
- joints (anatomy)

ligands

- RT chemical bonds
- chemical composition
- coordination number

light (visible radiation)

DEF Visible radiation (about 0. 4 to 0. 7 microns in wavelength) considered in terms of its luminous efficiency, i. e. , evaluated in proportion to its ability to stimulate the sense of sight. Used for optical spectrum and visible radiation.

- UF *optical spectrum*
- visible radiation*
- GS electromagnetic radiation
- . **light (visible radiation)**
- . . coherent light
- . . gegenschein
- . . polarized light
- . . sky radiation
- . . . airglow
- geocoronal emissions
- nightglow
- twilight glow
- . . . dayglow
- . . . elves
- . . . sprites (atmospheric physics)
- . . sunlight
- . . zodiacal light
- RT atmospheric radiation
- attenuation
- beams (radiation)
- black body radiation
- brightness
- Cerenkov radiation
- coherent electromagnetic radiation
- coherent radiation
- color
- critical frequencies
- darkness
- dichroism
- electromagnetic spectra
- energy absorption
- excitons
- extraterrestrial radiation
- ∞ flash

- geometrical optics
- glare
- illumination
- incandescence
- infrared radiation
- light curve
- lighting equipment
- line spectra
- lumens
- luminaires
- luminance
- luminescence
- luminosity
- luminous intensity
- monochromatic radiation
- near infrared radiation
- near ultraviolet radiation
- opacity
- optical depolarization
- optical emission spectroscopy
- optical measurement
- optical properties
- ∞ optics
- photics
- photometry
- photons
- photonuclear reactions
- photophilic plants
- photophoresis
- photosensitivity
- planetary radiation
- polarized electromagnetic radiation
- polarizers
- ∞ radiation
- Raman spectra
- reflection
- refraction
- refractivity
- shadows
- sky brightness
- solar radiation
- thermal radiation
- transmittance
- ultraviolet spectra
- visibility
- visible spectrum

light absorption

- USE **electromagnetic absorption**

light adaptation

- GS adaptation
- . retinal adaptation
- . . **light adaptation**
- sensitivity
- . photosensitivity
- . . **light adaptation**
- RT flash blindness
- night vision
- pupillometry
- thresholds (perception)
- vision

Light Airborne Multipurpose System

- UF *LAMPS program*
- GS navigation aids
- . **Light Airborne Multipurpose System**
- onboard equipment
- . airborne equipment
- . . **Light Airborne Multipurpose System**
- RT aircraft equipment
- flight instruments
- navigation instruments
- ∞ systems

light aircraft

- GS **light aircraft**
- . Beech 99 aircraft
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft

- . Cessna 402B aircraft
- . Cessna L-19 aircraft
- . DH 125 aircraft
- . DO-27 aircraft
- . DO-28 aircraft
- . F-28 helicopter
- . Firebee 2 target drone aircraft
- . G-1 aircraft
- . light helicopters
- . . OH-4 helicopter
- . . OH-5 helicopter
- . . OH-6 helicopter
- . . OH-58 helicopter
- . light intratheater transport
- . MH-262 aircraft
- . Mystere 20 aircraft
- . OH-13 helicopter
- . OH-23 helicopter
- . PD-808 aircraft
- . Piper aircraft
- . . PA-34 Seneca aircraft
- . Saab 105 aircraft
- . SC-7 aircraft
- . U-10 aircraft
- . VZ-8 aircraft
- RT agricultural aircraft

∞ aircraft

- biplanes
- drone aircraft
- general aviation aircraft
- ∞ low wing aircraft
- ∞ military aircraft
- observation aircraft
- passenger aircraft
- pilotless aircraft
- reconnaissance aircraft
- submersible aircraft
- ∞ subsonic aircraft
- training aircraft
- transport aircraft
- ultralight aircraft
- utility aircraft
- water takeoff and landing aircraft

light alloys

- GS alloys
- . **light alloys**
- . . aluminum alloys
- . . . aluminum-lithium alloys
- . . beryllium alloys
- . . magnesium alloys
- RT ∞ metallurgy
- metals

light amplifiers

- UF *optical amplifiers*
- GS amplifiers
- . **light amplifiers**
- RT fiber lasers
- four-wave mixing
- HCN lasers
- image converters
- image enhancers
- image intensifiers
- Lallemand cameras
- laser cavities
- laser microscopy
- lasers
- microchannels
- ∞ optics
- photocathodes
- quantum amplifiers
- ultrashort pulsed lasers
- ultraviolet lasers

light armed reconnaissance aircraft

- USE **COIN aircraft**

light beams

- UF *light probes*
- GS beams (radiation)
- . **light beams**
- . . laser beams
- electromagnetic radiation
- . **light beams**
- . . laser beams

- RT Bragg cells
four-wave mixing
optical waveguides
photon beams
rare gas-halide lasers
- light bulbs*
USE **luminaires**
- light communication*
USE **optical communication**
- light curve**
RT ∞ curves
light (visible radiation)
stellar radiation
- light duration*
USE **flash**
pulse duration
- light elements**
GS chemical elements
. **light elements**
RT ∞ elements
low density materials
- light emission**
UF *optical emission*
GS emission
. **light emission**
. . . incandescence
. . . luminescence
. . . . bioluminescence
. . . . cathode glow
. . . . cathodoluminescence
. . . . chemiluminescence
. . . . electroluminescence
. . . . fluorescence
. laser induced fluorescence
. phosphorescence
. resonance fluorescence
. x ray fluorescence
. . . . lunar luminescence
. . . . optical resonance
. . . . photoluminescence
. triboluminescence
. x ray fluorescence
. . . . shock wave luminescence
. . . . sonoluminescence
. . . . spacecraft glow
. . . . thermoluminescence
- RT airglow
auroral absorption
auroral ionization
auroral spectroscopy
auroras
diffraction radiation
dimming
electromagnetic radiation
linear polarization
∞ optics
self sustained emission
sky brightness
spectral emission
stimulated emission
white holes (astronomy)
- light emitting diodes**
DEF Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes).
UF *LED (diodes)*
GS electronic equipment
. diodes
. . . semiconductor diodes
. . . . **light emitting diodes**
. . . . solid state devices
. . . . semiconductor devices
. **light emitting diodes**
optoelectronic devices
. **light emitting diodes**
RT aircraft instruments
alphanumeric characters
display devices
- electroluminescence
fiber optics
luminescence
photonics
surface emitting lasers
- light gas guns**
GS gas guns
. **light gas guns**
RT hypervelocity projectiles
- light helicopters**
(added June 1989)
GS light aircraft
. **light helicopters**
. . . OH-4 helicopter
. . . OH-5 helicopter
. . . OH-6 helicopter
. . . OH-58 helicopter
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . **light helicopters**
. OH-4 helicopter
. OH-5 helicopter
. OH-6 helicopter
. OH-58 helicopter
RT ∞ aircraft
military helicopters
observation aircraft
- light intensity*
USE **luminous intensity**
- light intratheater transport**
GS light aircraft
. **light intratheater transport**
transport aircraft
. **light intratheater transport**
RT ∞ aircraft
COIN aircraft
- light ions**
DEF Ions of helium, boron, and other elements used in implantation experiments.
GS ions
. **light ions**
RT chemical elements
heavy ions
plasmas (physics)
- light modulation**
UF *optical maser modulation*
optical modulation
GS modulation
. **light modulation**
. . . Miros system
. . . ultrasonic light modulation
RT amplitude modulation
Bragg cells
deformable mirrors
electro-optical effect
frequency modulation
Kerr electrooptical effect
lasers
light modulators
light valves
modulators
optical heterodyning
optical resonators
optical switching
∞ optics
polarization modulation
pulse modulation
traveling wave modulation
tunable lasers
- light modulators**
(added September 1995)
GS modulators
. **light modulators**
RT acousto-optics
electro-optics
light modulation
magneto-optics
- optical data processing
- light pressure*
USE **illuminance**
- light probes*
USE **light beams**
- light scattering**
GS scattering
. wave scattering
. . . electromagnetic scattering
. . . . **light scattering**
. halos
transmission
. electromagnetic wave transmission
. light transmission
. . . **light scattering**
. halos
. wave propagation
. . **light scattering**
. halos
RT afterglows
atmospheric scattering
bidirectional reflectance
Brillouin effect
circumsolar radiation
diffuse radiation
electromagnetic absorption
forward scattering
gravitational lenses
infrared absorption
Rayleigh scattering
reflection nebulae
scatter plates (optics)
speckle patterns
transmissivity
tropospheric scattering
Umkehr effect
- light scattering meters**
GS measuring instruments
. optical measuring instruments
. . **light scattering meters**
optical equipment
. optical measuring instruments
. . **light scattering meters**
RT meteorological instruments
- light sources**
GS **light sources**
. illuminators
RT arc lamps
cathodoluminescence
dayglow
duochromators
electric arcs
electroluminescence
flash lamps
glow discharges
HCN lasers
heat sources
illuminating
lasers
lighting equipment
luminaires
mercury lamps
monochromators
moon
plasma display devices
point sources
porous silicon
radiation sources
sun
- light speed**
GS rates (per time)
. **light speed**
velocity
. **light speed**
RT high speed
relativistic velocity
Schwarzschild metric
- light transmission**
UF *optical absorption*

light transport aircraft

- GS transmission
 - . electromagnetic wave transmission
 - . . . **light transmission**
 - light scattering
 - halos
- RT absorptance
- atmospheric optics
- atmospheric refraction
- Fermat principle
- fiber optics
- flicker
- gamma ray lasers
- geometrical optics
- haze
- holographic optical elements
- illuminating
- ∞ illumination
- integrated optics
- lasers
- low visibility
- molecular absorption
- opacity
- optical bistability
- optical coupling
- optical properties
- optical reflection
- optical waveguides
- rainbows
- Sagnac effect
- squeezed states (quantum theory)
- stimulated emission devices
- translucence
- transparence
- turbidity
- ultraviolet lasers
- visibility
- wave dispersion
- wave propagation

light transport aircraft

- DEF A classification of multiengine airplanes having a maximum passenger capacity of 30 seats and a gross weight of about 35,000 pounds.
- GS commercial aircraft
 - . **light transport aircraft**
 - transport aircraft
 - . **light transport aircraft**
- RT ∞ aircraft
- multiengine vehicles
- passenger aircraft

light valves

- DEF Optical shutters which, when activated by light, become either transparent or opaque.
- RT electro-optics
- light modulation
- liquid crystals
- optical data processing

light water

- DEF Water in which both hydrogen atoms in each molecule are of the isotope protium. Used for protium.
- UF *protium*
- GS hydrogen compounds
 - . **light water**
 - water
 - . **light water**

light water breeder reactors

- GS nuclear reactors
 - . breeder reactors
 - . . . **light water breeder reactors**
- RT heavy water reactors

light water reactors

- DEF Nuclear reactors using ordinary (rather than heavy) water as moderator.
- GS nuclear reactors
 - . liquid cooled reactors
 - . . . water cooled reactors
 - **light water reactors**

- RT water moderated reactors

light-cone expansion

- RT field theory (physics)
- Minkowski space
- quantum mechanics
- relativity
- space-time functions

Lighthill gas model

- GS models
 - . **Lighthill gas model**
- RT boundary layer flow
- gas mixtures
- gas transport
- hypersonic flow
- molecular theory
- transport properties

Lighthill method

- RT airfoil profiles
- airfoils
- conformal mapping
- flow theory
- integral transformations
- ∞ methodology

lighting

- USE **illuminating**

lighting equipment

- GS **lighting equipment**
 - . illuminators
 - . luminaires
 - . . . aircraft lights
 - . . . airport lights
 - runway lights
 - . . . arc lamps
 - . . . flash lamps
 - alkali vapor lamps
 - . . . mercury lamps
 - . . . quartz lamps
 - . . . searchlights
 - . . . xenon lamps
- RT ∞ electric equipment
- ∞ equipment
- ∞ flares
- illuminating
- light (visible radiation)
- light sources
- onboard equipment
- waste energy utilization

lightning

- DEF A discharge of atmospheric electricity accompanied by a vivid flash of light.
- GS electric current
 - . electric discharges
 - . . . **lightning**
 - . . . ball lightning
 - cloud-to-cloud discharges
 - cloud-to-ground discharges
 - intracloud discharges
 - leaders (meteorology)
 - stepped leaders
- RT ∞ arresters
- atmospheric electricity
- electric arcs
- electric sparks
- electricity
- electrodeless discharges
- elves
- gas discharges
- lightning suppression
- nitrogenation
- radiative recombination
- sprites (atmospheric physics)
- static electricity
- thunderstorms
- whistlers

lightning suppression

- GS weather modification
 - . **lightning suppression**
- RT atmospheric electricity
- climatology

- electric discharges
- lightning
- thunderstorms

lights

- USE **luminaires**

lignin

- DEF That part of plant material which is not saccharified by the action of 72 percent sulfuric acid or 42 percent hydrochloric acid, after the resins, waxes, and tannins have been removed.
- GS biopolymers
 - . **lignin**
- RT cellulose
- ∞ polymers

lignite

- DEF Coal of relatively recent origin, an intermediate between peat and bituminous coal.
- GS fuels
 - . chemical fuels
 - . . . hydrocarbon fuels
 - fossil fuels
 - coal
 - **lignite**
 - resources
 - . Earth resources
 - . . . fossil fuels
 - coal
 - **lignite**
 - rocks
 - . sedimentary rocks
 - . . . carbonaceous rocks
 - coal
 - **lignite**
- RT ashes
- bitumens
- carbonaceous materials
- coal gasification
- coal liquefaction
- coal utilization
- coke
- energy conversion
- energy policy
- energy technology
- gaseous fuels
- hydrocarbon fuel production
- hydrogen production
- hydropyrolysis
- synthane

LIGO (observatory)

- (added December 2000)
- UF *Laser Interferometer Gravitational-Wave Observatory*
- GS antennas
 - . gravitational wave antennas
 - . . . **LIGO (observatory)**
 - observatories
 - . astronomical observatories
 - . . . **LIGO (observatory)**
- RT astronomical interferometry
- gravitational waves
- laser interferometry

likelihood ratio

- DEF The probability of a random drawing of a specified sample from a population, assuring a given hypothesis about the parameters of the population, divided by the probability of a random drawing of the same sample, assuring that the parameters of the population are such that this probability is maximized.
- GS ratios
 - . **likelihood ratio**
 - statistical analysis
 - . **likelihood ratio**
- RT estimates
- mathematical models
- maximum likelihood estimates
- probability theory
- statistical tests

limb brightening

- DEF The increase in the intensity of radio or

x ray brightness of the sun or other stars from its center to its limb.

- RT B stars
 - brightness
 - brightness temperature
- ∞ limbs
 - solar flux
 - solar flux density
 - solar granulation
 - solar limb
 - stellar atmospheres
 - stellar luminosity

limb darkening

DEF A condition, sometimes observed on celestial bodies, in which the brightness of the object decreases as the edges or limbs of the object are approached. The sun and Jupiter exhibit limb darkening.

- GS darkening
 - . limb darkening
- RT B stars
 - binary stars
- ∞ limbs
 - solar limb
 - stellar atmospheres
 - stellar luminosity

∞ limbs

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Earth limb
 - limb brightening
 - limb darkening
 - limbs (anatomy)
 - lunar limb
 - planetary limb
 - solar limb

limbs (anatomy)

- GS anatomy
 - . limbs (anatomy)
 - . . arm (anatomy)
 - . . . elbow (anatomy)
 - . . . forearm
 - . . hand (anatomy)
 - . . fingers
 - . . leg (anatomy)
 - . . . feet (anatomy)
 - . . . knee (anatomy)
 - . . . thigh
- RT appendages
 - hindlimb suspension
 - human body
- ∞ limbs

lime

USE calcium oxides

limen

DEF Threshold; a psychophysical concept denoting the lowest detectable intensity of any sensory stimulus.

- RT psychological tests
 - thresholds (perception)

limestone

DEF Sedimentary rock composed principally of calcium carbonate (the mineral calcite) or the double carbonate of calcium and magnesium (the mineral dolomite) or mixture of the two.

- GS rocks
 - . sedimentary rocks
 - . . limestone
- RT aggregates
 - calcium carbonates
 - dolomite (mineral)
 - Earth resources
 - fluxes
 - minerals
 - schist

soils

limitations

USE constraints

limiter amplifiers

- GS amplifiers
 - . limiter amplifiers

limiter circuits

- GS circuits
 - . limiter circuits
 - . . clipper circuits
- RT circulators (phase shift circuits)
 - clamping circuits
 - current regulators
 - power limiters

limiters (fusion reactors)

DEF Material aperture in fusion power reactors which collect particles from the outer surfaces of the plasmas to control their transport to regions of low density.

- RT blankets (fusion reactors)
 - controlled fusion
 - divertors (fusion reactors)
 - fusion reactors
 - moderation (energy absorption)
 - moderators
 - plasma control
 - plasma loss
 - reactor design
 - reactor materials
 - tokamak devices
 - toroidal plasmas
 - walls

∞ limits

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ignition limits
 - limits (mathematics)
 - range (extremes)

limits (mathematics)

- GS analysis (mathematics)
 - . calculus
 - . . limits (mathematics)
 - . real variables
 - . . extremum values
 - . . . limits (mathematics)
- RT differential calculus
 - ∞ envelopes
 - ∞ limits

limnology

DEF The physical, chemical, meteorological, and especially the biological and ecological conditions in inland waters.

- RT aquifers
 - arroyos
 - Earth hydrosphere
 - fresh water
 - geochemistry
 - geophysics
 - ground water
- ∞ hydraulics
 - hydrography
 - hydrology
 - Lake Texoma (OK-TX)
 - lakes
 - marine biology
 - marine chemistry
 - ponds
 - potable water
 - rain
 - streams
 - water
 - water management
 - water pollution
 - water resources
 - wells

limonite

- GS iron compounds
 - . limonite

minerals

. limonite

Lincoln Experimental Satellites

- UF LES (satellites)
- GS artificial satellites
 - . Lincoln Experimental Satellites

line current

- GS electric current
 - . line current
- RT electric power supplies
 - electrodynamics
 - magnetohydrodynamic flow
 - plasma currents
- ∞ power supplies

line of sight

DEF An aim or observation taken with mechanical or optical aid to establish a direct path to an objective, target, etc.

- RT area
 - coordinates
- ∞ direction
 - loci
 - proportional navigation
 - targets

line of sight communication

DEF Electromagnetic wave propagation, usually microwaves, in a straight line between the transmitter and receiver. The useful transmission distance is generally limited to the horizon as sighted from the elevation of the transmitter.

- GS telecommunication
 - . communication
 - . . line of sight communication
- RT boresight error
 - frequency modulation
 - space communication
 - television transmission

line shape

- GS shapes
 - . line shape
- RT curves (geometry)
 - inflection points
- ∞ profiles

line spectra

DEF The spontaneous emission of electromagnetic radiation from the bound electrons as they jump from high to low energy levels in an atom. Used for spectral lines.

- UF spectral lines
- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line
 - H gamma line
 - K lines
 - Lyman spectra
 - Paschen series
 - Rydberg series
 - telluric lines
- RT absorption spectra
 - atomic energy levels
 - Bohr theory
 - emission spectra
 - fine structure
 - flame spectroscopy
 - frequencies
 - hyperfine structure
 - infrared spectra
 - light (visible radiation)
- ∞ lines
 - molecular spectroscopy
 - oscillator strengths

pressure broadening
Raman spectra
Raman spectroscopy
resonance lines
rotational spectra
Seyfert galaxies
solar spectra
spectral bands
spectral emission
spectral energy distribution
spectral line width
spectral resolution
spectrograms
spectrum analysis
Stark effect
stellar spectra
ultraviolet spectra
visible spectrum

lineament

USE **structural properties (geology)**

linear AC alternators

USE **linear alternators**

linear accelerators

DEF Devices for accelerating charged particles employing alternate electrodes and gaps arranged in a straight line, so proportioned that when their potentials are varied in the proper amplitudes and frequency, particles passing through them receive successive increments of energy.

GS particle accelerators
. **linear accelerators**
RT ∞ accelerators
electron accelerators
ion sources
multipactor discharges
neutron sources

linear alternators

(added July 1991)

DEF An electromagnetic energy converter that converts reciprocating linear harmonic motion and driving force input to AC electrical power and energy output.

UF *linear AC alternators*
GS electric generators
. AC generators
. . **linear alternators**
RT free-piston engines
∞ generators
Stirling engines

linear amplifiers

GS amplifiers
. **linear amplifiers**

linear arrays

DEF Antenna arrays whose elements are equally spaced along a straight line.

GS arrays
. antenna arrays
. . **linear arrays**
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
RT dipole antennas
focal plane devices
laser arrays
multiple beam interval scanners
phased arrays
pushbroom sensor modes

linear circuits

GS circuits
. **linear circuits**
RT amplifiers
distributed parameter systems
electrical resistance
superposition (mathematics)
transconductance

volt-ampere characteristics

linear energy transfer (LET)

GS energy transfer
. **linear energy transfer (LET)**
RT ionizing radiation

linear equations

GS algebra
. **linear equations**
. . linear evolution equations
. . Riccati equation
analysis (mathematics)
. real variables
. . **linear equations**
. . . linear evolution equations
. . . Riccati equation
RT determinants
differential equations
∞ equations
Floquet theorem
Gaussian elimination
linear operators
matrices (mathematics)
operational calculus
polynomials

linear evolution equations

DEF Denotes a large class of differential or integral differential equations which are used to describe the evolution in time of some physical systems from an initial state. The equation is said to be linear if the unknown functions and their derivatives appear linearly.

GS algebra
. linear equations
. . **linear evolution equations**
analysis (mathematics)
. real variables
. . linear equations
. . . **linear evolution equations**
RT difference equations
∞ equations

linear filters

GS **linear filters**
. Kalman filters
. reduced order filters
RT adaptive filters
electric filters
electromagnetic wave filters
∞ filters
frequency response
nonlinear filters

linear integrated circuits

GS circuits
. integrated circuits
. . **linear integrated circuits**
RT electronic packaging
large scale integration
microminiaturization
molecular electronics
operational amplifiers
transistor circuits

linear operators

GS operators (mathematics)
. **linear operators**
RT linear equations
linear systems
linear transformations

linear parameter-varying control

(added July 2002)
RT ∞ control
control systems design
feedback control
H-infinity control
multivariable control

linear polarization

DEF Polarization of an electromagnetic wave in which the electric vector at a fixed point in space remains pointing in a fixed direction

although varying in magnitude. Also known as plane polarization.

GS polarization (waves)
. **linear polarization**
RT light emission
microwave emission
optical polarization
∞ polarization
polarized electromagnetic radiation
polarized radiation
radio astronomy

linear prediction

GS predictions
. **linear prediction**
RT computation
differential pulse code modulation
mathematical models
operations research
quality control
statistical analysis

linear programming

DEF An optimization problem characterization in which a set of parameter values are to be determined, subject to given linear constraints.

GS optimization
. mathematical programming
. . **linear programming**
research
. **linear programming**
RT ∞ applications of mathematics
computer programming
constraints
dynamic programming
formalism
game theory
matrices (mathematics)
nonlinear programming
numerical analysis
operations research
∞ programming
simplex method

linear quadratic Gaussian control

DEF A type of optimal-state feedback control whose design considers noise. It is primarily used to control aircraft and spacecraft systems. Used for LQG control.

UF *LQG control*
GS automatic control
. optimal control
. . **linear quadratic Gaussian control**
optimization
. linear quadratic regulator
. . **linear quadratic Gaussian control**
. optimal control
. . **linear quadratic Gaussian control**
RT ∞ control
control systems design
control theory
feedback control
H-2 control
H-infinity control
Kalman filters

linear quadratic regulator

DEF A type of optimal-state feedback controller that does not consider noise. It is primarily used to control aircraft and spacecraft. Used for linear regulator and LQR.

UF *linear regulator*
LQR
GS optimization
. **linear quadratic regulator**
. . linear quadratic Gaussian control
RT ∞ control
control systems design
control theory
controllers
feedback control
Kalman filters

- optimal control
- linear receivers**
 GS receivers
 . **linear receivers**
 RT frequency response
 Nyquist frequencies
- linear regulator*
 USE **linear quadratic regulator**
- linear systems**
 RT distributed parameter systems
 linear operators
 nonlinear systems
 robustness (mathematics)
 state estimation
 ∞ systems
 tracking problem
 uncertain systems
- linear transformations**
 GS algebra
 . **linear transformations**
 functions (mathematics)
 . **linear transformations**
 transformations (mathematics)
 . **linear transformations**
 RT Fourier analysis
 Jordan form
 linear operators
 matrices (mathematics)
 orthogonal functions
 Schwartz inequality
 vector spaces
- linear vibration**
 GS vibration
 . structural vibration
 . . **linear vibration**
 RT free vibration
 missile vibration
 random vibration
 vibration mode
- linearity**
 DEF The maximum deviation between an actual instrument reading and the reading predicted by a straight line drawn between upper and lower calibration points; usually expressed as a percentage of the full scale.
 GS **linearity**
 . collinearity
 RT accuracy
 consistency
 differential equations
 dynamic characteristics
 errors
 functions (mathematics)
 instrument errors
 linearization
 nonlinearity
 tolerances (mechanics)
 variability
- linearization**
 RT Bernoulli theorem
 ∞ equations
 Galerkin method
 linearity
 simplification
- linen**
 GS fabrics
 . **linen**
 fibers
 . **linen**
 textiles
 . **linen**
- RT organic materials
- liners*
 USE **linings**
- ∞ **lines**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT delay lines
 line spectra
 lines of force
 pipelines
 terminator lines
 tetherlines
 transmission lines
 underground transmission lines
- lines (geometry)**
 GS geometry
 . Euclidean geometry
 . . **lines (geometry)**
 . . . chords (geometry)
 . . . geodesic lines
 RT radii
 reciprocal theorems
 segments
- lines of force**
 RT barium ion clouds
 conjugate points
 field aligned currents
 flux pinning
 flux transfer events
 ∞ force
 ∞ lines
 magnetic circuits
 magnetic domains
 magnetic fields
 magnetic flux
 magnetic mirrors
 magnetic properties
 magnetostatic fields
 nonuniform magnetic fields
 polar cusps
- Ling-Temco-Vought aircraft**
 UF *LTV aircraft*
 GS **Ling-Temco-Vought aircraft**
 . A-7 aircraft
 . F-8 aircraft
 . XC-142 aircraft
 RT ∞ aircraft
- linguistics**
 GS **linguistics**
 . machine translation
 . phonemics
 . phonetics
 . psycholinguistics
 . semantics
 . syntax
 RT languages
 natural language processing
 orthography
 phonemes
 predicate logic
 speech
 speech recognition
- lining processes**
 RT coating
 coatings
 insulation
 linings
 sealing
 tunneling (excavation)
- linings**
 UF *liners*
 GS **linings**
 . rocket linings
 RT bushings
 ∞ casing
 coatings
 inserts
 insulation
- jackets
 lining processes
 sheaths
 shielding
 ∞ tubes
- linkages**
 RT cams
 connectors
 coupling
 couplings
 eccentrics
 fasteners
 fittings
 joints (junctions)
 latches
 ∞ links
 mechanical devices
 unions (connectors)
 yokes
- linking*
 USE **joining**
- ∞ **links**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT chains
 data links
 linkages
 links (mathematics)
- links (mathematics)**
 GS geometry
 . topology
 . . **links (mathematics)**
 RT ∞ links
- Liouville equations**
 GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **Liouville equations**
 RT ∞ equations
 plasma physics
 plasmas (physics)
 statistical mechanics
- Liouville theorem**
 GS analysis (mathematics)
 . complex variables
 . . **Liouville theorem**
 theorems
 . **Liouville theorem**
- lip reading**
 GS communicating
 . **lip reading**
 reading
 . **lip reading**
- lipid metabolism**
 GS metabolism
 . protein metabolism
 . . **lipid metabolism**
 RT glucocorticoids
 ∞ nutrients
 oils
- lipids**
 GS organic compounds
 . **lipids**
 . . calciferol
 . . castor oil
 . . fats
 . . lipoproteins
 . . phylloquinone
 . . retinene
 . . steroids
 . . . cholesterol
 . . . corticosteroids
 aldosterone
 hydroxycorticosteroid
 cortisone

lipoic acid

- glucocorticoids
- estrogens
- prostaglandins
- tocopherol
- RT amino acids
- esters
- glycerols
- myelin
- ∞ nutrients

lipoic acid

- GS acids
- carboxylic acids
- fatty acids
- **lipoic acid**
- organic compounds
- carboxylic acids
- fatty acids
- **lipoic acid**

lipoproteins

- GS biopolymers
- proteins
- **lipoproteins**
- organic compounds
- lipids
- **lipoproteins**
- proteins
- **lipoproteins**

lips (anatomy)

- GS anatomy
- digestive system
- mouth
- **lips (anatomy)**
- face (anatomy)
- mouth
- **lips (anatomy)**
- RT head (anatomy)

Lipschitz condition

- GS analysis (mathematics)
- real variables
- **Lipschitz condition**
- conditions
- **Lipschitz condition**
- RT differential equations

liquefaction

- GS phase transformations
- **liquefaction**
- coal liquefaction
- RT ∞ condensation
- ∞ conversion
- jet condensers
- melting
- noncondensable gases
- thixotropy

liquefied gases

- GS gases
- **liquefied gases**
- liquefied natural gas
- liquid air
- liquid ammonia
- liquid fluorine
- liquid helium
- liquid helium 2
- liquid hydrogen
- liquid neon
- liquid nitrogen
- liquid oxygen
- liquids
- **liquefied gases**
- liquefied natural gas
- liquid air
- liquid ammonia
- liquid fluorine
- liquid helium
- liquid helium 2
- liquid hydrogen
- liquid neon
- liquid nitrogen
- liquid oxygen
- RT condensates
- condensers (liquefiers)

- cryogenic rocket propellants
- cryogenics
- gas mixtures
- liquid rocket propellants
- solid cryogen cooling

liquefied natural gas

- UF *LNG*
- GS fuels
- chemical fuels
- hydrocarbon fuels
- fossil fuels
- natural gas
- **liquefied natural gas**
- gaseous fuels
- natural gas
- **liquefied natural gas**
- gases
- flammable gases
- gaseous fuels
- natural gas
- **liquefied natural gas**
- **liquefied natural gas**
- liquefied gases
- **liquefied natural gas**
- geophysical fluids
- natural gas
- **liquefied natural gas**
- liquids
- liquefied gases
- **liquefied natural gas**
- organic compounds
- hydrocarbons
- natural gas
- **liquefied natural gas**
- resources
- Earth resources
- fossil fuels
- natural gas
- **liquefied natural gas**
- RT methane

liquid air

- GS gases
- gas mixtures
- air
- **liquid air**
- liquefied gases
- **liquid air**
- liquids
- liquefied gases
- **liquid air**
- mixtures
- solutions
- gas mixtures
- air
- **liquid air**

liquid air cycle engines

- UF *LACE (engine)*
- GS engines
- rocket engines
- liquid propellant rocket engines
- **liquid air cycle engines**
- RT aerospace planes
- hydrogen oxygen engines
- sustainer rocket engines
- turborocket engines

liquid alloys

- GS alloys
- **liquid alloys**
- RT metals

liquid ammonia

- GS gases
- ammonia
- **liquid ammonia**
- liquefied gases
- **liquid ammonia**
- inorganic compounds
- ammonia
- **liquid ammonia**
- liquids
- liquefied gases
- **liquid ammonia**

- nitrogen compounds
- ammonia
- **liquid ammonia**
- RT fuels
- liquid fuels

liquid atomization

- GS atomizing
- **liquid atomization**
- RT gas atomization
- spraying

liquid bearings

- GS bearings
- **liquid bearings**
- RT lubrication

liquid breathing

- GS respiration
- **liquid breathing**
- RT acclimatization
- pressure breathing
- resuscitation

liquid bridges

- (added September 1993)
- DEF Axisymmetric liquid columns held by capillary forces and forming an interface between two solids or between two gaps in a solid. Useful in space processing.
- RT ∞ bridges
- capillary flow
- containerless melts
- interfacial tension
- liquid-solid interfaces
- low gravity manufacturing
- Marangoni convection
- space manufacturing
- space processing

liquid chromatography

- UF *gel filtration chromatography*
- gel permeation chromatography*
- GS chemical tests
- chemical analysis
- chromatography
- **liquid chromatography**
- RT colorimetry
- paper chromatography
- sorption

liquid cooled reactors

- GS nuclear reactors
- **liquid cooled reactors**
- liquid metal cooled reactors
- advanced sodium cooled reactor
- Experimental Breeder Reactor 1
- Experimental Breeder Reactor 2
- Lithium Cooled Reactor Experiment
- Los Alamos Molten Plutonium Reactor
- military compact reactors
- sodium graphite reactors
- sodium reactor experiment
- organic cooled reactors
- experimental organic cooled reactors
- water cooled reactors
- boiling water reactors
- experimental boiling water reactors
- Halden Boiling Water Reactor
- Los Alamos Water Boiler Reactor
- Pathfinder nuclear reactor
- Spert reactors
- heavy water reactors
- heavy water components test reactors
- plutonium recycle test reactor
- zero power reactor 2
- light water reactors
- NFX reactors
- Plum Brook Reactor
- pressurized water reactors

- spectral shift control reactor
- swimming pool reactors
- zero power reactors
- zero power reactor 2
- zero power reactor 3
- zero power reactor 6
- zero power reactor 9
- RT sodium cooling

liquid cooling

- SN (COOLING WITH LIQUIDS)
- UF *water cooling*
- GS cooling
 - . **liquid cooling**
 - . . film cooling
- RT air cooling
 - capillary pumped loops
 - coolants
 - cooling systems
 - sodium cooling
 - space cooling (buildings)
 - sweat cooling
 - thermal pollution
 - water immersion

liquid crystals

- GS crystals
 - . **liquid crystals**
- RT anisotropic fluids
 - cholesterol
 - ferroelectric materials
 - light valves

liquid drops

- USE **drops (liquids)**

liquid filled shells

- GS shells (structural forms)
 - . fluid filled shells
 - . . **liquid filled shells**
- RT hydrodynamic ram effect
 - propellant tanks
 - reinforced shells
 - shell stability
- ∞ storage
 - tanks (containers)
- ∞ vessels

liquid flow

- GS fluid flow
 - . **liquid flow**
 - . . open channel flow
 - . . water flow
- RT critical flow
 - gas flow
 - head (fluid mechanics)
 - head flow
 - hydrodynamic coefficients
 - laminar flow
 - mass flow
 - multiphase flow
 - nonNewtonian flow
 - orifice flow
 - pipe flow
 - pressure gradients
 - pressure heads
 - rheology
 - single-phase flow
 - Soret coefficient
 - steady flow
 - subcritical flow
 - supercritical flow
 - turbulent flow
 - two phase flow
 - uniform flow
 - unsteady flow

liquid fluorine

- GS chemical elements
 - . halogens
 - . . fluorine
 - . . . **liquid fluorine**
- gases
 - . liquefied gases
 - . . **liquid fluorine**
- liquids

- . liquefied gases
- . . **liquid fluorine**

liquid fuels

- GS fuels
 - . chemical fuels
 - . . **liquid fuels**
 - . . . antimisting fuels
 - . . . diesel fuels
 - . . . gasoline
 - . . . hydrogen fuels
 - . . . jet engine fuels
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . . fuel oils
 - . . . kerosene
- RT aircraft fuels
 - automobile fuels
 - fuel production
 - gaseous fuels
 - liquid ammonia
 - liquid hydrogen
 - liquid rocket propellants
 - liquids
 - synthetic fuels

liquid helium

- UF *helium 2*
- GS chemical elements
 - . rare gases
 - . . helium
 - . . . **liquid helium**
 - liquid helium 2
- gases
 - . liquefied gases
 - . . **liquid helium**
 - . . . liquid helium 2
- . rare gases
 - . . helium
 - . . . **liquid helium**
 - liquid helium 2
- liquids
 - . cryogenic fluids
 - . . **liquid helium**
 - . . . liquid helium 2
- . liquefied gases
 - . . **liquid helium**
 - . . . liquid helium 2
- RT cryostats
 - superfluidity
 - two fluid models

liquid helium 2

- GS chemical elements
 - . rare gases
 - . . helium
 - . . . liquid helium
 - **liquid helium 2**
- gases
 - . liquefied gases
 - . . liquid helium
 - . . . **liquid helium 2**
- . rare gases
 - . . helium
 - . . . liquid helium
 - **liquid helium 2**
- liquids
 - . cryogenic fluids
 - . . liquid helium
 - . . . **liquid helium 2**
- . liquefied gases
 - . . liquid helium
 - . . . **liquid helium 2**
- RT cryostats
 - superfluidity

liquid hydrogen

- GS chemical elements
 - . hydrogen
 - . . **liquid hydrogen**
- gases
 - . hydrogen
 - . . **liquid hydrogen**
- liquids

- . liquefied gases
- . . **liquid hydrogen**
- liquids
 - . cryogenic fluids
 - . . **liquid hydrogen**
 - . . liquefied gases
 - . . **liquid hydrogen**
- RT cryogenic rocket propellants
 - fuels
 - hydrogen fuels
 - hydrogen-based energy
 - liquid fuels
 - slush hydrogen
 - topping cycle engines

liquid injection

- GS injection
 - . fluid injection
 - . . **liquid injection**
 - . . . deep well injection (wastes)
 - . . . water injection
- RT film cooling
 - fuel injection
 - fuel sprays
 - mixing
 - propellant sprays
 - thrust vector control

liquid lasers

- GS stimulated emission devices
 - . lasers
 - . . **liquid lasers**
- RT carbon lasers
 - chemical lasers
 - dye lasers
 - infrared lasers
 - organic lasers

liquid levels

- GS level (horizontal)
 - . **liquid levels**
- RT fluid boundaries

liquid lithium

- GS chemical elements
 - . alkali metals
 - . . lithium
 - . . . **liquid lithium**
- liquids
 - . liquid metals
 - . . **liquid lithium**
- metals
 - . alkali metals
 - . . lithium
 - . . . **liquid lithium**
 - . liquid metals
 - . . **liquid lithium**

liquid mercury

- USE **mercury (metal)**

liquid metal cooled reactors

- UF *LMCR (reactors)*
- GS nuclear reactors
 - . liquid cooled reactors
 - . . **liquid metal cooled reactors**
 - . . . advanced sodium cooled reactor
 - . . . Experimental Breeder Reactor 1
 - . . . Experimental Breeder Reactor 2
 - . . . Lithium Cooled Reactor Experiment
 - . . . Los Alamos Molten Plutonium Reactor
 - . . . military compact reactors
 - . . . sodium graphite reactors
 - . . . sodium reactor experiment
- RT Enrico Fermi atomic power plant
 - sodium

liquid metal fast breeder reactors

- UF *LMFBR*
- GS nuclear reactors
 - . breeder reactors
 - . . **liquid metal fast breeder reactors**
 - . fast nuclear reactors

liquid metals

- . . **liquid metal fast breeder reactors**
 - RT nuclear power reactors
 - liquid metals**
 - GS liquids
 - . **liquid metals**
 - . . liquid lithium
 - . . liquid potassium
 - . . liquid sodium
 - . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor metals
 - . **liquid metals**
 - . . liquid lithium
 - . . liquid potassium
 - . . liquid sodium
 - . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor
 - RT casting
 - levitation melting
 - lubricants
 - melting
 - metal vapors
 - squeeze casting
 - liquid neon**
 - GS chemical elements
 - . rare gases
 - . . neon
 - . . . **liquid neon** gases
 - . liquefied gases
 - . . **liquid neon**
 - . rare gases
 - . . neon
 - . . . **liquid neon** liquids
 - . liquefied gases
 - . . **liquid neon**
 - liquid nitrogen**
 - GS chemical elements
 - . nitrogen
 - . . **liquid nitrogen** gases
 - . liquefied gases
 - . . **liquid nitrogen**
 - . nitrogen
 - . . **liquid nitrogen** liquids
 - . cryogenic fluids
 - . . **liquid nitrogen**
 - . liquefied gases
 - . . **liquid nitrogen**
 - RT high temperature superconductors
 - solid cryogenes
 - liquid oxidizers**
 - GS liquids
 - . **liquid oxidizers**
 - oxidizers
 - . **liquid oxidizers**
 - RT rocket oxidizers
 - liquid oxygen**
 - UF *LOX (oxygen)*
 - GS chemical elements
 - . oxygen
 - . . **liquid oxygen** gases
 - . liquefied gases
 - . . **liquid oxygen**
 - . oxygen
 - . . **liquid oxygen** liquids
 - . cryogenic fluids
 - . . **liquid oxygen**
 - . liquefied gases
 - . . **liquid oxygen** oxidizers
 - . **liquid oxygen**
 - RT cryogenic rocket propellants
 - FLOX
 - oxygen-hydrocarbon rocket engines
 - rocket oxidizers
 - liquid oxygen hydrocarbon rocket engines*
 - USE **oxygen-hydrocarbon rocket engines**
 - liquid phase epitaxy**
 - DEF A liquid phase transformation during crystal growth.
 - GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **liquid phase epitaxy**
 - RT crystal structure
 - liquid phases
 - vapor phase epitaxy
 - liquid phase sintering**
 - (added August 1991)
 - DEF Sintering of a compact, or loose powder aggregate under conditions where a liquid phase is present during part of the sintering cycle.
 - GS sintering
 - . **liquid phase sintering**
 - RT consolidation
 - metal powder
 - powder metallurgy
 - liquid phases**
 - RT alloys
 - critical pressure
 - electroepitaxy
 - eutectics
 - liquid phase epitaxy
 - liquids
 - liquidus
 - melting points
 - phase diagrams
 - phase separation (materials)
 - ∞ phases
 - solid phases
 - solid solutions
 - solidus
 - solubility
 - supercritical pressures
 - syntectic alloys
 - transition temperature
 - vapor phase epitaxy
 - vapor phases
 - liquid plus solid zones*
 - USE **mushy zones**
 - liquid potassium**
 - GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . **liquid potassium** liquids
 - . liquid metals
 - . . **liquid potassium** metals
 - . alkali metals
 - . . potassium
 - . . . **liquid potassium**
 - . liquid metals
 - . . **liquid potassium**
 - liquid propellant rocket engines**
 - DEF Rocket engines using a propellant or propellants in liquid form.
 - GS engines
 - . rocket engines
 - . . **liquid propellant rocket engines**
 - . . . AJ-10 engine
 - . . . F-1 rocket engine
 - . . . H-1 engine
 - . . . hydrazine engines
 - . . . hydrogen oxygen engines
 - J-2 engine
 - M-1 engine
 - RL-10-A-1 engine
 - RL-10-A-3 engine
 - . . . liquid air cycle engines
 - . . . LR-62-RM-2 engine
 - . . . LR-87-AJ-5 engine
 - . . . LR-91-AJ-5 engine
 - . . . MA-2 engine
 - . . . MA-3 engine
 - . . . MA-5 engine
 - . . . oxygen-hydrocarbon rocket engines
 - . . . RL-10 engines
 - RL-10-A-1 engine
 - RL-10-A-3 engine
 - . . . pulse detonation engines
 - . . . Space Shuttle Main Engine
 - . . . X-405 engine
 - . . . XLR-99 engine
 - . . . YLR-91-AJ-1 engine
- RT Ablestar launch vehicle
- Atlas SLV-3 launch vehicle
- Black Knight rocket vehicle
- Blue Steel missile
- Blue Streak launch vehicle
- Blue Streak missile
- BOMARC A missile
- BOMARC B missile
- booster rocket engines
- Centaur launch vehicle
- Corporal missile
- Corvus missile
- Delta Clipper
- Diamant launch vehicle
- Dormier paraglider rocket vehicle
- ducted rocket engines
- hybrid propellant rocket engines
- ∞ hybrid rocket engines
- Hyla-Star rocket vehicle
- internal combustion engines
- Juno 1 launch vehicle
- Juno 2 launch vehicle
- Juno launch vehicles
- Jupiter C rocket vehicle
- Jupiter missile
- Lance missile
- Meteor 1 rocket vehicle
- Navaho missile
- Nike-Ajax missile
- Nomad launch vehicle
- Nova launch vehicles
- propellant tanks
- restartable rocket engines
- retrorocket engines
- Saturn S-1 stage
- Saturn S-1B stage
- Saturn S-1C stage
- Saturn S-2 stage
- Saturn S-4 stage
- Saturn S-4B stage
- Saturn stages
- solid propellant rocket engines
- Sparrow 3 missile
- sustainer rocket engines
- Talos missile
- Thor Able rocket vehicle
- Thor Agena launch vehicle
- Thor Delta launch vehicle
- Thor launch vehicles
- Thorad launch vehicles
- Titan ICBM
- Titan launch vehicles
- V-1 missile
- V-2 missile
- vanguard 2 launch vehicle
- Vega launch vehicle
- Vernier engines
- Veronique rocket vehicles
- Viking rocket vehicle
- X-33 reusable launch vehicle
- X-34 reusable launch vehicle
- liquid rocket propellants**
- DEF Specifically, rocket propellants in liquid form. Examples of liquid propellants include fuels such as alcohol, gasoline, aniline, liquid ammonia, and liquid hydrogen; oxidants such as liquid oxygen, hydrogen peroxide (also applicable as a monopropellant), and nitric acid; additives such as water; and monopropellants

such as nitromethane. Used for bipropellants and tripropellants.

- UF *bipropellants*
- tripropellants*
- GS propellants
 - . rocket propellants
 - . . . **liquid rocket propellants**
 - cryogenic rocket propellants
 - gelled rocket propellants
 - hypergolic rocket propellants
 - monopropellants
 - RP-1 rocket propellants
 - slurry propellants
 - slush hydrogen
- RT aircraft fuels
 - chemical compatibility
 - chlorine fluorides
 - fuel tank pressurization
 - gaseous rocket propellants
 - high energy propellants
 - hybrid propellants
 - hydrazines
 - hydrogen fuels
 - liquefied gases
 - liquid fuels
 - liquids
 - monomethylhydrazines
 - nitrogen tetroxide
 - propellant sprays
 - solid rocket propellants
 - storable propellants

liquid rotation

USE **rotating liquids**

liquid sloshing

DEF The back and forth movement of a liquid fuel in its tank, creating problems of stability and control in the vehicle. Used for sloshing.

- UF *sloshing*
- RT aerodynamic stability
 - aircraft stability
 - baffles
 - controllability
 - fuel control
 - fuel tanks
 - interface stability
 - propellant tanks
 - propellant transfer
 - rotating fluids
 - spacecraft stability
 - storage stability
 - tank geometry
 - ullage

liquid sodium

- GS chemical elements
 - . alkali metals
 - . . sodium
 - . . . **liquid sodium**
 - liquids
 - . liquid metals
 - . . **liquid sodium**
 - metals
 - . alkali metals
 - . . sodium
 - . . . **liquid sodium**
 - . liquid metals
 - . . **liquid sodium**

liquid surfaces

- GS **liquid surfaces**
 - . menisci
- RT fluid boundaries
 - free boundaries
 - interfacial tension
 - jet boundaries
 - solid surfaces
 - surface waves
- ∞ surfaces

liquid wastes

DEF The liquid counterpart of solid wastes

from industrial, chemical, metabolic, and/or mineral sources.

- GS wastes
 - . **liquid wastes**
 - . . urine
 - . . waste water
- RT drainage
 - effluents
 - human wastes
 - industrial wastes
 - metabolic wastes
 - ponds
 - sewage
 - sludge
 - solid wastes

liquid-gas mixtures

- GS mixtures
 - . dispersions
 - . . **liquid-gas mixtures**
 - . . . aerosols
 - fog
- RT air water interactions
 - binary mixtures
 - gas mixtures
 - menisci
 - solubility
 - vapor phases
 - vapor pressure

liquid-liquid interfaces

- GS boundaries
 - . fluid boundaries
 - . . **liquid-liquid interfaces**
 - interfaces
 - . fluid boundaries
 - . . **liquid-liquid interfaces**
- RT boundary layers
 - free boundaries
 - heat transfer
 - interface stability
 - interfacial energy
 - interfacial tension
 - pressure gradients
 - solubility

liquids

DEF Substances in a state in which the individual particles move freely with relation to each other and take the shape of the container, but do not expand to fill the container.

- GS **liquids**
 - . cryogenic fluids
 - . . Fermi liquids
 - . . FLOX
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid nitrogen
 - . . liquid oxygen
 - . ferrofluids
 - . hydraulic fluids
 - . . Skydrol (trademark)
 - . juices
 - . liquefied gases
 - . . liquefied natural gas
 - . . liquid air
 - . . liquid ammonia
 - . . liquid fluorine
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid neon
 - . . liquid nitrogen
 - . . liquid oxygen
 - . liquid metals
 - . . liquid lithium
 - . . liquid potassium
 - . . liquid sodium
 - . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor
 - . liquid oxidizers
 - . organic liquids
 - . potable liquids
 - . . beverages
 - . . . wines

- . . potable water
- . rotating liquids
- RT ∞ fluids
 - globules
 - glycerols
 - liquid fuels
 - liquid phases
 - liquid rocket propellants
 - nonpoint sources
 - phase diagrams
 - vapor phases
 - water

liquid-solid interfaces

- GS boundaries
 - . fluid boundaries
 - . . **liquid-solid interfaces**
 - interfaces
 - . fluid boundaries
 - . . **liquid-solid interfaces**
- RT boundary layers
 - fluid films
 - fluid-solid interactions
- ∞ fusion
 - heat transfer
 - interface stability
 - liquid bridges
 - melting
 - menisci
 - metal surfaces
 - phase change materials
 - solid phases
 - solid-solid interfaces
 - squeeze films

liquidus

- RT crystallization
 - liquid phases
 - melting points
 - phase diagrams
 - solid phases
 - solid solutions
 - solidus

liquid-vapor equilibrium

- UF *vapor liquid equilibrium*
- RT ∞ equilibrium
 - thermodynamic equilibrium
 - vapors

liquid-vapor interfaces

- GS boundaries
 - . fluid boundaries
 - . . **liquid-vapor interfaces**
 - interfaces
 - . fluid boundaries
 - . . **liquid-vapor interfaces**
- RT air water interactions
 - evaporation
 - free boundaries
 - heat transfer
 - interface stability
 - menisci
 - pressure gradients
 - solubility
 - vapor phases
 - vapor pressure

LIRTS (telescope)

DEF A proposed large infrared telescope for Spacelab superseded by the German infrared laboratory. Used for Large Infrared Telescope on Spacelab.

- UF *Large Infrared Telescope on Spacelab*
- GS telescopes
 - . spaceborne telescopes
 - . . **LIRTS (telescope)**
- RT European Space Agency
 - payloads
 - space shuttles
 - Spacelab

LISA (observatory)

(added December 2000)
UF *Laser Interferometer Space Antenna*

LISP (programming language)

GS antennas
 . gravitational wave antennas
 . . . **LISA (observatory)**
artificial satellites
 . scientific satellites
 . . . astronomical satellites
 . . . **LISA (observatory)**
observatories
 . astronomical observatories
 . . . astronomical satellites
 . . . **LISA (observatory)**
RT astronomical interferometry
gravitational waves
laser interferometry
spaceborne astronomy

LISP (programming language)
GS languages
 . programming languages
 . . . **LISP (programming language)**
RT computer programming
recursive functions

Lissajous figures

DEF Figures where the path of a particle moving in a plane when the components of its position along two perpendicular axes each undergo simple harmonic motions and the ratio of their frequencies is a rational number.
RT eccentric orbits
equations of motion
libration
lunar orbits
satellite orbits

lists

GS **lists**
 . hardware utilization lists
RT ∞ catalogs
display devices
enumeration
indexes (documentation)
printouts

literature

GS **literature**
 . biography
 . documentation
RT bibliographies
documents
indexes (documentation)
knowledge
libraries
papers
philosophy

lithergol rocket engines

GS engines
 . rocket engines
 . . . hybrid propellant rocket engines
 . . . **lithergol rocket engines**
RT ∞ hybrid rocket engines

lithergolic propellants

USE **hybrid propellants**

lithiasis

GS diseases
 . **lithiasis**
RT calculi
dental calculi

lithium

GS chemical elements
 . alkali metals
 . . . **lithium**
 . . . liquid lithium
 . . . lithium isotopes
metals
 . alkali metals
 . . . **lithium**
 . . . liquid lithium

. . . lithium isotopes

lithium 4

USE **lithium isotopes**

lithium 6

USE **lithium isotopes**

lithium alloys

GS alloys
 . **lithium alloys**
 . . aluminum-lithium alloys
RT aircraft construction materials
aluminum alloys
copper alloys
magnesium alloys
zirconium alloys

lithium aluminum hydrides

GS aluminum compounds
 . **lithium aluminum hydrides**
hydrogen compounds
 . hydrides
 . . metal hydrides
 . . . lithium hydrides
 **lithium aluminum hydrides**
lithium compounds
 . lithium hydrides
 . . **lithium aluminum hydrides**
RT powdered aluminum

lithium batteries

(added December 1999)
GS electrochemical cells
 . electric batteries
 . . **lithium batteries**
 . . . lithium sulfur batteries
RT storage batteries

lithium borates

GS boron compounds
 . borates
 . . **lithium borates**
lithium compounds
 . **lithium borates**

lithium chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **lithium chlorides**
 . . halides
 . . . chlorides
 **lithium chlorides**
 . . . metal halides
 **lithium chlorides**
lithium compounds
 . **lithium chlorides**

lithium compounds

GS **lithium compounds**
 . lithium borates
 . lithium chlorides
 . lithium fluorides
 . lithium hydrides
 . . lithium aluminum hydrides
 . lithium hydroxides
 . lithium iodates
 . lithium niobates
 . lithium oxides
 . lithium perchlorates
 . lithium sulfates
 . organic lithium compounds
 . spodumene
RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds
metal fuels

Lithium Cooled Reactor Experiment

UF *LCRE Reactor*
GS nuclear reactors
 . liquid cooled reactors
 . . liquid metal cooled reactors

. . . **Lithium Cooled Reactor Experiment**

lithium fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **lithium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **lithium fluorides**
 . metal halides
 . . metal fluorides
 **lithium fluorides**
lithium compounds
 . **lithium fluorides**

lithium hydrides

GS hydrogen compounds
 . hydrides
 . . metal hydrides
 . . . **lithium hydrides**
 lithium aluminum hydrides
lithium compounds
 . **lithium hydrides**
 . . lithium aluminum hydrides

lithium hydroxides

GS bases (chemical)
 . alkalis
 . . **lithium hydroxides**
hydroxides
 . **lithium hydroxides**
lithium compounds
 . **lithium hydroxides**

lithium iodates

DEF Salts of iodic acid containing the 10 to the third power radical.
GS halogen compounds
 . iodine compounds
 . . iodates
 . . . **lithium iodates**
lithium compounds
 . **lithium iodates**
RT ∞ metal compounds

lithium isotopes

UF *lithium 4*
lithium 6
GS chemical elements
 . alkali metals
 . . lithium
 . . . **lithium isotopes**
 . nuclides
 . . isotopes
 . . . **lithium isotopes**
metals
 . alkali metals
 . . lithium
 . . . **lithium isotopes**

lithium niobates

GS lithium compounds
 . **lithium niobates**
niobium compounds
 . niobates
 . . **lithium niobates**

lithium oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **lithium oxides**
lithium compounds
 . **lithium oxides**

lithium perchlorates

GS halogen compounds
 . chlorine compounds
 . . perchlorates
 . . . **lithium perchlorates**
lithium compounds

- . **lithium perchlorates**
 - RT Hercules engine
 - solid propellant rocket engines
- lithium sulfates**
 - GS lithium compounds
 - . **lithium sulfates**
 - sulfur compounds
 - . sulfates
 - . . **lithium sulfates**
- lithium sulfur batteries**
 - DEF Primary cells for producing electrical energy using lithium metal for one electrode and sulfur for the other.
 - GS electrochemical cells
 - . electric batteries
 - . . lithium batteries
 - . . . **lithium sulfur batteries**
 - RT ∞ cells
 - ∞ electric cells
 - ∞ energy sources
 - ∞ power supplies
- lithography**
 - DEF The process of printing from a plane surface on which the image to be printed is ink receptive and water repellent and the non-image area is ink repellent and water receptive.
 - UF *stereolithography*
 - ultraviolet lithography*
 - GS printing
 - . **lithography**
 - . . photolithography
 - RT nanofabrication
 - photomechanical effect
 - reproduction (copying)
- lithology**
 - DEF Description of the physical character of rocks as determined by eye or with a low-power magnifier and based on color, structure, mineralogic components, and grain size.
 - GS geology
 - . petrology
 - . . **lithology**
 - RT regolith
 - rocks
- lithosphere**
 - DEF The solid portion of the Earth, as compared to atmosphere and hydrosphere.
 - UF *geosphere*
 - GS **lithosphere**
 - . Earth core
 - . Earth crust
 - . Earth mantle
 - . Earth surface
 - RT asthenosphere
 - Earth planetary structure
 - planetary mantles
 - plates (tectonics)
 - subduction (geology)
- Lithuania**
 - GS nations
 - . **Lithuania**
 - RT Europe
- Little Joe 2 launch vehicle**
 - GS launch vehicles
 - . **Little Joe 2 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Little Joe 2 launch vehicle**
 - RT Algol engine
 - Mercury project
 - sergeant missiles
 - solid propellant rocket engines
 - TX-354 engine
 - XM-33 engine
- Little John rocket vehicle**
 - GS rocket vehicles
 - . single stage rocket vehicles
 - . . **Little John rocket vehicle**
 - . surface to surface rockets
 - . . **Little John rocket vehicle**
- RT littoral currents
 - USE **coastal currents**
- littoral drift**
 - DEF Material (such as shingle, gravel, sand, and shell fragments) that is moved along the shore by coastal currents.
 - RT bars (landforms)
 - beaches
 - breakwaters
 - coasts
 - ocean currents
 - sands
 - sediments
- littoral transport**
 - RT breakwaters
 - ocean currents
 - sands
 - water waves
 - ∞ waves
- liver**
 - GS anatomy
 - . **liver**
 - RT gastrointestinal system
 - glands (anatomy)
 - hepatitis
 - tyrosine
- Livermore Pool Type Reactor**
 - UF *LPTR Reactor*
 - GS nuclear reactors
 - . nuclear research and test reactors
 - . . **Livermore Pool Type Reactor**
- liverworts*
 - USE **Bryophytes**
- livestock**
 - GS animals
 - . **livestock**
 - RT calves
 - cattle
 - deer
 - goats
 - horses
 - rangelands
 - sheep
 - swine
 - turkeys
- lixiscopes**
 - DEF Portable light weight battery operated low intensity x ray imaging systems with medical, industrial, and scientific applications. Used for Low Intensity X Ray Imaging Scopes.
 - UF *Low Intensity X Ray Imaging Scopes*
 - GS medical equipment
 - . x ray apparatus
 - . . **lixiscopes**
 - RT portable equipment
 - radiography
 - x ray astronomy
 - x ray imagery
- lizards**
 - GS animals
 - . vertebrates
 - . . reptiles
 - . . . **lizards**
- Llanos Orientales (Colombia)**
 - GS land
 - . grasslands
 - . . **Llanos Orientales (Colombia)**
 - . plains
 - . . **Llanos Orientales (Colombia)**
 - landforms
 - . plains
 - . . **Llanos Orientales (Colombia)**
- RT Colombia
- LLR (ranging)*
 - (added July 2001)
 - USE **laser ranging**
 - lunar ranging**
- LMCR (reactors)*
 - USE **liquid metal cooled reactors**
- LMFBR*
 - USE **liquid metal fast breeder reactors**
- LNG*
 - USE **liquefied natural gas**
- load carrying capacity**
 - (added August 1991)
 - SN (LIMITED TO STRUCTURAL MECHANICS)
 - DEF The capacity of a structure to bear loads.
 - GS mechanical properties
 - . yield strength
 - . . **load carrying capacity**
 - RT compressive strength
 - creep strength
 - critical loading
 - fracture strength
 - loads (forces)
 - ∞ strength
 - structural failure
 - structural stability
 - structural strain
 - tensile strength
- load distribution (forces)**
 - GS distribution (property)
 - . **load distribution (forces)**
 - RT ∞ distribution
 - transverse loads
- load factors*
 - USE **loads (forces)**
- load testing machines**
 - RT ∞ machinery
 - ∞ test equipment
- load tests**
 - RT compression tests
 - creep tests
 - destructive tests
 - fatigue tests
 - impact tests
 - loading rate
 - nondestructive tests
 - shock tests
 - specimen geometry
 - spin tests
 - static tests
 - tensile tests
 - ∞ tests
 - variable amplitude loading
- ∞ **loading**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *dummy loads*
 - RT feeding (supplying)
 - filling
 - input
 - loading operations
 - loads (forces)
 - payloads
 - refilling
 - replenishment
 - shafts (machine elements)
 - sweep effect
 - variable amplitude loading
- loading forces*
 - USE **loads (forces)**
- loading moments**
 - GS moments

loading operations

- . **loading moments**
 - RT aerodynamic loads
 - bending moments
 - flexing
 - loads (forces)
 - mass distribution
 - moment distribution
 - pressure distribution
 - static loads
 - structural analysis
 - torque
 - transverse loads
 - shafts (machine elements)
 - shearing
 - stress concentration
 - stress intensity factors
 - stresses
 - structural design criteria
 - weight (mass)
 - wind pressure
 - ∞ systems
 - location*
 - USE **position (location)**
 - Location of Air Traffic Satellites*
 - USE **LOCATES system**
 - loci**
 - GS geometry
 - . Euclidean geometry
 - . . . analytic geometry
 - **loci**
 - RT ∞ centers
 - conics
 - foci
 - line of sight
 - points (mathematics)
 - resolution
 - Lockheed 186 helicopter*
 - USE **XH-51 helicopter**
 - Lockheed aircraft**
 - GS **Lockheed aircraft**
 - . C-5 aircraft
 - . C-121 aircraft
 - . C-130 aircraft
 - . C-140 aircraft
 - . C-141 aircraft
 - . CL-823 aircraft
 - . Electra aircraft
 - . F-94 aircraft
 - . F-104 aircraft
 - . L-1011 aircraft
 - . L-2000 aircraft
 - . Lockheed model 18 aircraft
 - . P-3 aircraft
 - . S-3 aircraft
 - . SR-71 aircraft
 - . T-33 aircraft
 - . U-2 aircraft
 - . X-35 aircraft
 - . XH-51 helicopter
 - . XV-4 aircraft
 - RT ∞ aircraft
 - Lockheed C-5 aircraft*
 - USE **C-5 aircraft**
 - Lockheed CL-595 helicopter*
 - USE **XH-51 helicopter**
 - Lockheed CL-823 aircraft*
 - USE **CL-823 aircraft**
 - Lockheed Constellation aircraft*
 - USE **C-121 aircraft**
 - Lockheed L-2000 aircraft*
 - USE **L-2000 aircraft**
 - Lockheed model 18 aircraft**
 - GS Lockheed aircraft
 - . **Lockheed model 18 aircraft**
 - monoplanes
 - . **Lockheed model 18 aircraft**
 - transport aircraft
 - . **Lockheed model 18 aircraft**
 - RT ∞ aircraft
 - Lockheed U-2 aircraft*
 - USE **U-2 aircraft**
 - Lockheed XV-4A aircraft*
 - USE **XV-4 aircraft**
 - locking**
 - UF *interlocking*
 - GS **locking**
 - . laser mode locking
 - RT fasteners
 - ∞ joining
 - locks (fasteners)
- loading operations**
- RT feeders
 - ∞ loading
 - materials handling
 - ∞ operations
 - unloading
- loading rate**
- GS rates (per time)
 - . **loading rate**
 - RT impact loads
 - load tests
 - loads (forces)
 - strain rate
 - variable amplitude loading
 - velocity
- loading waves*
- USE **elastic waves**
 - loads (forces)**
- loads (forces)**
- UF *load factors*
 - loading forces*
 - loading waves*
 - GS **loads (forces)**
 - . axial loads
 - . . axial compression loads
 - . compression loads
 - . . axial compression loads
 - . . impact loads
 - . contact loads
 - . . impact loads
 - . . rolling contact loads
 - . critical loading
 - . dynamic loads
 - . . aerodynamic loads
 - . . . blast loads
 - gust loads
 - . . . cyclic loads
 - . . . rolling contact loads
 - . . thrust loads
 - . . transient loads
 - gust loads
 - impact loads
 - . . . landing loads
 - shock loads
 - blast loads
 - . . variable amplitude loading
 - . . vibratory loads
 - . . wing loading
 - . edge loading
 - . random loads
 - . . gust loads
 - . static loads
 - . transverse loads
 - RT ballast (mass)
 - ∞ equilibrium
 - ∞ force
 - force distribution
 - Hugoniot equation of state
 - load carrying capacity
 - ∞ loading
 - loading moments
 - loading rate
 - mass distribution
 - ∞ mechanics (physics)
 - moment distribution
 - payloads
 - plane stress
 - pressure
 - pressure distribution
 - pressure effects
- lobes**
- ∞ **lobes**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT antenna design
 - antenna radiation patterns
 - backlobes
 - sidelobes
- local area networks**
- DEF Networks, generally microcomputer based, that enable users in the same location to use the same programs and equipment such as printers. Used for LAN (computer networks).
 - UF *LAN (computer networks)*
 - GS networks
 - . communication networks
 - . . **local area networks**
 - . computer networks
 - . . **local area networks**
 - RT architecture (computers)
 - carrier sense multiple access
 - data transmission
 - Ethernet
 - interprocessor communication
 - network control
 - protocol (computers)
 - VSAT (network)
 - wide area networks
- local group (astronomy)**
- DEF The cluster of galaxies to which our galaxy belongs. It is a poor, irregular cluster with some 20 certain members including the Milky Way Galaxy, the Andromeda Galaxy, the Triangulum, four irregular galaxies, and about 13 intermediate or dwarf ellipticals.
 - GS celestial bodies
 - . galactic clusters
 - . . **local group (astronomy)**
 - RT Andromeda Galaxy
 - barred galaxies
 - cosmology
 - disk galaxies
 - dwarf galaxies
 - elliptical galaxies
 - Milky Way Galaxy
 - solar neighborhood
 - spiral galaxies
 - Virgo galactic cluster
- local scientific survey module**
- GS modules
 - . **local scientific survey module**
 - RT instrument packages
 - lunar exploration
 - measuring instruments
- local thermodynamic equilibrium**
- (added April 1991)
 - UF *LTE (astronomy)*
 - RT stellar atmospheres
 - stellar physics
 - thermodynamic equilibrium
- localization*
- USE **position (location)**
- LOCATES system**
- UF *Location of Air Traffic Satellites*
 - RT air traffic control
 - Beacon satellites
 - navigation satellites
 - satellite guidance

- retaining
- ∞ **locks**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT air locks
locks (fasteners)
- locks (fasteners)**
- GS fasteners
. **locks (fasteners)**
- RT locking
∞ locks
- locomotion**
- UF *motility*
- GS **locomotion**
. astronaut locomotion
. gait
. running
. walking
- RT exercise physiology
navigation
propulsion
wheelchairs
- locomotives**
- RT diesel engines
handling equipment
rail transportation
windshields
- locusts**
- GS animals
. invertebrates
. . . arthropods
. . . . insects
. . . . **locusts**
- RT farm crops
foliage
infestation
vegetation
- LOFAR**
- RT sonar
underwater acoustics
- LOFTI satellites**
- USE **low frequency transionospheric satellites**
- lofting**
- RT aircraft design
ascent trajectories
computer aided design
differential geometry
engineering drawings
mathematical models
spacecraft design
structural design
∞ surface geometry
templates
- log periodic antennas**
- GS antennas
. directional antennas
. . . **log periodic antennas**
- RT antenna arrays
antenna design
broadband
dipole antennas
frequency response
parasitic elements (antennas)
- log spiral antennas**
- GS antennas
. spiral antennas
. . . **log spiral antennas**
- RT dipole antennas
- logarithmic receivers**
- GS receivers
. **logarithmic receivers**
- RT communication equipment
frequency response
- intermediate frequency amplifiers
transfer functions
- logarithms**
- DEF The power to which a fixed number, called the base, usually 10 or e (2. 7182818) must be raised to produce the value to which the logarithm corresponds.
- GS analysis (mathematics)
. complex variables
. . . exponential functions
. . . . **logarithms**
functions (mathematics)
. transcendental functions
. . . exponential functions
. . . . **logarithms**
- RT exponents
- logging (industry)**
- DEF The business of felling trees, cutting them up into logs and transporting the logs to sawmills or to a place of sale.
- RT forests
trees (plants)
- ∞ **logic**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT artificial intelligence
axioms
Boolean algebra
branching (mathematics)
complements (mathematics)
expert systems
fluid logic
fluidics
formalism
information theory
logic circuits
logic design
mathematical logic
paradoxes
philosophy
predicate calculus
predicate logic
∞ principles
temporal logic
threshold logic
transistor logic
- logic circuits**
- UF *logic networks*
- GS circuits
. **logic circuits**
. . . threshold gates
- RT adding circuits
architecture (computers)
arithmetic and logic units
central processing units
computers
counting circuits
decisions
digital computers
evolvable hardware
fluid logic
gates (circuits)
∞ logic
logical elements
matrices (circuits)
multipliers
multivibrators
neural nets
programmable logic devices
reconfigurable hardware
∞ relay
switching circuits
threshold logic
transistor circuits
transistor logic
- logic design**
- RT amplifier design
architecture (computers)
computer aided design
computer design
computer programming
- ∞ design
design analysis
evolvable hardware
hardware description languages
∞ logic
logic programming
logical elements
programmable logic devices
switching theory
transistor logic
- logic networks*
- USE **logic circuits**
- logic programming**
- GS computer programming
. **logic programming**
- RT artificial intelligence
expert systems
logic design
temporal logic
- logic units*
- USE **arithmetic and logic units**
- logical elements**
- DEF In computers or data processing systems, the smallest building blocks which can be represented by operators in an appropriate system of symbolic logic. Typical logical elements are the AND gate and flip-flop, which can be represented as operators in a suitable symbolic logic. Used for decision elements.
- UF *decision elements*
- RT computer components
digital electronics
∞ elements
gates (circuits)
logic circuits
logic design
- logistics**
- GS **logistics**
. lunar logistics
. space logistics
- RT aircraft maintenance
Army-Navy instrumentation program
command and control
cranes
deployment
downtime
∞ electric equipment
energy policy
∞ facilities
inventory management
maintenance
matrix management
portable equipment
rapid transit systems
resource allocation
resources
services
shipyards
site selection
stockpiling
∞ storage
stowage (onboard equipment)
transportation
∞ travel
utilities
- logistics management**
- GS management
. **logistics management**
. . . inventory management
. . . . inventory controls
- RT ∞ facilities
maintenance
resources
services
spare parts

logistics over the shore (LOTS) carrier

∞ storage

Shenzhou 5 spacecraft

position (location)

logistics over the shore (LOTS) carrier

RT military technology

long period variables

USE **Mira variables**

longitude measurement

RT latitude measurement

∞ measurement

navigation

positioning

LOH helicopter

USE **OH-6 helicopter**

long range navigation

USE **loran**

longitudinal control

UF *pitch attitude control*

GS attitude control

. **longitudinal control**

RT aircraft control

altitude control

automatic control

∞ control

directional control

helicopter control

lateral control

manual control

missile control

pilot induced oscillation

pitch (inclination)

satellite attitude control

satellite control

Loki rocket vehicle

GS rocket vehicles

. single stage rocket vehicles

. . **Loki rocket vehicle**

. sounding rockets

. . **Loki rocket vehicle**

RT solid propellant rocket engines

WASP sounding rocket

long range weather forecasting

GS meteorology

. weather forecasting

. . **long range weather forecasting**

predictions

. forecasting

. . weather forecasting

. . . **long range weather forecasting**

RT Atmospheric General Circulation

Models

numerical weather forecasting

statistical weather forecasting

LOLA (simulator)

USE **lunar orbit and landing simulators**

long term effects

UF *secular perturbation*

RT celestial mechanics

climate

closed ecological systems

cycles

durability

∞ effects

life (durability)

life support systems

orbit perturbation

∞ performance

periodic variations

perturbation

storage stability

time temperature parameter

weather

longitudinal stability

GS dynamic characteristics

. dynamic stability

. . motion stability

. . . attitude stability

. . . . **longitudinal stability**

stability

. dynamic stability

. . motion stability

. . . attitude stability

. . . . **longitudinal stability**

RT aerodynamic stability

aircraft stability

directional stability

flow stability

hovering stability

lateral stability

pitch (inclination)

pitching moments

POGO effects

rotary stability

spacecraft stability

Lomonosov current

GS circulation

. water circulation

. . water currents

. . . ocean currents

. . . . **Lomonosov current**

RT Atlantic Ocean

Gulf Stream

tropical regions

Long Duration Exposure Facility

UF *LDEF*

GS artificial satellites

. scientific satellites

. . **Long Duration Exposure Facility**

laboratories

. space laboratories

. . **Long Duration Exposure Facility**

space platforms

. **Long Duration Exposure Facility**

RT space weathering

spaceborne experiments

Long Term Zonal Earth Energy Experiment

USE **LZEEB satellite**

long wave radiation

GS electromagnetic radiation

. radio waves

. . **long wave radiation**

RT far infrared radiation

monochromatic radiation

∞ radiation

short wave radiation

solar radiation

longitudinal waves

DEF Waves in which the direction of displacement at each point of the medium is normal to the wave front.

GS **longitudinal waves**

. plane waves

RT beams (radiation)

dilatational waves

elastic waves

electrostatic waves

frequencies

normal shock waves

∞ radiation

seismic waves

shock waves

solar radiation

sound waves

transverse waves

wave packets

wavelengths

∞ waves

long duration space flight

DEF Space flight involving interplanetary and/or interstellar travel. Used for extended duration space flight.

UF *extended duration space flight*

GS space flight

. **long duration space flight**

RT deep space

extraterrestrial environments

∞ flight

flyby missions

interplanetary flight

interstellar travel

manned Mars missions

manned space flight

Mars bases

∞ missions

planetary environments

space adaptation syndrome

long waves (meteorology)

USE **planetary waves**

longerons

UF *astromasts*

GS structural members

. **longerons**

RT keels

reinforcement (structures)

ribs (supports)

strakes

stringers

structural stability

∞ **longevity**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT life (durability)

life span

longshore currents

USE **coastal currents**

Long Island (NY)

GS landforms

. islands

. . **Long Island (NY)**

RT Atlantic Ocean

New York

longitude

DEF Angular distance, along a primary great circle, from the adopted reference point; the angle between a reference plane through the polar axis and a second plane through that axis.

GS **longitude**

. solar longitude

RT coordinates

geodetic coordinates

latitude

look angles (electronics)

DEF The solid angle in which an instrument operates effectively, generally used to describe radars, optical instruments, and space radiation detectors.

GS geometry

. Euclidean geometry

. . angles (geometry)

. . . **look angles (electronics)**

RT alignment

directivity

installing

Long March launch vehicles

(added January 1999)

GS launch vehicles

. **Long March launch vehicles**

RT Chinese space program

Chinese spacecraft

heavy lift launch vehicles

instrument orientation
optical equipment
positioning
radar equipment

look angles (tracking)
DEF The elevation and azimuth at which a particular satellite is predicted to be found at a specified time.
GS geometry
. Euclidean geometry
. . . angles (geometry)
. . . **look angles (tracking)**
RT azimuth
elevation angle
field of view

loop antennas
DEF Antennas whose configuration is that of a loop. If the current in the loop, or in the parallel turns of the loop is essentially uniform and the loop circumference is small compared with the wavelength, the radiation pattern approximates that of a magnetic dipole.
GS antennas
. directional antennas
. . . **loop antennas**
RT aircraft antennas
loops
monopole antennas

loop transfer functions
(added September 1993)
GS functions (mathematics)
. transfer functions
. . . **loop transfer functions**
RT control systems design
feedback control
loop transfer recovery

loop transfer recovery
(added September 1993)
DEF The recovery of the transfer properties of the controller in a feedback control system compensator design.
RT compensators
control stability
control systems design
control theory
error signals
feedback control
loop transfer functions
 ∞ recovery
systems stability

loops
GS **loops**
. corrosion test loops
RT circuits
closed cycles
loop antennas
toruses
trusses

LOR (rendezvous)
USE **lunar orbital rendezvous**

LORAC navigation system
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . **LORAC navigation system**
RT distance measuring equipment
navigation aids
navigation instruments
surface navigation
 ∞ systems

loran
DEF A two dimensional pulse synchronized radio navigation system to determine hyperbolic lines of position through pulse time differencing from a master compared to two slave stations. Used for long range navigation.
UF *long range navigation*
GS navigation

. radio navigation
. . . hyperbolic navigation
. . . **loran**
. . . . loran C
. . . . loran D
RT air navigation
Decca navigation
distance measuring equipment
navigation aids
navigation instruments
polar navigation
solar compasses
surface navigation
surveys

loran C
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . loran
. . . . **loran C**
RT air navigation
Decca navigation
navigation aids

loran D
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . loran
. . . . **loran D**
RT air navigation
Decca navigation
navigation aids

Lorentz contraction
UF *Fitzgerald-Lorentz contraction*
RT relativity

Lorentz force
DEF The force affecting a charged particle due to the motion of the particle in a magnetic field.
RT charged particles
 ∞ force
magnetic fields
ponderomotive forces

Lorentz force accelerator thrusters
(added April 2001)
USE **magnetoplasmadynamic thrusters**

Lorentz gas
GS gases
. ionized gases
. . . **Lorentz gas**
particles
. charged particles
. . . ionized gases
. . . . **Lorentz gas**
RT gas dynamics
kinetic theory

Lorentz transformations
GS functions (mathematics)
. **Lorentz transformations**
RT Dirac equation
invariance
Mandelstam representation

LORV
USE **low observable reentry vehicles**

Los Alamos Molten Plutonium Reactor
GS nuclear reactors
. liquid cooled reactors
. . . liquid metal cooled reactors
. . . . **Los Alamos Molten Plutonium Reactor**
. nuclear research and test reactors

. . **Los Alamos Molten Plutonium Reactor**
Los Alamos Turret Reactor
USE **high temperature nuclear reactors**

Los Alamos Water Boiler Reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Los Alamos Water Boiler Reactor**

loss of coolant
UF *coolant loss*
GS accidents
. **loss of coolant**
RT coolants
leakage
losses
nuclear reactors
reactor materials

losses
GS **losses**
. dielectric loss
RT auditory defects
commerce
damage
depletion
eddy currents
energy dissipation
impairment
insertion loss
leakage
legal liability
liabilities
loss of coolant
ohmic dissipation
plasma loss
seepage
transmission loss
wastes
water loss
yield

lossless equipment
RT lossless materials

lossless materials
DEF Dielectric materials that do not dissipate energy or that do not dampen oscillations.
GS dielectrics
. **lossless materials**
RT lossless equipment
 ∞ materials

lossy media
DEF A material that dissipates electromagnetic or acoustic energy passing through it.
RT electromagnetic wave transmission
ionospheric propagation
transmission loss
wave propagation

lost wax process
USE **investment casting**

LOTS cargo ships
USE **cargo ships**

loudness
DEF The intensive attribute of an auditory sensation, in terms of which sounds may be ordered on a scale extending from soft to loud. Loudness is measured in sones. Loudness depends primarily upon the sound pressure of the stimulus, but it also depends upon the frequency and waveform of the stimulus.
RT acoustics
effective perceived noise levels
flux density
hearing
 ∞ intensity
level (quantity)

loudspeakers

noise (sound)
noise measurement
noise reduction
power spectra
sound intensity
sound pressure
sound waves

loudspeakers

GS audio equipment
. **loudspeakers**
transducers
. sound transducers
. . electroacoustic transducers
. . . **loudspeakers**
RT monaural signals
radio receivers
sound generators

Louisiana

GS nations
. United States
. . **Louisiana**
RT Atchafalaya River Basin (LA)
Gulf of Mexico
Lake Pontchartrain (LA)
Mississippi Delta (LA)

∞ lounges

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED—CONSULT THE TERMS
LISTED BELOW)
RT mobile lounges
rooms
seats

louvers

RT apertures
baffles
∞ diffusers
∞ screening
shades
shielding
∞ shutters
slots
vents

Love waves

DEF Surface waves having a horizontal motion that is shear or transverse to the direction of propagation. Their velocity depends only on density and rigidity and not on bulk modulus. They are named after A. E. H. Love, the English mathematician who discovered them.

GS elastic waves
. seismic waves
. . **Love waves**
RT surface waves

low alloy steels

USE **high strength steels**

low altitude

GS altitude
. **low altitude**
RT elevation
lower atmosphere
midaltitude
nap-of-the-earth navigation
terrain following

low aspect ratio

GS ratios
. aspect ratio
. . **low aspect ratio**

low aspect ratio wings

UF *diamond wings*
GS airfoils
. wings
. . **low aspect ratio wings**
. . . delta wings
. . . trapezoidal wings
RT cruciform wings
fixed wings
rigid wings

wing planforms

low carbon steels

DEF Iron alloys containing carbon in low percentages that display temper and malleability characteristics not found in ordinary carbon steels.

GS alloys
. iron alloys
. . steels
. . . carbon steels
. . . . **low carbon steels**
RT iron

low concentrations

GS composition (property)
. concentration (composition)
. . **low concentrations**
RT dilution

low conductivity

RT electric current
electrical resistivity
transconductance

low cost

GS costs
. **low cost**
RT economy

low currents

GS electric current
. **low currents**
RT dark current
low voltage
plasma currents

low density flow

GS fluid flow
. **low density flow**
RT ∞ flow
molecular flow
rarefied gas dynamics
rarefied gases

low density gases

USE **rarefied gases**

low density materials

RT absorbents
absorbents (materials)
foams
granular materials
honeycomb cores
honeycomb structures
light elements
∞ materials
polyurethane foam
porous materials
porous plates
powder metallurgy

low density research

GS research
. **low density research**
RT blowdown wind tunnels
collisionless plasmas
composite materials
epoxy matrix composites
nonuniform plasmas
plasmas (physics)
rarefied gases
shock tubes
shock tunnels
shock wave luminescence
ultrahigh vacuum
vacuum apparatus

low density wind tunnels

GS test facilities
. wind tunnels
. . **low density wind tunnels**
RT hypersonic wind tunnels
hypervelocity wind tunnels
plasma jets
rarefied gas dynamics

shock tubes
shock tunnels
slip flow
supersonic wind tunnels

low Earth orbital environments

USE **Earth orbital environments**

low Earth orbits

(added April 1995)

DEF Nominally circular Earth orbits of low altitude (typically between 100 and 1,000 km.) and short periodicity.

UF *LEO*
GS orbits
. Earth orbits
. . **low Earth orbits**
RT Earth orbital environments
elliptical orbits
interplanetary transfer orbits
parking orbits
polar orbits
remote sensing
satellite orbits

low frequencies

SN (30 TO 300 KHZ)
GS frequencies
. radio frequencies
. . **low frequencies**
. . . very low frequencies
RT ∞ bands
extremely low frequencies
high frequencies
intermediate frequencies
ultrahigh frequencies
very high frequencies

low frequency transionospheric satellites

UF *LOFTI satellites*
GS artificial satellites
. communication satellites
. . **low frequency transionospheric satellites**

low gravity

USE **microgravity**

low gravity manufacturing

GS manufacturing
. **low gravity manufacturing**
RT containerless melts
drop towers
fabrication
levitation melting
liquid bridges
Marangoni convection
metal foams
microgravity
∞ microgravity applications
space manufacturing
space processing
space tools
technologies

Low Intensity X Ray Imaging Scopes

USE **lixiscopes**

low latitudes

USE **tropical regions**

low level turbulence

GS turbulence
. atmospheric turbulence
. . **low level turbulence**
RT homogeneous turbulence

low mass

USE **mass**

low molecular weights

GS molecular weight
. **low molecular weights**
RT diatomic molecules
molecules
monatomic molecules

- weight (mass)
- low noise**
RT preamplifiers
signal to noise ratios
- low observable reentry vehicles**
UF *LORV*
GS reentry vehicles
. **low observable reentry vehicles**
RT radar cross sections
reentry
reentry physics
∞ vehicles
- low pass filters**
DEF Wave filters having a single transmission band extending from zero frequency up to some critical or bounding frequency, not infinite.
RT bandstop filters
electric filters
electromagnetic wave filters
∞ filters
Gabor filters
microwave filters
optical filters
- low pressure**
GS pressure
. **low pressure**
. . high altitude pressure
RT altitude tolerance
cyclogenesis
cyclones
∞ depression
high altitude environments
high pressure
hypobaric atmospheres
troughs
vacuum
- low pressure chambers*
USE **vacuum chambers**
- ∞ **low resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ resistance
thermal resistance
transconductance
- low Reynolds number**
SN (RN BELOW 2,000)
DEF A Reynolds number below the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . **low Reynolds number**
ratios
. Reynolds number
. . **low Reynolds number**
RT direct numerical simulation
high Reynolds number
laminar flow
viscosity
- low speed**
UF *low velocity*
GS rates (per time)
. **low speed**
velocity
. **low speed**
RT airspeed
flow velocity
ground speed
landing speed
subsonic speed
- low speed stability**
GS dynamic characteristics
. dynamic stability
. . motion stability
- . . . **low speed stability**
stability
. dynamic stability
. . motion stability
. . . **low speed stability**
RT aerodynamic stability
aerodynamic stalling
aircraft stability
attitude stability
controllability
dynamic tests
flight characteristics
flow stability
hovering stability
spacecraft stability
- low speed wind tunnels**
GS test facilities
. wind tunnels
. . **low speed wind tunnels**
. . . subsonic wind tunnels
RT blowdown wind tunnels
- low temperature**
GS temperature
. **low temperature**
. . cryogenic temperature
RT bay ice
cooling
cryogenics
freezing
frost
frost damage
ice formation
magnetic cooling
pressure ice
refrigerating
- low temperature brazing**
GS welding
. fusion welding
. . gas welding
. . . brazing
. . . . **low temperature brazing**
RT soldering
- low temperature environments**
GS environments
. **low temperature environments**
RT cold strength
cold weather
high altitude environments
lunar temperature
magnetic cooling
mountain inhabitants
thermal environments
- low temperature physics**
RT cryochemistry
cryogenics
high temperature superconductors
Kondo effect
∞ physics
∞ science
solidified gases
superconducting power transmission
superconductivity
YBCO superconductors
- low temperature plasmas*
USE **cold plasmas**
- low temperature tests**
GS environmental tests
. **low temperature tests**
RT chemical tests
cold strength
cold weather tests
cryostats
hardness tests
lubricant tests
melting points
nondestructive tests
quality control
temperature control
∞ tests
- thermal expansion
thermal stability
- low thrust**
GS thrust
. **low thrust**
. . microthrust
RT high thrust
jet thrust
rocket thrust
variable thrust
- low thrust propulsion**
GS propulsion
. **low thrust propulsion**
. . electromagnetic propulsion
. . . magnetic sails
. . . electrostatic propulsion
. . . ion propulsion
. . man operated propulsion systems
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
RT electric propulsion
microthrust
rocket thrust
space station propulsion
spacecraft propulsion
variable thrust
- low turbulence**
GS turbulence
. **low turbulence**
RT steady flow
- low vacuum**
SN (PRESSURES BETWEEN 3. 001 AND 1. 0 TORR)
DEF The condition in a gas filled space at pressures less than 760 torr corresponding approximately to the vapor pressure of water at 25 deg. C and to 1 inch of mercury.
GS pressure
. vacuum
. . **low vacuum**
RT high vacuum
- low velocity*
USE **low speed**
- low visibility**
GS visibility
. **low visibility**
RT aircraft landing
all-weather landing systems
hazards
haze
instrument flight rules
light transmission
- low voltage**
GS potential energy
. electric potential
. . **low voltage**
RT low currents
- low volume ramjet engines**
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. . internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines

low weight

- **low volume ramjet engines**
- low weight**
 - RT gravitation
 - microgravity
 - weightlessness
- ∞ **low wing aircraft**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT ∞ aircraft
 - aircraft configurations
 - Beech 99 aircraft
 - general aviation aircraft
 - hypersonic aircraft
 - jet aircraft
 - light aircraft
 - monoplanes
 - passenger aircraft
 - tailless aircraft
 - transport aircraft
 - turbofan aircraft
 - turboprop aircraft
- lower atmosphere**
 - SN (ALTITUDE BELOW ABOUT 50 KM)
 - DEF Generally, and quite loosely, that part of the atmosphere in which most weather phenomena occur (i. e., the troposphere and lower stratosphere); hence, used in contrast to the common meaning for the upper atmosphere.
 - GS Earth atmosphere
 - . **lower atmosphere**
 - . . . troposphere
 - . . . tropopause
 - RT biosphere
 - chemosphere
 - heterosphere
 - homosphere
 - Intasat satellite
 - LACATE (experiment)
 - low altitude
 - mesometeorology
 - middle atmosphere
- Lower Atmospheric Composition Experiment*
 - USE **LACATE (experiment)**
- lower body negative pressure**
 - DEF Application and/or measurement of reduced pressure in the portion of the body below the iliac crests. Used as a simulator or orthostatic stress or as an indicator of cardiovascular deconditioning in a weightless environment.
 - GS hemodynamics
 - . **lower body negative pressure**
 - pressure
 - . blood pressure
 - . . **lower body negative pressure**
 - RT acceleration stresses (physiology)
 - artificial gravity
 - cardiovascular system
 - gravitational effects
 - head up tilt
 - orthostatic tolerance
 - space flight stress
 - stress (physiology)
 - weightlessness
- Lower California (Mexico)**
 - UF *Baja California*
 - RT Mexico
 - North America
- lower ionosphere**
 - GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . **lower ionosphere**
 - D region
- RT E region
- LOX (oxygen)*
 - USE **liquid oxygen**
- LOX-hydrocarbon rocket engines*
 - USE **oxygen-hydrocarbon rocket engines**
- LOX-hydrogen engines*
 - USE **hydrogen oxygen engines**
- LPTR Reactor*
 - USE **Livermore Pool Type Reactor**
- LQG control*
 - USE **linear quadratic Gaussian control**
- LQR*
 - USE **linear quadratic regulator**
- LR circuits*
 - USE **RL circuits**
- LR-62-RM-2 engine**
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **LR-62-RM-2 engine**
 - RT Bullpup missiles
- LR-87-AJ-5 engine**
 - GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **LR-87-AJ-5 engine**
 - . . liquid propellant rocket engines
 - . . . **LR-87-AJ-5 engine**
 - RT Titan 1 ICBM
- LR-91-AJ-5 engine**
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **LR-91-AJ-5 engine**
 - RT Titan ICBM
- LRC circuits*
 - USE **RLC circuits**
- LRV (vehicle)*
 - USE **lunar roving vehicles**
- L-Sat**
 - DEF A communications satellite designed by European Space Agency member states to meet future communications satellite market needs such as European broadcast services, global telecommunications trunk services, and mobile services. Used for European Large Telecomm Satellite.
 - UF *European Large Telecomm Satellite*
 - GS artificial satellites
 - . communication satellites
 - . . **L-Sat**
 - . . ESA satellites
 - . . **L-Sat**
 - ESA spacecraft
 - . ESA satellites
 - . . **L-Sat**
 - RT satellite networks
- LSI*
 - USE **large scale integration**
- LSS (cosmology)*
 - (added May 2002)
 - USE **large-scale structure of the universe**
- LSSM**
 - UF *Lunar Surface Scientific Modules*
 - GS lunar spacecraft
 - . lunar landing modules
 - . . Lunar Module
- . . . **LSSM**
 - manned spacecraft
 - . Lunar Module
 - . . **LSSM**
 - modules
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **LSSM**
 - soft landing spacecraft
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - **LSSM**
 - spacecraft components
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **LSSM**
- RT Apollo project
- lunar laboratories
- ∞ surfaces
- LST*
 - USE **Hubble Space Telescope**
- LTE (astronomy)*
 - USE **local thermodynamic equilibrium**
- LTV aircraft*
 - USE **Ling-Temco-Vought aircraft**
- lubricant tests**
 - RT engine tests
 - high temperature tests
 - low temperature tests
 - ∞ materials tests
 - ∞ tests
 - tribometers
 - wear resistance
- lubricants**
 - DEF Substances interposed between two surfaces for the purpose of reducing the friction or wear between them.
 - GS **lubricants**
 - . gas lubricants
 - . high temperature lubricants
 - . lubricating oils
 - . solid lubricants
 - RT additives
 - boundary lubrication
 - graphite
 - greases
 - kerogen
 - liquid metals
 - lubrication
 - lubrication systems
 - maintenance
 - oils
 - petroleum products
 - squeeze films
- lubricating oils**
 - GS lubricants
 - . **lubricating oils**
 - oils
 - . **lubricating oils**
 - RT detergents
 - lubrication
 - mineral oils
 - petroleum products
 - shale oil
- lubrication**
 - GS **lubrication**
 - . boundary lubrication
 - . self lubrication
 - . spacecraft lubrication
 - . vapor phase lubrication
 - RT bearings
 - elastohydrodynamics
 - engines
 - friction reduction

gears
 impregnating
 liquid bearings
 lubricants
 lubricating oils
 lubrication systems
 maintenance
 self lubricating materials
 sliding
 tribology

lubrication systems

RT automobiles
 cooling systems
 internal combustion engines
 lubricants
 lubrication
 pumps
 ∞ systems
 vapor phase lubrication

lucite (trademark)

USE **polymethyl methacrylate**

Luder bands

USE **plastic deformation yield point**

Ludox (trademark)

DEF Composite material utilizing colloidal silica matrixes.

GS refractory materials
 . **Ludox (trademark)**
 RT densification
 heat shielding
 reentry shielding
 spacecraft construction materials
 thermal protection
 tiles

lugs

RT fasteners
 holders
 studs (structural members)
 supports

lumbar region

GS anatomy
 . **lumbar region**
 regions
 . **lumbar region**
 RT human body
 sciatic region

lumbering areas

USE **forests**

lumens

DEF Units of luminous flux equal to the luminous flux radiated into a unit solid angle (steradian) from a point source having a luminous intensity of 1 candela.

GS pressure
 . radiation pressure
 . . **lumens**
 rates (per time)
 . flux density
 . . radiant flux density
 . . **lumens**
 RT light (visible radiation)
 luminance
 luminescence
 luminosity
 optical properties
 radiance

luminaires

UF *electroluminescent lamps*
lamps
light bulbs
lights
 GS lighting equipment
 . **luminaires**
 . . aircraft lights
 . . airport lights
 . . . runway lights

. . arc lamps
 . . flash lamps
 . . . alkali vapor lamps
 . . mercury lamps
 . . quartz lamps
 . . searchlights
 . . xenon lamps

RT ballasts (impedances)
 bulbs
 fixtures
 ∞ flares
 ∞ globes
 illuminating
 light (visible radiation)
 light sources
 projectors
 visual signals

luminance

SN (LIMITED TO EMISSION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF In photometry, a measure of the intrinsic luminous intensity emitted by a source in a given direction; the illuminance produced by light from the source upon a unit surface area oriented normal to the line of sight at any distance from the source, divided by the solid angle subtended by the source at the receiving surface. Also called brightness but luminance is preferred.

GS pressure
 . radiation pressure
 . . luminous intensity
 . . . **luminance**
 rates (per time)
 . flux density
 . . radiant flux density
 . . . luminous intensity
 **luminance**

RT brightness
 glare
 illuminance
 illuminating
 ∞ intensity
 irradiance
 light (visible radiation)
 lumens
 optical properties
 photometry
 sky brightness
 solar flux density
 stellar magnitude

luminescence

DEF Light emission by a process in which kinetic heat energy is not essential for the mechanism of excitation. Used for glow and noctilucence.

UF *glow*
noctilucence
 GS emission
 . light emission
 . . **luminescence**
 . . . bioluminescence
 . . . cathode glow
 . . . cathodoluminescence
 . . . chemiluminescence
 . . . electroluminescence
 . . . fluorescence
 laser induced fluorescence
 phosphorescence
 resonance fluorescence
 x ray fluorescence
 . . . lunar luminescence
 . . . optical resonance
 . . . photoluminescence
 triboluminescence
 x ray fluorescence
 . . . shock wave luminescence
 . . . sonoluminescence
 . . . spacecraft glow
 . . . thermoluminescence

RT afterglows
 alkali vapor lamps
 brightness
 electron-hole drops
 Fraunhofer line discriminators

∞ illumination
 illuminators
 incandescence
 light (visible radiation)
 light emitting diodes
 lumens
 luminosity
 luminous intensity
 noctilucence clouds
 optical transition
 plasma radiation
 stellar luminosity
 Stokes law of radiation
 temperature sensitive paints
 visibility

luminescent intensity

USE **luminous intensity**

luminosity

GS electromagnetic properties
 . optical properties
 . . **luminosity**
 . . . stellar luminosity
 RT brightness
 emissivity
 emittance
 illuminance
 incandescence
 light (visible radiation)
 lumens
 luminescence
 mass to light ratios
 phosphene
 radiance
 radiant flux density
 visibility

luminous flux density

USE **luminous intensity**

luminous intensity

SN (LIMITED TO EMISSION OR DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF Luminous energy per unit time per unit solid angle; the intensity (flux per unit solid angle) of visible radiation weighted to take into account the variable response of the human eye as a function of the wavelength of light; usually expressed in candelas. Used for light intensity, luminescent intensity, and luminous flux density.

UF *light intensity*
luminescent intensity
luminous flux density

GS pressure
 . radiation pressure
 . . **luminous intensity**
 . . . illuminance
 . . . luminance
 rates (per time)
 . flux density
 . . radiant flux density
 . . . **luminous intensity**
 illuminance
 luminance

RT BL Lacertae objects
 brightness
 emittance
 flux (rate)
 incandescence
 ∞ intensity
 irradiance
 light (visible radiation)
 luminescence
 mass to light ratios
 radiancy
 Seyfert galaxies
 solar flux density
 stellar magnitude

lumped parameter systems

DEF Systems in which the parameters may be considered to represent, for purposes of analysis, a single inductance, capacitance, resistance, etc. , throughout the frequency range of interest.

lumping

RT lumping
mathematical models
matrices (mathematics)
∞ systems

lumping

RT agglomeration
coagulation
collection
composition (property)
lumped parameter systems

LUNA *lunar probes*

USE **Lunik lunar probes**

lunar albedo

GS albedo
. **lunar albedo**
RT absorptance
cosmic ray albedo
Earth albedo
optical properties
surface properties

lunar atmosphere

UF *lunar ionosphere*
GS environments
. extraterrestrial environments
. . . lunar environment
. . . **lunar atmosphere**
. . . satellite atmospheres
. . . **lunar atmosphere**
RT moon
planetary atmospheres

lunar based equipment (added December 1990)

GS **lunar based equipment**
. lunar construction equipment
. lunar excavation equipment
. lunar retroreflectors
RT ∞ equipment
lunar bases
lunar flying vehicles
lunar laboratories
lunar logistics
lunar mining
lunar shelters
lunar surface vehicles

lunar bases

GS space bases
. **lunar bases**
RT AEPS
∞ astronautics
∞ bases
lunar based equipment
lunar construction equipment
lunar laboratories
lunar mining
Mars bases
moon
orbiting lunar stations
space colonies
stations
terraforming

lunar cinematography

USE **lunar photography**

lunar communication

GS telecommunication
. space communication
. . **lunar communication**
. . . circumlunar communication
RT facsimile communication
interplanetary communication
lasers
moon
optical communication
radar
radio communication
satellite communication

spacecraft communication

lunar composition

GS composition (property)
. **lunar composition**
RT lunar core
Lunar Prospector
moon
pre-Imbrian period
selenology
siderophile elements

lunar construction equipment (added December 1990)

GS lunar based equipment
. **lunar construction equipment**
RT lunar bases
lunar excavation equipment
lunar shelters
lunar surface vehicles

lunar core

GS cores
. **lunar core**
RT lunar composition
lunar geology
planetary cores
selenology

lunar craters

DEF A depression, usually circular, on the surface of the moon, usually with a raised rim called a ringwall.
GS craters
. **lunar craters**
. . Ptolemaeus Crater
. . Tycho crater
RT meteorite craters
moon
pre-Imbrian period
selenography
selenology

lunar crust

GS crusts
. **lunar crust**
RT Earth crust
moon
planetary crusts
selenography
selenology

lunar dust

GS particles
. dust
. . **lunar dust**
soils
. lunar soil
. . **lunar dust**
RT moon
selenology

lunar echoes

GS echoes
. **lunar echoes**
. . lunar radar echoes
RT radio echoes
selenology

lunar eclipses

DEF The phenomenon observed when the moon enters the shadow of the Earth.
GS eclipses
. **lunar eclipses**
RT moon
selenology

lunar effects

UF *lunar perturbation*
GS **lunar effects**
. lunar gravitational effects
. lunar tides
RT ∞ effects
orbit perturbation

selenology

lunar environment

GS environments
. extraterrestrial environments
. . **lunar environment**
. . . lunar atmosphere
RT aerospace environments
bioastronautics
exobiology
life support systems
moon
planetary environments
selenology
terraforming
thermal environments

lunar equator

GS equators
. **lunar equator**
RT infrared imagery
radar imagery
selenology

lunar escape devices

RT escape capsules
escape rockets

lunar evolution

GS evolution (development)
. **lunar evolution**
RT moon
pre-Imbrian period
selenology
solar system evolution

lunar excavation equipment

(added December 1990)
GS lunar based equipment
. **lunar excavation equipment**
RT ∞ equipment
excavation
lunar construction equipment
lunar mining
lunar resources
lunar surface vehicles
tractors

lunar exploration

GS exploration
. space exploration
. . **lunar exploration**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo lunar experiment module
Apollo Lunar Surface Experiments
Package
Apollo project
Clementine spacecraft
EASEP
extraterrestrial resources
local scientific survey module
Lunar Prospector
lunar resources
Mars exploration
moon
selenology

Lunar Exploration System for Apollo

UF *LESA (lunar exploration system)*
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight

Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 Apollo project
 ∞ systems

lunar far side

RT libration
 moon
 selenology

lunar figure

RT selenology

lunar flight

GS space flight
 . **lunar flight**
 RT Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 circumlunar trajectories
 cislunar space
 Earth-Moon trajectories
 ∞ flight
 flyby missions
 moon-Earth trajectories
 orbits

lunar flying vehicles

RT ∞ flight vehicles
 lifting bodies
 lunar based equipment
 ∞ vehicles

lunar geology

DEF The science that applies geologic principles and techniques to the study of the moon, especially its composition and the origin of its surface features.

GS geology
 . **lunar geology**
 RT geomorphology
 lunar core
 lunar maria
 lunar seismographs
 moon
 moonquakes
 planetary geology
 pre-Imbrian period
 regolith
 seismology
 selenology

lunar gravitation

GS gravitation
 . **lunar gravitation**
 RT moon
 planetary gravitation
 selenology

lunar gravitational effects

GS gravitational effects
 . **lunar gravitational effects**
 lunar effects
 . **lunar gravitational effects**
 RT ∞ effects
 selenology

Lunar Gravity Simulator

GS simulators
 . environment simulators

. . **Lunar Gravity Simulator**

RT gravitation

lunar ionosphere

USE **lunar atmosphere**

lunar laboratories

(added April 1993)
 GS laboratories
 . **lunar laboratories**
 . . lunar receiving laboratory
 RT LSSM
 lunar based equipment
 lunar bases
 lunar observatories
 space laboratories

lunar landing

GS landing
 . spacecraft landing
 . . **lunar landing**
 RT Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 Apollo lunar experiment module
 crash landing
 hard landing
 planetary landing
 soft landing
 Surveyor project

lunar landing modules

GS lunar spacecraft
 . **lunar landing modules**
 . . Lunar Module
 . . . Apollo lunar experiment module
 . . . LSSM
 . . . Lunar Module 5
 . . . Lunar Module 7
 modules
 . spacecraft modules
 . . landing modules
 . . . **lunar landing modules**
 Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 soft landing spacecraft
 . landing modules
 . . **lunar landing modules**
 . . . Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 spacecraft components
 . spacecraft modules
 . . landing modules
 . . . **lunar landing modules**
 Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 RT Apollo extension system
 maneuverable spacecraft
 manned spacecraft
 reusable spacecraft
 unmanned spacecraft

lunar landing sites

GS sites
 . landing sites

. . **lunar landing sites**

RT moon
 selenography

lunar laser ranging

(added July 2001)
 USE **laser ranging**
lunar rangefinding

lunar launch

GS launching
 . rocket launching
 . . **lunar launch**
 RT Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 orbital launching
 Saturn project

lunar limb

RT libration
 ∞ limbs
 moon
 planetary limb
 selenology

lunar logistics

GS logistics
 . **lunar logistics**
 RT life support systems
 lunar based equipment
 manned lunar surface vehicles
 materials handling

lunar luminescence

GS emission
 . light emission
 . . luminescence
 . . . **lunar luminescence**
 RT moon
 selenology

lunar magnetic fields

GS magnetic fields
 . **lunar magnetic fields**
 RT moon
 selenology

lunar mantle

RT core-mantle boundary
 crusts
 Earth mantle
 planetary mantles
 planetary structure
 regolith
 selenology

lunar maps

GS maps
 . **lunar maps**
 RT astronomical maps
 Clementine spacecraft
 moon
 selenography

lunar maria

GS maria
 . **lunar maria**
 RT basalt
 lunar geology
 lunar rocks
 selenology

lunar mining

(added December 1990)
 GS mining

lunar mobile laboratories

- . **lunar mining**
- RT lunar based equipment
 - lunar bases
 - lunar excavation equipment
 - lunar resources
 - lunar rocks
 - lunar soil
 - mineral deposits
 - mines (excavations)
 - space commercialization
 - space industrialization
 - strip mining
- lunar mobile laboratories**
- UF *MOLABS*
- GS laboratories
 - . **lunar mobile laboratories**
 - surface vehicles
 - . lunar surface vehicles
 - . **lunar mobile laboratories**
- RT Apollo project
 - manned lunar surface vehicles
 - selenography
- Lunar Module**
- UF *LEM (lunar module)*
- GS lunar spacecraft
 - . lunar landing modules
 - . **Lunar Module**
 - . . . Apollo lunar experiment module
 - . . . LSSM
 - . . . Lunar Module 5
 - . . . Lunar Module 7
 - manned spacecraft
 - . **Lunar Module**
 - . . . Apollo lunar experiment module
 - . . . LSSM
 - . . . Lunar Module 5
 - . . . Lunar Module 7
 - modules
 - . spacecraft modules
 - . landing modules
 - . . . lunar landing modules
 - . . . **Lunar Module**
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - soft landing spacecraft
 - . landing modules
 - . . lunar landing modules
 - . . . **Lunar Module**
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - spacecraft components
 - . spacecraft modules
 - . landing modules
 - . . lunar landing modules
 - . . . **Lunar Module**
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 9 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- Apollo spacecraft
- ascent propulsion systems
- Lunar Module 5**
- GS lunar spacecraft
 - . lunar landing modules
 - . Lunar Module
- . . . **Lunar Module 5**
- manned spacecraft
- . Lunar Module
- . . **Lunar Module 5**
- modules
- . spacecraft modules
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- **Lunar Module 5**
- soft landing spacecraft
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- **Lunar Module 5**
- spacecraft components
- . spacecraft modules
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- **Lunar Module 5**
- RT Apollo spacecraft
- Lunar Module 7**
- GS lunar spacecraft
 - . lunar landing modules
 - . Lunar Module
 - . . **Lunar Module 7**
 - manned spacecraft
 - . Lunar Module
 - . **Lunar Module 7**
 - modules
 - . spacecraft modules
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - **Lunar Module 7**
 - soft landing spacecraft
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - **Lunar Module 7**
 - spacecraft components
 - . spacecraft modules
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - **Lunar Module 7**
 - RT Apollo spacecraft
- Lunar Module Ascent Stage**
- RT ascent
 - ascent trajectories
 - rocket engines
 - stage separation
- lunar observatories**
- GS observatories
 - . **lunar observatories**
- RT astronomical observatories
 - lunar laboratories
- lunar occultation**
- GS occultation
 - . **lunar occultation**
 - . . solar eclipses
- RT Exosat satellite
 - moon
 - selenology
 - stellar occultation
- lunar orbit and landing simulators**
- UF *LOLA (simulator)*
- GS simulators
 - . **lunar orbit and landing simulators**
- RT flight simulators
 - training simulators
- lunar orbital rendezvous**
- UF *LOR (rendezvous)*
- GS maneuvers
 - . orbital maneuvers
 - . . orbital rendezvous
 - . . . **lunar orbital rendezvous**
 - rendezvous
 - . space rendezvous
- . . orbital rendezvous
- . . . **lunar orbital rendezvous**
- RT Earth orbital rendezvous
 - orbital mechanics
 - spacecraft trajectories
- Lunar Orbiter**
- GS artificial satellites
 - . lunar satellites
 - . **Lunar Orbiter**
 - . . Lunar Orbiter 1
 - . . . Lunar Orbiter 2
 - . . . Lunar Orbiter 3
 - . . . Lunar Orbiter 4
 - . . . Lunar Orbiter 5
 - lunar spacecraft
 - . lunar satellites
 - . **Lunar Orbiter**
 - . . Lunar Orbiter 1
 - . . . Lunar Orbiter 2
 - . . . Lunar Orbiter 3
 - . . . Lunar Orbiter 4
 - . . . Lunar Orbiter 5
- Lunar Orbiter 1**
- UF *Lunar Orbiter A*
- GS artificial satellites
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 1**
 - lunar spacecraft
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 1**
- Lunar Orbiter 2**
- UF *Lunar Orbiter B*
- GS artificial satellites
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 2**
 - lunar spacecraft
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 2**
- Lunar Orbiter 3**
- UF *Lunar Orbiter C*
- GS artificial satellites
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 3**
 - lunar spacecraft
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 3**
- Lunar Orbiter 4**
- UF *Lunar Orbiter D*
- GS artificial satellites
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 4**
 - lunar spacecraft
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 4**
- Lunar Orbiter 5**
- UF *Lunar Orbiter E*
- GS artificial satellites
 - . lunar satellites
 - . Lunar Orbiter
 - . . **Lunar Orbiter 5**
 - lunar spacecraft
 - . lunar satellites
 - . Lunar Orbiter

- ... **Lunar Orbiter 5**
- Lunar Orbiter A*
 - USE **Lunar Orbiter 1**
- Lunar Orbiter B*
 - USE **Lunar Orbiter 2**
- Lunar Orbiter C*
 - USE **Lunar Orbiter 3**
- Lunar Orbiter D*
 - USE **Lunar Orbiter 4**
- Lunar Orbiter E*
 - USE **Lunar Orbiter 5**
- lunar orbits**
 - UF *evection*
 - GS orbits
 - . **lunar orbits**
 - RT artificial satellites
 - circular orbits
 - circumlunar trajectories
 - cislunar space
 - command service modules
 - Earth orbits
 - Earth-Moon trajectories
 - elliptical orbits
 - equatorial orbits
 - Lissajous figures
 - moon
 - orbital mechanics
 - parking orbits
 - perilunes
 - polar orbits
 - satellite orbits
 - spacecraft orbits
 - transfer orbits
- lunar perturbation*
 - USE **lunar effects**
- lunar phases**
 - RT moon
 - ∞ phases
 - selenology
 - terminator lines
- lunar photographs**
 - GS photographs
 - . **lunar photographs**
 - RT astronomical photography
 - photography
 - Ranger project
 - spaceborne photography
- lunar photography**
 - UF *lunar cinematography*
 - GS imagery
 - . photography
 - ... **lunar photography**
 - RT astronomical photography
 - black and white photography
 - infrared photography
 - moon
 - Ranger project
 - spaceborne photography
- lunar probes**
 - DEF Probes for exploring and reporting on conditions on or about the Moon.
 - GS lunar spacecraft
 - . **lunar probes**
 - ... Lunik lunar probes
 - ... Lunik 2 lunar probe
 - ... Lunik 3 lunar probe
 - ... Lunik 9 lunar probe
 - ... Lunik 10 lunar probe
 - ... Lunik 11 lunar probe
 - ... Lunik 12 lunar probe
 - ... Lunik 13 lunar probe
 - ... Lunik 14 lunar probe
 - ... Lunik 16 lunar probe
 - ... Lunik 17 lunar probe
 - ... Lunik 19 lunar probe
 - ... Lunik 20 lunar probe
 - ... Lunik 22 lunar probe
 - .. Ranger lunar probes
 - ... Ranger 1 lunar probe
 - ... Ranger 2 lunar probe
 - ... Ranger 3 lunar probe
 - ... Ranger 4 lunar probe
 - ... Ranger 5 lunar probe
 - ... Ranger 6 lunar probe
 - ... Ranger 7 lunar probe
 - ... Ranger 8 lunar probe
 - ... Ranger 9 lunar probe
 - ... Ranger lunar landing vehicles
 - .. Surveyor lunar probes
 - ... Surveyor 1 lunar probe
 - ... Surveyor 2 lunar probe
 - ... Surveyor 3 lunar probe
 - ... Surveyor 4 lunar probe
 - ... Surveyor 5 lunar probe
 - ... Surveyor 6 lunar probe
 - ... Surveyor 7 lunar probe
 - unmanned spacecraft
 - . space probes
 - .. **lunar probes**
 - ... Lunik lunar probes
 - ... Lunik 2 lunar probe
 - ... Lunik 3 lunar probe
 - ... Lunik 9 lunar probe
 - ... Lunik 10 lunar probe
 - ... Lunik 11 lunar probe
 - ... Lunik 12 lunar probe
 - ... Lunik 13 lunar probe
 - ... Lunik 14 lunar probe
 - ... Lunik 16 lunar probe
 - ... Lunik 17 lunar probe
 - ... Lunik 19 lunar probe
 - ... Lunik 20 lunar probe
 - ... Lunik 22 lunar probe
 - ... Ranger lunar probes
 - ... Ranger 1 lunar probe
 - ... Ranger 2 lunar probe
 - ... Ranger 3 lunar probe
 - ... Ranger 4 lunar probe
 - ... Ranger 5 lunar probe
 - ... Ranger 6 lunar probe
 - ... Ranger 7 lunar probe
 - ... Ranger 8 lunar probe
 - ... Ranger 9 lunar probe
 - ... Ranger lunar landing vehicles
 - ... Surveyor lunar probes
 - ... Surveyor 1 lunar probe
 - ... Surveyor 2 lunar probe
 - ... Surveyor 3 lunar probe
 - ... Surveyor 4 lunar probe
 - ... Surveyor 5 lunar probe
 - ... Surveyor 6 lunar probe
 - ... Surveyor 7 lunar probe
 - RT Apollo project
 - Atlas Able 5 launch vehicle
 - maneuverable spacecraft
 - Pioneer project
 - Ranger project
 - soft landing spacecraft
 - Surveyor project
- lunar programs**
 - GS programs
 - . **lunar programs**
 - .. Apollo project
 - .. Surveyor project
 - RT Lunar Prospector
- Lunar Prospector**
 - (added February 1998)
 - GS artificial satellites
 - . lunar satellites
 - .. **Lunar Prospector**
 - lunar spacecraft
 - . lunar satellites
 - .. **Lunar Prospector**
 - RT lunar composition
 - lunar exploration
 - lunar programs
 - lunar resources
 - lunar surface
- lunar radar echoes**
 - UF *lunar scattering*
- GS echoes
 - . lunar echoes
 - .. **lunar radar echoes**
 - . radar echoes
 - ... **lunar radar echoes**
- RT selenology
- lunar radiation**
 - GS extraterrestrial radiation
 - . **lunar radiation**
 - RT ∞ radiation
 - selenology
- lunar rangefinding**
 - UF *LLR (ranging)*
 - lunar laser ranging*
 - GS rangefinding
 - . **lunar rangefinding**
 - RT distance measuring equipment
 - laser range finders
 - laser ranging
 - measuring instruments
 - optical range finders
 - range finders
- lunar rays**
 - SN (EXCLUDES RADIATION)
 - RT meteorite craters
 - moon
 - ∞ rays
 - selenography
- lunar receiving laboratory**
 - GS laboratories
 - . lunar laboratories
 - .. **lunar receiving laboratory**
- lunar resources**
 - (added August 1990)
 - GS resources
 - . extraterrestrial resources
 - .. **lunar resources**
 - RT in situ resource utilization
 - lunar excavation equipment
 - lunar exploration
 - lunar mining
 - Lunar Prospector
 - lunar rocks
 - lunar soil
 - lunar surface
- lunar retroreflectors**
 - GS lunar based equipment
 - . **lunar retroreflectors**
 - RT Apollo Lunar Surface Experiments
 - Package
 - Earth-Moon system
 - geodesy
 - laser range finders
 - retroreflection
 - U. S. S. R. space program
- lunar rocks**
 - GS rocks
 - . **lunar rocks**
 - .. kreek
 - RT gabbro
 - impact melts
 - lunar maria
 - lunar mining
 - lunar resources
 - particle tracks
 - pre-Imbrian period
 - regolith
 - selenography
 - selenology
- lunar rotation**
 - GS gyration
 - . rotation
 - .. **lunar rotation**
 - rotating bodies
 - . **lunar rotation**
 - RT center of gravity
 - selenology

lunar roving vehicles

spin dynamics

lunar roving vehicles

UF *LRV (vehicle)*

GS surface vehicles

. lunar surface vehicles

. . **lunar roving vehicles**

. . . Lunokhod lunar roving vehicles

. . . manned lunar surface vehicles

. roving vehicles

. . **lunar roving vehicles**

. . . Lunokhod lunar roving vehicles

. . . manned lunar surface vehicles

RT research vehicles

∞ vehicles

lunar satellites

GS artificial satellites

. **lunar satellites**

. . Explorer 18 satellite

. . Explorer 28 satellite

. . IMP

. . Lunar Orbiter

. . . Lunar Orbiter 1

. . . Lunar Orbiter 2

. . . Lunar Orbiter 3

. . . Lunar Orbiter 4

. . . Lunar Orbiter 5

. . Lunar Prospector

. . orbiting lunar stations

lunar spacecraft

. **lunar satellites**

. . Explorer 18 satellite

. . Explorer 28 satellite

. . IMP

. . Lunar Orbiter

. . . Lunar Orbiter 1

. . . Lunar Orbiter 2

. . . Lunar Orbiter 3

. . . Lunar Orbiter 4

. . . Lunar Orbiter 5

. . Lunar Prospector

. . orbiting lunar stations

RT maneuverable spacecraft

manned spacecraft

perilunes

polar orbits

unmanned spacecraft

lunar scattering

USE **diffuse radiation**

lunar radar echoes

lunar seismographs

GS measuring instruments

. vibration meters

. . seismographs

. . . **lunar seismographs**

recording instruments

. seismographs

. . **lunar seismographs**

RT lunar geology

selenology

lunar shadow

GS shadows

. **lunar shadow**

RT eclipses

moon

selenology

solar eclipses

lunar shelters

GS shelters

. **lunar shelters**

RT inflatable structures

life support systems

lunar based equipment

lunar construction equipment

space colonies

survival

∞ tunnels

lunar soil

GS soils

. **lunar soil**

. . lunar dust

RT creep

lunar mining

lunar resources

minerals

moon

penetrometers

selenology

space weathering

lunar spacecraft

GS **lunar spacecraft**

. Apollo spacecraft

. . Apollo lunar experiment module

. . lunar landing modules

. . Lunar Module

. . . Apollo lunar experiment module

. . . LSSM

. . . Lunar Module 5

. . . Lunar Module 7

. lunar probes

. . Lunik lunar probes

. . . Lunik 2 lunar probe

. . . Lunik 3 lunar probe

. . . Lunik 9 lunar probe

. . . Lunik 10 lunar probe

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. . . Lunik 22 lunar probe

. . Ranger lunar probes

. . . Ranger 1 lunar probe

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. . . Ranger 3 lunar probe

. . . Ranger 4 lunar probe

. . . Ranger 5 lunar probe

. . . Ranger 6 lunar probe

. . . Ranger 7 lunar probe

. . . Ranger 8 lunar probe

. . . Ranger 9 lunar probe

. . Ranger lunar landing vehicles

. . Surveyor lunar probes

. . . Surveyor 1 lunar probe

. . . Surveyor 2 lunar probe

. . . Surveyor 3 lunar probe

. . . Surveyor 4 lunar probe

. . . Surveyor 5 lunar probe

. . . Surveyor 6 lunar probe

. . . Surveyor 7 lunar probe

. lunar satellites

. . Explorer 18 satellite

. . Explorer 28 satellite

. . IMP

. . Lunar Orbiter

. . . Lunar Orbiter 1

. . . Lunar Orbiter 2

. . . Lunar Orbiter 3

. . . Lunar Orbiter 4

. . . Lunar Orbiter 5

. . Lunar Prospector

. . orbiting lunar stations

RT Apollo 5 flight

Apollo 6 flight

artificial satellites

Clementine spacecraft

Halo Orbit space station

manned spacecraft

rendezvous spacecraft

space capsules

∞ spacecraft

Surveyor project

unmanned spacecraft

lunar surface

GS satellite surfaces

. **lunar surface**

RT Clementine spacecraft

Lunar Prospector

lunar resources

selenology

surface layers

surface properties

∞ surfaces

Lunar Surface Scientific Modules

USE **LSSM**

lunar surface vehicles

GS surface vehicles

. **lunar surface vehicles**

. . lunar mobile laboratories

. . lunar roving vehicles

. . . Lunokhod lunar roving vehicles

. . . manned lunar surface vehicles

RT crawler tractors

lunar based equipment

lunar construction equipment

lunar excavation equipment

∞ surfaces

∞ vehicles

walking machines

lunar temperature

GS temperature

. **lunar temperature**

RT high temperature environments

low temperature environments

moon

selenology

lunar tides

DEF The parts of tides caused solely by the tide producing force of the moon.

GS lunar effects

. **lunar tides**

tides

. **lunar tides**

RT atmospheric tides

Earth tides

moonquakes

selenology

lunar topography

GS topography

. **lunar topography**

RT moon

selenography

selenology

surface properties

surface roughness

lunar trajectories

GS trajectories

. spacecraft trajectories

. . **lunar trajectories**

. . . circumlunar trajectories

. . . Earth-Moon trajectories

. . . moon-Earth trajectories

RT parking orbits

transfer orbits

lunation

USE **month**

luneberg lenses

USE **radar corner reflectors**

lung morphology

GS morphology

. **lung morphology**

RT alveoli

pulmonary lesions

respiratory diseases

lungs

GS anatomy

. respiratory system

. . **lungs**

. . . alveoli

RT alveolar air

atelectasis

bronchi

pleurae

pneumography

pneumothorax

pulmonary circulation

pulmonary functions

pulmonary lesions

spirometers

. . . . Lunik 12 lunar probe

. . . . Lunik 20 lunar probe

Lunik 2 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 2 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 2 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 2 lunar probe

Lunik 13 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 13 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 13 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 13 lunar probe

Lunik 22 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 22 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 22 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 22 lunar probe
 RT U. S. S. R. space program

Lunik 3 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 3 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 3 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 3 lunar probe

Lunik 14 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 14 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 14 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 14 lunar probe

Lunik lunar probes

DEF Russian term for a space probe launched to the moon's vicinity or to impact on the Moon. Used for LUNA lunar probes.

UF *LUNA lunar probes*

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 2 lunar probe
 . . . Lunik 3 lunar probe
 . . . Lunik 9 lunar probe
 . . . Lunik 10 lunar probe
 . . . Lunik 11 lunar probe
 . . . Lunik 12 lunar probe
 . . . Lunik 13 lunar probe
 . . . Lunik 14 lunar probe
 . . . Lunik 16 lunar probe
 . . . Lunik 17 lunar probe
 . . . Lunik 19 lunar probe
 . . . Lunik 20 lunar probe
 . . . Lunik 22 lunar probe
 Soviet spacecraft

. Lunik lunar probes

. . Lunik 2 lunar probe
 . . Lunik 3 lunar probe
 . . Lunik 9 lunar probe
 . . Lunik 10 lunar probe
 . . Lunik 11 lunar probe
 . . Lunik 12 lunar probe
 . . Lunik 13 lunar probe
 . . Lunik 14 lunar probe
 . . Lunik 16 lunar probe
 . . Lunik 17 lunar probe
 . . Lunik 19 lunar probe
 . . Lunik 20 lunar probe
 . . Lunik 22 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes

. . . Lunik lunar probes

. . . Lunik 2 lunar probe
 . . . Lunik 3 lunar probe
 . . . Lunik 9 lunar probe
 . . . Lunik 10 lunar probe
 . . . Lunik 11 lunar probe
 . . . Lunik 12 lunar probe
 . . . Lunik 13 lunar probe
 . . . Lunik 14 lunar probe
 . . . Lunik 16 lunar probe
 . . . Lunik 17 lunar probe
 . . . Lunik 19 lunar probe
 . . . Lunik 20 lunar probe
 . . . Lunik 22 lunar probe

RT Lunokhod lunar roving vehicles

U. S. S. R. space program

Lunik 9 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 9 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 9 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 9 lunar probe

Lunik 16 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 16 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 16 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 16 lunar probe

Lunik 10 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 10 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 10 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 10 lunar probe

Lunik 17 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 17 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 17 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 17 lunar probe

Lunik 11 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 11 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 11 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 11 lunar probe

Lunik 19 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 19 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 19 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes
 Lunik 19 lunar probe
 RT U. S. S. R. space program

Lunik 12 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 12 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 12 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes

Lunik 20 lunar probe

GS lunar spacecraft
 . lunar probes
 . . Lunik lunar probes
 . . . Lunik 20 lunar probe
 Soviet spacecraft
 . Lunik lunar probes
 . . Lunik 20 lunar probe
 unmanned spacecraft
 . space probes
 . . lunar probes
 . . . Lunik lunar probes

Lunokhod lunar roving vehicles

GS surface vehicles
 . lunar surface vehicles
 . . lunar roving vehicles
 . . . Lunokhod lunar roving vehicles
 . . roving vehicles
 . . . lunar roving vehicles
 . . . Lunokhod lunar roving vehicles
 RT Lunik lunar probes
 Marsokhod Mars roving vehicles
 U. S. S. R. space program

luster

∞ vehicles

luster

DEF The appearance characteristic of a specimen due to pronounced changes in intensity of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for dullness.

UF *dullness*

RT brightness
finishes
glare
reflectance

lutetium

GS chemical elements
. nuclides
. . . isotopes
. . . . **lutetium**
. lutetium isotopes
. rare earth elements
. . . **lutetium**
. . . . lutetium isotopes
metals
. rare earth elements
. . **lutetium**
. . . . lutetium isotopes

lutetium 176

USE **lutetium isotopes**

lutetium compounds

GS rare earth compounds
. **lutetium compounds**
RT ∞ chemical compounds
∞ metal compounds

lutetium isotopes

UF *lutetium 176*
GS chemical elements
. nuclides
. . . isotopes
. . . . lutetium
. **lutetium isotopes**
. rare earth elements
. . . lutetium
. . . . **lutetium isotopes**
metals
. rare earth elements
. . . lutetium
. . . . **lutetium isotopes**

Luxembourg

GS nations
. **Luxembourg**
RT Europe
Luxembourg space program

Luxembourg effect

RT ∞ effects
ionospheric cross modulation
ionospheric propagation

Luxembourg space program

(added March 1989)
GS programs
. space programs
. . . European space programs
. . . . **Luxembourg space program**
RT Luxembourg

Lyapunov functions

USE **Liapunov functions**

Lybia

USE **Libya**

Lyman alpha radiation

DEF The radiation emitted by hydrogen at 1216 angstrom, first observed in the solar spectrum by rocket borne spectrographs. Lyman alpha is very important in the heating of the upper atmosphere thus affecting other atmospheric phenomena.

GS electromagnetic radiation
. ultraviolet radiation

. . far ultraviolet radiation
. . . **Lyman alpha radiation**

RT atomic spectra
extraterrestrial radiation
polarized electromagnetic radiation
∞ radiation
ultraviolet astronomy

Lyman beta radiation

GS electromagnetic radiation
. ultraviolet radiation
. . far ultraviolet radiation
. . . **Lyman beta radiation**
RT atomic spectra
extraterrestrial radiation
polarized electromagnetic radiation
∞ radiation
ultraviolet astronomy

Lyman spectra

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **Lyman spectra**
RT atomic spectra
electronic spectra
emission spectra
H lines
solar spectra
spectral theory
ultraviolet spectra

lymph

GS body fluids
. **lymph**
RT lymphatic system
lymphocytes

lymph nodes

(added February 2002)
USE **lymphatic system**

lymphatic system

(added February 2002)
DEF A major component of the immune system consisting of a network of vessels, organs, and nodes that collect and filter lymph from body tissues and return it to the bloodstream.

UF *lymph nodes*
lymphoid system
GS anatomy
. immune systems
. . **lymphatic system**
. . . spleen
. . . . thymus gland
RT antibodies
bone marrow
immunology
lymph
lymphocytes
metastasis

lymphocytes

GS cells (biology)
. blood cells
. . leukocytes
. . . **lymphocytes**
RT immune systems
lymph
lymphatic system

lymphoid system

(added February 2002)
USE **lymphatic system**

lyophilization

USE **colloiding**

lyophils

USE **colloids**

Lyra constellation

GS constellations
. **Lyra constellation**

RT celestial bodies
celestial sphere
stars

lysergine

GS bases (chemical)
. alkaloids
. . **lysergine**
nitrogen compounds
. alkaloids
. . **lysergine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **lysergine**

lysimeters

DEF Instruments for measuring the water percolating through soils and determining the materials dissolved by the water.

GS measuring instruments

. **lysimeters**

RT ground water
moisture content
percolation
soil moisture
soils
water balance
water pollution

lysine

GS acids
. amino acids
. . **lysine**
. . . carboxylic acids
. . . . **lysine**
organic compounds
. amino acids
. . **lysine**
. . . carboxylic acids
. . . . **lysine**
RT digesting
lysogenesis

Lysithea

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 11,720,000 kilometers.

GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . . **Lysithea**
RT Jupiter (planet)

lysogenesis

RT disintegration
lysine

lysosomes

GS organelles
. **lysosomes**
RT cells (biology)
cytology
enzyme activity
lysozyme

lysozyme

GS biopolymers
. proteins
. . enzymes
. . . **lysozyme**
organic compounds
. proteins
. . enzymes
. . . **lysozyme**
RT body fluids
lysosomes

LZEEBE satellite

UF *Earth Energy Budget Experiment*
Long Term Zonal Earth Energy
Experiment
Zonal Earth Energy Budget
Experiment
GS artificial satellites

- . scientific satellites
- . . LZEEBE satellite

M

M region

- GS regions
 - . **M region**
- RT geomagnetism
 - solar atmosphere
 - solar corpuscular radiation
 - solar wind

M stars

- GS celestial bodies
 - . stars
 - . . . late stars
 - cool stars
 - **M stars**
 - Van Biesbroeck star
- RT asymptotic giant branch stars
 - flare stars
 - giant stars
 - main sequence stars
 - Mira variables
 - red giant stars
 - S stars
 - subgiant stars
 - supergiant stars
 - symbiotic stars

M wings

- USE **variable sweep wings**

M-1 engine

- UF *AJ-1000 engine*
- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **M-1 engine**
 - . . . liquid propellant rocket engines
 - hydrogen oxygen engines
 - **M-1 engine**
- RT Nova launch vehicles
 - Saturn 1 launch vehicles
 - Saturn 1B launch vehicles

M-2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - . . **M-2 lifting body**
 - . . . M-2F2 lifting body
 - reentry vehicles
 - maneuverable reentry bodies
 - lifting reentry vehicles
 - **M-2 lifting body**
 - M-2F2 lifting body

M-2F2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - . . M-2 lifting body
 - . . . **M-2F2 lifting body**
 - reentry vehicles
 - maneuverable reentry bodies
 - lifting reentry vehicles
 - M-2 lifting body
 - **M-2F2 lifting body**

M-2F3 lifting body

- GS lifting bodies
 - . **M-2F3 lifting body**

M-46 engine

- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **M-46 engine**
- RT Falcon missile

M-55 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **M-55 engine**

- . . solid propellant rocket engines
- . . . **M-55 engine**
- RT Minuteman ICBM

M-56 engine

- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **M-56 engine**
- RT Minuteman ICBM

M-57 engine

- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **M-57 engine**
- RT Minuteman ICBM

M-100 engine

- GS engines
 - . rocket engines
 - . . **M-100 engine**

MA-2 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **MA-2 engine**
 - . . . liquid propellant rocket engines
 - **MA-2 engine**
- RT Atlas ICBM
 - Vernier engines

MA-2 mission

- USE **Mercury MA-2 flight**

MA-3 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **MA-3 engine**
 - . . . liquid propellant rocket engines
 - **MA-3 engine**
- RT Atlas ICBM
 - Vernier engines

MA-3 flight

- USE **Mercury MA-3 flight**

MA-4 flight

- USE **Mercury MA-4 flight**

MA-5 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **MA-5 engine**
 - . . . liquid propellant rocket engines
 - **MA-5 engine**
- RT Atlas launch vehicles
 - Atlas SLV-3 launch vehicle
 - Vernier engines

MA-5 flight

- USE **Mercury MA-5 flight**

MA-8 flight

- USE **Mercury MA-8 flight**

MA-9 flight

- USE **Mercury MA-9 flight**

maars

- USE **craters**

Mace missiles

- GS missiles
 - . surface to surface missiles
 - . . **Mace missiles**

- RT booster rocket engines
 - J-33 engine
 - solid propellant rocket engines
 - turbojet engines

Mach cones

DEF The cone shaped shock waves theoretically emanating from an infinitesimally small particle moving at supersonic speed through a fluid medium. It is the locus of the Mach lines. The cone shaped shock waves generated by a sharp pointed body, as at the nose of a high speed aircraft.

- GS cones
 - . **Mach cones**
 - elastic waves
 - . shock waves
 - . . **Mach cones**
- RT acoustic velocity
 - bow waves
 - hypersonic shock
 - sound waves
 - supersonic flight
 - supersonic flow
 - supersonics

Mach inertia principle

- GS inertia
 - . inertia principle
 - . . **Mach inertia principle**
- RT equations of motion
 - moments of inertia

Mach number

DEF A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for critical Mach number and Glauert coefficient.

- UF *critical Mach number*
- Glauert coefficient*
- GS dimensionless numbers
 - . **Mach number**
 - ratios
 - . **Mach number**
- RT acoustic velocity
 - aerodynamics
 - airspeed
 - shock waves
 - superharmonics
 - sweep angle

Mach reflection

DEF The reflection of a shock wave from a rigid wall in which the shock strength of the reflected wave and the angle of reflection both have the smaller of the two values theoretically possible.

- GS reflection
 - . wave reflection
 - . . **Mach reflection**
- RT shock waves

machine aided indexing

- (*added April 2000*)
- USE **indexing (information science)**

machine learning

- (*added May 1989*)
- UF *learning machines*
- RT adaptive control
 - artificial intelligence
 - automata theory
 - backpropagation (artificial intelligence)
 - cybernetics
 - data mining
 - feedback control
 - genetic algorithms

∞ machinery
 membership functions
 self organizing systems
 teaching machines

machine life

USE **service life**

machine oriented languages

GS languages
 . programming languages
 . . **machine oriented languages**
 RT ALGOL
 Assembly language
 autocoders
 language programming
 PL/1

machine recognition

USE **artificial intelligence**

machine storage

USE **computer storage devices**
core storage

machine tools

GS tools
 . **machine tools**
 . . boring machines
 . . grinding machines
 . . lathes
 . . . turret lathes
 . . milling machines
 . . shapers
 RT cutters
 dies
 drills
 ∞ machinery
 machining
 mandrels
 mechanical devices
 mechanical engineering
 metal cutting
 numerical control
 presses
 punches
 saws
 shears
 taps
 ultrasonic cleaning

machine translation

GS linguistics
 . **machine translation**
 translating
 . **machine translation**
 RT computer programs
 information theory
 language programming
 languages
 natural language processing

machine vision

USE **computer vision**

machine-independent programs

GS computer programs
 . **machine-independent programs**
 RT computer programming
 computers
 multiprogramming

∞ **machinery**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT boring machines
 computers
 drafting machines
 engines
 fatigue testing machines
 grinding machines
 ground effect machines
 impact testing machines
 levers
 load testing machines

machine learning
 machine tools
 mechanical engineering

∞ mechanism
 mechanization
 milling machines
 positioning devices (machinery)
 refrigerating machinery
 ∞ rotating electrical machines
 self focusing
 teaching machines
 tide powered machines
 tools
 turbomachinery
 Turing machines
 vibration simulators
 walking machines
 waterwave powered machines
 welding machines
 windmills (windpowered machines)

machining

UF *material removal (machining)*
 GS **machining**
 . chemical machining
 . . electrochemical machining
 . hot machining
 . laser machining
 . micromachining
 . milling (machining)
 . spark machining
 . ultrasonic machining
 RT ∞ cut-off
 cutting
 drilling
 finishes
 forming techniques
 grinding (material removal)
 grooving
 knurling
 laser cutting
 machine tools
 metal cutting
 metal working
 planing
 residual stress
 setups
 surface finishing
 surface roughness
 tooling
 V grooves

MACHOs (astronomy)

(added November 1999)

USE **massive compact halo objects**

Mach-Zehnder interferometers

GS measuring instruments
 . interferometers
 . . **Mach-Zehnder interferometers**
 RT aerodynamics
 argon lasers
 carbon dioxide lasers
 diffractometers
 gas lasers
 goniometers
 optical equipment
 optical measuring instruments
 Schlieren photography

Macintosh PC

USE **Macintosh personal computers**

Macintosh personal computers

(added September 1992)

UF *Macintosh PC*
 GS data processing equipment
 . computers
 . . digital computers
 . . . microcomputers
 personal computers
 **Macintosh personal computers**
 RT computer graphics

computer programs

MacLaurin series

UF *McLaurin series*
 GS analysis (mathematics)
 . calculus
 . . series (mathematics)
 . . . power series
 Taylor series
 **MacLaurin series**
 . real variables
 . . series (mathematics)
 . . . power series
 Taylor series
 **MacLaurin series**

macroclimate

USE **climate**

macromolecules

(added March 1990)

GS molecules
 . **macromolecules**
 . . dendrimers
 RT molecular chains
 molecular structure
 molecular weight
 ∞ polymers
 proteins

macrophages

GS cells (biology)
 . **macrophages**
 RT tissues (biology)

macroscopic equations

RT ∞ equations
 ∞ measurement
 ∞ properties
 statistical mechanics

macular vision

USE **vision**

Madagascar

(added September 1993)

UF *Malagasy Republic*
 GS landforms
 . islands
 . . **Madagascar**
 nations
 . **Madagascar**
 RT Africa
 Indian Ocean

Madden-Julian Oscillation

(added September 2000)

DEF The most dominant and coherent component of the intraseasonal variability in the tropical atmosphere; characterized by a strong eastward propagation of atmospheric features, with a typical period of 30-60 days. The Madden-Julian Oscillation (MJO) may influence the tropical climate and its short-term variability by modulating the timing and strength of El Nino - Southern Oscillation (ENSO) events, contributing to the mean heat budget of the western Pacific, and regulating the annual cycle of the tropical western Pacific, especially the Australian summer monsoon.

UF *MJO (meteorology)*

GS oscillations
 . **Madden-Julian Oscillation**
 variations
 . periodic variations
 . . intraseasonal variations
 . . . **Madden-Julian Oscillation**
 RT air water interactions
 annual variations
 atmospheric circulation
 atmospheric models
 climatology
 el Nino
 monsoons
 Southern Oscillation
 tropical meteorology

Maffei galaxies

zonal flow (meteorology)

Maffei galaxies

- GS celestial bodies
 - . galaxies
 - . . . **Maffei galaxies**
- RT nebulae
 - radio astronomy
 - radio galaxies
 - radio sources (astronomy)
 - spiral galaxies

magazines (supply chambers)

- RT ammunition
 - photographic film
 - spools

Magdalena-Cauca Valley (Colombia)

- GS landforms
 - . **Magdalena-Cauca Valley (Colombia)**
 - valleys
 - . **Magdalena-Cauca Valley (Colombia)**
- RT Colombia
 - South America

Magellan Mission (ESA)

- USE **Magellan ultraviolet astronomy satellite**

Magellan project (NASA)

- SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
- DEF A Venus exploratory mission to acquire radar imagery and topographic profiles of the planet surface and determine the characteristics of the Venusian gravity field. (This term is used to designate general project reviews, chronologies, and project management and planning.) Used for Venus Radar Mapper Project.
- UF *Venus Radar Mapper Project*
- GS programs
 - . NASA programs
 - . . . NASA space programs
 - . . . **Magellan project (NASA)**
 - . projects
 - . . . **Magellan project (NASA)**
 - . space programs
 - . . . NASA space programs
 - . . . **Magellan project (NASA)**
- RT Magellan spacecraft (NASA)
 - space exploration
 - space missions
 - Venus orbiting imaging radar (spacecraft)
 - Venus probes
 - Venus surface

Magellan spacecraft (NASA)

- SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
- DEF A Venus probe incorporating Voyager and Galileo hardware designs equipped with a synthetic aperture radar system to acquire surface imagery, altimetric profiles, and surface radiothermal emissivities. Earth-based Doppler radio tracking of the spacecraft will be used to derive gravimetric data. (This term designates the spacecraft intrinsic and support hardware, instrumentation acquired data.) Used for Venus Radar Mapper.
- UF *Venus Radar Mapper*
- GS interplanetary spacecraft
 - . Venus probes
 - . . . **Magellan spacecraft (NASA)**
 - unmanned spacecraft
 - . space probes
 - . . . Venus probes
 - . . . **Magellan spacecraft (NASA)**
- RT Magellan project (NASA)
 - radar imagery
- ∞ spacecraft
 - synthetic aperture radar
 - Venus orbiting imaging radar (spacecraft)

Venus surface

Magellan ultraviolet astronomy satellite

- DEF This ESA mission will provide high resolution spectra of celestial sources down to sixteenth magnitude over the extreme ultraviolet wavelength range (between 50 and 150 nm). This mission is still in the study phase. Used for Magellan Mission (ESA).
- UF *Magellan Mission (ESA)*
- GS artificial satellites
 - . ESA satellites
 - . . . **Magellan ultraviolet astronomy satellite**
 - . scientific satellites
 - . . . astronomical satellites
 - . . . **Magellan ultraviolet astronomy satellite**
- ESA spacecraft
 - . ESA satellites
 - . . . **Magellan ultraviolet astronomy satellite**
- observatories
 - . astronomical observatories
 - . . . astronomical satellites
 - . . . **Magellan ultraviolet astronomy satellite**
- RT extreme ultraviolet radiation
 - far ultraviolet radiation
 - spaceborne astronomy

Magellanic clouds

- GS celestial bodies
 - . galaxies
 - . . . **Magellanic clouds**
- RT ∞ clouds
 - nebulae
 - Orion nebula
 - star clusters
 - stars
 - supernova 1987A

magic tees

- DEF Compound waveguides or coaxial tees with four arms which exhibit directional characteristics, when properly matched, so that a signal entering one arm will be split between two of the other arms but not the third. A signal entering another arm is likewise split with half the energy entering one of the arms common to the other input but not its second arm and the other half of the energy entering the arm not used by the other input. Magic tees are used in radar as transmitter receiver duplexers.
- RT duplexers

magma

- DEF Naturally occurring mobile rock materials, generated within the Earth and capable of intrusion and extrusion, from which igneous rocks are thought to have been derived by solidification and related processes.
- GS geophysical fluids
 - . **magma**
- RT igneous rocks
 - lava
 - petrogenesis
 - regolith
 - rhyolite
 - rocks
 - soils
 - volcanic eruptions

magnesium

- GS chemical elements
 - . **magnesium**
 - . . . magnesium isotopes
 - metals
 - . **magnesium**
 - . . . magnesium isotopes

magnesium alloys

- GS alloys
 - . light alloys
 - . . . **magnesium alloys**
- RT aluminum-lithium alloys

bismuth alloys
lithium alloys
silicon alloys

magnesium bromides

- GS halogen compounds
 - . bromine compounds
 - . . . bromides
 - . . . **magnesium bromides**
 - . halides
 - . . . bromides
 - . . . **magnesium bromides**
 - . . . metal halides
 - . . . **magnesium bromides**
- magnesium compounds
 - . **magnesium bromides**

magnesium cells

- DEF Primary cells with the negative electrodes made of magnesium or its alloy.
- GS electric generators
 - . direct power generators
 - . . . primary batteries
 - dry cells
 - **magnesium cells**
- electrochemical cells
 - . electric batteries
 - . . . primary batteries
 - dry cells
 - **magnesium cells**
- RT chemical auxiliary power units
 - electrolytic polarization

magnesium chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . . chlorides
 - . . . **magnesium chlorides**
 - . halides
 - . . . chlorides
 - . . . **magnesium chlorides**
- magnesium compounds
 - . **magnesium chlorides**

magnesium compounds

- GS **magnesium compounds**
 - . brucite
 - . chlorophylls
 - . cordierite
 - . dolomite (mineral)
 - . enstatite
 - . forsterite
 - . magnesium bromides
 - . magnesium chlorides
 - . magnesium fluorides
 - . magnesium germanates
 - . magnesium germanides
 - . magnesium oxides
 - . . akermanite
 - . . periclase
 - . magnesium perchlorates
 - . magnesium sulfates
 - . . hexahedrite
 - . magnesium titanates
 - . merwinite
 - . monticellite
 - . talc
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds

magnesium fluorides

- GS halogen compounds
 - . fluorine compounds
 - . . . fluorides
 - . . . metal fluorides
 - **magnesium fluorides**
 - . halides
 - . . . fluorides
 - . . . metal fluorides
 - **magnesium fluorides**
 - . metal halides
 - . . . metal fluorides
 - **magnesium fluorides**
- magnesium compounds
 - . **magnesium fluorides**

- . **magnesium fluorides**
 - wire winding
 - yokes
- magnesium germanates**
 - GS germanium compounds
 - . germanates
 - . . **magnesium germanates**
 - magnesium compounds
 - . **magnesium germanates**
- magnesium germanides**
 - GS germanium compounds
 - . germanides
 - . . **magnesium germanides**
 - magnesium compounds
 - . **magnesium germanides**
- magnesium isotopes**
 - GS chemical elements
 - . magnesium
 - . . **magnesium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **magnesium isotopes**
 - metals
 - . magnesium
 - . . **magnesium isotopes**
- magnesium oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . alkaline earth oxides
 - **magnesium oxides**
 - akermanite
 - periclase
 - magnesium compounds
 - . **magnesium oxides**
 - . . akermanite
 - . . periclase
- magnesium perchlorates**
 - GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **magnesium perchlorates**
 - magnesium compounds
 - . **magnesium perchlorates**
- magnesium sulfates**
 - GS magnesium compounds
 - . **magnesium sulfates**
 - . . hexahedrite
 - sulfur compounds
 - . sulfates
 - . . **magnesium sulfates**
 - . . . hexahedrite
 - RT bloedite
- magnesium titanates**
 - GS magnesium compounds
 - . **magnesium titanates**
 - titanium compounds
 - . titanates
 - . . **magnesium titanates**
- Magnesyn (trademark)*
 - USE **servomotors**
- magnet coils**
 - GS electric coils
 - . magnetic coils
 - . . **magnet coils**
 - RT ∞ coils
 - electromagnetism
 - electromagnets
 - field coils
 - inductors
 - magnetic circuits
 - magnetic cores
 - magnetic energy storage
 - magnets
 - saturable reactors
 - solenoids
 - superconducting magnets
 - toroids
 - transformers
- magnetars**
 - (added January 2000)
 - DEF Highly magnetized neutron stars believed to emit quasi-steady x-rays along with bursts of soft gamma rays-- emissions powered by their magnetic energy. According to the magnetar theory, these stars form in some fraction of all supernovae. When they are young (with ages less than about 10,000 years) magnetars may be observed as soft gamma repeaters (SGRs) or anomalous X-ray pulsars.
 - GS celestial bodies
 - . stars
 - . . magnetic stars
 - . . . **magnetars**
 - . . . neutron stars
 - . . . **magnetars**
 - RT pulsars
 - soft gamma repeaters
 - supernova remnants
 - x ray sources
- magnetic absorption*
 - USE **electromagnetic absorption**
- magnetic amplifiers**
 - GS amplifiers
 - . **magnetic amplifiers**
 - RT magnetostatic amplifiers
 - nonlinearity
 - power amplifiers
 - saturable reactors
 - voltage amplifiers
- magnetic annular arc**
 - RT ∞ arcs
 - current distribution
 - plasma accelerators
 - plasma control
 - plasma propulsion
- magnetic annular shock tubes**
 - UF *MAST shock tubes*
 - GS shock wave generators
 - . shock tubes
 - . . **magnetic annular shock tubes**
- magnetic anomalies**
 - UF *geomagnetic anomalies*
 - GS anomalies
 - . **magnetic anomalies**
 - . . geomagnetic hollow
 - aeromagnetism
 - geomagnetism
 - nonuniform magnetic fields
- magnetic bearings**
 - DEF Any application of the principle in which something capable of rotation and translation is held by the use of electromagnetic force without touching it. Applications range from small instruments to very large forces.
 - GS bearings
 - . **magnetic bearings**
 - RT levitation
 - magnetic suspension
- magnetic charge density**
 - UF *scalar magnetic charge*
 - GS divergence
 - . **magnetic charge density**
 - RT ∞ charging
 - constitutive equations
 - Maxwell equation
- magnetic circuits**
 - GS circuits
 - . **magnetic circuits**
 - RT flux (rate)
 - lines of force
 - magnet coils
 - saturable reactors
- magnetic clouds**
 - GS magnetic fields
 - . **magnetic clouds**
 - particles
 - . charged particles
 - . . plasma clouds
 - . . . **magnetic clouds**
 - RT ∞ clouds
 - interplanetary magnetic fields
 - interplanetary medium
 - interstellar gas
 - interstellar magnetic fields
 - magnetic field configurations
 - solar corona
 - solar wind
 - stellar mass ejection
- magnetic coils**
 - GS electric coils
 - . **magnetic coils**
 - . . field coils
 - . . magnet coils
 - RT ∞ coils
 - electromagnetic hammers
 - electromagnetism
 - flux pumps
- magnetic compasses**
 - DEF Compasses whose operation depends upon an element that senses the Earth's magnetic field, e. g. , an instrument having a magnetic needle that turns freely on a pivot in a horizontal plane and that always swings to such a position that one end points to magnetic north.
 - GS measuring instruments
 - . indicating instruments
 - . . compasses
 - . . . **magnetic compasses**
 - navigation aids
 - . navigation instruments
 - . . compasses
 - . . . **magnetic compasses**
 - RT gyrocompasses
 - solar compasses
- magnetic compression**
 - DEF The force exerted by a magnetic field on an electrically conducting fluid or on a plasma.
 - RT compressing
 - confinement
 - plasma control
 - plasmas (physics)
- magnetic control**
 - RT attitude control
 - ∞ control
- magnetic cooling**
 - DEF Keeping a substance cooled to about 0. 2 K by using a working substance (paramagnetic salt) in a cycle of processes between a high-temperature reservoir (liquid helium) at 1. 2 K and a low temperature reservoir containing the substance to be cooled.
 - GS cooling
 - . **magnetic cooling**
 - RT absorption cooling
 - adiabatic demagnetization cooling
 - low temperature
 - low temperature environments
 - refrigerating
- magnetic cores**
 - GS cores
 - . **magnetic cores**
 - RT bubble memory devices
 - electric coils
 - ferrites
 - ferromagnetism
 - laminates
 - magnet coils
 - magnets
 - parametrons

magnetic diffusion

saturable reactors
toroids
transformers

magnetic diffusion

SN (DIFFUSION VIA A MAGNETIC FIELD)
GS diffusion
. **magnetic diffusion**
RT field strength

magnetic dipoles

RT ∞ dipoles
electric dipoles
∞ physical properties
∞ poles

magnetic disks

GS computer components
. computer storage devices
. . **magnetic disks**
magnetic storage
. **magnetic disks**
RT core storage
disk operating system (DOS)
∞ disks
memory (computers)
peripheral equipment (computers)
video disks

magnetic dispersion

RT ∞ dispersion
electromagnetic scattering
ferromagnetism
magnetization
wave scattering

magnetic disturbances

GS **magnetic disturbances**
. magnetic storms
. . polar substorms
RT auroras
Birkeland currents
∞ disturbances
geomagnetism
KP index
nonadiabatic theory
solar activity
solar activity effects
solar flares
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space weather
starspots
stellar activity
sudden ionospheric disturbances
sudden storm commencements
sunspots

magnetic domains

DEF Small areas on the surface of the body of thin films of a magnetic medium, each of which maintains a discrete magnetic field orientation relative to the others around it.

GS domains
. **magnetic domains**
RT bubble memory devices
bubble technique
dipole moments
domain wall
lines of force

magnetic drums

DEF Memory devices used in computers; rotating cylinders on which information may be stored as magnetically polarized areas, usually along several parallel tracks around the periphery.

GS computer components
. computer storage devices
. . **magnetic drums**
magnetic storage
. **magnetic drums**
RT core storage

∞ drums

magnetic effects

UF *geomagnetic effects*
GS magnetic properties
. **magnetic effects**
. . magnetic rigidity
RT ∞ effects
flux transfer events
geomagnetism
magnetoactivity
plasma compression
quantum Hall effect
temperature effects

magnetic energy storage

GS energy storage
. **magnetic energy storage**
RT energy technology
magnet coils
magnetic fields
superconducting magnets

magnetic equator

DEF That line on the surface of the Earth connecting all points at which the magnetic dip is zero. Used for geomagnetic equator.

UF *geomagnetic equator*
GS equators
. **magnetic equator**
RT geomagnetism
∞ inclination

magnetic field configurations

GS **magnetic field configurations**
. magnetic islands
RT astrophysics
divertors (fusion reactors)
electromagnetic fields
flux transfer events
force-free magnetic fields
helical windings
magnetic clouds
magnetic field reconnection
plasma compression
plasma control
plasma physics
polar cusps
poloidal flux
spheromaks
stellar magnetic fields

magnetic field intensity

USE **magnetic flux**

magnetic field inversions

GS inversions
. **magnetic field inversions**
RT electromagnetic fields
electromagnetism
electromechanics
field theory (physics)

magnetic field reconnection

DEF A change in topology of the magnetic field configuration resulting from a localized breakdown of the requirement for 'connection' of fluid elements at one time on a common magnetic field line. Alternatively, it occurs when an electric field exists with a component parallel to a locally two-dimensional X-type magnetic neutral line which is equivalent to a breakdown in connection.

GS magnetic properties
. magnetoactivity
. . **magnetic field reconnection**
RT field aligned currents
flux transfer events
interplanetary magnetic fields
magnetic field configurations
magnetic fields
magnetic flux
magnetic islands
magnetosphere-ionosphere coupling
solar magnetic field

space plasmas

magnetic fields

DEF Regions of space wherein magnetic dipoles would experience a magnetic force or torque; often represented as the geometric array of the imaginary magnetic lines of force that exist in relation to magnetic poles. Magnetic fields are also considered to be the regions of influence of magnetized bodies or electric currents.

GS magnetic fields

. biomagnetism
. force-free magnetic fields
. geomagnetism
. interplanetary magnetic fields
. interstellar magnetic fields
. lunar magnetic fields
. magnetic clouds
. magnetostatic fields
. nonuniform magnetic fields
. paleomagnetism
. planetary magnetic fields
. stellar magnetic fields
. . solar magnetic field

RT magnetic fields

Bernstein energy principle
beta factor
Biot-Savart law
conjugate points
constitutive equations
crossed fields
demagnetization
Earth magnetosphere
electric fields
electromagnetic acceleration
electromagnetic fields
electromagnetism
electromechanics
electron-hole drops
ferromagnetic resonance
field emission
field strength
field theory (physics)

∞ fields

flux pumps
flux transfer events
geomagnetic tail
Helios satellites
Intasat satellite

∞ Kerr effects

lines of force
Lorentz force
magnetic energy storage
magnetic field reconnection
magnetization

magnetoactivity
magneto-optics
magnetoplasmadynamics
magneto-resistivity
magnetostatics
magnets
multipolar fields
nonthermal radiation
particle acceleration
pinch effect
polar cusps
polarity
pulsar magnetospheres
racetracks (particle accelerators)
radiation belts
screw pinch
Scylla
self-consistent fields
square wells
stellar magnetospheres
Suhl effect
Zeeman effect

magnetic films

GS coatings
. **magnetic films**
RT ∞ films

magnetic flux

DEF The magnetic force exerted on an imaginary unit magnetic pole placed at any

specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the force is measured in dynes and the unit pole is a cgs unit pole, the field intensity is given in oersteds. Used for magnetic field intensity.

UF *magnetic field intensity*
GS field strength

. **magnetic flux**
rates (per time)
. flux (rate)
. . **magnetic flux**

RT beta factor
constitutive equations
current sheets
flux pinning
flux quantization
flux transfer events
force-free magnetic fields
lines of force
magnetic field reconnection
pinning

magnetic forming

GS forming techniques
. **magnetic forming**
metal working
. **magnetic forming**

RT bulging
cold working
deep drawing
electromagnetic hammers
metal drawing

magnetic induction

UF *electromagnetic deduction*
GS magnetic properties

. **magnetic induction**

RT coupling coefficients
flux (rate)
inductance

∞ induction
induction heating

magnetic induction probes

USE **magnetic probes**

magnetic islands

(added October 1994)

GS magnetic field configurations

. **magnetic islands**

RT coalescing
collisionless plasmas
current sheets
geomagnetic tail
magnetic field reconnection

magnetic lenses

UF *quadrupole lenses*
GS lenses

. **magnetic lenses**

RT cathode ray tubes
electron beams
electron guns
electron microscopes
electron microscopy
plasma guns
plasma jets
scanning electron microscopy
transmission electron microscopy
wire grid lenses

magnetic levitation vehicles

GS surface vehicles
. **magnetic levitation vehicles**

RT levitation
lift devices
mass drivers
rail transportation
suspension systems (vehicles)
∞ vehicles

magnetic materials

UF *magnetic metals*
GS **magnetic materials**

. ferrimagnetic materials
. ferromagnetic materials
. . ferrofluids
. . ferromagnetic films
. . magnetite
. . Permalloys (trademark)

RT Kondo effect
magnetorheological fluids
magnets
∞ materials
permanent magnets

magnetic measurement

SN (MEASUREMENT OF MAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)

UF *fluxmeters*

magnetometry

RT electromagnetic measurement
magnetometers
∞ materials tests
∞ measurement
squid (detectors)

magnetic memories

USE **magnetic storage**

magnetic metals

USE **magnetic materials**
metals

magnetic mirrors

DEF Magnetic fields so arranged that they will theoretically confine a hot plasma.

GS mirrors

. **magnetic mirrors**

. . tandem mirrors

RT lines of force
mirror fusion
mirror point
nonuniform magnetic fields
nuclear fusion
plasma control
plasma equilibrium
Q devices
Scylla
spheromaks

magnetic moments

DEF The quantities obtained by multiplying the distances between two magnetic poles by the average strength of the poles. Measures of the magnetic flux set up by the gyration of an electric field in a magnetic field. Moments are negative, indicating they are diagrammatic, and equal to the energy of rotation divided by the magnetic field. In atomic and nuclear physics, moments, measured in Bohr magnetrons, are associated with the intrinsic spin of the particle and with the orbital motion of the particle in a system.

GS magnetic properties

. **magnetic moments**

moments

. dipole moments

. . **magnetic moments**

RT Bohr magneton
electric moments
Langevin formula
quenching (atomic physics)

magnetic monopoles

GS monopoles

. **magnetic monopoles**

particles

. elementary particles

. . **magnetic monopoles**

RT quantum theory

magnetic nozzles

(added September 1999)

DEF Nozzle devices used in some nuclear and plasma propulsion systems that utilize magnetic fields to direct and accelerate plasma flows, thereby providing thrust for propulsion.

RT coaxial plasma accelerators
electric rocket engines

∞ nozzles

nuclear propulsion
nuclear rocket engines
plasma acceleration
plasma engines
plasma propulsion
rocket nozzles
spacecraft propulsion
VASIMR (propulsion system)

magnetic permeability

UF *magnetic susceptibility*
susceptibility (magnetism)

GS magnetic properties

. **magnetic permeability**

RT Curie-Weiss law
dielectric permeability
hysteresis
neel temperature
reluctance

magnetic pistons

GS pistons

. **magnetic pistons**

RT hypersonic wind tunnels
hypervelocity wind tunnels
shock tubes
shock wave generators

magnetic poles

DEF Either of the two places on the surface of the Earth where the magnetic dip is 90 deg. . that in the Northern Hemisphere (at, approximately, latitude 73 deg. 8 N, longitude 144 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, latitude, 68 deg. S, longitude 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic force is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory. In nature, only dipoles, not isolate magnetic poles exist.

RT auroral zones

∞ dipoles

geomagnetism

polarity

∞ poles

magnetic probes

UF *magnetic induction probes*

GS measuring instruments

. **magnetic probes**

RT magnetometers
resonance probes
space probes

magnetic properties

GS **magnetic properties**

. antiferromagnetism

. biomagnetism

. Curie temperature

. diamagnetism

. ferrimagnetism

. ferromagnetism

. geomagnetism

. gyromagnetism

. . gyrofrequency

. magnetic effects

. . magnetic rigidity

. magnetic induction

. magnetic moments

. magnetic permeability

. magnetic relaxation

. . spin-lattice relaxation

. magnetic suspension

. magnetoacoustics

. magnetoactivity

. . flux transfer events

. . magnetic field reconnection

. . magnetoresistivity

. magnetostriction

. paleomagnetism

. paramagnetism

. polarization characteristics

. reluctance

magnetic pumping

- . remanence
 - . thermomagnetic effects
 - RT coercivity
 - Curie-Weiss law
 - dipole moments
 - eddy currents
 - electrical properties
 - electromagnetic properties
 - electromagnetism
 - ferritic stainless steels
 - field strength
 - hysteresis
 - inductance
 - KP index
 - lines of force
 - magnetization
 - magnetomechanics (physics)
 - magnets
 - Maxwell equation
 - ∞ physical properties
 - ∞ polarization (spin alignment)
 - ∞ properties
 - ∞ solid state physics
 - spin glass
- magnetic pumping**
- RT electron cyclotron heating
 - induction heating
 - ion cyclotron radiation
 - kinetic heating
 - plasma heating
 - ∞ pumping
- magnetic recording**
- UF *magnetic tape recorders*
 - GS recording
 - . **magnetic recording**
 - RT bubble memory devices
 - data recording
 - recording heads
- magnetic relaxation**
- GS magnetic properties
 - . **magnetic relaxation**
 - . . spin-lattice relaxation
 - RT relaxation (mechanics)
- magnetic resonance**
- GS resonance
 - . **magnetic resonance**
 - . . ferromagnetic resonance
 - . . nuclear magnetic resonance
 - . . . proton magnetic resonance
 - . . . proton resonance
 - . . paramagnetic resonance
 - . . . electron paramagnetic resonance
 - RT nuclear spin
 - Overhauser effect
 - spectrum analysis
- magnetic rigidity**
- UF *gyrointeraction*
 - GS magnetic properties
 - . magnetic effects
 - . . **magnetic rigidity**
 - RT electron trajectories
 - ionospheric drift
 - particle mass
 - particle motion
 - ∞ rigidity
- magnetic sails**
- (added May 1995)
- DEF Devices that provide low thrust spacecraft propulsion by deflecting plasma winds with a superconducting cable-generated magnetic field.
- UF *field sails*
 - magsails*
 - GS propulsion
 - . electric propulsion
 - . . electromagnetic propulsion
 - . . . **magnetic sails**
 - . low thrust propulsion
 - . . electromagnetic propulsion
 - . . . **magnetic sails**

- . spacecraft propulsion
- . . electromagnetic propulsion
- . . . **magnetic sails**
- sails
- . **magnetic sails**
- RT interplanetary flight
- interstellar travel
- ion propulsion
- manned Mars missions
- particle beams
- plasma propulsion
- solar wind

magnetic shielding

- GS shielding
- . **magnetic shielding**
- RT electromagnetic shielding
- magnetometers
- radiation shielding

magnetic signals

- RT nuclear magnetic resonance
- signal mixing
- ∞ signals

magnetic signatures

- UF *magnetograms*
- GS signatures
- . **magnetic signatures**
- RT pattern registration

magnetic spectroscopy

- GS spectroscopy
- . **magnetic spectroscopy**
- RT Alpha Magnetic Spectrometer
- gas spectroscopy
- mass spectroscopy
- spectroscopic analysis
- vacuum spectroscopy

magnetic stars

- GS celestial bodies
- . stars
- . . **magnetic stars**
- . . . magnetars
- RT peculiar stars

magnetic storage

- DEF In computer terminology, any device which makes use of the magnetic properties of materials for the storage of information. Used for magnetic memories.
- UF *magnetic memories*
 - GS **magnetic storage**
 - . bubble memory devices
 - . core storage
 - . magnetic disks
 - . magnetic drums
 - RT computer storage devices
 - data recording
 - data storage
 - ∞ drums
 - parametrons
 - ∞ storage
 - virtual memory systems

magnetic storms

- DEF Worldwide disturbances of the Earth's magnetic field. Used for geomagnetic storms and magnetic substorms.
- UF *geomagnetic storms*
 - magnetic substorms*
 - GS magnetic disturbances
 - . **magnetic storms**
 - . . polar substorms
 - storms
 - . **magnetic storms**
 - . . polar substorms
 - RT Birkeland currents
 - dawn chorus
 - Forbush decreases
 - IMAGE satellite
 - noise storms
 - solar storms
 - solar terrestrial interactions
 - space weather

- spread F
- sudden ionospheric disturbances
- sudden storm commencements

magnetic substorms

- USE **magnetic storms**

magnetic surveys

- UF *magnetotelluric profiling*
- RT aeromagnetism
- geomagnetism

magnetic susceptibility

- USE **magnetic permeability**

magnetic suspension

- GS magnetic properties
- . **magnetic suspension**
- suspending (hanging)
- . **magnetic suspension**
- RT annular suspension and pointing system
- levitation melting
- magnetic bearings

magnetic switching

- GS switching
- . **magnetic switching**
- RT antiferromagnetism
- beam switching
- bubble memory devices
- saturable reactors

magnetic tape recorders

- USE **magnetic recording tape recorders**

magnetic tape transports

- GS mechanical drives
- . **magnetic tape transports**
- RT tape recorders

magnetic tapes

- DEF Ribbons of paper, metal, or plastic, coated or impregnated with magnetic material on which information may be stored in the form of magnetically polarized areas.
- GS **magnetic tapes**
 - . computer compatible tapes
 - RT audio tapes
 - peripheral equipment (computers)
 - plastic tapes
 - playbacks
 - punched tapes
 - readers
 - recording heads
 - reels
 - tape recorders
 - ∞ tapes
 - video tapes

magnetic transducers

- GS transducers
- . **magnetic transducers**
- RT electromagnetic measurement
- electronic transducers
- microphones

magnetic variations

- DEF Changes in magnetic fields in time or space.
- GS variations
 - . **magnetic variations**
 - . . geomagnetic pulsations
 - . . . geomagnetic micropulsations
 - . . nocturnal variations
 - RT aeromagnetism
 - annual variations
 - diurnal variations
 - ionospheric disturbances
 - KP index
 - Scylla
 - traveling ionospheric disturbances

magnetically trapped particles

- GS particles

electrohydrodynamics
 gas dynamics
 gas transport
 Hall accelerators
 Hall effect
 Hartmann flow
 Hartmann number
 ionization
 magnetohydrodynamic flow
 magnetohydrodynamic generators
 magnetohydrodynamic stability
 magnetohydrodynamic waves
 magnetohydrostatics
 magnetoionics
 magnetosonic resonance
 pinch effect
 plasma currents
 plasma dynamics
 plasma physics
 plasma propulsion
 plasmas (physics)
 space charge
 space mechanics
 space plasmas
 stellar activity
 stellarators
 thermonuclear reactions
 uranium plasmas
 wave-particle interactions

magneto hydrostatics

GS fluid mechanics
 . hydromechanics
 . . hydrostatics
 . . . **magneto hydrostatics**
 statics
 . hydrostatics
 . . **magneto hydrostatics**
 RT magnetohydrodynamic stability
 magnetohydrodynamics
 magnetoionics
 plasma physics
 static stability

magnetoionic plasma

USE **plasmas (physics)**

magnetoionics

RT electromagnetic wave transmission
 elliptical polarization
 geomagnetism
 gyrofrequency
 ionospheric propagation
 magneto electric media
 magnetohydrodynamics
 magnetohydrostatics
 plasmas (physics)
 radio transmission

magnetomechanics (physics)

DEF Study of the effects which the magnetization of a material and its strain have on each other.
 RT magnetic properties
 magnetization
 ∞ physics

magnetometers

DEF Instruments used in the study of geomagnetism for measuring a magnetic element. Used for Gaussmeters.
 UF *Gaussmeters*
 GS measuring instruments
 . **magnetometers**
 . . variometers
 RT electrical measurement
 field intensity meters
 geomagnetism
 ∞ gradiometers
 magnetic measurement
 magnetic probes
 magnetic shielding
 MagSat 1 satellite
 MagSat A satellite
 MagSat B satellite
 MagSat satellites

nuclear magnetic resonance
 proton masers

magnetometry

USE **magnetic measurement**

magneto-optics

RT acousto-optics
 electromagnetic radiation
 electro-optics
 Faraday effect
 Kerr magneto optical effect
 light modulators
 magnetic fields
 optical switching
 ∞ optics
 polarization (waves)
 polarized electromagnetic radiation

magnetopause

GS environments
 . Earth magnetosphere
 . . **magnetopause**
 RT Chapman-Ferraro problem
 flux transfer events
 IMAGE satellite
 magnetosheath
 magnetospheric instability
 planetary magnetotails
 polar cusps
 satellite atmospheres
 solar wind

magnetoplasmadynamic thrusters

(added April 2001)
 DEF Electromagnetic rocket engines that produce thrust via the Lorentz body force ejecting a high velocity plasma stream. The thrusters can be operated in either steady-state or pulsed mode, and typically have an axisymmetric geometry (annular anode surrounding a central cathode).
 UF *LFA thrusters*
Lorentz force accelerator thrusters
MPD thrusters
 GS engines
 . rocket engines
 . . electric rocket engines
 . . . plasma engines
 **magnetoplasmadynamic thrusters**
 RT arc jet engines
 electromagnetic propulsion
 magnetoplasmadynamics
 plasma accelerators
 plasma propulsion
 spacecraft propulsion
 ∞ thrusters

magnetoplasmadynamics

DEF The study of the dynamics of generating electricity by passing a beam of ionized gas through a magnetic field.
 RT magnetic fields
 magnetoplasmadynamic thrusters
 plasma density
 plasma propulsion
 rocket engines
 spacecraft propulsion

magnetoplasmas

USE **plasmas (physics)**

magneto resistivity

GS electrical properties
 . electrical resistivity
 . . **magneto resistivity**
 electromagnetic properties
 . **magneto resistivity**
 magnetic properties
 . magnetoactivity
 . . **magneto resistivity**
 transport properties
 . electrical resistivity
 . . **magneto resistivity**
 RT ∞ conductivity

electromagnetism
 Fermi surfaces
 Hall resistance
 magnetic fields
 reluctance
 ∞ resistance

magnetorheological fluids

(added September 2000)
 DEF Fluids comprised of magnetically soft particles dispersed in liquids and possessing rheological properties that can be rapidly and reversibly altered by the application of a magnetic field.
 RT electrorheological fluids
 ferrofluids
 ferromagnetic materials
 ∞ fluids
 magnetic materials
 rheology
 smart materials
 vibration damping

magnetosheath

GS environments
 . Earth magnetosphere
 . . **magnetosheath**
 RT bow waves
 Earth environment
 geomagnetism
 magnetopause
 plasma sheaths
 shock fronts
 solar planetary interactions
 solar terrestrial interactions
 solar wind

magnetosonic resonance

GS resonance
 . **magnetosonic resonance**
 RT magnetoelastic waves
 magnetohydrodynamics

magnetosphere-ionosphere coupling

UF *ionosphere-magnetosphere coupling*
 GS coupling
 . **magnetosphere-ionosphere coupling**
 RT aeronomy
 atmospheric physics
 coupled modes
 Earth ionosphere
 Earth magnetosphere
 electromagnetic coupling
 flux transfer events
 ∞ ionospheres
 magnetic field reconnection
 magnetospheric instability
 planetary ionospheres

∞ **magnetospheres**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Region surrounding a celestial body where its magnetic field controls the motions of charged particles.
 RT cometary magnetospheres
 Earth magnetosphere
 planetary magnetospheres
 pulsar magnetospheres
 stellar magnetospheres

magnetospheric electron density

GS density (number/volume)
 . particle density (concentration)
 . . electron density (concentration)
 . . . **magnetospheric electron density**
 RT atmospheric density
 ionospheric electron density
 plasma density

magnetospheric instability

GS stability
 . **magnetospheric instability**
 RT geomagnetic pulsations

- magnetoelastic waves
magnetopause
magnetosphere-ionosphere coupling
- magnetospheric ion density**
GS density (number/volume)
 . particle density (concentration)
 . . ion density (concentration)
 . . . **magnetospheric ion density**
 magnetospheric proton density
RT atmospheric density
 ionospheric ion density
 plasma density
 positive ions
- magnetospheric proton density**
GS density (number/volume)
 . particle density (concentration)
 . . ion density (concentration)
 . . . magnetospheric ion density
 **magnetospheric proton density**
 proton density (concentration)
 **magnetospheric proton density**
RT atmospheric density
 plasma density
- magnetostatic amplifiers**
GS amplifiers
 . **magnetostatic amplifiers**
RT gadolinium-gallium garnet
 magnetic amplifiers
 parametric amplifiers
 traveling wave tubes
 yttrium-aluminum garnet
 yttrium-iron garnet
- magnetostatic fields**
GS magnetic fields
 . **magnetostatic fields**
RT field theory (physics)
 lines of force
- magnetostatics**
GS electromagnetism
 . **magnetostatics**
RT electrostatics
 flux (rate)
 magnetic fields
- magnetostratigraphy**
(added April 1999)
GS stratigraphy
 . **magnetostratigraphy**
RT geochronology
 paleomagnetism
- magnetostriction**
DEF The phenomenon wherein ferromagnetic materials experience an elastic strain when subjected to an external magnetic field. The converse in which mechanical stresses cause a change in the magnetic induction of a ferromagnetic material. Used for magnetoelasticity.
UF *magnetoelasticity*
GS magnetic properties
 . **magnetostriction**
 mechanical properties
 . elastic properties
 . . **magnetostriction**
RT electrostriction
 magnetoelastic waves
- ∞ **magnetotails**
(added April 1990)
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT TERMS LISTED BELOW)
RT geomagnetic tail
- planetary magnetotails
- magnetotelluric profiling*
USE **magnetic surveys**
- magnetovariographs*
USE **variometers**
- magnetron sputtering**
DEF A deposition method in which a microwave tube is utilized to confine a plasma magnetically to produce high deposition rates and a low working-gas partial pressure.
GS sputtering
 . **magnetron sputtering**
RT deposition
 metal coatings
- magnetrons**
DEF Electron tubes characterized by the interaction of electrons with the electric field of a circuit element in crossed steady electric and magnetic fields to produce alternating current power output.
GS electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . **magnetrons**
 nigtotrons
 microwave equipment
 . microwave oscillators
 . . **magnetrons**
 . . . nigtotrons
 . microwave tubes
 . . **magnetrons**
 . . . nigtotrons
oscillators
 . microwave oscillators
 . . **magnetrons**
 . . . nigtotrons
RT cavity resonators
 crossed field amplifiers
 crossed fields
 electrostatic generators
 klystrons
 multimode resonators
 planotrons
 resonators
 traveling wave tubes
- magnets**
DEF Bodies which produce magnetic fields around themselves.
GS **magnets**
 . cryogenic magnets
 . electromagnets
 . . high field magnets
 . . superconducting magnets
 . ferrimagnets
 . permanent magnets
 . wiggler magnets
RT electrets
 ferromagnetic materials
 ferromagnetism
 magnet coils
 magnetic cores
 magnetic fields
 magnetic materials
 magnetic properties
 magnetization
 Permalloys (trademark)
- magnification**
DEF A ratio of the size of an image to its corresponding object. This is usually determined by linear measurement. Used for magnifiers.
UF *magnifiers*
RT amplification
 increasing
 lenses
- ∞ projection
- magnifiers*
USE **magnification**
- magnitude**
GS **magnitude**
 . stellar magnitude
RT amplitudes
 dimensions
 displacement
∞ intensity
 level (quantity)
- magnons**
UF *spin waves*
GS elementary excitations
 . **magnons**
RT antiferromagnetism
 ferrimagnetism
 ferromagnetism
 magnetization
 plasmons
- Magnus effect**
RT Bernoulli theorem
 boundary layer flow
∞ effects
 fluid dynamics
 fluid flow
 missile design
 rotating cylinders
- magsails*
USE **magnetic sails**
- MagSat 1 satellite**
DEF A scientific satellite launched by NASA for surveying the Earth's magnetic field. It was launched in October 1979 and reentered in June 1980.
GS artificial satellites
 . scientific satellites
 . . MagSat satellites
 . . . **MagSat 1 satellite**
RT geomagnetism
 magnetometers
- Magsat A satellite**
GS artificial satellites
 . scientific satellites
 . . MagSat satellites
 . . . **Magsat A satellite**
RT geomagnetism
 magnetometers
- MagSat B satellite**
DEF The second in a series of satellites for measuring the Earth's magnetic field. Similar magnetic measurements are proposed as part of the Geopotential Research Mission.
GS artificial satellites
 . scientific satellites
 . . MagSat satellites
 . . . **MagSat B satellite**
RT geomagnetism
 magnetometers
- MagSat satellites**
DEF A series of satellites used to study the magnetic field.
GS artificial satellites
 . scientific satellites
 . . **MagSat satellites**
 . . . MagSat 1 satellite
 . . . Magsat A satellite
 . . . MagSat B satellite
RT geomagnetism
 magnetometers
- main sequence stars**
GS celestial bodies
 . stars
 . . **main sequence stars**
 . . . dwarf stars
 dwarf novae

Maine

- flare stars
 - red dwarf stars
 - . . . sun
 - RT color-magnitude diagram
 - early stars
 - F stars
 - G stars
 - giant stars
 - K stars
 - late stars
 - M stars
 - pre-main sequence stars
 - stellar evolution
 - stellar mass
 - subdwarf stars
 - subgiant stars
- Maine**
- GS nations
 - . United States
 - . . **Maine**
 - RT St Lawrence Valley (North America)

maintainability

- DEF A measure of the ease and rapidity with which a system or equipment can be retained in operational status through preventive maintenance or restored to operational status following a failure. It is characteristic of equipment design and installation, personnel availability in the required skill levels, adequacy of maintenance procedures and test equipment, and the physical environment under which maintenance is performed.
- RT design analysis
 - maintenance
 - reliability

maintenance

- UF *repairing*
- troubleshooting*
- GS **maintenance**
- . aircraft maintenance
- . file maintenance (computers)
- . preventive maintenance
- . space maintenance
- . spacecraft maintenance
- RT checkout
- construction
- damage assessment
- downtime
- equipment specifications
- fault detection
- ∞ fixing
- ground crews
- ground support equipment
- installing
- logistics
- logistics management
- lubricants
- lubrication
- maintainability
- manuals
- mechanical engineering
- operating costs
- reliability
- replacing
- self repairing devices
- service life
- shipyards
- shops
- spare parts
- specifications

maintenance training

- GS education
- . **maintenance training**

majority carriers

- GS charge carriers
- . **majority carriers**
- RT additives
- bipolar transistors
- carrier injection
- electron mobility
- electrons

- holes (electron deficiencies)
- semiconductors (materials)

Malagasy Republic

- USE **Madagascar**

Malawi

- GS nations
- . **Malawi**
- RT Africa

Malaya

- USE **Malaysia**

Malaysia

- UF *Malaya*
- GS nations
- . **Malaysia**
- RT Asia

Maldivé Islands

- GS landforms
- . islands
- . **Maldivé Islands**
- nations
- . **Maldivé Islands**

maleates

- GS esters
- . **maleates**

males

- RT children
- females
- human beings
- sex
- sex factor

malfunctions

- DEF Improper functioning of components, causing improper operation of a system.
- RT aborted missions
 - aircraft accidents
 - aircraft hazards
 - downtime
 - errors
 - failure
 - system failures

Mali

- GS nations
- . **Mali**
- RT Africa

Malkus theory

- RT statistical mechanics
- ∞ theories

malleability

- GS mechanical properties
- . **malleability**
- RT ductility
- metal working

malononitrile

- GS cyanides
- . **malononitrile**
- nitriles
- . **malononitrile**

Malta

- GS landforms
- . islands
- . . **Malta**
- nations
- . **Malta**
- RT Mediterranean Sea

mammals

- GS animals
- . vertebrates
- . . **mammals**
- . . . bats
- . . . bears
- . . . cats

- . . . cattle
- calves
- . . . deer
- caribous
- . . . dogs
- . . . goats
- . . . horses
- . . . marine mammals
- dolphins
- manatees
- porpoises
- seals (animals)
- whales
- . . . moles
- . . . primates
- apes
- chimpanzees
- baboons
- human beings
- monkeys
- . . . rodents
- guinea pigs
- hamsters
- mice
- jerboas
- pocket mice
- rabbits
- rats
- squirrels
- ground squirrels
- . . . sheep
- . . . swine
- . . . wolves
- RT Earth resources
- homeotherms
- mammary glands

mammary glands

- GS anatomy
- . glands (anatomy)
- . . **mammary glands**
- RT mammals

man

- USE **human beings**

man environment interactions

- RT biomass burning
- climate change
- desertification
- environment effects
- environment management
- human beings
- ∞ interactions
- International Geosphere-Biosphere program
- resources

man machine systems

- DEF Systems in which the functions of the man and the machine are interrelated and necessary for the operation of the system.
- GS **man machine systems**
 - . human-computer interface
 - RT astronaut performance
 - ∞ automation
 - balancing
 - bionics
 - biotechnology
 - computer systems design
 - consoles
 - cybernetics
 - data processing terminals
 - depersonalization
 - display devices
 - ∞ engineering
 - human factors engineering
 - management
 - mechanization
 - office automation
 - pilot induced oscillation
 - pilot support systems
 - robotics
 - ∞ systems
 - systems analysis
 - systems engineering

systems management
teleoperators
virtual reality
workstations

man operated propulsion systems

UF *MOPS (propulsion systems)*
GS propulsion

. low thrust propulsion
. . . **man operated propulsion systems**

RT astronaut locomotion
compressed air
extravehicular activity
gaseous rocket propellants
manned space flight
pilot performance
retrorocket engines
∞ systems

man powered aircraft

DEF Aircraft powered by human energy.

RT ∞ aircraft
hang gliders
soaring
ultralight aircraft
∞ winged vehicles

man tended free flyers

(added July 1989)

DEF Intermittently manned spacecraft or platforms designed primarily to carry out experiments in reduced gravity and life science research. They also serve as annexes or components of space stations. Used for MTF (space station).

UF *MTFF (space station)*

GS artificial satellites
. space stations
. . . **man tended free flyers**
manned spacecraft
. **man tended free flyers**
space platforms
. **man tended free flyers**
stations
. space stations
. . . **man tended free flyers**

RT Columbus space station
European space programs
orbital servicing
space station payloads
spaceborne experiments
spacecraft modules

management

UF *administration*

GS **management**

. configuration management
. contract management
. data management
. environment management
. financial management
. industrial management
. . . engineering management
. . . inventory management
. . . . inventory controls
. . . personnel management
. information management
. . . information resources management
. . . records management
. logistics management
. . . inventory management
. . . . inventory controls
. matrix management
. procurement management
. production management
. project management
. research management
. resources management
. . . forest management
. . . . reforestation
. . . information resources management
. . . land management
. . . resource allocation
. safety management
. systems management

. terminal area energy management
. total quality management
. waste management
. water management
. weapon system management
. . . waste disposal
. . . . composting
. . . . hazardous material disposal (in space)

. . . waste treatment
. . . . sewage treatment
. . . waste utilization

RT autonomy
Central Electronic Management System

command and control
contract negotiation
cost analysis
cost estimates
cost incentives
cost reduction
cybernetics
decision making
decisions

∞ direction
economic analysis
economic factors
evaluation
fiduciaries
forecasting
GERT
incentive techniques
incentives
information flow
man machine systems
marketing
mission planning
operations research
performance prediction
personnel development
prejudices
problem solving
procurement policy
product development
production engineering
progress
project planning
∞ research projects
statistical analysis
systems engineering

management analysis

RT ∞ analyzing
cost analysis
GERT
PERT
tradeoffs

management information systems

GS information systems
. **management information systems**
management systems
. **management information systems**
RT computer techniques
data base management systems
data retrieval
data storage
data systems
information retrieval
information theory
records management
∞ systems

management methods

GS **management methods**
. Delphi method (forecasting)
. pattern method (forecasting)
. probe method (forecasting)
. profile method (forecasting)
RT computer techniques
cost reduction
critical path method
decision making
estimates
forecasting
GERT
incentives

matrix management
∞ methodology
multidisciplinary research
NASA Interactive Planning System
operations research
PERT
retraining
Starsite program
systems management
total quality management

management planning

GS planning
. **management planning**
. . . production planning
. . . project planning
RT consulting
cost analysis
cost reduction
decision making
∞ development
economy
estimates
feasibility analysis
finance
forecasting
GERT
human resources
interfaces
life cycle costs
mediation
mission planning
operations research
personnel management
PERT
program trend line analysis
project management
research and development
selective dissemination of information
systems engineering
tradeoffs
value engineering

management systems

GS **management systems**
. flight management systems
. management information systems
RT computer techniques
information systems
project management
∞ systems

manatees

DEF Large plant eating aquatic mammals living in shallow tropical waters near the coasts of North and South America.

GS animals
. vertebrates
. . . mammals
. . . . marine mammals
. **manatees**

man-computer interface

USE **human-computer interface**

Mandelstam representation

GS models
. mathematical models
. . . **Mandelstam representation**
RT elementary particle interactions
inelastic scattering
Lorentz transformations
nuclear scattering
quantum theory
scattering amplitude

mandrels

RT cores
machine tools
molds
shafts (machine elements)

maneuverability

RT air slew missiles
aircraft control
aircraft maneuvers

maneuverable reentry bodies

aircraft performance
controllability
flight characteristics
flight control
flight envelopes
helicopter performance
maneuvers
spacecraft maneuvers

maneuverable reentry bodies

DEF (1) Reentry vehicles capable of performing preplanned flight maneuvers during the reentry phase. (2) Ballistic missile reentry vehicles whose ballistic trajectory can be adjusted by internal or external mechanisms, enabling them to evade antiballistic defenses and, or strike their target with a high degree of accuracy.

GS reentry vehicles
. **maneuverable reentry bodies**
. . . lifting reentry vehicles
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft
RT ∞ bodies

maneuverable spacecraft

GS **maneuverable spacecraft**
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. evasive satellites
. ferry spacecraft
. Janus spacecraft
. rendezvous spacecraft
. X-20 aircraft
RT artificial satellites
interplanetary spacecraft
landing modules
lunar landing modules
lunar probes
lunar satellites
manned spacecraft
MARS (Manned Reusable Spacecraft)
recoverable spacecraft
reentry vehicles
space probes
∞ spacecraft
spacecraft maneuvers
thrust vector control

maneuvers

GS **maneuvers**
. aircraft maneuvers
. evasive actions
. hovering
. sideslip
. spacecraft maneuvers
. . spacecraft docking
. orbital maneuvers
. terrain following
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT aerobatics
aircraft spin
flight control
landing
maneuverability
minor circle turning flight
rendezvous
self maneuvering units
takeoff

turning flight

manganese

GS chemical elements
. **manganese**
. . manganese isotopes
metals
. transition metals
. . **manganese**
. . . manganese isotopes
RT strategic materials

manganese 53

USE **manganese isotopes**

manganese 54

USE **manganese isotopes**

manganese 56

USE **manganese isotopes**

manganese alloys

GS alloys
. **manganese alloys**
. . Manganin (trademark)

manganese compounds

GS **manganese compounds**
. manganese oxides
. . Hopcalite (trademark)
. manganese phosphides
. permanganates
RT ∞ chemical compounds
∞ Group 7B compounds
∞ metal compounds

manganese ions

GS ions
. metal ions
. . **manganese ions**
RT permanganates

manganese isotopes

UF *manganese 53*
manganese 54
manganese 56
GS chemical elements
. manganese
. . **manganese isotopes**
. nuclides
. . isotopes
. . . **manganese isotopes**
metals
. transition metals
. . manganese
. . . **manganese isotopes**

manganese oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **manganese oxides**
. . . . Hopcalite (trademark)
manganese compounds
. **manganese oxides**
. . Hopcalite (trademark)

manganese phosphides

GS manganese compounds
. **manganese phosphides**
phosphorus compounds
. phosphides
. . **manganese phosphides**

Manganin (trademark)

GS alloys
. copper alloys
. . **Manganin (trademark)**
. manganese alloys
. . **Manganin (trademark)**
RT electrical resistance
thermocouples

manifolds

RT air intakes

exhaust systems
fuel systems
intake systems
pipes (tubes)
plenum chambers
∞ tubes
∞ water intakes

manifolds (mathematics)

GS **manifolds (mathematics)**
. Riemann manifold
RT coordinates
curves (geometry)
fibers (mathematics)
fixed points (mathematics)
topology

manipulation

USE **manipulators**

manipulators

SN (LIMITED TO MECHANICAL DEVICES FOR REMOTE HANDLING)
UF *manipulation*
GS **manipulators**
. remote manipulator system
. . Space Station Mobile Servicing System
RT control equipment
∞ effectors
end effectors
inverse kinematics
payload deployment & retrieval system
remote control
remote handling
robot arms
robot dynamics
robotics
servocontrol
shielding
tactile sensors (robotics)
teleoperators
telerobotics
torque sensors (robotics)

Manitoba

GS nations
. Canada
. . **Manitoba**

Manitou (CO)

GS cities
. **Manitou (CO)**
RT Colorado

Manned Aerodynamic Reusable Spaceship

USE **MARS (Manned Reusable Spacecraft)**

manned lunar surface vehicles

GS surface vehicles
. lunar surface vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
. roving vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
RT crawler tractors
lunar logistics
lunar mobile laboratories
∞ surfaces
∞ vehicles
walking machines

manned maneuvering units

SN (LIMITED TO ASTRONAUT PROPULSIVE UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM AND THE SPACE STATION)
DEF A propulsive backpack device for extravehicular activity. It uses a low thrust, dry, cold nitrogen propellant.
GS astronaut maneuvering equipment
. **manned maneuvering units**
RT astronaut locomotion
extravehicular activity

life support systems
 orbital servicing
 self maneuvering units
 space transportation system

manned Mars missions

DEF Any of several options for manned missions to Mars in which spacecraft are built for a particular mission. A mission is estimated by around 2020 and may last from one year to three years depending on speed and design.

- GS space missions
 - . Mars missions
 - . . **manned Mars missions**
- RT in situ resource utilization
 interplanetary flight
 interplanetary spacecraft
 long duration space flight
 magnetic sails
 manned spacecraft
 Mars (planet)
 Mars exploration
 NASA space programs
 return to Earth space flight
 space exploration
 terraforming

manned orbital laboratories

- UF *MOL (orbital laboratories)*
MORL
- GS laboratories
 - . space laboratories
 - . . **manned orbital laboratories**
 - . . . Destiny Laboratory Module
 - . . . Skylab 1
 - . . . Skylab 2
 - . . . Skylab 3
 - . . . Skylab 4
 - . . . Spacelab
- manned spacecraft
 - . **manned orbital laboratories**
 - . . Destiny Laboratory Module
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - . . Spacelab
- RT Apollo spacecraft
 Columbus space station
 International Space Station
 orbital workshops
 reconnaissance spacecraft
 space stations
 ∞ spacecraft
 Titan 3 launch vehicle

manned orbital space stations
 USE **space stations**

manned orbital telescopes

- UF *MOT (orbital telescopes)*
- GS telescopes
 - . **manned orbital telescopes**
 - . . Apollo telescope mount
- RT OAO

manned reentry

- GS atmospheric entry
 - . reentry
 - . . **manned reentry**
- space flight
 - . manned space flight
 - . . **manned reentry**
- RT descent trajectories
 environmental control
 lifting reentry vehicles
 reentry communication
 spacecraft reentry

manned space flight

- GS space flight
 - . **manned space flight**
 - . . Apollo flights
 - . . . Apollo 5 flight
 - . . . Apollo 6 flight
 - . . . Apollo 7 flight

- . . . Apollo 8 flight
- . . . Apollo 9 flight
- . . . Apollo 10 flight
- . . . Apollo 11 flight
- . . . Apollo 12 flight
- . . . Apollo 13 flight
- . . . Apollo 14 flight
- . . . Apollo 15 flight
- . . . Apollo 16 flight
- . . . Apollo 17 flight
- . . Gemini flights
 - . . . Gemini 3 flight
 - . . . Gemini 4 flight
 - . . . Gemini 5 flight
 - . . . Gemini 6 flight
 - . . . Gemini 7 flight
 - . . . Gemini 8 flight
 - . . . Gemini 9 flight
 - . . . Gemini 10 flight
 - . . . Gemini 11 flight
 - . . . Gemini 12 flight
- . . manned reentry
 - . . Mercury flights
 - . . . Mercury MA-1 flight
 - . . . Mercury MA-2 flight
 - . . . Mercury MA-3 flight
 - . . . Mercury MA-4 flight
 - . . . Mercury MA-5 flight
 - . . . Mercury MA-6 flight
 - . . . Mercury MA-7 flight
 - . . . Mercury MA-8 flight
 - . . . Mercury MA-9 flight
 - . . . Mercury MR-1 flight
 - . . . Mercury MR-2 flight
 - . . . Mercury MR-3 flight
 - . . . Mercury MR-4 flight
- . . Space Shuttle missions
 - . . . Space Shuttle mission 31-A
 - . . . Space Shuttle mission 31-B
 - . . . Space Shuttle mission 31-C
 - . . . Space Shuttle mission 31-D
 - . . . Space Shuttle mission 41-A
 - . . . Space Shuttle mission 41-B
 - . . . Space Shuttle mission 41-C
 - . . . Space Shuttle mission 41-D
 - . . . Space Shuttle mission 41-G
 - . . . Space Shuttle mission 51-A
 - . . . Space Shuttle mission 51-B
 - . . . Space Shuttle mission 51-C
 - . . . Space Shuttle mission 51-D
 - . . . Space Shuttle mission 51-E
 - . . . Space Shuttle mission 51-F
 - . . . Space Shuttle mission 51-G
 - . . . Space Shuttle mission 51-H
 - . . . Space Shuttle mission 51-I
 - . . . Space Shuttle mission 51-J
 - . . . Space Shuttle mission 51-L
 - . . . Space Shuttle mission 61-A
 - . . . Space Shuttle mission 61-B
 - . . . Space Shuttle mission 61-C
 - . . . Space Shuttle mission 61-E

- RT aerospace environments
 Apollo extension system
 Atlantis (orbiter)
 Columbia (Orbiter)
 Discovery (Orbiter)
 Enterprise (Orbiter)
 extravehicular activity
 Gemini 2 spacecraft
 Gemini (GT-1) spacecraft
 Gemini B spacecraft
 Gemini spacecraft
 human factors engineering
 Indian space program
 interplanetary flight
 interstellar travel
 intravehicular activity
 long duration space flight
 man operated propulsion systems
 Mercury project
 space adaptation syndrome
 space communication
 space exploration
 space flight stress
 space logistics
 space programs
 space psychology

Space Shuttle orbiters
 space shuttles
 spacecrew transfer
 suborbital flight

manned space flight network

- GS networks
 - . tracking networks
 - . . **manned space flight network**
- RT Advanced Range Instrumentation
 Ship
 unified S band

manned spacecraft

- GS **manned spacecraft**
 - . Apollo spacecraft
 - . . Apollo lunar experiment module
 - . Astro vehicle
 - . Columbus space station
 - . ferry spacecraft
 - . Gemini B spacecraft
 - . Gemini spacecraft
 - . . Gemini 2 spacecraft
 - . . Gemini (GT-1) spacecraft
 - . Janus spacecraft
 - . Lunar Module
 - . . Apollo lunar experiment module
 - . . LSSM
 - . . . Lunar Module 5
 - . . . Lunar Module 7
 - . man tended free flyers
 - . manned orbital laboratories
 - . . Destiny Laboratory Module
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - . . Spacelab
 - . MARS (Manned Reusable Spacecraft)
 - . . Mercury spacecraft
 - . . . Aurora 7
 - . . . Faith 7
 - . . . Friendship 7
 - . . . SIGMA 7
 - . . Mir space station
 - . . . orbital workshops
 - . . . Saturn workshops
 - . . . Saturn 1 workshop
 - . . . Saturn 5 workshop
 - . . . Skylab 1
 - . . . Skylab 2
 - . . . Skylab 3
 - . . . Skylab 4
 - . . Salyut space station
 - . . . Soyuz spacecraft
 - . . Space Operations Center (NASA)
 - . . space shuttles
 - . . . Buran space shuttle
 - . . . Hermes manned spaceplane
 - . . . Space Shuttle orbiters
 - Atlantis (orbiter)
 - Challenger (Orbiter)
 - Columbia (Orbiter)
 - Discovery (Orbiter)
 - Endeavour (orbiter)
 - Enterprise (Orbiter)
 - . . . voskhod manned spacecraft
 - Voskhod 1 spacecraft
 - Voskhod 2 spacecraft
 - . . . Vostok spacecraft
 - Vostok 1 spacecraft
 - Vostok 2 spacecraft
 - Vostok 3 spacecraft
 - Vostok 4 spacecraft
 - Vostok 5 spacecraft
 - Vostok 6 spacecraft
 - . . . HOPE aerospace plane
 - . . . Shenzhou 5 spacecraft
- RT Apollo 7 flight
 Apollo 8 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight

Manning theory

Apollo 16 flight
 Apollo 17 flight
 Apollo project
 Apollo Soyuz test project
 approach and landing tests (STS)
 artificial satellites
 biosatellites
 boosterglide vehicles
 command service modules
 environmental control
 gravity gradient satellites
 interplanetary spacecraft
 landing modules
 lifting reentry vehicles
 lunar landing modules
 lunar satellites
 lunar spacecraft
 maneuverable spacecraft
 manned Mars missions
 Mercury flights
 Mercury project
 military spacecraft
 reconnaissance spacecraft
 recoverable spacecraft
 rendezvous spacecraft
 reusable spacecraft
 Shuttle Derived Vehicles
 space capsules
 space navigation
 Space Shuttle Boosters
 space stations
 ∞ spacecraft
 spacecraft cabin simulators
 unmanned spacecraft
 X-20 aircraft

Manning theory

RT fluid flow
 ∞ theories
 wall flow

mannitol

GS organic compounds
 . carbohydrates
 . . sugars
 . . . **mannitol**

Mann-Whitney-Wilcoxon U test

GS statistical analysis
 . statistical tests
 . . **Mann-Whitney-Wilcoxon U test**
 RT quality control

manometers

DEF Instruments for measuring pressure of gases and vapors above and below atmospheric pressure. Used for micromanometers and U tubes.
 UF *micromanometers*
U tubes
 GS measuring instruments
 . pressure gages
 . . **manometers**
 RT barometers
 blood pressure
 flame probes
 pressure distribution
 pressure measurement
 vacuum gages

manpower

GS **manpower**
 . engineers
 . scientists
 RT engineering management
 human resources
 labor
 personnel
 research management
 resources

retraining

mantle (Earth structure)

USE **Earth mantle**

∞ manual

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT manual control
 manuals

manual control

GS **manual control**
 . visual control
 RT aircraft control
 attitude control
 automatic control
 ∞ buttons
 consoles
 ∞ control
 control boards
 control equipment
 control sticks
 directional control
 engine control
 guidance (motion)
 handles
 helicopter control
 human factors engineering
 knobs
 landing instruments
 lateral control
 levers
 longitudinal control
 ∞ manual
 pedals
 reentry guidance
 remote control
 satellite control
 satellite guidance
 servocontrol
 spacecraft control
 spacecraft guidance
 speed control
 temperature control

manuals

GS documents
 . **manuals**
 . . installation manuals
 . . user manuals (computer programs)
 RT directories
 handbooks
 maintenance
 ∞ manual
 textbooks

manufacturing

GS **manufacturing**
 . computer aided manufacturing
 . group technology (manufacturing)
 . low gravity manufacturing
 . space manufacturing
 RT aircraft production costs
 commerce
 commodities
 containerless melts
 contract negotiation
 economic development
 fabrication
 industries
 Kraft process (woodpulp)
 ∞ processing
 production management
 products
 space industrialization
 technologies
 technology assessment
 technology utilization

manures

DEF Materials that fertilize land. Refuse of stables and barnyards consisting of mammal and bird excreta with or without litter.
 GS wastes
 . **manures**

RT biomass energy production
 metabolic wastes
 waste disposal
 waste utilization

many body problem

UF *many particle theory*
N-body problem
 RT BCS theory
 celestial mechanics
 elementary excitations
 field theory (physics)
 four body problem
 Green's functions
 Hartree approximation
 orbital mechanics
 orbits
 particle theory
 perturbation
 perturbation theory
 ∞ problems
 quantum statistics
 statistical mechanics
 superfluidity
 three body problem
 Trojan orbits
 two body problem

many electron effects

RT autoionization
 electron capture
 electron scattering
 electron states
 electron transitions

many particle theory

USE **many body problem**

MAP (programming language)

GS languages
 . programming languages
 . . Assembly language
 . . . **MAP (programming language)**
 RT computer programming

MAP (space probe)

(added November 2002)

USE **Microwave Anisotropy Probe**

map matching guidance

GS guidance (motion)
 . **map matching guidance**
 RT airborne equipment
 display devices
 image correlators
 radar maps
 radar navigation
 TERCOM
 terrain following
 video landmark acquisition and tracking

mapping

SN (EXCLUDES CONFORMAL MAPPING)
 UF *cartography*
flux mapping
 GS **mapping**
 . cadastral mapping
 . computer aided mapping
 . ice mapping
 . photomapping
 . planetary mapping
 . soil mapping
 . thematic mapping
 . thermal mapping
 RT astrography
 Bonne projection
 contours
 declination
 fixed points (mathematics)
 functions (mathematics)
 geographic applications program
 geography
 Heat Capacity Mapping Mission
 hypsography
 maps

- Mapsat
 orthophotography
 Phoenix quadrangle (AZ)
 photogrammetry
 photography
 scale (ratio)
 SPOT (French satellite)
 surveys
 terrain analysis
 topography
 topology
 triangulation
- maps**
 GS **maps**
 . astronomical maps
 . . planispheres
 . lunar maps
 . meteorological charts
 . photomaps
 . radar clutter maps
 . radar maps
 . relief maps
 RT Bonne projection
 cadastral mapping
 charts
 computer aided mapping
 coordinates
 datum (elevation)
 geography
 ∞ globes
 hypsography
 mapping
 Mercator projection
 navigation aids
 photomapping
 soil mapping
 surveys
 thematic mapping
- Mapsat**
 DEF A proposed stereoscopic system for mapping the Earth from space to replace Landsat D as defined by the US Geological Survey.
 GS artificial satellites
 . **Mapsat**
 RT Landsat satellites
 mapping
 remote sensing
 stereophotography
- maraging**
 GS hardening (materials)
 . precipitation hardening
 . . **maraging**
 heat treatment
 . **maraging**
- maraging steels**
 GS alloys
 . high strength alloys
 . . high strength steels
 . . . **maraging steels**
 . iron alloys
 . . steels
 . . . high strength steels
 **maraging steels**
 RT martensitic stainless steels
 stainless steels
- Marangoni convection**
 DEF Convective flow induced by surface tension gradients. This is important in both ground and space processing where a free surface is present.
 GS convection
 . surface tension driven convection
 . . **Marangoni convection**
 RT convective flow
 free convection
 interfacial tension
 liquid bridges
 low gravity manufacturing
 melts (crystal growth)
 microgravity
 space processing
- thermocapillary migration
- Marbore 2 engine**
 USE **J-69-T-25 engine**
- Marecs maritime satellites**
 DEF The European Space Agency's system of two satellites provides maritime communications links between ships and coast Earth stations. Originally known as Marots, the system operates with one satellite over the Atlantic Ocean and one over the Pacific Ocean. It was leased to the International Maritime Satellite Organization for five years. Also known as the maritime European communications satellite.
 GS artificial satellites
 . communication satellites
 . . **Marecs maritime satellites**
 . ESA satellites
 . . **Marecs maritime satellites**
 . maritime satellites
 . . **Marecs maritime satellites**
 ESA spacecraft
 . ESA satellites
 . . **Marecs maritime satellites**
 RT European space programs
 satellite networks
- margins**
 RT borders
 edges
 rims
- maria**
 GS **maria**
 . lunar maria
 RT lava
 meteorite craters
 topography
- marijuana**
 GS drugs
 . psychotropic drugs
 . . **marijuana**
 RT alkaloids
- marine biology**
 DEF The study of marine fauna and flora and related topics.
 RT algae
 aquatic plants
 aquaculture
 ∞ biology
 environment effects
 environmental quality
 fisheries
 limnology
 oceanography
 phytoplankton
 ∞ science
 sea grasses
 seals (animals)
 seaweeds
 shellfish
 thermal pollution
 waterfowl
 wetlands
 zooplankton
- marine chemistry**
 DEF The study of the chemical processes in oceanic environments.
 GS environmental chemistry
 . **marine chemistry**
 RT biochemistry
 ∞ chemistry
 geochemistry
 hydrology
 limnology
 ocean bottom
 ∞ science
 sediments
- marine environments**
 GS environments
 . **marine environments**
- RT aquiculture
 beaches
 coastal ecology
 coasts
 environment effects
 ice environments
 nearshore water
 ocean models
 oceanography
 red tide
 sea breeze
 shellfish
 waterfowl
 wetlands
- marine mammals**
 GS animals
 . vertebrates
 . . mammals
 . . . **marine mammals**
 dolphins
 manatees
 porpoises
 seals (animals)
 whales
- marine meteorology**
 GS meteorology
 . hydrometeorology
 . . **marine meteorology**
 RT fronts (meteorology)
 oceanography
 ∞ science
 typhoons
 wind (meteorology)
- marine navigation*
 USE **surface navigation**
- marine propulsion**
 GS propulsion
 . **marine propulsion**
 . . underwater propulsion
 . . . submarine propulsion
 RT chemical propulsion
 electric propulsion
 jet propulsion
 nuclear electric propulsion
 nuclear propulsion
 propeller drive
 Savannah nuclear ship
- marine resources**
 GS resources
 . Earth resources
 . . **marine resources**
 RT aquiculture
 coastal ecology
 fisheries
 oceanography
 oceans
 sea water
 shellfish
 underwater resources
 water pollution
 wetlands
- marine rudders**
 GS control surfaces
 . rudders
 . . **marine rudders**
 RT aerial rudders
 hydrofoils
 tail assemblies
- marine technology**
 GS technologies
 . **marine technology**
 RT aquiculture
 artificial harbors
 deepwater terminals
 oceanography
 offshore docking
 offshore energy sources
 offshore platforms
 tanker terminals

marine transportation

- wharves
- marine transportation**
 - GS transportation
 - marine transportation**
 - RT air transportation
 - deepwater terminals
 - harbors
 - offshore docking
 - rail transportation
 - ships
 - tanker ships
 - water vehicles
- Mariner 1 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 1 space probe
 - Venus probes
 - Mariner 1 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 1 space probe
 - Venus probes
 - Mariner 1 space probe
- Mariner 2 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 2 space probe
 - Venus probes
 - Mariner 2 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 2 space probe
 - Venus probes
 - Mariner 2 space probe
 - RT Atlas Agena B launch vehicle
- Mariner 3 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 3 space probe
 - Mars probes
 - Mariner 3 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 3 space probe
 - Mars probes
 - Mariner 3 space probe
- Mariner 4 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 4 space probe
 - Mars probes
 - Mariner 4 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 4 space probe
 - Mars probes
 - Mariner 4 space probe
- Mariner 5 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 5 space probe
 - Venus probes
 - Mariner 5 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 5 space probe
 - Venus probes
 - Mariner 5 space probe
 - RT Atlas Agena launch vehicles
- Mariner 6 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 6 space probe
 - Mars probes
 - Mariner 6 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 6 space probe
 - Mars probes
 - Mariner 6 space probe
 - RT Atlas Agena launch vehicles
 - Mars 69 project
- Mariner 7 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 7 space probe
 - Mars probes
 - Mariner 7 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 7 space probe
 - Mars probes
 - Mariner 7 space probe
 - RT Mars 69 project
- Mariner 8 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 8 space probe
 - Mars probes
 - Mariner 8 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 8 space probe
 - Mars probes
 - Mariner 8 space probe
 - RT Mars 71 project
- Mariner 9 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 9 space probe
 - Mars probes
 - Mariner 9 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 9 space probe
 - Mars probes
 - Mariner 9 space probe
- Mariner 10 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 10 space probe
 - Venus probes
 - Mariner 10 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 10 space probe
 - Venus probes
 - Mariner 10 space probe
 - RT Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
- Mariner 11 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 11 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 11 space probe
- Mariner C spacecraft**
 - GS interplanetary spacecraft
 - Mariner spacecraft
 - Mariner C spacecraft
 - unmanned spacecraft
 - space probes
 - Mariner spacecraft
 - Mariner C spacecraft
- Mariner Jupiter-Saturn flyby**
 - GS space missions
- Mariner 6 space probe
 - unmanned spacecraft
 - space probes
- Mariner space probes
 - Mariner 6 space probe
 - Mariner 7 space probe
 - Mariner 8 space probe
 - Mariner 9 space probe
 - Mariner 10 space probe
 - Mariner 11 space probe
- Mariner 6 space probe
 - unmanned spacecraft
 - space probes
- Mariner 7 space probe
 - unmanned spacecraft
 - space probes
- Mariner 8 space probe
 - unmanned spacecraft
 - space probes
- Mariner 9 space probe
 - unmanned spacecraft
 - space probes
- Mariner 10 space probe
 - unmanned spacecraft
 - space probes
- Mariner 11 space probe
 - unmanned spacecraft
 - space probes
- Mariner C spacecraft
 - unmanned spacecraft
 - space probes
- Mariner Jupiter-Saturn flyby
 - flyby missions
 - Grand Tours
 - Mariner Jupiter-Saturn flyby
- interplanetary flight
 - missions
 - space flight
- Mariner Jupiter-Uranus flyby**
 - GS space missions
 - flyby missions
 - Grand Tours
 - Mariner Jupiter-Uranus flyby
 - RT interplanetary flight
 - missions
 - space flight
- Mariner Mark 2 Spacecraft**
 - DEF A NASA concept of a basic planetary spacecraft for studying the outer planets, comets, and asteroids. The first of the series will be a comet rendezvous mission to be launched in 1994.
 - RT Cassini mission
 - Comet Rendezvous Asteroid Flyby Mission
 - flyby missions
 - interplanetary flight
 - spacecraft
- Mariner program**
 - GS programs
 - NASA programs
 - NASA space programs
 - Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - space programs
 - NASA space programs
 - Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - space programs
 - NASA space programs
 - Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - RT Agena B rocket vehicle
 - Agena rocket vehicles
 - Atlas Agena launch vehicles
 - Atlas launch vehicles
 - Centaur project
 - flyby missions
 - Mars probes
 - space probes
 - unmanned spacecraft
 - Venus probes
- Mariner R 2 space probe**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner R 2 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner R 2 space probe
- Mariner space probes**
 - GS interplanetary spacecraft
 - Mariner space probes
 - Mariner 1 space probe
 - Mariner 2 space probe
 - Mariner 3 space probe
 - Mariner 4 space probe
 - Mariner 5 space probe
 - Mariner 6 space probe
 - Mariner 7 space probe
 - Mariner 8 space probe
 - Mariner 9 space probe
 - Mariner 10 space probe
 - Mariner 11 space probe
 - Mariner R 2 space probe
 - unmanned spacecraft
 - space probes
 - Mariner space probes
 - Mariner 1 space probe
 - Mariner 2 space probe
 - Mariner 3 space probe
 - Mariner 4 space probe
 - Mariner 5 space probe
 - Mariner 6 space probe
 - Mariner 7 space probe
 - Mariner 8 space probe
 - Mariner 9 space probe
 - Mariner 10 space probe
 - Mariner 11 space probe
 - Mariner R 2 space probe

- ... Mariner 8 space probe
 - ... Mariner 9 space probe
 - ... Mariner 10 space probe
 - ... Mariner 11 space probe
 - ... Mariner R 2 space probe
- Mariner spacecraft**
- GS interplanetary spacecraft
 - . **Mariner spacecraft**
 - .. Mariner C spacecraft
 - .. Mariner Venus 67 spacecraft
 - unmanned spacecraft
 - . space probes
 - .. **Mariner spacecraft**
 - ... Mariner C spacecraft
 - ... Mariner Venus 67 spacecraft
- Mariner Venus 67 spacecraft**
- GS interplanetary spacecraft
 - . Mariner spacecraft
 - .. **Mariner Venus 67 spacecraft**
 - unmanned spacecraft
 - . space probes
 - .. Mariner spacecraft
 - ... **Mariner Venus 67 spacecraft**
 - RT Venus probes
- Mariner Venus-Mercury 1973**
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... Mariner program
 - ... **Mariner Venus-Mercury 1973**
 - . space programs
 - .. NASA space programs
 - ... Mariner program
 - ... **Mariner Venus-Mercury 1973**
 - space missions
 - . flyby missions
 - .. **Mariner Venus-Mercury 1973**
 - RT Mariner 10 space probe
 - Mariner-Mercury 1973
- Mariner-Mercury 1973**
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... Mariner program
 - ... **Mariner-Mercury 1973**
 - . space programs
 - .. NASA space programs
 - ... Mariner program
 - ... **Mariner-Mercury 1973**
 - space missions
 - . flyby missions
 - .. **Mariner-Mercury 1973**
 - RT Mariner 10 space probe
 - Mariner Venus-Mercury 1973
- Marisat 1 satellite**
- DEF The first commercial maritime communication satellite.
 - GS artificial satellites
 - . Marisat satellites
 - .. **Marisat 1 satellite**
 - RT radio communication
- Marisat satellites**
- DEF A class of maritime commercial communication service satellites designed to provide telephone, telegraph, radio, distress messages and facsimile services to merchant ships, etc.
 - GS artificial satellites
 - . **Marisat satellites**
 - .. Marisat 1 satellite
 - RT communication
 - Fleet Satellite Communication System
 - INMARSAT satellites
 - Marots (ESA)
- radio communication
- Maritime Communication Satellite (ESA)*
- USE **Marots (ESA)**
- Maritime Orbital Test Satellite*
- USE **Marots (ESA)**
- maritime satellites**
- GS artificial satellites
 - . **maritime satellites**
 - .. ERS-1 (ESA satellite)
 - .. Marecs maritime satellites
 - .. Marots (ESA)
 - RT MSAT
 - National Oceanic Satellite System
 - TOPEX
- Mark 1 reentry body**
- GS reentry vehicles
 - . **Mark 1 reentry body**
 - RT intercontinental ballistic missiles
 - intermediate range ballistic missiles
- Mark 1 spacecraft**
- RT ∞ spacecraft
- Mark 2 reentry body**
- GS reentry vehicles
 - . **Mark 2 reentry body**
 - RT intercontinental ballistic missiles
 - intermediate range ballistic missiles
- Mark 3 reentry body**
- GS reentry vehicles
 - . **Mark 3 reentry body**
 - RT intercontinental ballistic missiles
 - intermediate range ballistic missiles
- Mark 4 reentry body**
- GS reentry vehicles
 - . **Mark 4 reentry body**
 - RT intercontinental ballistic missiles
- Mark 5 reentry body**
- GS reentry vehicles
 - . **Mark 5 reentry body**
 - RT intercontinental ballistic missiles
- Mark 6 reentry body**
- GS reentry vehicles
 - . **Mark 6 reentry body**
 - RT intercontinental ballistic missiles
- Mark 11 reentry body**
- GS reentry vehicles
 - . **Mark 11 reentry body**
 - RT intercontinental ballistic missiles
- Mark 12 reentry body**
- GS reentry vehicles
 - . **Mark 12 reentry body**
 - RT intercontinental ballistic missiles
- Mark 17 reentry body**
- GS reentry vehicles
 - . **Mark 17 reentry body**
 - RT intercontinental ballistic missiles
- Markarian galaxies**
- GS celestial bodies
 - . galaxies
 - .. active galaxies
 - ... **Markarian galaxies**
 - RT Seyfert galaxies
- ∞ **markers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT beacons
 - biomarkers
 - buoys
 - crayons
 - dyes
 - radio beacons
- runway lights
 - smoke
- market research**
- GS research
 - . **market research**
 - RT commerce
 - commodities
 - consumers
 - marketing
 - product development
- marketing**
- RT commerce
 - commercialization
 - consumers
 - finance
 - industrial areas
 - management
 - market research
 - product development
 - supplying
- marking**
- UF *labeling (marking)*
 - tagging*
 - GS **marking**
 - . isotopic labeling
 - RT detection
 - identifying
 - materials handling
 - packaging
 - staining
 - ∞ tracers
- Markov chains**
- GS stochastic processes
 - . Markov processes
 - .. **Markov chains**
 - RT Monte Carlo method
 - random walk
- Markov processes**
- GS stochastic processes
 - . **Markov processes**
 - .. Markov chains
 - RT random processes
 - zero sum games
- markup languages*
- (added June 2000)
- USE **document markup languages**
- Marots (ESA)**
- DEF Earlier name for the Marecs maritime satellites. Used for Maritime Communication Satellite (ESA) and Maritime Orbital Test Satellite.
 - UF *Maritime Communication Satellite (ESA)*
 - Maritime Orbital Test Satellite*
 - GS artificial satellites
 - . communication satellites
 - .. **Marots (ESA)**
 - .. ESA satellites
 - .. **Marots (ESA)**
 - .. maritime satellites
 - .. **Marots (ESA)**
 - ESA spacecraft
 - . ESA satellites
 - .. **Marots (ESA)**
 - RT European Space Agency
 - Marisat satellites
 - rangefinding
 - rescue operations
 - ship terminals
- Marquardt R4D engine**
- GS engines
 - . **Marquardt R4D engine**
 - RT Apollo project
 - auxiliary propulsion
 - command modules
 - ∞ reaction control
 - satellite attitude control

mars

spacecraft control

RT U. S. S. R. space program

... Mars environment
 ... **Mars atmosphere**
 ... planetary atmospheres
 ... **Mars atmosphere**
 RT aerospace environments
 Mars (planet)
 Mars Climate Orbiter
 Mars Express
 Mars Global Surveyor
 Mars Polar Lander
 Mars Surveyor 98 Program
 Mars volcanoes
 Phobos spacecraft
 planetary ionospheres
 planetary meteorology

∞ **mars**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT MARS (Manned Reusable Spacecraft)
 Mars (planet)
 navigation aids
 tracking stations

Mars 7 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 7 spacecraft**
 Soviet spacecraft
 . **Mars 7 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 7 spacecraft**
 RT U. S. S. R. space program

Mars 69 project

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Mars 69 project**
 . projects
 . . **Mars 69 project**
 . space programs
 . . NASA space programs
 . . . **Mars 69 project**
 RT Mariner 6 space probe
 Mariner 7 space probe
 space exploration

Mars 71 project

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Mars 71 project**
 . projects
 . . **Mars 71 project**
 . space programs
 . . NASA space programs
 . . . **Mars 71 project**
 RT Mariner 8 space probe
 space exploration

MARS (Manned Reusable Spacecraft)

SN (NOT RESTRICTED TO SPACECRAFT FOR FLIGHT TO PLANET MARS)
 UF *Manned Aerodynamic Reusable Spaceship*
 GS manned spacecraft
 . **MARS (Manned Reusable Spacecraft)**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . **MARS (Manned Reusable Spacecraft)**
 RT ferry spacecraft
 maneuverable spacecraft
 ∞ mars

Mars (planet)

GS celestial bodies
 . planets
 . . terrestrial planets
 . . . **Mars (planet)**
 RT 2001 Mars Odyssey
 Amor asteroid
 Apollo asteroids
 Deimos
 dust storms
 manned Mars missions
 ∞ mars
 Mars atmosphere
 Mars bases
 Mars environment
 Mars sample return missions
 Mars surface
 Mars volcanoes
 Phobos
 planetary craters
 planetary cryospheres
 polar caps
 SNC meteorites
 terraforming

Mars atmosphere

GS environments
 . extraterrestrial environments
 . . planetary environments

Mars bases

(added September 1994)
 UF *Mars colonies*
 GS space bases
 . planetary bases
 . . **Mars bases**
 RT extraterrestrial environments
 long duration space flight
 lunar bases
 Mars (planet)
 space colonies
 space habitats

Mars Climate Orbiter

(added March 1999)
 DEF One of two spacecraft comprising the Mars Surveyor 98 program; launched December 1998. After obtaining a polar, nearly circular orbit around Mars, the Orbiter will serve as a radio relay during the Lander surface mission, then begin monitoring the atmosphere, surface, and polar caps for a complete Martian year. The Orbiter carries two science instruments: the Pressure Modulated Infrared Radiometer and the Mars Color Imager.
 UF *Mars Surveyor 98 Orbiter*
 GS interplanetary spacecraft
 . Mars probes
 . . **Mars Climate Orbiter**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars Climate Orbiter**
 RT Mars atmosphere
 Mars missions
 Mars Polar Lander
 Mars surface
 Mars Surveyor 98 Program

Mars colonies

USE **Mars bases**

Mars craters

DEF Craters from meteoritic impact on the surface of Mars.
 GS craters
 . planetary craters
 . . **Mars craters**
 RT cratering
 ejecta
 impact damage
 meteorite craters
 meteoritic damage

Mars environment

GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . **Mars environment**
 Mars atmosphere
 RT dust storms
 Mars (planet)
 Mars Surveyor 2001 Mission
 Mars volcanoes
 Phobos spacecraft
 terraforming

Mars Excursion Module

UF *MEM (excursion module)*
 GS modules

Mars 1 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 1 spacecraft**
 Soviet spacecraft
 . **Mars 1 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 1 spacecraft**
 RT U. S. S. R. space program

Mars 2 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 2 spacecraft**
 Soviet spacecraft
 . **Mars 2 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 2 spacecraft**
 RT U. S. S. R. space program

Mars 3 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 3 spacecraft**
 Soviet spacecraft
 . **Mars 3 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 3 spacecraft**
 RT U. S. S. R. space program

Mars 4 Spacecraft

DEF One of a series of Soviet unmanned spacecraft designed for Mars exploration.
 GS interplanetary spacecraft
 . Mars probes
 . . **Mars 4 Spacecraft**
 Soviet spacecraft
 . **Mars 4 Spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 4 Spacecraft**
 RT U. S. S. R. space program

Mars 5 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 5 spacecraft**
 Soviet spacecraft
 . **Mars 5 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 5 spacecraft**
 RT U. S. S. R. space program

Mars 6 spacecraft

GS interplanetary spacecraft
 . Mars probes
 . . **Mars 6 spacecraft**
 Soviet spacecraft
 . **Mars 6 spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Mars 6 spacecraft**

- . spacecraft modules
- . . landing modules
- . . . **Mars Excursion Module**
- soft landing spacecraft
- . landing modules
- . . **Mars Excursion Module**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . **Mars Excursion Module**
- RT Mars exploration

Mars exploration
(added September 1994)

- GS exploration
 - . space exploration
 - . . **Mars exploration**
- RT 2001 Mars Odyssey
 - Earth-Mars trajectories
 - interplanetary flight
 - lunar exploration
 - manned Mars missions
 - Mars Excursion Module
 - Mars Express
 - Mars landing sites
 - Mars missions
 - Mars roving vehicles
 - Marsokhod Mars roving vehicles
 - space colonies

Mars Express
(added November 2003)

DEF European Space Agency spacecraft and related mission designed to search for sub-surface water on Mars and collect data on the Mars atmosphere, structure, geology, and composition. The spacecraft will deploy a lander (Beagle 2) that will perform exobiology and geochemistry research. Launched June 2003.

- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Express**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Express**
- RT European Space Agency
 - European space programs
 - Mars atmosphere
 - Mars exploration
 - Mars landing
 - Mars missions
 - Mars surface
 - planetary geology

Mars Geoscience Climatology Orbiter
USE **Mars Observer**

Mars Global Surveyor
(added March 1999)

DEF Spacecraft and related mission designed to orbit Mars over a two year period and collect data on the surface morphology, topography, composition, gravity, atmospheric dynamics, and magnetic field. Launched November 1996.

- UF *MGS (spacecraft)*
- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Global Surveyor**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Global Surveyor**
- RT Mars atmosphere
 - Mars missions
 - Mars Observer
 - Mars surface

Mars landing

- GS landing
 - . spacecraft landing
 - . . planetary landing
 - . . . **Mars landing**
- RT AEPs
 - Mars Express

- Mars landing sites
- Mars missions
- Mars Pathfinder
- Mars sample return missions
- soft landing
- Viking 1975 entry vehicle

Mars landing sites
(added February 2001)

DEF Areas on the Martian surface selected for spacecraft landing, or areas where spacecraft have actually landed.

- GS sites
 - . landing sites
 - . . **Mars landing sites**
- RT Mars exploration
 - Mars landing
 - Mars missions
 - Mars surface
 - site selection

Mars missions
(added February 1999)

- GS space missions
 - . **Mars missions**
 - . . 2001 Mars Odyssey
 - . . manned Mars missions
 - . . Mars sample return missions
 - . . Mars Surveyor 2001 Mission
- RT Earth-Mars trajectories
 - Mars Climate Orbiter
 - Mars exploration
 - Mars Express
 - Mars Global Surveyor
 - Mars landing
 - Mars landing sites
 - Mars Observer
 - Mars Pathfinder
 - Mars Polar Lander
 - Mars probes
 - Mars roving vehicles
 - Mars surface samples
 - Mars Surveyor 98 Program
 - ∞ missions
 - return to Earth space flight

Mars Observer

DEF Spacecraft and related mission to study the geoscience and climate of Mars. Launched September 1992. Contact with the spacecraft was lost in August 1993, three days before the scheduled Mars orbit insertion.

- UF *Mars Geoscience Climatology Orbiter MSCO*
- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Observer**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Observer**
- RT Mars Global Surveyor
 - Mars missions

Mars Pathfinder
(added January 1996)

- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Pathfinder**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Pathfinder**
- RT exobiology
 - landing sites
 - Mars landing
 - Mars missions
 - parachute descent
 - planetary geology

Mars photographs

- GS photographs
 - . **Mars photographs**
- RT photography
 - satellite-borne photography

- spaceborne photography

Mars Polar Lander
(added March 1999)

DEF One of two spacecraft comprising the Mars Surveyor 98 program; launched January 1999. After a soft landing near the Martian south pole, the Lander will search for near-surface ice and possible surface records of cyclic climate change, and characterize physical processes key to the seasonal cycles of water, carbon dioxide and dust on Mars. Prior to landing, the Deep Space 2 microprobes will be released as part of a technology-validation mission related to multiple-lander spacecraft.

- UF *Mars Surveyor 98 Lander*
- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Polar Lander**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Polar Lander**
- RT Mars atmosphere
 - Mars Climate Orbiter
 - Mars missions
 - Mars surface
 - Mars Surveyor 98 Program

Mars probes

- GS interplanetary spacecraft
 - . **Mars probes**
 - . . Advanced Recon Electric Spacecraft
 - . . . Mariner 3 space probe
 - . . . Mariner 4 space probe
 - . . . Mariner 6 space probe
 - . . . Mariner 7 space probe
 - . . . Mariner 8 space probe
 - . . . Mariner 9 space probe
 - . . . Mars 1 spacecraft
 - . . . Mars 2 spacecraft
 - . . . Mars 3 spacecraft
 - . . . Mars 4 Spacecraft
 - . . . Mars 5 spacecraft
 - . . . Mars 6 spacecraft
 - . . . Mars 7 spacecraft
 - . . . Mars Observer
 - . . . Mars Pathfinder
 - . . . Viking 1975 entry vehicle
 - . . . Viking spacecraft
 - Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - Mars Climate Orbiter
 - Mars Express
 - Mars Global Surveyor
 - Mars Polar Lander
 - Nozomi Mars Orbiter
 - Phobos spacecraft
 - Zond 2 space probe
 - unmanned spacecraft
 - space probes
 - **Mars probes**
 - Advanced Recon Electric Spacecraft
 - Mariner 3 space probe
 - Mariner 4 space probe
 - Mariner 6 space probe
 - Mariner 7 space probe
 - Mariner 8 space probe
 - Mariner 9 space probe
 - Mars 1 spacecraft
 - Mars 2 spacecraft
 - Mars 3 spacecraft
 - Mars 4 Spacecraft
 - Mars 5 spacecraft

Mars roving vehicles

- ... Mars 6 spacecraft
- ... Mars 7 spacecraft
- ... Mars Observer
- ... Mars Pathfinder
- ... Viking 1975 entry vehicle
- ... Viking spacecraft
 - ... Viking 1 spacecraft
 - ... Viking lander 1
 - ... Viking orbiter 1
 - ... Viking 2 spacecraft
 - ... Viking lander 2
 - ... Viking orbiter 2
 - ... Viking lander spacecraft
 - ... Viking lander 1
 - ... Viking lander 2
 - ... Viking orbiter spacecraft
 - ... Viking orbiter 1
 - ... Viking orbiter 2
 - ... Viking orbiter 1975
 - ... Mars Climate Orbiter
 - ... Mars Express
 - ... Mars Global Surveyor
 - ... Mars Polar Lander
 - ... Nozomi Mars Orbiter
 - ... Phobos spacecraft
 - ... Zond 2 space probe
- RT Mariner program
 - Mars missions
 - Mars sample return missions
 - outer planets explorers
 - Venus probes
 - Voyager project
 - Zond space probes

Mars Rover Sample Return Mission
USE **Mars sample return missions**

Mars roving vehicles
(added March 2003)
DEF Remote-, autonomous-, or human-controlled ground vehicles designed for the exploration of the Martian surface.
GS surface vehicles

- ... roving vehicles
- ... **Mars roving vehicles**
- ... Marsokhod Mars roving vehicles

- RT Mars exploration
- Mars missions
- Mars surface
- planetary surfaces
- research vehicles
- ∞ vehicles

Mars sample return missions
(added March 1989)
UF *Mars Rover Sample Return Mission*
GS space missions

- ... Mars missions
- ... **Mars sample return missions**
- ... sample return missions
- ... **Mars sample return missions**

- RT Mars (planet)
- Mars landing
- Mars probes
- Mars surface samples
- NASA space programs
- planetary protection
- roving vehicles
- samples
- space exploration

Mars satellites
GS celestial bodies

- ... natural satellites
- ... **Mars satellites**
- ... Deimos
- ... Phobos

Mars surface
GS planetary surfaces

- ... **Mars surface**

- RT 2001 Mars Odyssey
- canals
- dust storms
- Mars (planet)
- Mars Climate Orbiter

- Mars Express
- Mars Global Surveyor
- Mars landing sites
- Mars Polar Lander
- Mars roving vehicles
- Mars Surveyor 98 Program
- Mars Surveyor 2001 Mission
- Mars volcanoes
- meteorite craters
- planetary craters
- SNC meteorites
- ∞ surfaces
- terraforming
- topography

Mars surface samples

- GS samples
 - ... **Mars surface samples**
- RT assaying
 - chemical analysis
 - Mars missions
 - Mars sample return missions
 - Mars Surveyor 2001 Mission
 - soil sampling
 - specimens
- ∞ surfaces
 - Viking lander 1
 - Viking lander 2

Mars Surveyor 98 Lander
(added March 1999)

USE **Mars Polar Lander**

Mars Surveyor 98 Orbiter
(added March 1999)

USE **Mars Climate Orbiter**

Mars Surveyor 98 Program
(added March 1999)

DEF Mars exploration program consisting of two mission spacecraft-- the Mars Climate Orbiter and the Mars Polar Lander. Two surface penetrating microprobes (part of the associated Deep Space 2 mission) for detecting water ice are also piggybacking on the Lander.

- GS programs
 - ... NASA programs
 - ... NASA space programs
 - ... **Mars Surveyor 98 Program**
 - ... space programs
 - ... NASA space programs
 - ... **Mars Surveyor 98 Program**
- RT Mars atmosphere
 - Mars Climate Orbiter
 - Mars missions
 - Mars Polar Lander
 - Mars surface

Mars Surveyor 2001 Mission
(added July 1999)

DEF Mars exploration mission including an orbiter with a gamma ray spectrometer and a multispectral thermal imager, and a lander with an extensive set of instrumentation, a robotic arm, and the Marie Curie Rover. (In March 2000, the lander portion of the mission was cancelled; the orbiter mission was superseded by the 2001 Mars Odyssey mission.)

- GS space missions
 - ... Mars missions
 - ... **Mars Surveyor 2001 Mission**
- RT 2001 Mars Odyssey
 - Mars environment
 - Mars surface
 - Mars surface samples
 - NASA space programs

Mars volcanoes

- DEF Volcanoes on the planet Mars.
- GS geology
 - ... planetary geology
 - ... **Mars volcanoes**
 - ... volcanoes
 - ... **Mars volcanoes**
 - landforms
 - ... volcanoes

- RT **Mars volcanoes**
 - basalt
 - calderas
 - cones (volcanoes)
 - effusives
 - lava
 - Mars (planet)
 - Mars atmosphere
 - Mars environment
 - Mars surface
 - mountains
 - orography
 - paleomagnetism
 - petrology
 - Rouse belts
 - volcanology

marshes

USE **marshlands**

marshlands

DEF Transitional land-water areas, covered at least part of the time by estuarine or coastal waters and characterized by aquatic and grass-like vegetation. Used for bogs, coastal marshlands, marshes, and swamps.

- UF *bogs*
 - coastal marshlands*
 - marshes*
 - swamps*

- GS land
 - ... wetlands
 - ... **marshlands**

- RT bayous
 - Earth resources
 - Earth surface
 - flats (landforms)
 - muskegs
 - oceanography
 - tidal flats
 - waterfowl

Marsokhod Mars roving vehicles
(added August 1995)

- GS surface vehicles
 - ... roving vehicles
 - ... Mars roving vehicles
 - ... **Marsokhod Mars roving vehicles**
- RT Lunokhod lunar roving vehicles
 - Mars exploration
 - planetary surfaces
- ∞ vehicles

martensite

- RT austenite
 - hardening (materials)
 - heat treatment
 - iron alloys
 - martensitic stainless steels
 - microstructure
 - phase transformations
 - steels

martensitic stainless steels

- GS alloys
 - ... iron alloys
 - ... steels
 - ... stainless steels
 - ... **martensitic stainless steels**
- RT austenitic stainless steels
 - maraging steels
 - martensite

martensitic transformation

DEF A phase transformation occurring in some metals and resulting in formation of martensite.
GS phase transformations

- ... **martensitic transformation**

- RT austenite
- Martian meteorites*
(added March 1998)
USE **SNC meteorites**
- Martin aircraft**
GS **Martin aircraft**
. B-26 aircraft
. B-57 aircraft
RT ∞ aircraft
- martingales**
DEF In game theory, a procedure for recouping one's losses in previous wagers by doubling or otherwise increasing the amount bet.
RT decision theory
game theory
∞ mathematics
probability theory
stochastic processes
- Martinique**
GS landforms
. islands
. . West Indies
. . . **Martinique**
nations
. France
. . **Martinique**
RT Caribbean region
- Maryland**
GS nations
. United States
. . **Maryland**
RT Allegheny Plateau (US)
Assateague Island (MD-VA)
Chesapeake Bay (US)
Delmarva Peninsula (DE-MD-VA)
Potomac River Valley (MD-VA-WV)
Susquehanna River Basin (MD-NY-PA)
- mascons**
DEF Large scale, high density lunar mass concentrations below ringed mare.
GS composition (property)
. concentration (composition)
. . **mascons**
RT center of mass
gravity anomalies
mass
weight (mass)
- maser materials**
(added June 1989)
RT laser materials
masers
∞ materials
∞ materials science
- maser outputs**
GS output
. **maser outputs**
RT ∞ coherence
diffraction radiation
laser outputs
maser pumping
pulse duration
radiant flux density
water masers
wavelengths
- maser pumping**
(added June 1989)
RT laser pumping
maser outputs
masers
optical pumping
- ∞ pumping
- maser resonators*
USE **masers**
- masers**
DEF Amplifiers or oscillators utilizing the principle of microwave amplification by stimulated emission of radiation.
UF *maser resonators*
paramagnetic amplifiers
rasers
GS stimulated emission devices
. **masers**
. . gas masers
. . . hydrogen masers
. . interstellar masers
. . proton masers
. . traveling wave masers
. . water masers
RT amplifiers
atomic clocks
coherent electromagnetic radiation
cross relaxation
diffraction radiation
frequency standards
krypton fluoride lasers
lasers
maser materials
maser pumping
microwave amplifiers
molecular oscillators
resonators
stimulated emission
transient oscillations
two-wavelength lasers
ultraviolet lasers
- masking**
GS **masking**
. target masking
RT audiometry
chemisorption
coverings
photomasks
- masks**
GS **masks**
. oxygen masks
RT chemical defense
protective clothing
- Masonite (trademark)**
RT cellulose
∞ construction materials
trees (plants)
wood
- masonry**
GS **masonry**
. bricks
RT cements
ceramics
clays
concretes
construction
∞ construction materials
mortars (material)
structural members
tiles
veneers
- mass**
DEF A quantity characteristic of a body, which relates the attraction of this body toward another body. Since the mass of a body is not fixed in magnitude, all masses are referred to the standard kilogram, which is a lump of platinum. Used for low mass.
UF *low mass*
GS **mass**
. center of mass
. critical mass
. galactic mass
. missing mass (astrophysics)
. particle mass
. . electron mass
. planetary mass
. stellar mass
. subcritical mass
RT center of gravity
de Broglie wavelengths
inertia
mascons
mass to light ratios
moments of inertia
negative matter
relativistic effects
weight (mass)
- ∞ **mass balance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT balance
mass distribution
material balance
variable mass systems
- mass distribution**
GS distribution (property)
. **mass distribution**
RT aerodynamic balance
aerodynamic stability
angular distribution
balance
ballast (mass)
charge distribution
cosmology
counterbalances
density wave model
∞ distribution
flux density
force distribution
galactic mass
intergalactic media
interplanetary medium
interstellar matter
loading moments
loads (forces)
∞ mass balance
mass to light ratios
meteoroid concentration
missing mass (astrophysics)
moment distribution
moments of inertia
pressure distribution
size distribution
star distribution
static loads
structural design criteria
variable mass systems
- mass drivers**
(added May 1989)
DEF Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer, propulsion systems, and hypervelocity accelerators.
RT ∞ accelerators
electromagnetic acceleration
electromagnetic propulsion
launchers
magnetic levitation vehicles
moon-Earth trajectories
propulsion
railgun accelerators
spacecraft propulsion
- mass filters*
USE **fluid filters**
- mass flow**
GS fluid flow
. **mass flow**
RT Crocco-Lee theory
∞ flow
flow theory
gas flow
Kelvin-Helmholtz instability
kinetic theory
laminar flow

mass flow factors

Lewis numbers
liquid flow
molecular interactions
multiphase flow
pipe flow
sediment transport
single-phase flow
sliding
slumping
solids flow
steady flow
steam flow
turbulent flow
uniform flow
unsteady flow

mass flow factors

RT discharge coefficient
flow coefficients
heat transfer coefficients
heat transmission
nozzle geometry

mass flow rate

GS rates (per time)
. **mass flow rate**
RT convective flow
diffusion coefficient
flow velocity
pneumatic probes
specific impulse
transient pressures

mass ratios

DEF The ratios of the mass of the propellant charge of a rocket to the total mass of the rocket when charged with the propellant.
GS ratios
. **mass ratios**
. . mass to light ratios
. . mixing ratios
. . payload mass ratio
. . propellant mass ratio
RT metallicity
pressure ratio
structural weight
thrust-weight ratio

mass spectra

GS spectra
. **mass spectra**
RT energy spectra
molecular spectra
radiation spectra

mass spectrometers

DEF Instruments that are capable of separating ionized molecules of different mass to charge ratio and measuring the respective ion currents. Used for ion spectrometers and retarding ion mass spectrometers.
UF *ion spectrometers*
retarding ion mass spectrometers
GS measuring instruments
. spectrometers
. . **mass spectrometers**
RT chemical analysis
gas analysis
ion mobility spectroscopy
ion optics
microanalysis
neutron activation analysis
qualitative analysis
secondary ion mass spectrometry

mass spectrometry

USE **mass spectroscopy**

mass spectroscopy

UF *mass spectrometry*
GS spectroscopy
. **mass spectroscopy**
. . inductively coupled plasma mass spectrometry
. . secondary ion mass spectrometry
RT chemical analysis

gas spectroscopy
magnetic spectroscopy
nuclear radiation spectroscopy
spectroscopic analysis
vacuum spectroscopy

mass to light ratios

DEF The ratio of the mass of celestial body to its luminosity.
GS ratios
. mass ratios
. . **mass to light ratios**
RT astronomy
astrophysics
galactic radiation
indexes (ratios)
luminosity
luminous intensity
mass
mass distribution (astrophysics)
radiant flux density
stellar luminosity
stellar mass

mass transfer

RT ablation
charge transfer
convective flow
convective heat transfer
energy transfer
gas transport
gas-liquid interactions
heat transfer
Lewis numbers
porous boundary layer control
sediment transport
transferring
transpiration

Massachusetts

GS nations
. United States
. . **Massachusetts**

massaging

GS therapy
. **massaging**
RT fatigue (biology)
relaxation (physiology)

massifs

DEF Massive topographic and structural features, especially in orogenic belts, commonly formed of rocks more rigid than those of their surroundings. These rocks may be protruding bodies of basement rocks, consolidated during earlier orogenies, or younger plutonic bodies.
GS landforms
. **massifs**
RT Earth crust
∞ faults
geological faults
geology
mountains

massive compact halo objects

(added November 1999)
DEF Objects, such as brown dwarfs, black holes, and massive planets, hypothesized to account for the dark matter in the halo of the Milky Way. The signature of these objects is the occasional amplification of the light from extragalactic stars by the gravitational lens effect.
UF *MACHOs (astronomy)*
GS celestial bodies
. **massive compact halo objects**
RT brown dwarf stars
dark matter
galactic halos
gravitational lenses
Milky Way Galaxy
missing mass (astrophysics)

red dwarf stars

massive stars

(added July 1991)
GS celestial bodies
. stars
. . **massive stars**
RT black holes (astronomy)
degenerate matter
stellar mass
supergiant stars
supermassive stars

massively parallel processors

(added December 1988)
UF *MPP (computers)*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **massively parallel processors**
. . . . Connection Machine
RT architecture (computers)
parallel processing (computers)

MAST shock tubes

USE **magnetic annular shock tubes**

mastication

UF *chewing*
RT digesting
eating
teeth

mastoids

GS anatomy
. head (anatomy)
. . skull
. . . **mastoids**
. . . musculoskeletal system
. . . bones
. . . skull
. . . . **mastoids**
RT cranium
ear

matched filters

GS electromagnetic wave filters
. **matched filters**
RT communication equipment
demodulators
∞ filters
modulators
signal to noise ratios

matching

RT adjusting
comparison
fitting
homology
image resolution
impedance matching
mismatch (electrical)
pattern registration

material absorption

RT absorbents
absorbers (equipment)
∞ absorption
assimilation
bioavailability
extraction
hygroscopicity
radiation absorption
sorption
water treatment

material balance

GS balance
. **material balance**
. . water balance
RT heat balance
∞ mass balance

stoichiometry

*material removal (machining)*USE **machining***material strength*USE **mechanical properties**∞ **materials**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *substances*

RT ablatives materials

absorbents

absorbers (materials)

acceptor materials

aging (materials)

aircraft construction materials

airframe materials

amorphous materials

anisotropic media

binary systems (materials)

binders (materials)

bitumens

boron reinforced materials

Borsic (tradename)

brittle materials

carbonaceous materials

composite materials

concrete structures

∞ construction materials

contaminants

cork (materials)

curl (materials)

dislocations (materials)

donor materials

dredged materials

electric furnaces

electrons

epoxy matrix composites

fatigue (materials)

ferrimagnetic materials

ferroelastic materials

ferroelectric materials

ferromagnetic materials

fissionable materials

foams

foils (materials)

fractures (materials)

glass

glassy carbon

granular materials

graphite-epoxy composites

hazardous materials

holes (electron deficiencies)

∞ inorganic materials

insulation

laminates

laser materials

lossless materials

low density materials

magnetic materials

maser materials

materials handling

materials recovery

∞ materials science

∞ materials tests

matrix materials

mechanical properties

metal matrix composites

molding materials

nonflammable materials

optical materials

organic materials

paper (material)

phase change materials

photoelastic materials

photoelectric materials

polymer matrix composites

porous materials

pyrolytic materials

pyrophoric materials

radioactive materials

radome materials

reactor materials

refractory materials

reinforcing materials

reserves

resources

self lubricating materials

semiconductors (materials)

sizing materials

smart materials

solids

spacecraft construction materials

sponges (materials)

strategic materials

superhybrid materials

thermochromatic materials

thermoelectric materials

thickeners (materials)

three dimensional composites

vitreous materials

Vycor

materials handlingGS **materials handling**

. ground handling

. propellant transfer

. remote handling

RT airfield surface movements

∞ automation

blowers

canals

cargo

cargo aircraft

carts

chemical engineering

chutes

∞ containers

contingency

conveyors

cranes

delivery

dispensers

disposal

distributing

∞ distribution

distributors

dollies

dumping

ejection

ejectors

emptying

encapsulating

excavation

feeders

feeding (supplying)

fluid flow

fuel pumps

hauling

heavy lift airships

hoppers

loading operations

lunar logistics

marking

∞ materials

mechanical engineering

mines (excavations)

mooring

packaging

pipelines

∞ pumping

pumps

railroad humping tests

releasing

rigging

services

siphons

sprayers

spreading

stacks

∞ storage

tanks (containers)

tractors

transferring

transportation

trucks

unloading

vacuum pumps

waste disposal

wharves

materials recovery

SN (LIMITED TO TREATMENT OF A MATERIAL TO RECLAIM ONE OR MORE OF ITS COMPONENTS)

DEF The treatment of a material to reclaim one or more of its components.

GS reclamation

. **materials recovery**

. . gas recovery

. . nuclear fuel reprocessing

. . solvolysis

. . water reclamation

RT ∞ absorption

by-products

centrifuging

crystallization

disposal

distillation

extraction

filtration

in situ resource utilization

∞ materials

∞ precipitation

precipitation (chemistry)

∞ processing

∞ recovery

recycling

refining

removal

∞ separation

waste management

∞ **materials science**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ceramics

laser cutting

maser materials

∞ materials

metal foams

plastics

∞ properties

∞ science

materials selection*(added August 2001)*

DEF Process of choosing the most appropriate materials for a given application.

GS selection

. **materials selection**

RT aircraft construction materials

airframe materials

∞ construction materials

∞ materials tests

optical materials

reactor materials

spacecraft construction materials

structural design

structural weight

weight reduction

*materials testing reactors*USE **nuclear research and test reactors**∞ **materials tests**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bend tests

burst tests

Charpy impact test

chemical analysis

compression tests

corrosion tests

destructive tests

electrophotometry

environmental tests

fatigue tests

fiber pullout

fiber pushout

fuel tests

gas analysis

hardness tests

high temperature tests

impact tests

- lubricant tests
- magnetic measurement
- ∞ materials
- materials selection
- mechanical properties
- metallography
- microanalysis
- nanoindentation
- neutron radiography
- nondestructive tests
- propellant tests
- quality
- quality control
- radiography
- specifications
- static tests
- ∞ tests
- ultrasonic tests
- wear tests
- x ray analysis
- x ray spectroscopy

mathematical analysis

USE **applications of mathematics**

mathematical logic

- GS **mathematical logic**
 - . algorithms
 - . . backpropagation (artificial intelligence)
 - . . genetic algorithms
 - . . greedy algorithms
 - . . parsing algorithms
 - . . simplex method
 - . . sorting algorithms
 - . axioms
 - . formulas (mathematics)
 - . . Bethe-Heitler formula
 - . lattices (mathematics)
 - . . Boolean algebra
 - . . . Boolean functions
 - . predicate calculus
 - . set theory
 - . . Borel sets
 - . . equivalence
 - . . threshold logic
- RT branching (mathematics)
- functions (mathematics)
- hypotheses
- induction (mathematics)
- instruction sets (computers)
- ∞ logic
- philosophy
- proving
- temporal logic
- theorems
- Turing machines
- Venn diagrams

mathematical models

- GS models
 - . **mathematical models**
 - . . analog simulation
 - . . BGK model
 - . . biological models (mathematics)
 - . . digital simulation
 - . . Mandelstam representation
 - . . Petri nets
 - . . Thomas-Fermi model
 - . . turbulence models
 - . . . Baldwin-Lomax turbulence model
 - . . . k-epsilon turbulence model
 - . . . k-omega turbulence model
 - . . Veneziano model
- RT aircraft models
- ∞ applications of mathematics
- astronomical models
- asymptotic properties
- atmospheric models
- bond graphs
- broken symmetry
- chaos
- computational astrophysics
- computational grids
- computer systems simulation
- computerized simulation
- continuum modeling

- control systems design
- decision theory
- dynamic models
- dynamic programming
- dynamical systems
- Euler-Bernoulli beams
- exhaust flow simulation
- experiment design
- factorial design
- flow charts
- footprints
- forecasting
- functions (mathematics)
- game theory
- goodness of fit
- graph theory
- inelastic stress
- inventory controls
- large eddy simulation
- likelihood ratio
- linear prediction
- lofting
- lumped parameter systems
- method of moments
- ∞ missile simulators
- model reference adaptive control
- Monte Carlo method
- multiscale models
- numerical weather forecasting
- ocean models
- operations research
- outliers (statistics)
- parameter identification
- parameterization
- quantiles
- queueing theory
- regression coefficients
- risk
- robustness (mathematics)
- scheduling
- similarity theorem
- simulation
- spacecraft models
- spatial dependencies
- statistical distributions
- stochastic processes
- system identification
- systems analysis
- systems engineering
- systems simulation
- three dimensional models
- trajectory analysis
- two dimensional bodies
- two dimensional models
- validity
- war games

mathematical programming

- SN (LIMITED TO MATHEMATICAL OPTIMIZATION THEORY--EXCLUDES COMPUTER PROGRAMMING)
- GS optimization
 - . **mathematical programming**
 - . . dynamic programming
 - . . linear programming
 - . . nonlinear programming
 - . . quadratic programming
- RT game theory
- operations research
- ∞ programming
- simplex method

mathematical tables

- GS tables (data)
- . **mathematical tables**
- RT information
- numerical analysis
- random numbers

∞ **mathematics**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The study of the logical relationships among abstract entities. These relationships are expressed in numbers, symbols, and signs and may also be applied to concrete instances such as measures and properties of shapes. The

main subdivisions include algebra, geometry, and analysis.

- RT algebra
- analysis (mathematics)
- axioms
- bond graphs
- calculus
- current algebra
- duality theorem
- formulas (mathematics)
- fractals
- functions (mathematics)
- geometry
- inequalities
- information theory
- integrals
- Latin square method
- lattices (mathematics)
- martingales
- morphology
- number theory
- numerical analysis
- primitive equations
- ∞ principles
- probability theory
- rings (mathematics)
- ∞ science
- series expansion
- stars (mathematics)
- statistical analysis
- superposition (mathematics)
- symbols
- theorems

Mathieu equation

USE **Mathieu function**

Mathieu function

- UF *Mathieu equation*
- GS analysis (mathematics)
 - . complex variables
 - . . **Mathieu function**
 - functions (mathematics)
 - . **Mathieu function**
- RT boundary value problems
- differential equations
- eigenvectors
- ∞ equations
- Hill determinant
- orthogonal functions

Matra missile

- GS missiles
 - . air to air missiles
 - . . **Matra missile**
- RT solid propellant rocket engines

∞ **matrices**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT composite materials
- epoxy matrix composites
- eutectic composites
- ∞ grids
- ∞ imbeddings
- lattices (mathematics)
- matrices (circuits)
- matrices (mathematics)
- metal matrix composites
- monotectic alloys
- polymer matrix composites

matrices (circuits)

- GS circuits
 - . **matrices (circuits)**
- RT logic circuits
- ∞ matrices
- switching circuits

matrices (mathematics)

- UF *differential algebra*
- matrix analysis*
- GS algebra
 - . vector spaces
 - . . **matrices (mathematics)**
 - . . . adjoints

- ... canonical forms
 - ... eigenvalues
 - ... eigenvectors
 - ... Hessian matrices
 - ... Jordan form
 - ... stiffness matrix
 - RT arrays
 - chiral dynamics
 - determinants
 - energy methods
 - factor analysis
 - finite element method
 - Gaussian elimination
 - Hermitian polynomial
 - isoperimetric problem
 - linear equations
 - linear programming
 - linear transformations
 - lumped parameter systems
 - ∞ matrices
 - method of moments
 - roots of equations
 - simplex method
 - simultaneous equations
 - subgroups
 - U spin space
 - Walsh function
- matrix analysis*
- USE **matrices (mathematics)**
- matrix management**
- DEF An organized approach to administration of a program by defining and structuring all elements to form a single system with components united by interaction.
- GS management
- . **matrix management**
- RT allocations
- logistics
 - management methods
- ∞ methodology
- operations research
 - productivity
 - project planning
 - scheduling
 - tasks
- matrix materials**
- DEF The ingredients used as binding agents to produce composite materials.
- RT bismaleimide
- ceramic matrix composites
 - composite materials
 - debonding (materials)
 - epoxy matrix composites
 - fiber composites
 - fiber-matrix interfaces
 - functionally gradient materials
 - laminates
- ∞ materials
- metal matrix composites
 - polymer matrix composites
 - reinforcing materials
 - resin matrix composites
 - resin transfer molding
- matrix methods**
- SN (LIMITED TO METHODS FOR STRUCTURAL ANALYSIS)
- UF *matrix stress calculation*
- GS structural analysis
- . **matrix methods**
- RT equilibrium methods
- ∞ methodology
- NASTRAN
 - spline functions
- matrix stress calculation*
- USE **matrix methods**
- matrix theory**
- RT operators (mathematics)
- ∞ theories
- matter (physics)**
- GS **matter (physics)**
- . dark matter
 - . degenerate matter
 - . negative matter
 - . rotating matter
 - . . rotating fluids
 - . . . rotating liquids
 - . . . rotating plasmas
- RT antimatter
- condensed matter physics
 - extraterrestrial matter
- ∞ physics
- matter-antimatter propulsion**
- (added December 1988)
- DEF Spacecraft propulsion by use of matter-antimatter annihilation reactions.
- GS propulsion
- . spacecraft propulsion
 - . . **matter-antimatter propulsion**
- RT annihilation reactions
- antimatter
 - interplanetary flight
 - interplanetary spacecraft
 - interstellar travel
 - negative matter propulsion
 - nuclear propulsion
 - positron annihilation
 - proton-antiproton interactions
 - rocket engines
- MATTS (systems)**
- UF *multiple target trajectory systems*
- GS networks
- . tracking networks
 - . . **MATTS (systems)**
- RT abort trajectories
- airborne equipment
 - angular correlation
 - target acquisition
- maturing*
- USE **growth**
- Mauler missile**
- GS missiles
- . antiaircraft missiles
 - . . **Mauler missile**
 - . antimissile missiles
 - . . **Mauler missile**
 - . surface to air missiles
 - . . **Mauler missile**
- RT single stage rocket vehicles
- solid propellant rocket engines
- Mauritania**
- GS nations
- . **Mauritania**
- RT Africa
- Mauritius**
- (added February 1989)
- GS landforms
- . islands
 - . . **Mauritius**
 - . nations
 - . . **Mauritius**
- RT Africa
- Indian Ocean
- Maverick missiles**
- GS missiles
- . air to surface missiles
 - . . **Maverick missiles**
- Max Holste MH-262 aircraft*
- USE **MH-262 aircraft**
- maxima**
- GS analysis (mathematics)
- . real variables
 - . . extremum values
 - . . . **maxima**
- RT apexes
- calculus of variations
 - cusps (mathematics)
 - minima
 - optimization
- ∞ peaks
- penalty function
 - range (extremes)
 - zenith
- maximum entropy method**
- DEF Procedure used in estimating high resolution power spectra from short data lengths.
- GS entropy (statistics)
- . **maximum entropy method**
 - . spectrum analysis
 - . **maximum entropy method**
- RT distribution functions
- entropy
 - Fourier transformation
 - information theory
- ∞ methodology
- power spectra
 - signal processing
 - signal to noise ratios
 - statistical analysis
 - time series analysis
- maximum likelihood estimates**
- RT confidence limits
- Cramer-Rao bounds
 - forecasting
 - goodness of fit
 - likelihood ratio
 - parameter identification
 - predictions
 - reliability
 - risk
 - system identification
- maximum principle**
- RT complex variables
- differential equations
 - elliptic differential equations
 - harmonic functions
 - pontryagin principle
 - real variables
- maximum usable frequency**
- DEF For a given distance from a transmitter, the highest frequency at which sky waves can be received.
- GS frequencies
- . **maximum usable frequency**
- RT frequency assignment
- frequency reuse
 - high frequencies
 - very high frequencies
- Maxwell bodies**
- RT classical mechanics
- continuum mechanics
 - Hookes law
 - oscillation dampers
 - relaxation time
- Maxwell equation**
- RT Biot-Savart law
- Boltzmann-Vlasov equation
 - Born-Infeld theory
 - electricity
 - electrodynamics
 - electromechanics
- ∞ equations
- Gauss equation
 - magnetic charge density
 - magnetic properties
 - magnetolectric media
 - perfectly matched layers
 - Poynting theorem
- ∞ Stokes law
- Maxwell fluids**
- RT compressible fluids
- fluid mechanics

Maxwell-Boltzmann density function

- ∞ fluids
- rheology
- viscoelasticity
- viscous flow
- viscous fluids
- Maxwell-Boltzmann density function**
- UF *Maxwellian distribution (density)*
- GS functions (mathematics)
 - . **Maxwell-Boltzmann density function**
 - statistical analysis
 - . **Maxwell-Boltzmann density function**
- RT density distribution
- kinetic theory
- probability theory
- statistical mechanics
- Maxwellian distribution (density)*
- USE **Maxwell-Boltzmann density function**
- Maxwell-Mohr method**
- RT deflection
- ∞ equilibrium
- ∞ methodology
- static deformation
- trusses
- Mayer problem**
- RT ∞ condensation
- critical point
- Gibbs free energy
- ∞ molecular physics
- ∞ problems
- supersaturation
- maypole antennas**
- DEF A class of antennas which use the deployable reflector concept for large space systems applications.
- GS antennas
 - . **maypole antennas**
- RT antenna design
- large space structures
- space erectable structures
- maze learning**
- GS learning
 - . **maze learning**
- RT problem solving
- MB-1 rocket vehicle*
- USE **Genie rocket vehicle**
- MBM junctions**
- DEF Diode devices using metal-barrier-metal layers. Used for metal-barrier-metal junctions.
- UF *metal-barrier-metal junctions*
- GS semiconductor junctions
 - . **MBM junctions**
- RT barrier layers
- ∞ barriers
- junction transistors
- solid state devices
- McDonnell aircraft**
- GS McDonnell Douglas aircraft
 - . **McDonnell aircraft**
 - . . C-9 aircraft
 - . . DC 10 aircraft
 - . . F-4 aircraft
 - . . F-101 aircraft
- RT ∞ aircraft
- McDonnell Douglas aircraft**
- GS **McDonnell Douglas aircraft**
 - . C-17 aircraft
 - . Douglas aircraft
 - . . A-1 aircraft
 - . . A-3 aircraft
 - . . A-4 aircraft
 - . . B-66 aircraft
 - . . C-9 aircraft

- . . C-47 aircraft
- . . C-54 aircraft
- . . C-118 aircraft
- . . C-124 aircraft
- . . C-133 aircraft
- . . D-558 aircraft
- . . DC 3 aircraft
- . . DC 7 aircraft
- . . DC 8 aircraft
- . . DC 9 aircraft
- . . DC 10 aircraft
- . . PD-808 aircraft
- . . X-3 aircraft
- . . F-18 aircraft
- . Mcdonnell aircraft
 - . . C-9 aircraft
 - . . DC 10 aircraft
 - . . F-4 aircraft
 - . . F-101 aircraft
 - . . MD 11 aircraft
 - . . MD 80 aircraft
 - . . X-36 aircraft
- RT ∞ aircraft
- Boeing aircraft
- McLaurin series*
- USE **MacLaurin series**
- Mcleod gages**
- GS measuring instruments
 - . pressure gages
 - . . vacuum gages
 - . . . **Mcleod gages**
- vacuum apparatus
- . vacuum gages
- . . **Mcleod gages**
- RT ionization gages
- Knudsen gages
- Pirani gages
- pressure measurement
- McMurdo sound**
- GS regions
 - . polar regions
 - . . Antarctic regions
 - . . . **McMurdo sound**
 - . remote regions
 - . . Antarctic regions
 - . . . **McMurdo sound**
- sounds (topographic features)
- . **McMurdo sound**
- Southern Hemisphere
- . Antarctic regions
- . . **McMurdo sound**
- RT Ross ice shelf
- MCR reactors*
- USE **military compact reactors**
- MD 11 aircraft**
- (added October 1994)*
- UF *DC 11 aircraft*
- GS commercial aircraft
 - . **MD 11 aircraft**
- jet aircraft
- . **MD 11 aircraft**
- McDonnell Douglas aircraft
- . **MD 11 aircraft**
- passenger aircraft
- . **MD 11 aircraft**
- transport aircraft
- . **MD 11 aircraft**
- RT ∞ aircraft
- MD 80 aircraft**
- (added October 1994)*
- GS commercial aircraft
 - . **MD 80 aircraft**
- jet aircraft
- . **MD 80 aircraft**
- McDonnell Douglas aircraft
- . **MD 80 aircraft**
- passenger aircraft
- . **MD 80 aircraft**
- transport aircraft
- . **MD 80 aircraft**

- RT ∞ aircraft
- DC 9 aircraft
- MDA*
- USE **multiple docking adapters**
- ME P-160 aircraft*
- USE **P-160 aircraft**
- ME P-308 aircraft*
- USE **P-308 aircraft**
- meadowlands*
- USE **grasslands**
- MEAM (physical chemistry)*
- (added February 1998)*
- USE **embedded atom method**
- mean**
- GS average
 - . **mean**
 - moments
 - distribution moments
 - . . **mean**
- RT median (statistics)
- mode (statistics)
- normality
- quality control
- range (extremes)
- statistical analysis
- variance (statistics)
- mean free path**
- DEF Of any particle, the average distance that a particle travels between successive collisions with the other particles of an ensemble. Specifically, the average distance traveled by the molecules of a perfect gas between consecutive collisions with one another. For any process the reciprocal of the cross section per unit volume for that process.
- RT collision parameters
- ∞ cross sections
- Knudsen flow
- particle collisions
- particle motion
- ∞ paths
- scattering
- vacuum
- mean square values**
- DEF In statistics, values representing the average of the sum of the squares of the deviations from the mean value.
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **mean square values**
- RT algorithms
- error analysis
- least squares method
- mean time between failures*
- USE **MTBF**
- meanders**
- DEF Freely developing sinuous curves, bends, loops, turns, or windings in the courses of streams. They are produced by mature streams swinging from side to side as they flow across flood plains or shift course laterally toward the convex side of an original curve.
- RT open channel flow
- rapids
- river basins
- rivers
- streams
- topography
- valleys
- measure and integration**
- UF *integration (real variables)*
- measure theory*
- Riemann integral*
- GS analysis (mathematics)

. real variables
 . . . **measure and integration**
 binary integration
 Borel sets
 functional integration
 integral calculus
 J integral
 Lebesgue theorem
 numerical integration
 Runge-Kutta method
 Stieltjes integral
 weighting functions
 RT Fourier analysis

measure theory

USE **measure and integration**

∞ **measurement**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The technical action required to assign values (numbers) to represent certain properties or attributes, using rules based on scientific laws. Used for determination, measuring, and quantization.

UF *determination*
measuring
quantization

RT acceleration measurement

accuracy
 acoustic measurement
 airborne range and orbit
 determination

aircraft instruments
 analog data
 astrometry
 audiometry
 chemical analysis
 confidence limits
 consistency
 counting

∞ **data**

definition
 densimeters
 density measurement
 depth measurement
 detection
 dilatometry
 dimensional measurement
 Downrange Antimissile Measurement Program
 downrange measurement
 drag measurement
 Earth terminal measurement system
 electrical measurement
 electromagnetic measurement
 electromagnetic noise measurement
 ellipsometry
 estimating
 evaluation
 examination
 flow measurement
 frequency measurement
 friction measurement
 gamma ray absorptiometry
 geometry
 gravimetry
 heat measurement
 high alt target and background
 measurement
 humidity measurement
 identifying
 in situ measurement
 International System of Units
 latitude measurement
 longitude measurement
 macroscopic equations
 magnetic measurement
 ∞ **measures**
 measuring instruments
 mechanical measurement
 metrology
 monitors
 noise measurement
 nonintrusive measurement
 optical measurement

optometry
 photographic measurement
 pneumography
 precipitation measurement
 pressure measurement
 proving
 pupillometry
 radar measurement
 radiation measurement
 radioactive age determination
 rangefinding
 signal measurement
 size determination
 sounding
 sphygmography
 standards
 strain measurement
 synoptic measurement
 temperature measurement
 thrust measurement
 time measurement
 trajectory measurement
 ultrasonic densimeters
 units of measurement
 velocity measurement
 vibration measurement
 weight measurement
 wind measurement

∞ **measures**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT criteria

∞ **measurement**
 standards

measuring

USE **measurement**

measuring instruments

UF *fluxmeters*

gages
meters

rate meters

GS **measuring instruments**

. accelerometers
 . . strain gage accelerometers
 . ammeters
 . . micromillimeters
 . . thermoelement ammeters
 . analyzers
 . . engine analyzers
 . . signal analyzers
 . anemometers
 . . drag force anemometers
 . . hot-film anemometers
 . . hot-wire anemometers
 . . laser anemometers
 . . sonic anemometers
 . balloon-borne instruments
 . bathymeters
 . burettes
 . calorimeters
 . . bomb calorimeters
 . . drop calorimeters
 . . flame calorimeters
 . comparators
 . conductivity meters
 . . electrical conductivity meters
 . coulometers
 . counters
 . . radiation counters
 . . . Cerenkov counters
 . . . electron counters
 . . . Geiger counters
 . . . neutron counters
 . . . neutron spectrometers
 . . . particle telescopes
 . . . proportional counters
 . . . quantum counters
 . . . scintillation counters
 . . . spark chambers
 . deformeters
 . densimeters
 . . ultrasonic densimeters
 . densitometers
 . . microdensitometers
 . distance measuring equipment
 . altimeters
 . . laser altimeters
 . . radio altimeters
 . . geodimeters
 . . range finders
 . . . optical range finders
 laser range finders
 . stadimeters
 . . tellurometers
 . dynamometers
 . elastometers
 . electrometers
 . electron probes
 . engine monitoring instruments
 . ergometers
 . eudiometers
 . extensometers
 . field intensity meters
 . flame probes
 . flight recorders
 . . flight load recorders
 . flowmeters
 . . gas meters
 . . hot-wire flowmeters
 . . rheometers
 . force vector recorders
 . fuel gages
 . . capacitive fuel gages
 . galvanometers
 . Gerden condensers
 . goniometers
 . . photogoniometers
 . . radiogoniometers
 . gravimeters
 . gravity gradiometers
 . heliometers
 . . pyroheliometers
 . hydrometers
 . hypsometers
 . impedance probes
 . . radio frequency impedance probes
 . indicating instruments
 . . approach indicators
 . . astrolabes
 . . attitude indicators
 . . gyro horizons
 . . cloud height indicators
 . . compasses
 . . . gyrocompasses
 . . . magnetic compasses
 . . . solar compasses
 . . flow direction indicators
 . . . wind vanes
 . . position indicators
 . . . plan position indicators
 . . . radio direction finders
 . . . spacecraft position indicators
 . . smoke detectors
 . . speed indicators
 . . . tachometers
 . . weight indicators
 . . . microbalances
 . . . strain gage balances
 . . . thermobalances
 . interferometers
 . . etalons
 . . Fabry-Perot interferometers
 . . infrared interferometers
 . . Mach-Zehnder interferometers
 . . Michelson interferometers
 . . microwave interferometers
 . . phase switching interferometers
 . . radio interferometers
 . ion probes
 . ion traps (instrumentation)
 . laser doppler velocimeters
 . lysimeters
 . magnetic probes
 . magnetometers
 . variometers
 . mechanograms
 . meteorological instruments
 . tribometers
 . . barometers
 . . cloud height indicators

measuring instruments

- . . dropsondes
- . . radiometeorographs
- . . radiosondes
- . . . ionosondes
- . . . rawinsondes
- . . rain gages
- . . weather data recorders
- . . wind vanes
- . . micrometers
- . . microwave probes
- . . microwave plasma probes
- . . microwave sensors
- . . Advanced Microwave Sounding Unit
- . . moisture meters
- . . hygrometers
- . . . psychrometers
- . . monochromators
- . . noise meters
- . . ohmmeters
- . . optical measuring instruments
- . . cathetometers
- . . diffractometers
- . . Ebert spectrometers
- . . ellipsometers
- . . etalons
- . . geodimeters
- . . haploscopes
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . light scattering meters
- . . microdensitometers
- . . nephelometers
- . . oculometers
- . . optical pyrometers
- . . optical range finders
- . . . laser range finders
- . . photogoniometers
- . . photometers
- . . . electrophotometers
- . . . ultraviolet spectrometers
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- . . . ultraviolet spectrophotometers
- . . polarimeters
- . . reflectometers
- . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . theodolites
- . . . cinetheodolites
- . . transmissometers
- . . oscillographs
- . . oxygen analyzers
- . . penetrometers
- . . plasma probes
- . . electrostatic probes
- . . polariscopes
- . . Senarmont polariscopes
- . . potentiometers (instruments)
- . . pressure gages
- . . barometers
- . . manometers
- . . osmometers
- . . piezoelectric gages
- . . piezometers
- . . vacuum gages
- . . . ionization gages
- . . . alphasondes
- . . . Bayard-Alpert ionization gages
- . . . Penning gages
- . . . Philips ionization gages
- . . Knudsen gages
- . . McLeod gages
- . . Pirani gages
- . . profilometers
- . . protractors
- . . radiation measuring instruments
- . . actinometers
- . . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . . pyranometers
- . . . radiometers
- Dicke radiometers
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- microwave radiometers
- Advanced Microwave Sounding Unit
- passive L-band radiometers
- pressure modulator radiometers
- spectroradiometers
- MODIS (radiometry)
- . . . solar spectrometers
- . . . spectroheliographs
- . . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . . ultraviolet detectors
- . . . ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . . ultraviolet spectrophotometers
- . . . x ray detectors
- . . bolometers
- . . Ebert spectrometers
- . . electrostatic probes
- . . Fabry-Perot spectrometers
- . . hodoscopes
- . . infrared instruments
- . . infrared detectors
- . . . FLIR detectors
- . . . infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- . . infrared interferometers
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . infrared spectrophotometers
- . . photometers
- . . . electrophotometers
- . . ultraviolet spectrometers
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- . . ultraviolet spectrophotometers
- . . radiation counters
- . . Cerenkov counters
- . . electron counters
- . . Geiger counters
- . . neutron counters
- . . . neutron spectrometers
- . . . particle telescopes
- . . . proportional counters
- . . . quantum counters
- . . . scintillation counters
- . . . spark chambers
- . . radiation detectors
- . . dosimeters
- . . . threshold detectors (dosimeters)
- . . . Golay detector cells
- . . . silicon radiation detectors
- . . riometers
- . . radiometers
- . . resonance probes
- . . respirometers
- . . satellite-borne instruments
- . . Advanced Microwave Sounding Unit
- . . Advanced Very High Resolution Radiometer
- . . AMPS (satellite payload)
- . . Total Ozone Mapping Spectrometer
- . . scatterometers
- . . shock measuring instruments
- . . sondes
- . . dropsondes
- . . Judi-Dart rocket
- . . radiosondes
- . . . ionosondes
- . . . rawinsondes
- . . spectrometers
- . . Ebert spectrometers
- . . Fabry-Perot spectrometers
- . . gamma ray spectrometers
- . . imaging spectrometers
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . laser spectrometers
- . . mass spectrometers
- . . microwave spectrometers
- . . neutron spectrometers
- . . Solar Backscatter UV Spectrometer
- . . solar spectrometers
- . . spectroheliographs
- . . time of flight spectrometers
- . . ultraviolet spectrometers
- . . high dispersion spectrographs
- . . Total Ozone Mapping Spectrometer
- . . Alpha Magnetic Spectrometer
- . . x ray spectrometers
- . . sputtering gages
- . . strain gages
- . . temperature measuring instruments
- . . bathythermographs
- . . optical pyrometers
- . . . pneumatic probes
- . . pyrometers
- . . . radiation pyrometers
- . . . thermocouple pyrometers
- . . temperature probes
- . . thermometers
- . . . resistance thermometers
- . . tensiometers
- . . tensometers
- . . thermal conductivity gages
- . . tiltmeters
- . . time measuring instruments
- . . clocks
- . . . atomic clocks
- . . . autonomous spacecraft clocks
- . . . chronometers
- . . timing devices
- . . titrimeters
- . . torqueimeters
- . . turbulence meters
- . . vibration meters
- . . seismographs
- . . . lunar seismographs
- . . viscometers
- . . voltmeters
- . . millivoltmeters
- . . wattmeters
- RT aircraft instruments
- automatic control
- automatic test equipment
- bioinstrumentation
- calibrating
- circumsolar telescopes
- control moment gyroscopes
- controllers
- ∞ detectors
- drag measurement
- duochromators
- electric bridges
- electrical measurement
- flight instruments
- forest fire detection
- Fraunhofer line discriminators
- IMBLMS
- instrument receivers
- instrument transmitters
- ∞ instruments
- International System of Units
- laboratory equipment
- landing instruments
- large aperture seismic array
- local scientific survey module
- lunar ranging
- ∞ measurement
- metrology
- microinstrumentation

- monitors
- navigation instruments
- ∞ probes
- propellant actuated instruments
- radio probing
- radio telemetry
- rapid ballistics identification
- recording instruments
- remote sensors
- rocket-borne instruments
- Ronchi test
- satellite instruments
- ∞ sensors
- sodar
- sound detecting and ranging
- spacecraft instruments
- synchroscopes
- telemetry
- ∞ test equipment
- transducers
- ultrasonic scanners
- Venturi tubes
- Wheatstone bridges
- wind tunnel calibration

mecamylamine

- GS amines
- . **mecamylamine**
- terpenes
- . **mecamylamine**

mechanical devices

- RT cams
- clamps
- clips
- clutches
- ∞ devices
- ∞ equipment
- holders
- jigs
- levers
- linkages
- machine tools
- ∞ mechanism
- mechanization
- tools

mechanical drawings

USE **engineering drawings**

mechanical drives

- UF *rotary drives*
- GS **mechanical drives**
- . magnetic tape transports
- . propeller drive
- . . helicopter propeller drive
- . transmissions (machine elements)
- RT clutches
- counter-rotating wheels
- coupling
- couplings
- ∞ drives
- ∞ gear
- gear teeth
- gears
- magnetolectric media
- ∞ power transmission
- shafts (machine elements)
- vehicle wheels
- wind tunnel drives
- windmills (windpowered machines)

mechanical engineering

DEF Branch of engineering dealing with the design, development and operation of machines including mechanical devices and prime movers, vehicles, machine tools, and manufacturing machinery.

- RT aeronautical engineering
- aerospace engineering
- ∞ engineering
- fluid flow
- flywheels
- furnaces
- heat transfer
- machine tools

- ∞ machinery
- maintenance
- materials handling
- stress analysis
- thermodynamics
- vibration tests

mechanical fingers

USE **end effectors**

mechanical hands

USE **end effectors**

mechanical impedance

- GS impedance
- . **mechanical impedance**
- RT attenuation
- damping
- friction
- impedance measurement

mechanical measurement

- SN (MEASUREMENT OF MECHANICAL PROPERTIES, QUANTITIES OR CONDITIONS)
- GS **mechanical measurement**
- . displacement measurement
- . drag measurement
- . flow measurement
- . . particle image velocimetry
- . friction measurement
- . pressure measurement
- . stress measurement
- . . x ray stress measurement
- . thrust measurement
- . velocity measurement
- . . particle image velocimetry
- . . wind velocity measurement
- . vibration measurement
- . wind measurement
- . . wind velocity measurement
- RT accelerometers
- acoustic measurement
- deformeters
- density measurement
- depth measurement
- dynamometers
- extensometers
- flowmeters
- ∞ measurement
- strain gages
- tensiometers
- torquemeters
- weight indicators

mechanical oscillators

- GS oscillators
- . **mechanical oscillators**
- . . pendulums
- . . . gyroscopic pendulums
- RT electric choppers
- harmonic oscillators
- reciprocation
- resonant vibration
- vibration

mechanical properties

- UF *material strength*
- meteorite compression tests*
- strength of materials*
- GS **mechanical properties**
- . brittleness
- . bulk modulus
- . cold strength
- . compressibility
- . compressive strength
- . creep properties
- . . creep rupture strength
- . . shear creep
- . . steady state creep
- . . tensile creep
- . creep strength
- . dimensional stability
- . . structural stability
- . . . shell stability
- . ductility
- . earthquake resistance

- . elastic properties
- . . aeroelasticity
- . . . aeroservoelasticity
- . . . aerothermoelasticity
- . . anelasticity
- . . elastoplasticity
- . . hydroelasticity
- . . hypoelasticity
- . . magnetostriction
- . . modulus of elasticity
- . . . dynamic modulus of elasticity
- . . photoelasticity
- . . . photoviscoelasticity
- . . proportional limit
- . . thermoelasticity
- . . . aerothermoelasticity
- . . viscoelasticity
- . . . photoviscoelasticity
- . . . thermoviscoelasticity
- . . ferroelasticity
- . . electrostriction
- . fatigue life
- . fiber strength
- . flexibility
- . fracture strength
- . flexural strength
- . hardness
- . . microhardness
- . . . Knoop hardness
- . . Rockwell hardness
- . . Vickers hardness
- . high strength
- . impact strength
- . malleability
- . modular ratios
- . notch strength
- . piezoelectricity
- . plastic properties
- . . elastoplasticity
- . . photoplasticity
- . . superplasticity
- . . thermoplasticity
- . . viscoplasticity
- . . yield point
- . Poisson ratio
- . resilience
- . set
- . shear properties
- . . shear strength
- . stiffness
- . stress cycles
- . stress ratio
- . stress relaxation
- . tensile properties
- . . tensile strength
- . thermal resistance
- . toughness
- . . notch sensitivity
- . wear resistance
- . . abrasion resistance
- . weld strength
- . yield strength
- . . load carrying capacity
- . . microyield strength
- RT acoustic properties
- aging (materials)
- anisotropy
- buoyancy
- cast alloys
- coefficients
- compressing
- compression loads
- deformation
- durability
- elongation
- fatigue (materials)
- ferritic stainless steels
- fiber orientation
- flatness
- ∞ high resistance
- hysteresis
- impedance
- interfacial tension
- interference fit
- internal friction
- isotropy
- J integral

mechanical shock

- ∞ low resistance
- ∞ materials
- ∞ materials tests
- ∞ metallurgy
- micromechanics
- microporosity
- nanindentation
- peeling
- permeability
- ∞ physical properties
- propellant properties
- ∞ properties
- radiation effects
- reliability
- ∞ rigidity
- roughness
- ruggedness
- shear strain
- shear stress
- shock resistance
- solid mechanics
- specifications
- specimen geometry
- strain rate
- ∞ strength
- stress concentration
- stresses
- structural failure
- supercooling
- surface defects
- surface properties
- surface roughness
- tearing
- temperature inversions
- textures
- tolerances (mechanics)
- triaxial stresses
- triboluminescence
- weathering

mechanical resonance

USE **resonant vibration**

mechanical shock

UF *jarring*
GS **mechanical shock**
. hydraulic shock
RT acceleration (physics)
high acceleration
hypervelocity impact
impact
impact acceleration
∞ shock
shock absorbers
shock resistance
shock spectra
shock waves
vibration

mechanical twinning

GS twinning
. **mechanical twinning**
RT crystal defects
crystal growth
crystal structure
work hardening

∞ mechanics (physics)

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT celestial mechanics
classical mechanics
continuum mechanics
∞ dynamics
electromechanics
flight mechanics
fluid dynamics
fluid mechanics
fracture mechanics
gas dynamics
∞ hydraulics
hydrodynamics
kinematics
kinetics
loads (forces)
∞ mechanism

megamechanics
micromechanics
orbital mechanics
∞ physics
quantum mechanics
∞ science
solid mechanics
statics
statistical mechanics
virial theorem
Wigner coefficient

∞ mechanism

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ machinery
mechanical devices
∞ mechanics (physics)
∞ methodology

mechanization

RT ∞ automation
data processing
depersonalization
∞ machinery
man machine systems
mechanical devices
∞ operations
systems engineering
tooling
tools

mechanograms

GS measuring instruments
. **mechanograms**
medical equipment
. **mechanograms**
recording instruments
. **mechanograms**
RT muscular function

mechanoreceptors

DEF Nerve endings that react to mechanical stimuli, such as touch, tension, and acceleration.
GS anatomy
. sense organs
. . **mechanoreceptors**
receptors (physiology)
. **mechanoreceptors**
RT sensitometry

meclizine

GS halogen compounds
. chlorine compounds
. . **meclizine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **meclizine**
pyrazines
. azines
. . **meclizine**

media

SN (EXCLUDES COMMUNICATION TECHNIQUES)
GS **media**
. anisotropic media
. . anisotropic fluids
. elastic media
. intergalactic media
. interplanetary medium
. . interplanetary dust
. . . meteoroid dust clouds
. . . . zodiacal dust
. . interplanetary gas
RT ∞ channels

median (statistics)

RT average
distribution moments
errors
mean
mode (statistics)

normality
norms
quality control
statistical analysis
∞ tests

mediastinum

RT septum
tissues (biology)

mediation

RT labor
management planning

medical electronics

RT echoencephalography
electrocardiography
electroencephalography
electromyography
∞ electronics
electroplethysmography
electroretinography
telemedicine

medical equipment

GS **medical equipment**
. artificial cardiac pacemaker
. artificial heart valves
. blood pumps
. cardiostimulators
. endoscopes
. mechanograms
. prosthetic devices
. . artificial ears
. respirators
. stethoscopes
. stretchers
. surgical instruments
. syringes
. tourniquets
. x ray apparatus
. . lixiscopes
. . x ray tubes
RT cardiography
dentistry
diagnosis
echoencephalography
electroencephalography
emergency life sustaining systems
∞ equipment
first aid
fluoroscopy
hospitals
IMBLMS
∞ medicine
microtomy
mobile quarantine facility
telemedicine
therapy

medical personnel

GS personnel
. **medical personnel**
. . flight nurses
. . physicians
. . surgeons
. . . flight surgeons
RT ∞ medicine

medical phenomena

RT diving (underwater)
phenomenology

medical science

GS **medical science**
. aerospace medicine
. . aviation psychology
. . space psychology
. anesthesiology
. cardiology
. clinical medicine
. dentistry
. dermatology
. endocrinology
. epidemiology
. geriatrics

- . gynecology
- . histology
- . immunology
- . neurology
- . nuclear medicine
- . . radiobiology
- . ophthalmology
- . orthopedics
- . otolaryngology
- . otology
- . pathology
- . . human pathology
- . pharmacology
- . . psychopharmacology
- . psychiatry
- . . neuropsychiatry
- . . social psychiatry
- . radiology
- . radiopathology
- . sports medicine
- . surgery
- . . labyrinthectomy
- . symptomology
- . urology
- . veterinary medicine

- RT ∞ biology
- diagnosis
- diseases
- first aid
- ∞ medicine
- optometry
- pneumothorax
- psychopharmacology
- radiation therapy
- ∞ science
- telemedicine
- transfusion

medical services

- GS services
- . **medical services**
- RT ambulances
- first aid
- intravenous procedures
- mobile quarantine facility
- public health
- telemedicine

∞ **medicine**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aerospace medicine
- clinical medicine
- drugs
- medical equipment
- medical personnel
- medical science
- neuropsychiatry
- pharmacology
- psychopharmacology
- radiobiology
- radiology
- veterinary medicine

Mediterranean Sea

- GS seas
- . **Mediterranean Sea**
- . . Adriatic Sea
- RT Cyprus
- Gibraltar
- Malta
- Rhone Delta (France)
- Sicily

medium scale integration

- GS circuits
- . integrated circuits
- . . **medium scale integration**
- microelectronics
- . **medium scale integration**
- RT electronic packaging
- large scale integration
- molecular electronics

printed circuits

meetings

USE **conferences**

megalopolises

- RT cities
- communities
- demography
- industrial areas
- regional planning
- residential areas
- rural areas
- suburban areas
- urban development
- urban transportation

megamechanics

- RT large space structures
- ∞ mechanics (physics)
- structural analysis
- structural engineering
- trusses

Meissner effect

USE **diamagnetism**
superconductivity

meitnerium

- (added May 1998)
- GS chemical elements
- . **meitnerium**
- RT hassium

melamine

- GS amines
- . **melamine**
- RT resins

melanin

- GS biopolymers
- . proteins
- . . **melanin**
- organic compounds
- . proteins
- . . **melanin**
- pigments
- . **melanin**
- RT dopa
- skin (anatomy)

melanoidin

- GS acids
- . amino acids
- . . **melanoidin**
- organic compounds
- . amino acids
- . . **melanoidin**

Mellin transforms

- GS functions (mathematics)
- . **Mellin transforms**
- RT integral equations
- kernel functions

melt spinning

DEF A material process by which polymers such as nylon and polyesters and glass are melted to permit extrusion into fibers through spinnerets.

- GS crystallization
- . **melt spinning**
- melts (crystal growth)
- . **melt spinning**
- solidification
- . **melt spinning**
- RT ∞ metallurgy
- phase transformations

melting

- UF *remelting*
- thawing*
- GS phase transformations
- . **melting**
- . . arc melting
- . . fusion (melting)

- . . levitation melting
- . . vacuum melting
- . . zone melting

RT

- ablation
- aufeis (ice)
- burnthrough (failure)
- casting
- coal liquefaction
- containerless melts
- cooling
- defrosting
- deicing
- drop transfer
- extraction
- freezing
- furnaces
- heat of fusion
- heating
- ice prevention
- impact melts
- induction heating
- injection molding
- liquefaction
- liquid metals
- liquid-solid interfaces
- melts (crystal growth)
- metal cutting
- metal foams
- ∞ metallurgy
- molds
- phase change materials
- pseudopotentials
- ∞ separation
- smelting
- solar furnaces
- spiking

melting points

DEF liquidus and solidus coincide at an invariant point. In a phase diagram, the temperature at which the

- UF *freezing points*
- GS thermodynamic properties
- . thermophysical properties

. . **melting points**

- RT high temperature tests
- liquid phases
- liquidus
- low temperature tests
- phase diagrams
- reaction bonding
- solid solutions
- solid state
- solidification
- solidified gases
- specific heat
- temperature
- transition temperature

melts (crystal growth)

DEF Molten substances from which crystals are formed during the cooling or solidifying process.

- GS **melts (crystal growth)**
- . containerless melts
- . impact melts
- . melt spinning
- RT atomic structure
- crystal growth
- crystallization
- float zones
- Marangoni convection
- melting
- semiconductors (materials)

MEM (excursion module)

USE **Mars Excursion Module**

membership functions

(added December 2000)

DEF Characteristic functions of a fuzzy set, which assign a value indicating the degree of membership for each element in a universal set.

- GS functions (mathematics)
- . **membership functions**
- RT control systems design

membrane structures

fuzzy sets
fuzzy systems
machine learning
neural nets

membrane analogy

USE **membrane structures**
structural analysis

membrane structures

DEF Shell structures, often pressurized, that do not take wall bending or compression loads. Used for membrane analogy.

UF *membrane analogy*

GS membranes

. **membrane structures**
. . skin (structural member)
structural members
. **membrane structures**
. . skin (structural member)

RT diaphragms (mechanics)

metal shells
perforated shells
Scotchlite (trademark)

∞ sheets

shells (structural forms)

∞ structures

thin walled shells

webs (supports)

membrane theory

USE **structural analysis**

membranes

UF *webs (membranes)*

GS **membranes**

. cell membranes (biology)
. choroid membranes
. conjunctiva
. epicardium
. ion exchange membrane electrolytes
. membrane structures
. . skin (structural member)
. peritoneum
. pleurae
. pleurae

RT biofilms

∞ diaphragms

diaphragms (mechanics)

∞ films

jet membrane process

∞ layers

osmosis

reverse osmosis

septum

∞ sheets

shells (structural forms)

skin (anatomy)

∞ webs

webs (sheets)

webs (supports)

memory

SN (LIMITED TO SENTIENT ORGANISMS--EXCLUDES COMPUTER STORAGE DEVICES AND PLASTIC MEMORY)

RT education

learning

mnemonics

recognition

retention (psychology)

memory (computers)

DEF The component of a computer, control system, guidance system, instrumented satellite, or the like, designed to provide ready access to data or instructions previously recorded so as to make them bear upon an immediate problem, such as the guidance of a physical object, or the analysis and reduction of data.

GS **memory (computers)**

. random access memory

. . core storage

. associative memory

. distributed memory

. optical memory (data storage)

RT architecture (computers)

chips (memory devices)
computer design
computer storage devices
computers
hole burning
magnetic disks
video disks

. hydrocarbons
. . cyclic hydrocarbons
. . . **menthol**
terpenes
. **menthol**

meprobamate

GS esters

. **meprobamate**

mercaptan

USE **thiols**

mercapto compounds

USE **thiols**

Mercator projection

DEF An equatorial, cylindrical, conformal map projection derived by mathematical analysis (not geometrically) in which the equator is represented by a straight line true to scale. The meridians are represented by parallel straight lines perpendicular to the equator and equally spaced according to their distance apart at the equator. The parallels are represented by straight lines perpendicular to the meridians and parallel with (and the same length as) the equator. The parallels are spaced so as to achieve conformality, their spacing increasing rapidly with their distance from the equator so that at all places the degrees of latitude and longitude have the same ratio to each other as to the sphere itself. This results in greater distortion of distances, areas, and shapes in the polar regions (above 80 deg. latitude). The scale is increasingly poleward as the secant of the latitude. Because any line of constant direction (azimuth) on the sphere is truly represented on the projection by a straight line, the Mercator projection is of great value in navigation. It is used for hydrographic charts, and also to show geographic variations of some physical property (such as magnetic declination) or to plot trajectories of Earth satellites in oblique orbits. It is named after Gerhardus Mercator (1512-1594), a Flemish mathematician and geographer, whose world map of 1569 used this projection.

GS geometry

. Euclidean geometry

. . analytic geometry

. . . **Mercator projection**

. . projective geometry

. . . **Mercator projection**

RT maps

Mercure aircraft

GS transport aircraft

. short haul aircraft

. . **Mercure aircraft**

RT ∞ aircraft

cargo aircraft

passenger aircraft

mercury (metal)

UF *liquid mercury*

GS chemical elements

. **mercury (metal)**

. . mercury isotopes

. . mercury vapor

liquids

. liquid metals

. . **mercury (metal)**

. . . mercury isotopes

. . . mercury vapor

metals

. liquid metals

. . **mercury (metal)**

. . . mercury isotopes

. . . mercury vapor

transition metals

. . **mercury (metal)**

. . . mercury isotopes

. . . mercury vapor

MEMS (electromechanical devices)

(added October 1998)

USE **microelectromechanical systems**

mendelevium

GS chemical elements

. actinide series

. . transuranium elements

. . . **mendelevium**

. nuclides

. . isotopes

. . . radioactive isotopes

. . . . transuranium elements

. **mendelevium**

metals

. actinide series

. . transuranium elements

. . . **mendelevium**

meningitis

GS diseases

. infectious diseases

. . **meningitis**

RT acquired immunodeficiency syndrome

bacterial diseases

viral diseases

menisci

GS liquid surfaces

. **menisci**

RT Bond number

curves (geometry)

liquid-gas mixtures

liquid-solid interfaces

liquid-vapor interfaces

∞ surfaces

menstruation

RT females

ovaries

physiology

mental health

GS health

. **mental health**

RT human performance

intelligence

neuropsychiatry

psychotherapy

Rorschach tests

schizophrenia

mental performance

RT abilities

cognitive psychology

consciousness

human performance

hypernea

inspiration

intellect

intelligence

intelligence tests

irrationality

lies

operator performance

∞ performance

psychomotor performance

stress (psychology)

workloads (psychophysiology)

mental stress

USE **stress (psychology)**

menthol

GS organic compounds

. cyclic compounds

. . cyclic hydrocarbons

. . . **menthol**

- RT heavy metals
- Mercury (planet)**
 - GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Mercury (planet)**
 - RT Mercury atmosphere
 - Mercury surface
 - planetary craters
- mercury alloys**
 - GS alloys
 - . **mercury alloys**
 - . . mercury amalgams
- mercury amalgams**
 - UF *amalgams*
 - GS alloys
 - . mercury alloys
 - . . **mercury amalgams**
- mercury arcs**
 - GS electric current
 - . electric discharges
 - . . electric arcs
 - . . . **mercury arcs**
 - RT arc lamps
 - metallic plasmas
 - rectifiers
- Mercury atmosphere**
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - **Mercury atmosphere**
 - RT Mercury (planet)
 - Mercury surface
 - planetary meteorology
- mercury cadmium tellurides**
 - DEF Compounds of tellurium exhibiting photovoltaic characteristics and used for photodiodes and photodetectors in the 3 to 12 micrometer wavelengths at cryogenic temperatures. Used for cadmium mercury tellurides.
 - UF *cadmium mercury tellurides*
 - GS chalcogenides
 - . tellurides
 - . . mercury tellurides
 - . . . **mercury cadmium tellurides**
 - mercury compounds
 - . mercury tellurides
 - . . **mercury cadmium tellurides**
 - mercurium compounds
 - . tellurides
 - . . mercury tellurides
 - . . . **mercury cadmium tellurides**
 - RT infrared detectors
 - photoconductivity
 - photoconductors
 - photodiodes
- mercury compounds**
 - GS **mercury compounds**
 - . mercury oxides
 - . mercury tellurides
 - . . mercury cadmium tellurides
 - RT ∞ chemical compounds
 - ∞ Group 2B compounds
 - ∞ metal compounds
- Mercury flights**
 - GS space flight
 - . manned space flight
 - . . **Mercury flights**
 - . . . Mercury MA-1 flight
 - . . . Mercury MA-2 flight
 - . . . Mercury MA-3 flight
 - . . . Mercury MA-4 flight
 - . . . Mercury MA-5 flight
 - . . . Mercury MA-6 flight
 - . . . Mercury MA-7 flight
 - . . . Mercury MA-8 flight
 - . . . Mercury MA-9 flight
- . . . Mercury MR-1 flight
- . . . Mercury MR-2 flight
- . . . Mercury MR-3 flight
- . . . Mercury MR-4 flight
- RT Atlas launch vehicles
 - manned spacecraft
 - space capsules
- mercury ion engines**
 - DEF Machines providing thrust by expelling accelerated or high velocity mercury ions and often using energy provided by nuclear reactors.
 - GS engines
 - . rocket engines
 - . . electric rocket engines
 - . . . electrostatic engines
 - ion engines
 - **mercury ion engines**
 - RT nuclear propulsion
 - nuclear rocket engines
 - plasma engines
- mercury isotopes**
 - GS chemical elements
 - . mercury (metal)
 - . . **mercury isotopes**
 - . . . nuclides
 - . . . isotopes
 - **mercury isotopes**
 - liquids
 - . liquid metals
 - . . mercury (metal)
 - . . . **mercury isotopes**
 - metals
 - . liquid metals
 - . . mercury (metal)
 - . . . **mercury isotopes**
 - . transition metals
 - . . mercury (metal)
 - . . . **mercury isotopes**
- mercury lamps**
 - GS lighting equipment
 - . luminaires
 - . . **mercury lamps**
 - RT light sources
 - phosphors
 - sterilization
 - xenon lamps
- Mercury MA-1 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-1 flight**
 - RT Atlas launch vehicles
- Mercury MA-2 flight**
 - UF *MA-2 mission*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-2 flight**
 - RT Atlas launch vehicles
 - Faith 7
- Mercury MA-3 flight**
 - UF *MA-3 flight*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-3 flight**
 - RT Atlas launch vehicles
- Mercury MA-4 flight**
 - UF *MA-4 flight*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-4 flight**
 - RT Atlas launch vehicles
- Mercury MA-5 flight**
 - UF *MA-5 flight*
 - GS space flight
 - . manned space flight
- . . Mercury flights
- . . . **Mercury MA-5 flight**
- RT Atlas launch vehicles
- Mercury MA-6 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-6 flight**
 - RT Atlas launch vehicles
 - Friendship 7
- Mercury MA-7 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-7 flight**
 - RT Atlas launch vehicles
 - Aurora 7
- Mercury MA-8 flight**
 - UF *MA-8 flight*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-8 flight**
 - RT Atlas launch vehicles
 - SIGMA 7
- Mercury MA-9 flight**
 - UF *MA-9 flight*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MA-9 flight**
 - RT Atlas launch vehicles
 - Faith 7
- Mercury MR-1 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MR-1 flight**
- Mercury MR-2 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MR-2 flight**
- Mercury MR-3 flight**
 - UF *MR-3 flight*
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MR-3 flight**
- Mercury MR-4 flight**
 - GS space flight
 - . manned space flight
 - . . Mercury flights
 - . . . **Mercury MR-4 flight**
- mercury oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **mercury oxides**
 - mercury compounds
 - . **mercury oxides**
- Mercury project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Mercury project**
 - . projects
 - . . **Mercury project**
 - . space programs
 - . . NASA space programs
 - . . . **Mercury project**
 - RT Apollo project
 - Atlas launch vehicles
 - Gemini project
 - Little Joe 2 launch vehicle
 - manned space flight

Mercury spacecraft

manned spacecraft

Mercury spacecraft

- GS manned spacecraft
 - . **Mercury spacecraft**
 - .. Aurora 7
 - .. Faith 7
 - .. Friendship 7
 - .. SIGMA 7
- reentry vehicles
 - . recoverable spacecraft
 - .. **Mercury spacecraft**
 - ... Aurora 7
 - ... Faith 7
 - ... Friendship 7
 - ... SIGMA 7
- soft landing spacecraft
 - . **Mercury spacecraft**
 - .. Aurora 7
 - .. Faith 7
 - .. Friendship 7
 - .. SIGMA 7
- space capsules
 - . **Mercury spacecraft**
 - .. Aurora 7
 - .. Faith 7
 - .. Friendship 7
 - .. SIGMA 7

Mercury surface

- DEF The surface of the planet Mercury.
- GS planetary surfaces
 - . **Mercury surface**
- RT extraterrestrial environments
 - Mercury (planet)
 - Mercury atmosphere
 - planetary craters
 - satellite surfaces
 - solar system
 - terrestrial planets

mercury tellurides

- GS chalcogenides
 - . tellurides
 - .. **mercury tellurides**
 - ... mercury cadmium tellurides
- mercury compounds
 - . **mercury tellurides**
 - .. mercury cadmium tellurides
- tellurium compounds
 - . tellurides
 - .. **mercury tellurides**
 - ... mercury cadmium tellurides

mercury vapor

- GS chemical elements
 - . mercury (metal)
 - .. **mercury vapor**
- liquids
 - . liquid metals
 - .. mercury (metal)
 - ... **mercury vapor**
- metals
 - . liquid metals
 - .. mercury (metal)
 - ... **mercury vapor**
- metal vapors
 - .. **mercury vapor**
 - .. transition metals
 - .. mercury (metal)
 - ... **mercury vapor**
- vapors
 - . metal vapors
 - .. **mercury vapor**
- RT cesium vapor
- sodium vapor

merging routines

- GS computer programs
 - . **merging routines**
- RT ∞ routines

meridional flow

- GS fluid flow
 - . gas flow
 - .. air flow

- ... air currents
- ... **meridional flow**
- RT atmospheric circulation
 - flow geometry
 - wind (meteorology)
 - wind direction
 - zonal flow (meteorology)

Merlin (helicopter)

(added April 1997)

USE **EH-101 helicopter**

meromorphic functions

- GS analysis (mathematics)
 - . complex variables
 - .. **meromorphic functions**
 - ... elliptic functions
 - ... rational functions
- functions (mathematics)
 - . **meromorphic functions**
 - .. elliptic functions
 - .. rational functions

Merritt Island (FL)

- GS landforms
 - . islands
 - .. **Merritt Island (FL)**
- RT Florida

merwinite

- GS calcium compounds
 - . **merwinite**
- magnesium compounds
 - . **merwinite**
- minerals
 - . **merwinite**
- silicon compounds
 - . silicates
 - .. **merwinite**

mesas

DEF Isolated, nearly level landmasses standing distinctly above the surrounding country, bounded by abrupt or steeply sloping erosion scarps on all sides, and capped by layers of resistant, nearly horizontal rock (often lava). Less strictly, very broad, flat topped, usually isolated hills or mountains of moderate height bounded on at least one side by a steep cliff or slope and representing an erosion remnant. Mesas are similar to, but have more summit area than buttes and are common topographical features in arid and semiarid regions of the United States. Mesas are often considered broad terraces or comparatively flat plateaus along river valleys. They are marked by an abrupt slope or escarpment on one side.

- GS landforms
 - . terraces (landforms)
 - .. plateaus
 - ... **mesas**
 - ... buttes
- RT flats (landforms)
- highlands
- mountains

MESFETs

USE **field effect transistors**

mesh

- RT fabrics
 - ∞ grids
 - strands
 - webbing
 - ∞ webs

mesh (mathematics)

USE **computational grids**

mesh generation (mathematics)

USE **grid generation (mathematics)**

mesh refinement (mathematics)

(added August 2003)

USE **grid refinement (mathematics)**

mesitylene

- GS organic compounds

- . hydrocarbons
- .. **mesitylene**

mesometeorology

- GS meteorology
 - . **mesometeorology**
- RT aeronomy
 - lower atmosphere
 - micrometeorology

meson resonance

- GS particles
 - . elementary particles
 - .. bosons
 - ... mesons
 - ... **meson resonance**
 - ... X mesons
 - ... fermions
 - ... **meson resonance**
 - ... X mesons
 - ... hadrons
 - ... mesons
 - ... **meson resonance**
 - ... X mesons
 - ... nuclear particles
 - .. bosons
 - ... mesons
 - ... **meson resonance**
 - ... X mesons
 - resonance
 - . **meson resonance**
 - .. X mesons
- RT baryons
- hyperons

meson-meson interactions

- GS particle interactions
 - . elementary particle interactions
 - .. **meson-meson interactions**
- RT electromagnetic interactions
- ∞ interactions

meson-nucleon interactions

- GS particle interactions
 - . elementary particle interactions
 - .. **meson-nucleon interactions**
- RT charged particles
- ∞ interactions
- mesons
- Yukawa potential

mesons

DEF In the classification of subatomic particles by mass, the second lightest of such particles. Their mass is intermediate between that of the lepton and the nucleon.

- GS particles
 - . elementary particles
 - .. bosons
 - ... **mesons**
 - ... eta-mesons
 - ... hyperons
 - ... xi hyperons
 - ... kaons
 - ... meson resonance
 - ... X mesons
 - ... muons
 - ... omega-mesons
 - ... pions
 - ... vector mesons
 - ... rho-mesons
 - ... sigma-mesons
 - .. hadrons
 - ... **mesons**
 - ... eta-mesons
 - ... hyperons
 - ... xi hyperons
 - ... kaons
 - ... meson resonance
 - ... X mesons
 - ... muons
 - ... omega-mesons
 - ... pions
 - ... vector mesons
 - ... rho-mesons
 - ... sigma-mesons

. nuclear particles
 . . bosons
 . . . **mesons**
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 RT baryons
 boson fields
 charged particles
 corpuscular radiation
 cosmic rays
 gluons
 leptons
 meson-nucleon interactions
 muonium
 Pomeranchuk theorem
 strangeness

mesopause
 SN (ALTITUDE APPROXIMATELY 90 KM)
 DEF The base of the inversion at the top of the mesosphere, usually found at 80 to 85 kilometers.
 GS Earth atmosphere
 . middle atmosphere
 . . mesosphere
 . . . **mesopause**
 RT stratopause

mesophiles
 RT microorganisms
 psychrophiles
 thermophiles

mesoscale phenomena
 DEF Meteorological phenomena extending approximately one to a hundred kilometers (mesoscale cloud patterns, for example).
 GS **mesoscale phenomena**
 . jet streams (meteorology)
 RT arc clouds
 meteorology
 phenomenology
 wind (meteorology)

mesosphere
 SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 45 AND 90 KM)
 DEF The atmospheric shell, in which temperature generally decreases with heights, extending from the stratopause at about 50 to 55 kilometers to the mesopause at about 80 to 85 kilometers.
 GS Earth atmosphere
 . middle atmosphere
 . . **mesosphere**
 . . . mesopause
 RT chemosphere
 Earth ionosphere
 homosphere
 Solar Mesosphere Explorer
 stratopause

Mesozoic Era
 (added June 1989)
 DEF An era of geologic time, from the end of the Paleozoic Era to the beginning of the Cenozoic Era, or from about 225 to about 65 million years ago.
 GS **Mesozoic Era**
 . Cretaceous Period
 RT Cretaceous-Tertiary boundary
 geochronology
 paleontology
 Paleozoic Era

message processing
 DEF In communication operations, the ac-

ceptance, preparation for transmission, receipt and/or delivery of a series of words or symbols intended for conveying information.

RT automatic repeat request
 communicating
 communication
 cryptography
 information flow
 messages
 packet transmission
 ∞ processing
 semantics
 signal processing
 signal transmission
 symbols

messages

GS communicating
 . information dissemination
 . . **messages**
 RT automatic repeat request
 communication theory
 information theory
 intelligibility
 message processing
 semantics
 sentences
 signal transmission
 ∞ signals
 syllables
 symbols
 vocoders
 words (language)

messenger RNA

USE **ribonucleic acids**

Messerschmitt ME P-160 aircraft

USE **P-160 aircraft**

Messerschmitt ME P-308 aircraft

USE **P-308 aircraft**

metabolic diseases

GS diseases
 . **metabolic diseases**
 RT metabolism

metabolic wastes

GS wastes
 . **metabolic wastes**
 . . human wastes
 . . . feces
 . . . urine
 RT activated sludge
 air pollution
 carbon dioxide
 composting
 environment effects
 environment pollution
 environmental surveys
 expired air
 liquid wastes
 manures
 metabolites
 organic wastes (fuel conversion)
 pollution
 sewage
 sewers
 solid wastes
 waste disposal

metabolism

DEF The sum of all physical and chemical processes by which living organized substance is produced and maintained and by which energy is made available for the use of the organism.

GS **metabolism**
 . adrenal metabolism
 . ascorbic acid metabolism
 . calcium metabolism
 . carbohydrate metabolism
 . . hyperglycemia
 . . hypoglycemia
 . catabolism

. electrolyte metabolism
 . enzyme activity
 . . fermentation
 . hormone metabolisms
 . hydrogen metabolism
 . hypometabolism
 . mineral metabolism
 . nitrogen metabolism
 . oxygen metabolism
 . phosphorus metabolism
 . protein metabolism
 . . lipid metabolism
 RT caloric requirements
 enzymology
 heterotrophs
 homeostasis
 Krebs cycle
 metabolic diseases
 metabolites
 nutrition
 obesity
 osteoporosis
 oxygen consumption
 physiology
 respiration
 secretions
 thermoregulation

metabolites

DEF Products of biological synthesis and/or metabolism.

RT biochemistry
 biosynthesis
 metabolic wastes
 metabolism
 organic compounds

metacomputing

(added December 2003)

USE **grid computing (computer networks)**

metagalaxy

USE **universe**

metal air batteries

GS electric generators
 . direct power generators
 . . primary batteries
 . . . **metal air batteries**
 zinc-oxygen batteries
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **metal air batteries**
 zinc-oxygen batteries
 RT dry cells
 storage batteries

metal bonding

GS bonding
 . **metal bonding**
 . . metal-metal bonding
 RT adhesion
 adhesive bonding
 bimetals
 brazing
 diffusion welding
 explosive welding
 heat affected zone
 joints (junctions)
 laminates
 resin bonding
 soldering
 welding

metal clusters

(added January 1994)

DEF Bonded aggregations of like metal atoms.

RT agglomeration
 atomic clusters
 chemisorption
 clumps
 ∞ clusters
 metals

metal coatings

molecular clusters
nucleation

metal coatings

SN (COATINGS CONSISTING OF METAL)
GS coatings

. **metal coatings**
. . aluminum coatings
. . gold coatings
. . nickel coatings
. . zinc coatings

RT anodic stripping
antiradar coatings
ceramic coatings
cladding
corrosion
corrosion prevention
deposition
electroless deposition
hot corrosion
ion plating
lacquers
magnetron sputtering
metallizing
∞ metallurgy
metals
oxides
paints
∞ plates
plating
primers (coatings)
protective coatings
sprayed coatings

metal combustion

GS combustion
. **metal combustion**
RT fuel combustion
gas-metal interactions
metals
oxidation
propellant combustion
pyrophoric materials
solid propellant combustion
solid propellant ignition

∞ metal compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ alkali metal compounds
aluminum compounds
amines
antimony compounds
barium compounds
beryllium compounds
bismuth compounds
cadmium compounds
calcium compounds
cerium compounds
cesium compounds
∞ chemical compounds
chromium compounds
cobalt compounds
copper compounds
dysprosium compounds
erbium compounds
europium compounds
gallium compounds
germanium compounds
hafnium compounds
indium compounds
iridium compounds
iron compounds
lanthanum compounds
lead compounds
lead organic compounds
lithium compounds
lithium iodates
lutetium compounds
magnesium compounds
manganese compounds
mercury compounds
metal fluorides
metal halides
metal hydrides
metal oxides

metals
molybdenum compounds
neodymium compounds
neptunium compounds
nickel compounds
niobium compounds
organic aluminum compounds
organic germanium compounds
organic lithium compounds
organic tin compounds
organometallic compounds
osmium compounds
platinum compounds
plutonium compounds
potassium compounds
praseodymium compounds
protactinium compounds
rare earth compounds
refractory materials
rhenium compounds
rubidium compounds
ruthenium compounds
samarium compounds
scandium compounds
silver compounds
sodium compounds
strontium compounds
strontium oxides
tantalum compounds
technetium compounds
thallium compounds
thorium compounds
thulium compounds
tin compounds
titanium compounds
tungsten compounds
uranium compounds
vanadium compounds
vanadyl compounds
ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds

metal corrosion

USE **corrosion**

metal crystals

GS crystals
. **metal crystals**
RT crystal lattices
crystal structure
metallography
metals

metal cutting

GS cutting
. **metal cutting**
RT countersinking
grinding (material removal)
knurling
laser cutting
machine tools
machining
melting
micromachining
milling (machining)
perforating
planing
plasma arc cutting
scarfing
shearing
slicing
spark machining
spiking

metal drawing

GS forming techniques
. **metal drawing**
metal working
. **metal drawing**
RT bulging
bundle drawing
cold working
cold working
∞ drawing

ductility
hot working
magnetic forming
stretch forming

metal fatigue

GS fatigue (materials)
. **metal fatigue**
RT bending fatigue
Coffin-Manson law
crack closure
crack initiation
crack propagation
fracturing
grain size
inelastic stress
retirement for cause
rupturing
Segre characteristic
short cracks
S-N diagrams
stress corrosion
stress corrosion cracking
thermal fatigue
transgranular corrosion

metal fibers

GS fibers
. **metal fibers**
RT Borsic (trade name)
fiber composites
filament winding
reinforcing fibers

metal films

RT coatings
diamond films
∞ films
metallizing
metals
nickel coatings
pickling (metallurgy)
sputtering gages
thin films

metal finishing

GS **metal finishing**
. electropolishing
. peening
. shot peening
RT cleaning
coating
coatings
descaling
pickling (metallurgy)
plating
surface finishing

metal fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. halides
. . fluorides

- . . . **metal fluorides**
- aluminum fluorides
- beryllium fluorides
- cadmium fluorides
- calcium fluorides
- fluorspar
- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- . . . metal halides
- . . . **metal fluorides**
- aluminum fluorides
- beryllium fluorides
- cadmium fluorides
- calcium fluorides
- fluorspar
- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- RT ∞ metal compounds

metal foams

DEF Foamed materials formed under low gravity conditions in space from sputtered metal deposits. This experimental space processing was completed in the second NASA SPAR flight.

- GS foams
- . **metal foams**
- RT bubbles
- foaming
- low gravity manufacturing
- ∞ materials science
- melting
- ∞ metallurgy
- Space Processing Applications
- Rocket

metal foils

- GS foils (materials)
- . **metal foils**
- RT honeycomb structures
- metals
- multilayer insulation
- ∞ sheets

metal forging

USE **forging**

metal forming

USE **forming techniques**
metal working

metal fuels

- GS fuels
- . chemical fuels
- . . **metal fuels**
- RT aluminum compounds
- beryllium compounds
- boron compounds
- cesium compounds

- gelled propellants
- hybrid propellants
- lithium compounds
- metals
- slurry propellants
- solid propellants

metal grinding

- GS grinding (material removal)
- . **metal grinding**
- RT forming techniques
- grinding machines
- surface finishing

metal halides

- GS halogen compounds
- . halides
- . . **metal halides**
- . . . alkali halides
- cesium halides
- cesium bromides
- cesium fluorides
- cesium iodides
- potassium iodides
- sodium bromides
- sodium chlorides
- sodium fluorides
- sodium iodides
- . . . aluminum chlorides
- . . . barium fluorides
- . . . beryllium chlorides
- . . . cadmium chlorides
- . . . calcium chlorides
- . . . chromium bromides
- . . . copper chlorides
- . . . hafnium iodides
- . . . iron chlorides
- . . . lanthanum chlorides
- . . . lead chlorides
- . . . lithium chlorides
- . . . magnesium bromides
- . . . metal fluorides
- aluminum fluorides
- beryllium fluorides
- cadmium fluorides
- calcium fluorides
- fluorspar
- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- . . . niobium iodides
- . . . potassium bromides
- . . . potassium chlorides
- . . . silver halides
- silver bromides
- silver chlorides
- silver iodides
- . . . strontium bromides
- . . . technetium fluorides
- . . . titanium chlorides
- . . . tungsten halides
- tungsten chlorides
- tungsten fluorides
- . . . zinc chlorides
- . . . zirconium iodides
- RT ∞ metal compounds

metal hardening

USE **hardening (materials)**

metal hydrides

- UF *plumbane*
- GS hydrogen compounds

- . hydrides
- . . **metal hydrides**
- . . . aluminum hydrides
- aluminum borohydrides
- beryllium hydrides
- cesium hydrides
- lithium hydrides
- lithium aluminum hydrides
- potassium hydrides
- sodium hydrides
- RT ∞ metal compounds

metal insulator semiconductors

USE **MIS (semiconductors)**

metal ions

- GS ions
- . **metal ions**
- . . ferric ions
- . . manganese ions
- RT barium ion clouds
- cations
- crystal field theory
- ion implantation
- ion plating
- metals
- positive ions

metal joints

- GS joints (junctions)
- . **metal joints**
- . . soldered joints
- . . welded joints
- . . . spot welds
- RT butt joints
- explosive welding
- lap joints
- riveted joints
- scarf joints
- seams (joints)

metal matrix composites

- GS composite materials
- . **metal matrix composites**
- . . aluminum boron composites
- . . aluminum graphite composites
- . . Borsic (tradename)
- . . eutectic composites
- RT aramid fiber composites
- boron fibers
- chemical compatibility
- crack bridging
- electrodeposition
- fiber composites
- fiber pullout
- fiber pushout
- fibers
- functionally gradient materials
- hybrid composites
- ∞ materials
- ∞ matrices
- matrix materials
- monotectic alloys
- particulate reinforced composites
- plasma spraying
- powder metallurgy
- reinforcing fibers
- resin matrix composites
- squeeze casting
- whisker composites

metal nitrides

- GS nitrogen compounds
- . nitrides
- . . **metal nitrides**
- . . . aluminum nitrides
- . . . beryllium nitrides
- . . . gallium nitrides
- . . . tantalum nitrides
- . . . titanium nitrides
- . . . zirconium nitrides

metal oxide semiconductors

RT transition metals

metal organic chemical vapor deposition

USE **metalorganic chemical vapor deposition**

metal oxide semiconductors

UF *MOS (semiconductors)*

GS electronic equipment

- . solid state devices
- . semiconductor devices
- . . . **metal oxide semiconductors**
- CMOS
- ITO (semiconductors)
- SOS (semiconductors)

semiconductors (materials)

- . **metal oxide semiconductors**
- . . CMOS
- . . ITO (semiconductors)
- . . SOS (semiconductors)

RT capacitance-voltage characteristics

ion implantation

rectifiers

SOI (semiconductors)

metal oxides

GS chalcogenides

- . oxides
- . . **metal oxides**
- . . . alkaline earth oxides
- barium oxides
- beryllium oxides
- alexandrite
- calcium oxides
- akermanite
- magnesium oxides
- akermanite
- periclase
- . . . aluminum oxides
- alexandrite
- sapphire
- . . . bismuth oxides
- . . . cerium oxides
- . . . cesium oxides
- . . . chromium oxides
- . . . cobalt oxides
- . . . copper oxides
- . . . gallium oxides
- . . . hafnium oxides
- . . . iron oxides
- hematite
- ilmenite
- magnetite
- . . . lanthanum oxides
- . . . lead oxides
- . . . lithium oxides
- . . . manganese oxides
- Hopcalite (trademark)
- . . . mercury oxides
- . . . mixed oxides
- BSCCO superconductors
- YBCO superconductors
- . . . molybdenum oxides
- . . . nickel oxides
- . . . niobium oxides
- . . . platinum oxides
- . . . plutonium oxides
- . . . potassium oxides
- . . . scandium oxides
- . . . silver oxides
- . . . sodium peroxides
- . . . strontium oxides
- . . . tantalum oxides
- . . . thorium oxides
- . . . tin oxides
- . . . titanium oxides
- anatase
- ilmenite
- rutile
- . . . tungsten oxides
- scheelite
- . . . uranium oxides
- . . . vanadium oxides
- . . . yttrium oxides
- . . . zinc oxides
- . . . zirconium oxides
- yttria-stabilized zirconia

RT cathodic coatings

high temperature superconductors

∞ metal compounds

oxide films

vanadates

metal particles

GS particles

- . **metal particles**
- . . metal powder
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder

RT particulate reinforced composites

powder metallurgy

scrap

sputtering

metal plates

UF *plate (metal)*

GS structural members

- . plates (structural members)
- . . **metal plates**
- . . . boiler plate

RT armor

bars

billets

flanges

flat plates

girder webs

parallel plates

∞ plates

- . rectangular plates
- . slabs
- . thick plates
- . thin plates

metal polishing

UF *polished metals*

GS polishing

- . **metal polishing**
- . . electropolishing

RT cleaning

surface finishing

metal powder

UF *powdered metals*

GS particles

- . metal particles
- . . **metal powder**
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder
- . . . powder (particles)
- . . . **metal powder**
- platinum black
- powdered aluminum
- sintered aluminum powder

RT atomizing

bearing alloys

comminution

compressibility

compressing

electrodeposition

flakes

liquid phase sintering

metals

mixing

porous materials

powder metallurgy

reduction (chemistry)

sintering

size separation

metal propellants

GS propellants

- . rocket propellants
- . . solid rocket propellants
- . . . **metal propellants**
- . . . solid propellants
- . . . solid rocket propellants
- **metal propellants**

RT aluminum compounds

beryllium compounds

boron compounds

gelled propellants

gelled rocket propellants

hybrid propellants

monopropellants

slurry propellants

metal sheets

UF *sheet metal*

RT plates (structural members)

∞ sheets

metal shells

GS shells (structural forms)

- . **metal shells**

RT circular shells

cylindrical shells

hemispherical shells

hulls (structures)

membrane structures

orthotropic shells

reinforced shells

skin (structural member)

spherical shells

thin walled shells

toroidal shells

metal spinning

UF *spin forging*

spinning (metallurgy)

GS forming techniques

- . **metal spinning**
- . . hydrospinning
- . . metal working
- . . **metal spinning**
- . . . hydrospinning
- . . . spin
- . . . **metal spinning**
- . . . hydrospinning

RT cold working

extruding

hot working

metal spraying

GS spraying

- . **metal spraying**

RT arc spraying

coating

coatings

flame spraying

HVOF thermal spraying

metallizing

surface finishing

metal strips

RT billets

ribbons

strakes

∞ strip

strip transmission lines

metal surfaces

RT adatoms

crack initiation

crystal surfaces

erosion

gas-solid interfaces

liquid-solid interfaces

oxide films

solid surfaces

surface finishing

surface properties

surface reactions

∞ surfaces

metal vapor lasers

DEF Stimulated emission devices, the active materials of which are vaporized metals.

GS stimulated emission devices

- . lasers
- . . **metal vapor lasers**

RT laser materials

laser microscopy

optical pumping

metal vapors

GS metals

- . **metal vapors**

- . . mercury vapor
- . . sodium vapor
- vapors
- . **metal vapors**
- . . mercury vapor
- . . sodium vapor
- RT alkali metals
- alkali vapor lamps
- gas-metal interactions
- heat transfer
- liquid metals
- vapor deposition
- metal whisker reinforcement*
- USE **whisker composites**
- metal working**
- SN (METAL DEFORMATION FOR CHANGING SHAPE AND FOR PROPERTIES--EXCLUDES CASTING, CUTTING, DEPOSITION PROCESS AND MACHINING)
- UF *metal forming*
- GS **metal working**
- . ausforming
- . bulging
- . cladding
- . coining
- . explosive forming
- . forging
- . hydroforming
- . magnetic forming
- . metal drawing
- . metal spinning
- . . hydrospinning
- . sizing (shaping)
- RT brakes (forming or bending)
- ∞ breakdown
- casting
- cold pressing
- cold rolling
- cold working
- decarburization
- deep drawing
- dimpling
- electrohydraulic forming
- electromagnetic hammers
- explosive welding
- extruding
- flattening
- forming techniques
- hardening (materials)
- hot isostatic pressing
- hot pressing
- hot working
- laser applications
- laser machining
- leveling
- machining
- malleability
- ∞ metallurgy
- micromachining
- peening
- perforating
- piercing
- plasma arc cutting
- pressing (forming)
- pyrometallurgy
- ∞ reduction
- roll forming
- ∞ rolling
- shearing
- shot peening
- squeeze casting
- stamping
- stretch forming
- stretching
- superplastic forming
- swaging
- tempering
- winding
- work hardening
- metal-barrier-metal junctions*
- USE **MBM junctions**
- metal-gas systems**
- RT gas lubricants
- gases
- gas-metal interactions
- metals
- ∞ systems
- vapor phases
- metal-insulator-metal diodes*
- USE **MIM diodes**
- metal-insulator-metal semiconductors*
- USE **MIM (semiconductors)**
- metallic glasses**
- DEF Amorphous alloys (glassy metals) produced by extremely rapid quenching of molten transition-metal alloys (e. g. , iron, nickel, and/or cobalt). These metallic glasses exhibit unique mechanical, magnetic, and electrical properties, superconductive behavior, and anticorrosion resistance, depending on the alloys, their formation and quenching techniques.
- GS glass
- . **metallic glasses**
- RT glass coatings
- glass fibers
- optical properties
- silicon dioxide
- spin glass
- vitreous materials
- metallic hydrogen**
- GS chemical elements
- . hydrogen
- . . hydrogen isotopes
- . . . **metallic hydrogen**
- . nuclides
- . . isotopes
- . . . hydrogen isotopes
- **metallic hydrogen**
- gases
- . hydrogen
- . . hydrogen isotopes
- . . . **metallic hydrogen**
- RT critical temperature
- solid phases
- solid state
- solidified gases
- solids
- metallic plasmas**
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **metallic plasmas**
- cesium plasma
- uranium plasmas
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **metallic plasmas**
- cesium plasma
- uranium plasmas
- RT electron plasma
- mercury arcs
- plasma sheaths
- metallic stars**
- GS celestial bodies
- . stars
- . . **metallic stars**
- RT abundance
- chemical composition
- metallicity
- stellar atmospheres
- stellar structure
- metallicity**
- DEF The abundance index of a metal or metals for a celestial body.
- RT abundance
- chemical analysis
- chemical composition
- galactic clusters
- galaxies
- globular clusters
- hydrogen
- interstellar matter
- mass ratios
- metallic stars
- metals
- spectroscopic analysis
- star clusters
- stars
- metallizing**
- GS coating
- . **metallizing**
- coatings
- . **metallizing**
- RT cladding
- electroplating
- finishes
- flame spraying
- laminates
- metal coatings
- metal films
- metal spraying
- plating
- spraying
- substrates
- vapor deposition
- metallography**
- RT abrasion
- alloys
- anisotropy
- crystal lattices
- crystallography
- electropolishing
- etching
- ferrography
- inclusions
- isotropy
- ∞ materials tests
- metal crystals
- ∞ metallurgy
- metals
- microporosity
- microscopes
- microstructure
- mushy zones
- order-disorder transformations
- photomicrography
- polishing
- radiography
- replicas
- solid suspensions
- time temperature parameter
- vibratory polishing
- Widmanstatten structure
- x ray diffraction
- metalloids**
- UF *semimetals*
- GS chemical elements
- . **metalloids**
- . . antimony
- . . antimony isotopes
- . . arsenic
- . . . arsenic isotopes
- . . boron
- . . . boron isotopes
- boron 10
- . . germanium
- . . . germanium isotopes
- . . polonium
- . . . polonium isotopes
- polonium 208
- polonium 209
- polonium 210
- . . silicon
- . . . amorphous silicon
- . . . porous silicon
- . . . silicon isotopes
- . . tellurium
- . . . tellurium isotopes
- RT alloys
- arsenic alloys
- boron alloys
- intermetallics
- metals
- organometallic compounds

metallurgy

- semiconductors (materials)
- metalloorganic compounds*
- USE **organometallic compounds**
- metalloxiloxane polymers*
- USE **organometallic polymers**
- metalloxane polymers*
- USE **organometallic polymers**
- ∞ **metallurgy**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT alloying
 - alloys
 - beneficiation
 - casting
 - coating
 - coatings
 - corrosion
 - crystallography
 - dispersion strengthening
 - duplex operation
 - ferrous metals
 - foundries
 - fractography
 - furnaces
 - hardening (materials)
 - heat affected zone
 - heat treatment
 - hydrometallurgy
 - levitation melting
 - light alloys
 - mechanical properties
 - melt spinning
 - melting
 - metal coatings
 - metal foams
 - metal working
 - metallography
 - metals
 - nonferrous metals
 - ∞ physical sciences
 - powder metallurgy
 - pyrometallurgy
 - rapid quenching (metallurgy)
 - recrystallization
 - ∞ science
 - smelting
 - thermomechanical treatment
- metal-metal bonding**
 - GS bonding
 - . metal bonding
 - . . **metal-metal bonding**
 - RT adhesive bonding
 - adhesives
 - diffusion welding
 - explosive welding
 - heat affected zone
 - inertia bonding
 - resin bonding
 - soldering
 - welding
- metal-nitride-oxide-semiconductors**
 - DEF Class of semiconductors utilizing silicon nitride and silicon oxide dielectrics.
 - GS electronic equipment
 - . solid state devices
 - . . . **metal-nitride-oxide-semiconductors**
 - semiconductors (materials)
 - . . . **metal-nitride-oxide-semiconductors**
 - RT chips (memory devices)
- metal-nitride-oxide-silicon**
 - UF *MNOS*
 - GS semiconductors (materials)
 - . **metal-nitride-oxide-silicon**
- metalorganic chemical vapor deposition**
(added May 1991)
 - UF *metal organic chemical vapor deposition*
 - MOCVD (vapor deposition)*
 - OMCVD (vapor deposition)*
 - organometallic vapor deposition*
 - GS deposition
 - . vapor deposition
 - . . **metalorganic chemical vapor deposition**
 - RT coating
 - crystal growth
 - organometallic compounds
 - space processing
- metal-oxide-metal semiconductors*
- USE **MOM (semiconductors)**
- metals**
 - UF *magnetic metals*
 - GS **metals**
 - . actinide series
 - . . actinium
 - . . radium
 - . . . radium isotopes
 - radium 226
 - . . thorium
 - . . . thorium isotopes
 - . . transuranium elements
 - . . . americium
 - americium isotopes
 - americium 241
 - . . . berkelium
 - . . . californium
 - californium isotopes
 - . . . curium
 - curium isotopes
 - curium 242
 - curium 244
 - . . . einsteinium
 - . . . fermium
 - . . . lawrencium
 - . . . mendelevium
 - . . . neptunium
 - neptunium isotopes
 - . . . nobelium
 - . . . plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - . . . sergenium
 - . . uranium
 - . . . uranium isotopes
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
 - . . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . . cesium vapor
 - . . francium
 - . . lithium
 - . . . liquid lithium
 - . . . lithium isotopes
 - . . potassium
 - . . . liquid potassium
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - . . rubidium
 - . . . rubidium isotopes
 - rubidium 86
 - . . sodium
 - . . . liquid sodium
 - . . . sodium isotopes
 - sodium 22
 - sodium 24
 - . . . sodium vapor
 - . alkaline earth metals
 - . . barium isotopes
 - . . aluminum
 - . . . aluminum isotopes
 - aluminum 26
 - aluminum 27
 - . . antimony isotopes
 - . . astatine
 - . . . astatine isotopes
 - . . barium
 - . . . barium isotopes
 - . . beryllium
 - . . . beryllium isotopes
 - beryllium 7
 - beryllium 9
 - beryllium 10
 - . . bismuth
 - . . . bismuth isotopes
 - . . calcium
 - . . . calcium isotopes
 - . . ferrous metals
 - . . gallium
 - . . . gallium isotopes
 - . . indium
 - . . . indium isotopes
 - . . lead (metal)
 - . . . lead isotopes
 - . . liquid metals
 - . . . liquid lithium
 - . . . liquid potassium
 - . . . liquid sodium
 - . . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor
 - . . magnesium
 - . . . magnesium isotopes
 - . . metal vapors
 - . . . mercury vapor
 - . . . sodium vapor
 - . . noble metals
 - . . . gold
 - gold isotopes
 - gold 198
 - . . . ruthenium
 - . . . ruthenium isotopes
 - . . silver
 - . . . silver isotopes
 - . . nonferrous metals
 - . . protactinium
 - . . . protactinium isotopes
 - . . rare earth elements
 - . . . cerium
 - cerium isotopes
 - cerium 137
 - cerium 144
 - . . . dysprosium
 - . . . dysprosium isotopes
 - . . erbium
 - . . . erbium isotopes
 - . . europium
 - . . . europium isotopes
 - . . . gadolinium
 - . . . gadolinium isotopes
 - . . holmium
 - . . . holmium isotopes
 - . . lanthanum
 - . . . lanthanum isotopes
 - . . lutetium
 - . . . lutetium isotopes
 - . . neodymium
 - . . . neodymium isotopes
 - . . praseodymium
 - . . . praseodymium isotopes
 - . . promethium
 - . . . promethium isotopes
 - . . samarium
 - . . . samarium isotopes
 - . . scandium
 - . . . scandium isotopes
 - . . terbium
 - . . . terbium isotopes
 - . . thulium
 - . . . thulium isotopes
 - . . ytterbium
 - . . . ytterbium isotopes
 - . . yttrium
 - . . . yttrium isotopes

. refractory metals
 . . chromium
 . . . chromium isotopes
 . . iridium
 . . . iridium isotopes
 . . molybdenum
 . . niobium
 . . . niobium isotopes
 niobium 95
 . . osmium
 . . . osmium isotopes
 . . rhenium
 . . . rhenium isotopes
 . . tantalum
 . . . tantalum isotopes
 . . tungsten
 . . . tungsten isotopes
 . . strontium
 . . . strontium isotopes
 strontium 85
 strontium 87
 strontium 89
 strontium 90
 . . thallium
 . . . thallium isotopes
 . . tin
 . . . tin isotopes
 . . transition metals
 . . . cadmium
 cadmium isotopes
 . . . chromium
 chromium isotopes
 . . . cobalt
 cobalt isotopes
 cobalt 58
 cobalt 60
 . . . copper
 copper isotopes
 . . . gold
 gold isotopes
 gold 198
 . . . hafnium
 hafnium isotopes
 . . . iridium
 iridium isotopes
 . . . iron
 iron isotopes
 iron 57
 iron 58
 iron 59
 . . . manganese
 manganese isotopes
 . . . mercury (metal)
 mercury isotopes
 mercury vapor
 . . . molybdenum
 . . . nickel
 nickel isotopes
 . . . niobium
 niobium isotopes
 niobium 95
 . . . osmium
 osmium isotopes
 . . . palladium
 . . . platinum
 platinum isotopes
 . . . rhenium
 rhenium isotopes
 . . . rhodium
 rhodium isotopes
 . . . ruthenium
 ruthenium isotopes
 . . . scandium
 scandium isotopes
 . . . silver
 silver isotopes
 . . . tantalum
 tantalum isotopes
 . . . technetium
 technetium isotopes
 . . . titanium
 titanium isotopes
 . . . tungsten
 tungsten isotopes
 . . . vanadium
 vanadium isotopes
 . . . yttrium

. . . yttrium isotopes
 . . . zinc
 zinc isotopes
 . . . zirconium
 zirconium isotopes
 zirconium 95
 . . . heavy metals
 ultrapure metals
 . . . uranium plasmas
 RT alloys
 antimony
 arsenic
 arsenic isotopes
 bimetals
 Borsic (tradename)
 cermets
 chemical elements
 composite materials
 conductors
 embedded atom method
 eutectic composites
 gadolinium alloys
 intermetallics
 isotopes
 light alloys
 liquid alloys
 metal clusters
 metal coatings
 metal combustion
 ∞ metal compounds
 metal crystals
 metal films
 metal foils
 metal fuels
 metal ions
 metal powder
 metal-gas systems
 metallicity
 metallography
 metalloids
 ∞ metallurgy
 monotectic alloys
 palladium compounds
 polonium
 polonium 208
 polonium 209
 polonium 210
 polonium isotopes
 strategic materials
 syntectic alloys

metal-semiconductor-metal semiconductors
 USE **MSM (semiconductors)**

metal-water reactions
 GS chemical reactions
 . **metal-water reactions**
 RT corrosion
 electrochemical corrosion
 erosion
 pitting
 rusting
 surface reactions

metamorphic rocks
 DEF Rocks derived from pre-existing rocks by mineralogical, chemical and/or structural changes, essentially in the solid state. These changes are in response to marked changes in temperature, pressure, shearing stress, and chemical environment, generally at the depth of the Earth's crust. Metamorphic rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and sedimentary rocks.
 GS rocks
 . **metamorphic rocks**
 . . quartzite
 RT metamorphism (geology)

metamorphism (geology)
 DEF The mineralogical and structural adjustment of solid rocks to physical and chemical conditions which have been imposed at depth below the surface zones of weathering and cementation, which differ from the conditions

under which the rocks in question originated.
 RT contacts (geology)
 metamorphic rocks
 phase transformations
 rocks

metastability
 USE **metastable state**

metastable atoms
 GS atoms
 . **metastable atoms**
 RT Penning effect

metastable state
 UF *metastability*
 RT excitation
 radiation trapping
 stability
 steady state
 unsteady state

metastasis
 (*added February 2002*)
 DEF The transfer of a neoplasm from one organ or part of the body to another remote from the primary site.
 RT cancer
 lymphatic system
 neoplasms

metathesis
 GS chemical reactions
 . **metathesis**
 RT electrolysis
 ion exchanging

metazoa
 USE **animals**

Meteor 1 rocket vehicle
 GS rocket vehicles
 . **Meteor 1 rocket vehicle**
 RT liquid propellant rocket engines
 ramjet engines
 solid propellant rocket engines

meteor bursts
 USE **meteoroid showers**

meteor craters
 USE **meteorite craters**

meteor hazards
 USE **meteoroid hazards**

meteor trails
 DEF Anything, such as light or ionization, left along the trajectory of the meteor after the head of the meteor has passed. Used for meteoritic ionization.
 UF *meteoritic ionization*
 RT bolides
 Earth atmosphere
 meteoroid showers
 meteoroids
 micrometeoroids
 ∞ paths
 Pribram meteorite
 radio meteors
 scatter propagation
 sporadic meteoroids
 ∞ tracks
 upper atmosphere

meteorite collisions
 UF *meteorite impacts*
 GS collisions
 . **meteorite collisions**
 RT asteroid collisions
 cometary collisions
 hypervelocity impact
 meteoritic damage
 meteoroid hazards
 near Earth objects

meteorite craters

shatter cones
Tungusk meteorite

meteorite compression tests
USE **compression tests**
mechanical properties
meteorites

meteorite craters
UF *fossil meteorite craters*
meteor craters
meteoroid craters
GS craters
. **meteorite craters**
RT Canadian Shield
cratering
ejecta
lunar craters
lunar rays
maria
Mars craters
Mars surface
meteorites
meteoritic damage
planetary craters
projectile cratering
Ptolemaeus Crater
shatter cones
Tungusk meteorite
Tycho crater

meteorite impacts
(added July 2002)
USE **meteorite collisions**

meteorite parent bodies
(added August 2001)
DEF Any celestial body that is the original source of meteoritic material.
UF *meteoroid parent bodies*
GS celestial bodies
. **meteorite parent bodies**
RT asteroid belts
asteroids
comets
meteorites
meteoritic composition
meteoritic microstructures
∞ origins
petrogenesis

meteorites
SN (LIMITED TO METEOROIDS WHICH HAVE REACHED THE SURFACE OF AN ASTEROID, NATURAL SATELLITE OR PLANET)
DEF Meteoroids which have reached the surface of the Earth without being completely vaporized. Used for meteorite compression tests.
UF *meteorite compression tests*
GS celestial bodies
. **meteorites**
. . . iron meteorites
. . . Aroos meteorite
. . . Lazarev meteorite
. . . Odessa meteorite
. . . Sikhote-Alin meteorite
. . . micrometeorites
. . . stony meteorites
. . . achondrites
. . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . SNC meteorites
. . . . ureilites
. . . carbonaceous meteorites
. . . carbonaceous chondrites
. Alais meteorite
. Allende meteorite
. Cold Bokkeveld meteorite
. Ivuna meteorite
. Murchison meteorite
. Murray meteorite

. Orgueil meteorite
. Tonk meteorite
. ureilites
. . . chondrites
. . . Bruderheim meteorite
. . . carbonaceous chondrites
. Alais meteorite
. Allende meteorite
. Cold Bokkeveld meteorite
. Ivuna meteorite
. Murchison meteorite
. Murray meteorite
. Orgueil meteorite
. Tonk meteorite
. . . Harleton meteorite
. . . Hvittis chondrite
. . . Okhansk meteorite
. . . Pantar chondrites
. . . Pribram meteorite
. . . tektites
. . . australites
. . . bediasites
. . . Tungusk meteorite
. . stony-iron meteorites

RT bolides
chondrule
coesite
foreign bodies
impact melts
meteorite craters
meteorite parent bodies
meteoritic composition
meteoritic microstructures
meteoroid showers
meteoroids
micrometeoroids
moldavite
near Earth objects

meteoritic composition
GS composition (property)
. **meteoritic composition**
RT carbonaceous meteorites
cosmochemistry
iron meteorites
isotope ratios
kamacite
meteorite parent bodies
meteorites
schreibersite
siderophile elements
solar nebula
stony meteorites
tektites
troilite
veins (petrology)

meteoritic damage
GS damage
. impact damage
. . **meteoritic damage**
RT ∞ bombardment
cratering
ejecta
hypervelocity impact
Mars craters
meteorite collisions
meteorite craters
meteoroid hazards
meteoroid protection
projectile cratering

meteoritic diamonds
GS diamonds
. **meteoritic diamonds**
RT ureilites

meteoritic dust
USE **micrometeoroids**

meteoritic ionization
USE **atmospheric ionization**
meteor trails

meteoritic microstructures
GS microstructure

. **meteoritic microstructures**
chondrule
iron meteorites
meteorite parent bodies
meteorites
stony meteorites
tektites
Widmanstätten structure

meteoroid concentration
GS composition (property)
. concentration (composition)
. . **meteoroid concentration**
density (number/volume)
. **meteoroid concentration**
RT flux density
mass distribution
spatial distribution
sporadic meteoroids

meteoroid craters
USE **meteorite craters**

meteoroid dust clouds
GS celestial bodies
. meteoroids
. . micrometeoroids
. . . **meteoroid dust clouds**
. . . zodiacal dust
extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . **meteoroid dust clouds**
. zodiacal dust
media
. interplanetary medium
. . interplanetary dust
. . . **meteoroid dust clouds**
. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . **meteoroid dust clouds**
. zodiacal dust
RT ∞ clouds
Explorer satellites
terrestrial dust belt

meteoroid hazards
UF *meteor hazards*
GS hazards
. flight hazards
. . **meteoroid hazards**
RT meteorite collisions
meteoritic damage
meteoroids
operational hazards
projectile cratering
spacecraft breakup

meteoroid parent bodies
(added August 2001)
USE **meteorite parent bodies**

meteoroid protection
GS protection
. **meteoroid protection**
RT bumpers
impact damage
meteoritic damage
spacecraft shielding
spacecraft structures

meteoroid showers
DEF Groups of meteoroids with approximately parallel trajectories. Used for meteor bursts.
UF *meteor bursts*
GS celestial bodies
. **meteoroid showers**
. . Aquarid meteoroids
. . Arietid meteoroids
. . Cyrrillid meteoroids
. . Draconid meteoroids

- .. Geminid meteoroids
- .. Leonid meteoroids
- .. Orionid meteoroids
- .. Perseid meteoroids
- .. Quadrantid meteoroids
- .. Taurid meteoroids
- RT astronomy
- bolides
- comets
- meteor trails
- meteorites
- meteoroids
- ∞ showers

Meteoroid Technology Satellite
 USE **Explorer 46 satellite**

meteoroids

- SN (LIMITED TO SOLID OBJECTS IN SPACE, MUCH SMALLER THAN AN ASTEROID AND MUCH LARGER THAN A MOLECULE)
- DEF Solid objects moving in interplanetary space, of a size considerably smaller than asteroids and considerably larger than atoms or molecules. Used for meteors.

- UF *meteors*
- GS celestial bodies
- .. **meteoroids**
- .. Aquarid meteoroids
- .. Arietid meteoroids
- .. bolides
- Cyrillid meteoroids
- .. Draconid meteoroids
- .. Geminid meteoroids
- .. Leonid meteoroids
- .. micrometeoroids
- meteoroid dust clouds
- zodiacal dust
- .. Orionid meteoroids
- .. Perseid meteoroids
- .. Quadrantid meteoroids
- .. radio meteors
- .. sporadic meteoroids
- .. Taurid meteoroids

- RT asteroid belts
- asteroids
- bumpers
- Chiron
- comets
- cosmic dust
- Gaspra asteroid
- hypervelocity projectiles
- Ida asteroid
- interplanetary dust
- interplanetary medium
- meteor trails
- meteorites
- meteoroid hazards
- meteoroid showers
- micrometeorites
- natural satellites
- particle tracks
- Radiation Meteoroid spacecraft
- solar system
- space debris
- Tempel 2 comet
- Toro asteroid
- Toutatis asteroid
- Vesta asteroid

meteorological balloons

- GS expandable structures
- .. inflatable structures
- .. balloons
- **meteorological balloons**
- jimsphere balloons
- ROBIN balloons
- RT dropsondes
- high altitude balloons
- radiosondes
- rawinsondes
- rockoons
- skyhook balloons
- sounding
- superpressure balloons
- tethered balloons
- upper atmosphere

weather forecasting

meteorological charts

- UF *weather charts*
- weather maps*
- GS charts
- .. **meteorological charts**
- maps
- .. **meteorological charts**
- RT isobars (pressure)
- radar maps
- synoptic meteorology

meteorological flight

- RT aerial reconnaissance
- balloon flight
- ∞ flight
- ice reporting
- rocket flight
- SIRS B satellite
- sounding
- space flight
- weather forecasting

meteorological instruments

- GS measuring instruments
- .. **meteorological instruments**
- .. barometers
- .. cloud height indicators
- .. dropsondes
- .. radiometeorographs
- .. radiosondes
- ionosondes
- rawinsondes
- .. rain gages
- .. weather data recorders
- .. wind vanes
- RT anemometers
- balloon-borne instruments
- hot-film anemometers
- hot-wire anemometers
- humidity measurement
- hygrometers
- hypsonometers
- ∞ instruments
- light scattering meters
- meteorology
- nephanalysis
- precipitation measurement
- psychrometers
- recording instruments
- rocket-borne instruments
- SIRS B satellite
- sodar
- sound detecting and ranging
- sounding rockets
- transducers
- weather reconnaissance aircraft
- weather stations

meteorological parameters

- GS constraints
- .. **meteorological parameters**
- .. Brunt-Vaisala frequency
- RT aerology
- agroclimatology
- annual variations
- Atmospheric & Oceanographic Inform Sys
- Atmospheric Cloud Physics Lab (Spacelab)
- atmospheric pressure
- atmospheric temperature
- atmospheric turbulence
- aviation meteorology
- ceilings (meteorology)
- cloud cover
- cockpit weather information systems
- cold fronts
- equatorial atmosphere
- fronts (meteorology)
- hindcasting
- humidity
- isotherms
- moisture
- ocean data acquisitions systems

- oceanographic parameters
- precipitation (meteorology)
- storms (meteorology)
- teleconnections (meteorology)
- temperature inversions
- tropical meteorology
- warm fronts
- weather
- wind direction
- wind measurement
- wind velocity

meteorological probes
 USE **sondes**

meteorological radar

- UF *weather radar*
- GS radar
- .. **meteorological radar**
- RT precipitation measurement
- precipitation particle measurement
- pulse radar
- radar scanning
- radar tracking
- radio meteorology
- surveillance radar
- weather forecasting

meteorological research aircraft

- GS research vehicles
- .. research aircraft
- .. **meteorological research aircraft**
- RT ∞ aircraft
- data acquisition

meteorological rockets

USE **sounding rockets**

meteorological satellites

- GS artificial satellites
- .. **meteorological satellites**
- .. AEROS satellite
- .. Cosmos 144 satellite
- .. D-2 satellites
- .. DMSP satellites
- .. Elektron satellites
- Elektron 1 satellite
- Elektron 2 satellite
- Elektron 4 satellite
- .. EOLE satellites
- .. ESSA satellites
- ESSA 1 satellite
- ESSA 2 satellite
- ESSA 3 satellite
- ESSA 4 satellite
- ESSA 5 satellite
- ESSA 6 satellite
- ESSA 7 satellite
- ESSA 8 satellite
- ESSA 9 satellite
- .. Explorer 9 satellite
- .. Explorer 17 satellite
- .. Explorer 19 satellite
- .. GEOLE satellites
- .. GOES satellites
- GOES 1
- GOES 2
- GOES 3
- GOES 4
- GOES 5
- GOES 6
- GOES 7
- GOES 8
- GOES 9
- GOES 10
- .. METEOSAT satellite
- .. Nimbus satellites
- Nimbus 1 satellite
- Nimbus 2 satellite
- Nimbus 3 satellite
- Nimbus 4 satellite
- Nimbus 5 satellite
- Nimbus 6 satellite
- Nimbus 7 satellite
- .. NOAA satellites
- NOAA 2 satellite

meteorological services

. . . NOAA 3 satellite
 . . . NOAA 4 satellite
 . . . NOAA 5 satellite
 . . . NOAA 6 satellite
 . . . NOAA 7 satellite
 . . . NOAA 8 satellite
 . . . NOAA 9 satellite
 . . . NOAA 10 satellite
 . . . NOAA 11 satellite
 . . . NOAA 12 satellite
 . . . NOAA 14 satellite
 . . San Marco satellites
 . . . San Marco 1 satellite
 . . . San Marco 2 satellite
 . . . San Marco 3 satellite
 . . SECOGS (satellite)
 . . SIRS B satellite
 . . Sputnik 1 satellite
 . . Sputnik 2 satellite
 . . Sputnik 3 satellite
 . . SRET satellites
 . . . SRET 1 satellite
 . . . SRET 2 satellite
 . . Synchronous Earth Observatory satellite
 . . . SMS 1
 . . . SMS 2
 . . Synchronous Meteorological Satellite
 . . . SMS 1
 . . . SMS 2
 . . TIROS satellites
 . . . ITOS satellites
 ITOS 1
 ITOS 2
 ITOS 3
 ITOS 4
 . . . TIROS 1 satellite
 . . . TIROS 2 satellite
 . . . TIROS 3 satellite
 . . . TIROS 4 satellite
 . . . TIROS 5 satellite
 . . . TIROS 6 satellite
 . . . TIROS 7 satellite
 . . . TIROS 8 satellite
 . . . TIROS 9 satellite
 . . . TIROS 10 satellite
 . . . TIROS M
 . . . TIROS N series satellites
 NOAA 6 satellite
 . . TRMM satellite
 . . Vanguard 2 satellite

RT

AgRISTARS project
 ATS
 cloud photography
 geophysical satellites
 GOES 1
 GOES 2
 GOES 3
 GOES 4
 GOES 5
 infrared photography
 Japanese space program
 meteorology
 military spacecraft
 navigation satellites
 Nimbus project
 NOESS
 precipitation measurement
 satellite observation
 satellite sounding
 satellite television
 sounding rockets
 space probes
 TIROS project
 unmanned spacecraft
 Vanguard satellites
 weather forecasting
 weather stations

meteorological services

UF *World Weather Watch*
WWW (meteorology)
 GS services
 . **meteorological services**
 RT automatic weather stations
 aviation meteorology

flight conditions
 weather forecasting
 weather stations

meteorological solenoids

RT baroclinity
 vortices

meteorological stations

USE **weather stations**

meteorology

DEF The study dealing with the phenomena of the atmosphere especially as they relate to weather and climate. Used for atmospheric conditions.

UF *atmospheric conditions*

GS meteorology

. aerology
 . agrometeorology
 . Alpine meteorology
 . aviation meteorology
 . biometeorology
 . hydrometeorology
 . . marine meteorology
 . mesometeorology
 . micrometeorology
 . . microbursts (meteorology)
 . nuclear meteorology
 . planetary meteorology
 . polar meteorology
 . radio meteorology
 . synoptic meteorology
 . tropical meteorology
 . weather forecasting
 . . long range weather forecasting
 . . nowcasting
 . . numerical weather forecasting
 . . statistical weather forecasting

RT

acid rain
 acoustic sounding
 aeronomy
 agroclimatology
 air land interactions
 air masses
 annual variations
 anticyclones
 anvil clouds
 arc clouds
 ∞ atmospheres
 Atmospheric & Oceanographic Inform Sys
 atmospheric density
 atmospheric physics
 atmospheric turbulence
 baroclinic instability
 brightness temperature
 cap clouds
 ceilings (meteorology)
 cirrocumulus clouds
 cirrostratus clouds
 cirrus shields
 climate
 climatology
 cloud cover
 clouds (meteorology)
 cold fronts
 condensation nuclei
 convection
 convection clouds
 Coriolis effect
 cyclones
 DMSP satellites
 Earth cryosphere
 Earth sciences
 environmental engineering
 environmental monitoring
 fronts (meteorology)
 GARP Atlantic Tropical Experiment
 geology
 geophysics
 Global Atmospheric Research Program
 hailstorms
 humidity
 hurricanes
 hydroclimatology

hydrodynamic equations
 hydrography
 hydrology
 insolation
 isotherms
 mesoscale phenomena
 meteorological instruments
 meteorological satellites
 METEOSAT satellite
 method of characteristics
 moisture
 National Severe Storms Project
 nephalanalysis
 NOESS
 oceanography
 ∞ physical sciences
 precipitation (meteorology)
 ∞ science
 sea breeze
 seasons
 sodar
 sound detecting and ranging
 storms (meteorology)
 teleconnections (meteorology)
 temperature
 temperature inversions
 tropical regions
 tropical storms
 typhoons
 warm fronts
 weather
 wind (meteorology)
 wind measurement
 World Meteorological Organization
 zonal flow (meteorology)

meteors

USE **meteoroids**

METEOSAT satellite

GS artificial satellites
 . ESA satellites
 . . **METEOSAT satellite**
 . meteorological satellites
 . . **METEOSAT satellite**
 ESA spacecraft
 . ESA satellites
 . . **METEOSAT satellite**
 RT cloud cover
 cloud photography
 European Space Agency
 European space programs
 French satellites
 French space program
 infrared photography
 ISCCP Project
 meteorology
 satellite observation
 weather

meters

USE **measuring instruments**

methacrylate resins

USE **acrylic resins**

methamphetamine

GS amines
 . amphetamines
 . . **methamphetamine**
 drugs
 . **methamphetamine**

methanation

DEF The conversion of various organic compounds to produce methane.

GS chemical reactions

. **methanation**

RT biomass energy production
 coal gasification
 hydrocarbon fuels
 hydropropyrolisis

methane

GS organic compounds
 . hydrocarbons

- .. aliphatic hydrocarbons
 - ... alkanes
 - ... **methane**
- RT
 - bioconversion
 - chlorofluoromethane
 - coal derived gases
 - hydrocarbon fuels
 - hydrolysis
 - landfills
 - liquefied natural gas
 - natural gas
 - natural gas exploration
 - Neptune atmosphere
 - oil fields
 - petroleum products
 - solvent refined coal
 - synthane
 - Uranus atmosphere
- methanol*
 - USE **methyl alcohol**
- methenyl*
 - USE **methylidyne**
- methionine**
 - GS acids
 - . amino acids
 - .. **methionine**
 - organic compounds
 - . amino acids
 - .. **methionine**
- method of characteristics**
 - UF *characteristic method*
 - RT ∞ characteristics
 - compressible fluids
 - flow distribution
 - hyperbolic functions
 - meteorology
 - ∞ methodology
 - partial differential equations
 - plastic properties
 - Prandtl-Meyer expansion
 - steady flow
 - unsteady flow
- method of moments**
 - DEF A method of estimating the parameters of a distribution by relating the parameters to moments.
 - RT
 - distribution moments
 - integral equations
 - mathematical models
 - matrices (mathematics)
 - ∞ methodology
 - moment distribution
 - moments
 - numerical analysis
- ∞ **methodology**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *methods*
 - techniques*
 - RT
 - approximation
 - asymptotic methods
 - Biot method
 - boundary integral method
 - Bridgman method
 - cluster variation method
 - critical path method
 - Crocco method
 - Czochralski method
 - Debye-Scherrer method
 - Delphi method (forecasting)
 - digital techniques
 - embedded atom method
 - emergency breathing techniques
 - Encke method
 - energy methods
 - equilibrium methods
 - ethics
 - finite element method
 - finite volume method
 - Fujita method
- Galerkin method
- GERT
- Glimm method
- Halphen method
- Hartree-Fock-Slater method
- heuristic methods
- Hill method
- imaging techniques
- in vitro methods and tests
- in vivo methods and tests
- Jacobi matrix method
- Kjeldahl method
- Latin square method
- Laue method
- least squares method
- Lighthill method
- management methods
- matrix management
- matrix methods
- maximum entropy method
- Maxwell-Mohr method
- ∞ mechanism
 - method of characteristics
 - method of moments
 - Milne method
 - Milne-Thomson method
 - minimum entropy method
 - Moire effects
 - Monte Carlo method
 - multigrid methods
 - Newton-Raphson method
 - panel method (fluid dynamics)
 - particle in cell technique
 - pattern method (forecasting)
 - Percus method
 - Pohlhausen method
 - probe method (forecasting)
 - problem solving
 - profile method (forecasting)
 - Rayleigh-Ritz method
 - relaxation method (mathematics)
 - Ritz averaging method
 - ruler method
 - Runge-Kutta method
 - Schmidt method
 - Schwartz method
 - simplex method
 - spectral methods
 - steepest descent method
 - strain energy methods
 - traveling solvent method
 - Van Slyke method
 - von Zeipel method
 - vortex in cell technique
 - Wentzel-Kramer-Brillouin method
 - wing flow method tests
- methods*
 - USE **methodology**
 - procedures**
- methoxy systems**
 - RT alcohols
 - ∞ chemical compounds
 - indoles
 - organic chemistry
 - organic compounds
 - pyrroles
 - ∞ systems
- methyl alcohol**
 - UF *methanol*
 - GS hydroxyl compounds
 - . alcohols
 - .. **methyl alcohol**
 - RT Karl Fischer reagent
- methyl chloride**
 - GS drugs
 - . anesthetics
 - .. **methyl chloride**
 - RT chlorides
- methyl chlorosilanes**
 - GS hydrogen compounds
 - . hydrides
- .. silanes
 - ... **methyl chlorosilanes**
 - methyl compounds
 - . **methyl chlorosilanes**
 - silicon compounds
 - . silanes
 - .. **methyl chlorosilanes**
- methyl compounds**
 - GS **methyl compounds**
 - . acetonitrile
 - . methyl chlorosilanes
 - . methyl nitrate
 - . methyl polysiloxanes
 - RT ∞ chemical compounds
 - dimethyl compounds
 - organic compounds
 - trimethyl compounds
- methyl cyanide*
 - USE **acetonitrile**
- methyl nitrate**
 - GS alkyl compounds
 - . **methyl nitrate**
 - methyl compounds
 - . **methyl nitrate**
 - nitrogen compounds
 - . nitrates
 - .. **methyl nitrate**
- methyl polysiloxanes**
 - GS methyl compounds
 - . **methyl polysiloxanes**
 - silicon polymers
 - . silicones
 - .. polysiloxanes
 - ... **methyl polysiloxanes**
 - RT ∞ polymers
 - silicon compounds
- methylation**
 - GS chemical reactions
 - . **methylation**
 - RT alkylation
- methylene**
 - GS organic compounds
 - . hydrocarbons
 - .. **methylene**
 - RT dyes
 - staining
- methylene blue**
 - GS dyes
 - . **methylene blue**
 - organic compounds
 - . cyclic compounds
 - .. heterocyclic compounds
 - ... azines
 - ... **methylene blue**
 - pyrazines
 - . azines
 - .. **methylene blue**
 - RT chemical analysis
 - chemical indicators
 - ∞ indicators
 - staining
- methylene diamine**
 - GS amines
 - . **methylene diamine**
- methylhydrazine**
 - GS hydrazines
 - . **methylhydrazine**
 - .. monomethylhydrazines
 - RT dimethylhydrazines
- methylidyne**
 - (added June 1993)
 - UF *CH (methylidyne)*
 - methenyl*
 - GS organic compounds
 - . hydrocarbons
 - .. **methylidyne**

Metis

radicals
. **methylidyne**
RT ∞ aromatic compounds
carbon compounds
diatomic molecules
interstellar gas
interstellar matter
molecular clouds

Metis

(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 127,960 kilometers.
GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . **Metis**
RT Jupiter (planet)

metric conversion

USE **metrication**

metric photography

DEF The recording of events by means of photography (either singly or sequentially), together with appropriate metric coordinates to form the basis for accurate measurements.
GS imagery
. photography
. . **metric photography**

metric space

GS geometry
. topology
. . **metric space**
. . . Hilbert space
. . . . Sobolev space
RT Banach space
bimetric theories

metric system

USE **International System of Units**

metrication

DEF The conversion on an industry and/or nationwide basis of English units of measurement into the International System of Units, including engineering and manufacturing standards, tools and instruments, and all affected areas in the government and private sectors. Used for metric conversion.
UF *metric conversion*
RT ∞ conversion
International System of Units
metrology
standardization
units of measurement

metrology

DEF The science of dimensional measurement; sometimes includes the science of weighing.
RT International System of Units
∞ measurement
measuring instruments
metrication
standards
units of measurement

Metropolitan aircraft

USE **CV-440 aircraft**

metropolitan areas

USE **cities**

Mexican space program

(added March 1989)
GS programs
. space programs
. . **Mexican space program**
RT Mexico

Mexico

GS nations
. **Mexico**
RT Colorado River (North America)

Gulf of California (Mexico)
Gulf of Mexico
Imperial Valley (CA)
Lower California (Mexico)
Mexican space program
North America
Rio Grande (North America)
San Andreas Fault
Southern California

MGCO

USE **Mars Observer**

MGS (spacecraft)

(added March 1999)
USE **Mars Global Surveyor**

MH-262 aircraft

UF *Max Holste MH-262 aircraft*
Nord 262 aircraft
GS jet aircraft
. turboprop aircraft
. . **MH-262 aircraft**
light aircraft
. **MH-262 aircraft**
monoplanes
. **MH-262 aircraft**
Nord aircraft
. **MH-262 aircraft**
transport aircraft
. **MH-262 aircraft**
RT ∞ aircraft
cargo aircraft
passenger aircraft

mica

UF *fluoromica*
GS minerals
. **mica**
. . biotite
. . fluorophlogopite
. . muscovite
RT igneous rocks
vermiculite

micarta

GS composite materials
. polymer matrix composites
. . reinforced plastics
. . . **micarta**
plastics
. reinforced plastics
. . **micarta**
. synthetic resins
. . thermosetting resins
. . . phenolic resins
. . . . **micarta**
resins
. synthetic resins
. . thermosetting resins
. . . phenolic resins
. . . . **micarta**
RT fabrics
fiber composites
insulation
∞ polymers

mice

GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **mice**
. jerboas
. pocket mice
RT rats

micelles

(added June 2001)
DEF Electrically charged colloidal particles or ions consisting of oriented molecules; aggregates of a number of molecules held loosely together by secondary bonds.
GS molecular clusters
. **micelles**
RT agglomeration

aggregates
block copolymers
∞ clusters
colloids
flocculating
nanostructure (characteristics)
self assembly

Michael reaction

GS chemical reactions
. **Michael reaction**

Michaelis theory

RT ∞ theories

Michell theorem

GS theorems
. **Michell theorem**
RT stress analysis
structural analysis

Michelson interferometers

GS measuring instruments
. interferometers
. . **Michelson interferometers**
RT astrophysics
radio astronomy
spectrometers

Michigan

GS nations
. United States
. . **Michigan**
RT Pontiac (MI)
Saginaw Bay (MI)

microanalysis

GS chemical tests
. chemical analysis
. . **microanalysis**
RT electron microscopes
electron microscopy
electrophotometry
inductively coupled plasma mass spectrometry
mass spectrometers
∞ materials tests
neutron activation analysis
qualitative analysis
quantitative analysis
scanning electron microscopy
spectroscopic analysis
transmission electron microscopy
x ray analysis

microbalances

UF *microscales*
GS measuring instruments
. indicating instruments
. . weight indicators
. . . **microbalances**

microballoons

DEF Very small glass spheres (50 to 100 micrometers in diameter) used as targets in the laser fusion programs.
GS expandable structures
. inflatable structures
. . balloons
. . . **microballoons**
RT globules
lasers
spheres
targets

microbe

USE **microorganisms**

microbeams

GS beams (radiation)
. **microbeams**
RT collimation
crystallography

x ray analysis

microbiology

- GS **microbiology**
 - . bacteriology
- RT ∞ biology
 - culture techniques
 - gnotobiotics

microbursts (meteorology)

- SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
- DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radically from the impact point.
- GS meteorology
 - . micrometeorology
 - . . **microbursts (meteorology)**
 - storms
 - . storms (meteorology)
 - . . downbursts
 - . . . **microbursts (meteorology)**
- RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

*microcalorimeters*USE **calorimeters****microchannel plates**

- DEF An array of microchannels formed into plates and contained in a photomultiplier tube. Used for multichannel plates.
- UF *multichannel plates*
- RT channel multipliers
 - dynamic range
 - integrated circuits
 - microchannels
 - microwave equipment
 - photomultiplier tubes
- ∞ plates
 - thin films

microchannels

- RT frequencies
 - image converters
 - light amplifiers
 - microchannel plates
 - multi-anode microchannel arrays
 - night vision
 - optical equipment
 - photocathodes
 - ultraviolet radiation

*microcircuits*USE **microelectronics****microclimatology**

- GS climatology
 - . **microclimatology**
- RT agroclimatology
 - biometeorology
 - micrometeorology

microcomputers

- DEF Complete digital computers utilizing a microprocessor consisting of one or more integrated circuit chips as the central arithmetic and logic unit, and added chips to provide timing, program memory, random access memory interfaces for input and output signals and other functions. Some microcomputers consist of a single integrated-circuit chip.
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **microcomputers**
 - personal computers
 - IBM personal computers
 - Macintosh personal computers
- RT microprocessors

minicomputers

microcracks

- GS fractures (materials)
 - . cracks
 - . . **microcracks**
- RT crack closure
 - crack geometry
 - crack initiation
 - Elber equation
 - surface cracks

microcrystals

- GS crystals
 - . **microcrystals**
- RT crystallites
 - nanocrystals
 - spherulites

Microcystis

- GS plants (botany)
 - . algae
 - . . blue green algae
 - . . . **Microcystis**
 - . thermophilic plants
 - . . blue green algae
 - . . . **Microcystis**
- RT pollution

microdensitometers

- DEF Image analysis devices for resolving gray-level differences within or between features and for integrating the optical density across scanned images of irregularly shaped objects.
- GS measuring instruments
 - . densitometers
 - . . **microdensitometers**
 - . . optical measuring instruments
 - . . . **microdensitometers**
 - optical equipment
 - . optical measuring instruments
 - . . **microdensitometers**
- RT gravimeters
 - optical density
 - optical measurement
 - photometers

microelectromechanical systems

- (added October 1998)
- UF *MEMS (electromechanical devices)*
- GS electromechanical devices
 - . **microelectromechanical systems**
- RT electroactive polymers
 - microfluidic devices
 - microinstrumentation
 - microminiaturization
 - microminiaturized electronic devices
 - microsatellites
 - nanosatellites
 - nanotechnology
 - piezoelectric actuators
 - piezoelectric motors

microelectronics

- UF *microcircuits*
- GS **microelectronics**
 - . large scale integration
 - . medium scale integration
 - . very large scale integration
- RT beam leads
 - chips (electronics)
 - circuits
- ∞ electronics
 - encapsulated microcircuits
 - ion implantation
 - laser microscopy
 - microinstrumentation
 - microminiaturization
 - microminiaturized electronic devices
 - micromodules
 - molecular electronics
 - nanotechnology
 - photolithography
 - photomasks
 - photoresists
 - single event upsets

systems-on-a-chip
transistor circuits
wafers**microfibers**

- GS fibers
 - . **microfibers**

microfilms

- GS photographic film
 - . **microfilms**
- RT data retrieval
 - data storage
 - microphotographs
 - readers
 - reproduction (copying)

microfluidic devices

- (added October 2003)
- DEF Various devices that incorporate one or more micro-scale fluid channels where measurements, analysis, reactions, and separations occur. Often applied in systems for chemical analysis, biochemical sensing, and cytometry.
- RT fluidic circuits
 - fluidics
 - microelectromechanical systems
 - microinstrumentation

*micrography*USE **photomicrography****microgravity**

- DEF A condition in which the acceleration acting on a body is less than normal gravity, between 0 and 1 g. Used for low gravity, reduced gravity, and subgravity.
- UF *hypogravity*
 - low gravity*
 - reduced gravity*
 - subgravity*
- GS gravitation
 - . **microgravity**
- RT antigravity
 - bioprocessing
 - clinorotation
 - clinostats
 - drop towers
 - Earth orbital environments
 - fluid management
 - high gravity environments
 - low gravity manufacturing
 - low weight
 - Marangoni convection
 - ∞ microgravity applications
 - space processing
 - thermocapillary migration
 - weightlessness

∞ **microgravity applications**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bioprocessing
 - commerce lab
 - crystal growth
 - electrophoresis
 - low gravity manufacturing
 - microgravity
 - space commercialization
 - space manufacturing
 - space processing
 - surface tension driven convection
 - tissue engineering

microhardness

- UF *microindentation*
- GS mechanical properties
 - . hardness
 - . . **microhardness**
 - . . . Knoop hardness
- RT nanoindentation

microinstrumentation

Rockwell hardness

microindentation

USE **microhardness**

microinstrumentation

RT measuring instruments
microelectromechanical systems
microelectronics
microfluidic devices
microminiaturization

micromachining

(added September 1993)

DEF Performing various microscopic scale cutting or grinding operations on a piece of work.

GS machining

. **micromachining**

RT cutting
drilling
grinding (material removal)
grooving
laser cutting
laser drilling
metal cutting
metal working
micromechanics
microstructure
photoengraving
photomasks
photomechanical effect
surface finishing
V grooves

micromanometers

USE **manometers**

micromechanics

DEF The study of the constraints, the grain size, and their interrelationship in materials.

RT composite materials
crack propagation
fracture mechanics
mechanical properties
∞ mechanics (physics)
micromachining
microstructure
reinforcing fibers
stress concentration

micrometeorites

DEF Very small meteorites or meteoritic particles with a diameter in general less than a millimeter.

GS celestial bodies
. meteorites
. . **micrometeorites**

RT cosmic dust
hypervelocity projectiles
meteoroids
micrometeoroids
space weathering
tektites
zodiacal dust

Micrometeoroid Explorer satellites

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Micrometeoroid Explorer satellites**

micrometeoroids

UF *meteoritic dust*
micrometeors
GS celestial bodies
. meteoroids
. . **micrometeoroids**
. . . meteoroid dust clouds
. . . . zodiacal dust
RT cosmic dust
Explorer satellites
interplanetary dust
meteor trails
meteorites
micrometeorites

Poynting-Robertson effect
space debris
terrestrial dust belt
zodiacal light

micrometeorology

GS meteorology
. **micrometeorology**
. . microbursts (meteorology)
RT agrometeorology
mesometeorology
microclimatology
turbulence

micrometeors

USE **micrometeoroids**

micrometers

DEF Instruments for making precise linear measurements in which the displacements measured correspond to the travel of a screw of accurately known pitch.

GS measuring instruments

. **micrometers**

RT dimensional measurement
distance measuring equipment

micromillimeters

GS measuring instruments

. ammeters

. . **micromillimeters**

RT electric current
electrical measurement
galvanometers

microminiaturization

GS miniaturization

. **microminiaturization**

RT circuits
DTL integrated circuits
integrated circuits
large scale integration
linear integrated circuits
microelectromechanical systems
microelectronics
microinstrumentation
microminiaturized electronic devices
microsatellites
miniature electronic equipment
molecular electronics
nanosatellites
semiconductor devices
subminiaturization
thick films
thin films
TTL integrated circuits
wafers

microminiaturized electronic devices

GS **microminiaturized electronic devices**

. micromodules
microelectromechanical systems
microelectronics
microminiaturization
microsatellites
miniature electronic equipment
nanosatellites
systems-on-a-chip

micromodules

GS electronic equipment
. electronic modules
. . **micromodules**
microminiaturized electronic devices
. **micromodules**
modules
. electronic modules
. . **micromodules**
RT beam leads
∞ containers
electronic packaging
microelectronics
microprocessors
miniature electronic equipment

photolithography

micromotors

SN (EXCLUDES ROCKET ENGINES)

GS electromechanical devices

. electric motors

. . **micromotors**

motors

. electric motors

. . **micromotors**

RT piezoelectric motors

microorganisms

UF *microbe*

GS **microorganisms**

. bacteria
. . actinomycetes
. . archaeobacteria
. . Azotobacter
. . Bacillus
. . . stearothermophilus
. . Clostridium
. . . Clostridium botulinum
. . Escherichia
. . hydrogenomonas
. . Klebsiella
. . nitrobacter
. . pseudomonas
. . salmonella
. . sarcina
. . serrata
. . staphylococcus
. . streptococcus
. . streptomyces
. protozoa
. . amoeba
. . . pelomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
. Rotifera
. viruses
. . adenoviruses
. . bacteriophages
. . human immunodeficiency virus
RT aerobes
algae
anaerobes
animals
antibiotics
biofilms
gnatobiotics
invertebrates
mesophiles
microparticles
microspores
plants (botany)
pollution
psychrophiles
red tide
saprophytes
spores
virulence

microparticles

GS particles

. **microparticles**

RT condensation nuclei

ferrofluids
microorganisms
particulate reinforced composites

microphones

DEF Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals.

GS audio equipment

. **microphones**

transducers

. sound transducers

. . electroacoustic transducers

. . . **microphones**

RT hydrophones
interphones
magnetic transducers
monaural signals

transmitters
ultrasonic wave transducers

microphotographs
GS photographs
. **microphotographs**
RT data storage
microfilms
photography
photomasks

microphotometers
USE **photometers**

microplasmas
GS particles
. charged particles
. . . energetic particles
. . . . plasmas (physics)
. . . . **microplasmas**
. corpuscular radiation
. . . energetic particles
. . . . plasmas (physics)
. . . . **microplasmas**

micropolar fluids
GS incompressible fluids
. **micropolar fluids**
RT fluid mechanics
∞ fluids
microstructure

microporosity
GS porosity
. **microporosity**
RT mechanical properties
metallography
microstructure

microprocessors
GS computer components
. **microprocessors**
. . . Intel 8080 microprocessor
data processing equipment
. **microprocessors**
. . . Intel 8080 microprocessor
RT central processing units
chips (electronics)
computer design
computer storage devices
computer techniques
data processing
distributed processing
firmware
integrated circuits
large scale integration
microcomputers
micromodules
onboard data processing
transputers

microprogramming
GS computer programming
. **microprogramming**
RT firmware
∞ programming

micropulsations
GS pulses
. **micropulsations**
. . . geomagnetic micropulsations
RT variations

microrocket engines
GS engines
. rocket engines
. . . **microrocket engines**
. . . Orbit Maneuvering Engine (Space Shuttle)
RT electric rocket engines
electrostatic engines
microthrust
Vernier engines

microsatellites
(added October 1998)

DEF Satellites with a total mass between 10 and 100 kg often incorporating miniaturized electronic and mechanical systems.
UF *microsats*
GS artificial satellites
. **microsatellites**
RT microelectromechanical systems
microminiaturization
microminiaturized electronic devices
nanosatellites
satellite constellations
satellite design
small satellite technology
small scientific satellites

microsats
(added October 1998)
USE **microsatellites**

microscales
USE **microbalances**

microscopes
DEF Optical instruments capable of producing a magnified image of a small object.
GS **microscopes**
. acoustic microscopes
. electron microscopes
. ion microscopes
. optical microscopes
RT binoculars
eyepieces
metallography
microscopy
optical equipment
optical measuring instruments
photomicrography
ultraviolet microscopy

microscopy
DEF The science of the interpretive use and applications of microscopes.
GS **microscopy**
. atomic force microscopy
. electron microscopy
. . . scanning electron microscopy
. . . scanning tunneling microscopy
. . . transmission electron microscopy
. laser microscopy
. photoacoustic microscopy
. ultraviolet microscopy
RT cytometry
microscopes
microtomy
phase contrast
photomicrography
slides (microscopy)

microseisms
DEF Seismic pulses of short duration and low amplitude, often occurring previous to failure of a material or structures.
GS elastic waves
. seismic waves
. . . **microseisms**
RT crustal fractures
earthquake damage
earthquakes

microsonics
GS acoustics
. **microsonics**
RT elastic properties
piezoelectric crystals
sound fields
sound waves
surface acoustic wave devices
surface waves

microspores
GS spores
. **microspores**
RT fungi
microorganisms
plants (botany)

protozoa

microstrip antennas
DEF Antennas which consist of thin metallic conductors bonded to thin grounded dielectric substrates. The metallic conductors generally have some regular shape, for example, rectangular, circular, or elliptical. Feeding is often by means of a coaxial probe or a microstrip transmission line.
GS antennas
. **microstrip antennas**
microstrip devices
. **microstrip antennas**
RT antenna design
microstrip transmission lines
microwave antennas
patch antennas
waveguide antennas

microstrip devices
GS **microstrip devices**
. microstrip antennas
. microstrip transmission lines
RT circuits
integrated circuits
microwave circuits
microwave equipment

microstrip transmission lines
UF *flat coaxial transmission lines*
parallel strip lines
GS microstrip devices
. **microstrip transmission lines**
transmission lines
. strip transmission lines
. . . **microstrip transmission lines**
RT directional couplers
microstrip antennas
microwave transmission

microstructure
GS **microstructure**
. meteoritic microstructures
. nanostructure (characteristics)
. Widmanstätten structure
RT aging (materials)
aging (metallurgy)
antiphase boundaries
atomic force microscopy
austenite
bainite
Bauschinger effect
cast alloys
casting
castings
cementite
crystal structure
crystallography
ferrites
grain size
hardening (materials)
heat treatment
kink bands
lamella (metallurgy)
Laves phases
martensite
metallography
micromachining
micromechanics
micropolar fluids
microporosity
molecular dynamics
order-disorder transformations
Ostwald ripening
pearlite
photomicrography
precipitates
quenching (cooling)
shape memory alloys
silicon alloys
spherulites
∞ structures
thermomechanical treatment
vanadium alloys

microthrust

- work softening
- microthrust**
 - SN (NOT USED FOR GEOLOGICAL FAULTS, SEISMOLOGY, OR TECTONICS)
 - GS thrust
 - . low thrust
 - . . **microthrust**
 - RT jet thrust
 - . low thrust propulsion
 - . microrocket engines
 - . rocket thrust
 - . variable thrust
- microtomy**
 - RT medical equipment
 - . microscopy
- microtrons**
 - GS particle accelerators
 - . cyclotrons
 - . . **microtrons**
 - RT betatrons
 - . synchrotrons
- microvision landing aid**
 - GS display devices
 - . **microvision landing aid**
 - . landing aids
 - . **microvision landing aid**
- microwave absorption**
 - (added August 1991)
 - DEF The absorption of electromagnetic radiation in the microwave frequency range.
 - GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **microwave absorption**
 - RT absorptance
 - ∞ absorption
 - . absorption spectra
 - . absorptivity
 - . activation
 - . atmospheric attenuation
 - . microwave attenuation
 - . microwave frequencies
 - . microwave scattering
 - . microwave transmission
 - . microwaves
 - . radar
 - . radar absorbers
- microwave amplifiers**
 - GS amplifiers
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - . microwave equipment
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - RT interstellar masers
 - . masers
 - . parametric amplifiers
 - . transferred electron devices
- Microwave Anisotropy Probe**
 - (added November 2002)
 - DEF Spacecraft and related mission to map the relative cosmic microwave background temperature over the full sky with a high angular resolution and sensitivity. Launched June 2001.
 - UF *MAP (space probe)*
 - GS unmanned spacecraft
 - . space probes
 - . . **Microwave Anisotropy Probe**
 - RT cosmic microwave background
 - . radiation
 - . relic radiation
 - . spaceborne astronomy
- microwave antennas**
 - GS antennas
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - . microwave equipment
 - . **microwave antennas**
 - . . horn antennas
 - . . lens antennas
 - . . rectennas
 - . . spacetennas
 - . radio equipment
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - RT aircraft antennas
 - . antenna arrays
 - . backfire antennas
 - . directional antennas
 - . Gregorian antennas
 - . helical antennas
 - . microstrip antennas
 - . missile antennas
 - . multibeam antennas
 - . omnidirectional antennas
 - . parabolic antennas
 - . parabolic reflectors
 - . patch antennas
 - . radar antennas
 - . reflector antennas
 - . slot antennas
 - . waveguide antennas
- microwave attenuation**
 - GS attenuation
 - . **microwave attenuation**
 - . transmission
 - . . electromagnetic wave transmission
 - . . **microwave attenuation**
 - . . signal transmission
 - . . **microwave attenuation**
 - RT microwave absorption
 - . wave propagation
- microwave circuits**
 - GS circuits
 - . **microwave circuits**
 - RT microstrip devices
- microwave coupling**
 - GS coupling
 - . electromagnetic coupling
 - . . **microwave coupling**
 - RT antenna couplers
 - . coupling circuits
 - . cross coupling
 - . directional antennas
 - . directional couplers
 - . optical coupling
- microwave emission**
 - GS electromagnetic radiation
 - . radio waves
 - . . short wave radiation
 - . . . microwaves
 - **microwave emission**
 - . emission
 - . . **microwave emission**
 - RT cosmic noise
 - . diffraction radiation
 - . extraterrestrial radiation
 - . extraterrestrial radio waves
 - . linear polarization
 - . microwave signatures
 - . stellar radiation
- microwave equipment**
 - GS **microwave equipment**
 - . gyrators
 - . . microwave filters
 - . . microwave amplifiers
 - . . crossed field amplifiers
- . cyclotron resonance devices
- . . planotrons
- . microwave antennas
- . . horn antennas
- . . horn antennas
- . . lens antennas
- . . rectennas
- . . spacetennas
- . . spacetennas
- . microwave interferometers
- . microwave oscillators
- . . magnetrons
- . . . nigotrons
- . microwave probes
- . . microwave plasma probes
- . microwave radiometers
- . . Advanced Microwave Sounding Unit
- . microwave scanning beam landing system
- . microwave tubes
- . . celescopes
- . cyclotron resonance devices
- . . klystrons
- . . magnetrons
- . . . nigotrons
- . . planotrons
- . . traveling wave tubes
- . . . backward wave tubes
- helitrons
- carcinotrons
- . thyratrons
- RT gas discharge tubes
- . microchannel plates
- . microstrip devices
- microwave filters**
 - GS electromagnetic wave filters
 - . electric filters
 - . . **microwave filters**
 - . microwave equipment
 - . . gyrators
 - . . **microwave filters**
 - RT bandpass filters
 - . bandstop filters
 - . digital filters
 - . FIR filters
 - . high pass filters
 - . low pass filters
 - . radar filters
 - . radio filters
 - . rectangular waveguides
 - . tunable filters
 - . waveguide filters
- microwave frequencies**
 - SN (1 TO 100 GHZ)
 - GS frequencies
 - . radio frequencies
 - . . **microwave frequencies**
 - . . . C band
 - . . . extremely high frequencies
 - . . . P band
 - . . . superhigh frequencies
 - RT acoustic microscopes
 - . centimeter waves
 - . microwave absorption
 - . microwaves
 - . passive L-band radiometers
 - . praeterasonic devices
- microwave holography**
 - GS imagery
 - . photography
 - . . holography
 - . . . **microwave holography**
 - RT imaging techniques
 - . microwaves
 - . wave front reconstruction
- microwave imagery**
 - GS imagery
 - . **microwave imagery**
 - RT radarscopes
 - . synthetic aperture radar

- x ray imagery
- microwave interferometers**
 - GS measuring instruments
 - . interferometers
 - . . **microwave interferometers**
 - microwave equipment
 - . **microwave interferometers**
 - RT Fabry-Perot interferometers
 - plasma diagnostics
- microwave landing systems**
 - DEF A precision instrument approach landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment.
 - GS landing aids
 - . **microwave landing systems**
 - . . microwave scanning beam landing system
 - RT air traffic control
 - aircraft landing
 - aircraft safety
 - approach control
 - automated en route ATC
 - automatic landing control
 - ∞ systems
- microwave oscillators**
 - GS microwave equipment
 - . **microwave oscillators**
 - . . magnetrons
 - . . . nigotrons
 - oscillators
 - . **microwave oscillators**
 - . . magnetrons
 - . . . nigotrons
 - RT backward wave tubes
 - Barritt diodes
 - diffraction radiation
 - gas discharge tubes
 - klystrons
 - microwave tubes
 - superconducting cavity resonators
 - transferred electron devices
 - traveling wave tubes
 - vacuum tube oscillators
 - voltage controlled oscillators
- microwave photography**
 - GS imagery
 - . photography
 - . . **microwave photography**
 - RT radar data
 - radar photography
 - radarscopes
- microwave plasma probes**
 - GS measuring instruments
 - . microwave probes
 - . . **microwave plasma probes**
 - microwave equipment
 - . microwave probes
 - . . **microwave plasma probes**
 - RT electron probes
 - plasma flux measurement
 - plasmaguides
 - plasmas (physics)
 - resonance probes
- microwave power beaming**
 - (added November 1989)
 - UF power transmission (microwave)
 - GS power beaming
 - . **microwave power beaming**
 - RT laser power beaming
 - microwave transmission
 - satellite power transmission
 - spacecraft power supplies
- microwave probes**
 - GS measuring instruments
 - . **microwave probes**
 - . . microwave plasma probes
 - microwave equipment
 - . **microwave probes**
- . . microwave plasma probes
- RT radio frequency impedance probes
- microwave radiation*
- USE **microwaves**
- microwave radiometers**
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - **microwave radiometers**
 - Advanced Microwave Sounding Unit
 - microwave equipment
 - . **microwave radiometers**
 - . . Advanced Microwave Sounding Unit
- microwave reflectometers**
 - GS measuring instruments
 - . optical measuring instruments
 - . . reflectometers
 - . . . **microwave reflectometers**
 - optical equipment
 - . optical measuring instruments
 - . . reflectometers
 - . . . **microwave reflectometers**
 - RT kinematics
- microwave resonance**
 - GS resonance
 - . **microwave resonance**
 - RT cavity resonators
 - harmonic analysis
 - nonresonance
- microwave scanning beam landing system**
 - DEF Primary position sensor of Space Shuttle orbiter's navigation system during the autoland phase of the flight. Used for MSBLS.
 - UF *MSBLS*
 - GS landing aids
 - . microwave landing systems
 - . . **microwave scanning beam landing system**
 - microwave equipment
 - . **microwave scanning beam landing system**
 - navigation aids
 - . **microwave scanning beam landing system**
 - RT approach indicators
 - Space Shuttle orbiters
 - ∞ systems
- microwave scattering**
 - GS scattering
 - . radio scattering
 - . . **microwave scattering**
 - wave scattering
 - . . electromagnetic scattering
 - . . . **microwave scattering**
 - RT atmospheric scattering
 - microwave absorption
 - microwave signatures
 - scatterometers
 - Sunyaev-Zeldovich effect
- microwave sensors**
 - GS measuring instruments
 - . **microwave sensors**
 - . . Advanced Microwave Sounding Unit
 - RT ∞ instruments
 - radar receivers
 - ∞ sensors
 - signal detectors
 - synthetic aperture radar
- microwave signatures**
 - (added September 1988)
 - GS signatures
 - . spectral signatures
 - . . **microwave signatures**
 - RT backscattering
- microwave emission
- microwave scattering
- microwaves
- radar signatures
- signature analysis
- microwave sounding**
 - GS sounding
 - . **microwave sounding**
 - RT Advanced Microwave Sounding Unit
 - imagery
 - microwaves
 - NOAA 12 satellite
 - rocket sounding
- microwave spectra**
 - UF *interstellar microwave spectra*
 - GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . radio spectra
 - **microwave spectra**
 - RT absorption spectra
 - infrared spectra
 - molecular rotation
 - molecular spectra
 - molecular spectroscopy
- microwave spectrometers**
 - GS measuring instruments
 - . spectrometers
 - . . **microwave spectrometers**
- microwave switching**
 - GS switching
 - . **microwave switching**
 - RT ferroelectricity
 - gyrators
 - packet switching
 - phase shift
 - switching circuits
 - waveguides
- microwave transmission**
 - GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **microwave transmission**
 - signal transmission
 - . . radio transmission
 - . . . **microwave transmission**
 - RT ACTS
 - circular waveguides
 - dielectric waveguides
 - domestic satellite communications systems
 - downlinking
 - Fleet Satellite Communication System
 - frequency reuse
 - laser power beaming
 - microstrip transmission lines
 - microwave absorption
 - microwave power beaming
 - power beaming
 - satellite solar energy conversion
 - satellite solar power stations
 - spacetennas
 - teletypewriter systems
 - uplinking
 - VSAT (network)
 - wave propagation
 - waveguides
- microwave tubes**
 - GS electron tubes
 - . vacuum tubes
 - . . **microwave tubes**
 - . . . telescopes
 - . . . cyclotron resonance devices
 - . . . klystrons
 - . . . magnetrons
 - nigotrons
 - . . . planotrons
 - . . . traveling wave tubes
 - backward wave tubes
 - helitrons

microwaves

- carcinotrons
- microwave equipment
- . **microwave tubes**
- celestrosopes
- cyclotron resonance devices
- klystrons
- magnetrons
- nigotrons
- planotrons
- traveling wave tubes
- backward wave tubes
- helitrons
- carcinotrons
- RT diffraction radiation
- gas discharge tubes
- microwave oscillators
- oscillators
- photomultiplier tubes
- phototubes
- triodes
- ∞ tubes

microwaves

DEF Of, or pertaining to, radiation in the microwave region. Used for microwave radiation.

UF *microwave radiation*

GS electromagnetic radiation

. radio waves

. . short wave radiation

. . . . **microwaves**

. . . . centimeter waves

. . . . cosmic microwave background radiation

. . . . decimeter waves

. . . . microwave emission

. . . . millimeter waves

RT cosmic noise

diffraction radiation

electromagnetic noise

extraterrestrial radio waves

infrared radiation

microwave absorption

microwave frequencies

microwave holography

microwave signatures

microwave sounding

∞ radiation

satellite solar energy conversion

satellite solar power stations

scatterometers

submillimeter waves

whistlers

microweighing

USE **weight measurement**

microyield strength

DEF Stress at which a microstructure (single crystal, for example) exhibits a specified deviation in its stress-strain relationship.

GS mechanical properties

. yield strength

. . **microyield strength**

RT elastic properties

∞ strength

stresses

yield point

micturition

USE **urination**

midair collisions

GS collisions

. **midair collisions**

. . bird-aircraft collisions

RT air traffic control

aircraft accidents

aircraft hazards

aircraft safety

Beacon Collision Avoidance System

collision avoidance

crashes

flight hazards

flight safety

pilot error

threat evaluation

RT Atlas Agena B launch vehicle

midaltitude

DEF The average of many measurements of altitudes as with satellite instruments for the compiling of planetary maps.

GS altitude

. **midaltitude**

RT flight altitude

high altitude

low altitude

Midas 2 satellite

GS artificial satellites

. Midas satellites

. . **Midas 2 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 2 satellite**

Midas 3 satellite

GS artificial satellites

. Midas satellites

. . **Midas 3 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 3 satellite**

Midas 4 satellite

GS artificial satellites

. Midas satellites

. . **Midas 4 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 4 satellite**

Midas 5 satellite

GS artificial satellites

. Midas satellites

. . **Midas 5 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 5 satellite**

Midas 6 satellite

GS artificial satellites

. Midas satellites

. . **Midas 6 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 6 satellite**

Midas 7 satellite

GS artificial satellites

. Midas satellites

. . **Midas 7 satellite**

military spacecraft

. reconnaissance spacecraft

. . Midas satellites

. . . **Midas 7 satellite**

Midas satellites

GS artificial satellites

. **Midas satellites**

. . Midas 2 satellite

. . Midas 3 satellite

. . Midas 4 satellite

. . Midas 5 satellite

. . Midas 6 satellite

. . Midas 7 satellite

military spacecraft

. reconnaissance spacecraft

. . **Midas satellites**

. . . Midas 2 satellite

. . . Midas 3 satellite

. . . Midas 4 satellite

. . . Midas 5 satellite

. . . Midas 6 satellite

. . . Midas 7 satellite

midcourse guidance

GS guidance (motion)

. **midcourse guidance**

RT command guidance

inertial guidance

injection guidance

rendezvous guidance

spacecraft guidance

terminal guidance

transearth injection

translunar injection

midcourse trajectories

GS trajectories

. **midcourse trajectories**

RT ascent trajectories

ballistic trajectories

coasting flight

descent trajectories

parabolic flight

middle atmosphere

DEF The portion of the Earth's atmosphere extending from the troposphere to 100 kilometers.

GS Earth atmosphere

. **middle atmosphere**

. . mesosphere

. . . mesopause

. . . stratosphere

. . . ozonosphere

. . . stratopause

RT air

air pollution

∞ atmospheres

atmospheric chemistry

atmospheric circulation

atmospheric composition

chemosphere

climatology

equatorial atmosphere

free atmosphere

heterosphere

homosphere

lower atmosphere

midlatitude atmosphere

tropopause

upper atmosphere

zonal flow (meteorology)

middle ear

GS anatomy

. sense organs

. . ear

. . . **middle ear**

RT semicircular canals

middle ear pressure

GS pressure

. **middle ear pressure**

RT ear pressure test

eardrums

Middle East

(added December 1995)

GS regions

. **Middle East**

RT Africa

Asia

Europe

midlatitude atmosphere

GS Earth atmosphere

. **midlatitude atmosphere**

environments

. **midlatitude atmosphere**

RT Earth ionosphere

middle atmosphere

sporadic E layer

stations

reconnaissance aircraft

*midlatitudes*USE **temperate regions****mid-ocean ridges***(added July 1992)*

DEF Continuous, seismic, median mountain ranges extending through the North and South Atlantic Oceans, the Indian Ocean and the South Pacific Ocean. They are broad fractured swells with a central rift valley and usually rugged topography. They are 1-3 km in elevation, about 1500 km in width, and over 84,000 km in length. According to the hypothesis of sea floor spreading, the mid-ocean ridges are the source of crustal material.

UF *mid-oceanic ridges*

RT Atlantic Ocean
geological faults
Indian Ocean
ocean bottom
oceanography
Pacific Ocean

∞ ridges

sea floor spreading
seamounts
seismology

*mid-oceanic ridges*USE **mid-ocean ridges****Mie scattering**

DEF Any scattering produced by spherical particles without special regard to comparative size of radiation wavelength and particle diameter. Used for Mie theory.

UF *Mie theory*

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **Mie scattering**
. . . . Rayleigh scattering

*Mie theory*USE **Mie scattering****MiG aircraft**

DEF Any of a series of Soviet fighter aircraft, fighter-bombers, interceptors, and air supremacy aircraft, designed by Mikoyan.

GS attack aircraft
. fighter aircraft
. . **MiG aircraft**
single engine aircraft
. **MiG aircraft**
supersonic aircraft
. **MiG aircraft**

RT ∞ aircraft

migration

RT behavior
phenology
waterfowl

Mil aircraft

RT ∞ aircraft

*Milankovitch theory*USE **climatology****military air facilities**

UF *aircraft bases*
RT air traffic control
∞ aircraft
aircraft carriers
airports
∞ facilities
∞ fields
hangars
heliports
landing aids
landing mats
navigation aids

∞ **military aircraft**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT A-37 aircraft
AH-1G helicopter
AH-1S helicopter
AH-1W helicopter
AH-63 helicopter
AH-64 helicopter
∞ aircraft
aircraft carriers
aircraft survivability
airships
Alpha jet aircraft
antisubmarine warfare aircraft
armed forces
armed forces (foreign)
armed forces (United States)
attack aircraft
attacking (assaulting)
AWACS aircraft
B-1 aircraft
B-2 aircraft
bomber aircraft
C-1A aircraft
cargo aircraft
CH-62 helicopter
CL-600 challenger aircraft
drone aircraft
drone vehicles
E-2 aircraft
E-3A aircraft
E-4A aircraft
fighter aircraft
Firebee 2 target drone aircraft
FV-12A aircraft
gliders
ground effect machines
H-60 Helicopter
Harrier aircraft
helicopters
Jaguar aircraft
jet aircraft
light aircraft
∞ military aviation
military helicopters
MRCA aircraft
nuclear propelled aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
research aircraft
rotary wing aircraft
S-3 aircraft
short takeoff aircraft
SR-71 aircraft
submersible aircraft
tailless aircraft
tanker aircraft
target drone aircraft
training aircraft
transport aircraft
utility aircraft
V-22 aircraft
V/STOL aircraft
vertical takeoff aircraft
weapon systems
X-45 aircraft
YC-14 aircraft
YF-12 aircraft

∞ **military aviation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ aeronautics
air law
armed forces
aviation meteorology
bomber aircraft
fighter aircraft
∞ military aircraft

military compact reactors

UF *MCF reactors*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **military compact reactors**
. nuclear research and test reactors
. . **military compact reactors**

military helicopters

GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **military helicopters**
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft
RT ∞ aircraft
attack aircraft
EH-101 helicopter
light helicopters
∞ military aircraft
reconnaissance aircraft
terrain following

military operations

GS **military operations**
. combat
. . electronic warfare
RT deployment
tactics
tanks (combat vehicles)

*military psychiatry*USE **military psychology****military psychology**

UF *military psychiatry*
GS psychology
. **military psychology**
RT aviation psychology
psychiatry
psychological effects
psychological tests

military spacecraft

- psychometrics
- space psychology
- military spacecraft**
 - GS **military spacecraft**
 - . DMSP satellites
 - . reconnaissance spacecraft
 - . . . Inspector satellite
 - . . . Midas satellites
 - Midas 2 satellite
 - Midas 3 satellite
 - Midas 4 satellite
 - Midas 5 satellite
 - Midas 6 satellite
 - Midas 7 satellite
 - . . . photo reconnaissance spacecraft
 - . . . Samos
 - . . . Vela satellites
 - RT aerospace planes
 - armed forces
 - artificial satellites
 - Columbus space station
 - evasive satellites
 - manned spacecraft
 - meteorological satellites
 - ∞ military vehicles
 - navigation satellites
 - recoverable spacecraft
 - rendezvous spacecraft
 - satellite networks
 - space stations
 - space surveillance (spaceborne)
 - ∞ spacecraft
 - synchronous satellites
 - unmanned spacecraft
 - weapon systems
- military technology**
 - GS technologies
 - . **military technology**
 - RT antimissile defense
 - antiradiation missiles
 - antisubmarine warfare
 - armed forces (foreign)
 - armed forces (United States)
 - Army-Navy instrumentation program
 - AWACS aircraft
 - Ballistic Missile Early Warning System
 - defense communications system (DCS)
 - defense industry
 - defense program
 - deployment
 - Fleet Satellite Communication System
 - interservice data exchange program
 - laser weapons
 - logistics over the shore (LOTS)
 - carrier
 - missile defense
 - optical countermeasures
 - radar homing missiles
 - Safeguard system
 - tactics
 - weapons
 - weapons delivery
 - weapons industry
- ∞ **military vehicles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT aeroquatic vehicles
 - aircraft carriers
 - ambulances
 - amphibious vehicles
 - armed forces
 - armed forces (foreign)
 - armed forces (United States)
 - automobiles
 - boats
 - military spacecraft
 - recovery vehicles
 - research vehicles
 - ships
 - submarines
 - tanks (combat vehicles)
 - trucks

- underwater vehicles
- ∞ vehicles
- water vehicles

milk

- RT beverages
- ∞ food

Milky Way Galaxy

- DEF The galaxy to which the sun belongs.
- GS celestial bodies
 - . galaxies
 - . . . spiral galaxies
 - . . . **Milky Way Galaxy**
- RT galactic bulge
- local group (astronomy)
- massive compact halo objects
- Orion nebula
- radio sources (astronomy)
- solar neighborhood
- stars

millet

- GS farm crops
 - . grains (food)
 - . . . **millet**
 - . . . plants (botany)
 - . . . **millet**
- RT Earth resources
- flour (food)
- ∞ food
- grasses

millimeter waves

- GS electromagnetic radiation
 - . radio waves
 - . . . short wave radiation
 - microwaves
 - **millimeter waves**
- RT beam plasma amplifiers
- C band
- CN emission
- cyclotron resonance devices
- decimeter waves
- electromagnetic noise
- extraterrestrial radio waves
- extremely high frequencies
- frequencies
- solar radio emission
- submillimeter waves
- wavelengths

∞ milling

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT comminution
- compounding

milling (machining)

- GS cutting
 - . **milling (machining)**
 - . machining
 - . . **milling (machining)**
- RT chemical machining
- grooving
- metal cutting
- planing

milling (mixing)

- USE **compounding**

milling machines

- GS tools
 - . machine tools
 - . . **milling machines**
- RT grinding machines
- ∞ machinery
- shapers

millivoltmeters

- GS measuring instruments
 - . voltmeters
 - . . **millivoltmeters**

- RT galvanometers

Mills ratio

- GS ratios
 - . **Mills ratio**
- RT failure
- failure analysis
- life (durability)
- mortality
- probability density functions
- statistical analysis

Milne method

- GS analysis (mathematics)
 - . numerical analysis
 - . . . approximation
 - . . . **Milne method**
- RT differential equations
- ∞ methodology

Milne-Thomson method

- RT incompressible flow
- ∞ methodology
- Navier-Stokes equation
- viscous flow

MIM (semiconductors)

- UF *metal-insulator-metal semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . . semiconductor devices
 - . . . **MIM (semiconductors)**
 - . . . semiconductors (materials)
 - . **MIM (semiconductors)**
- RT SIS (semiconductors)

MIM diodes

- DEF Junction diodes each consisting of an insulating layer sandwiched between two metallic surface layers and exhibiting a negative differential resistance in its V-I characteristics conceivably because of stimulated inelastic tunneling of electrons. Used for metal-insulator-metal diodes.
- UF *metal-insulator-metal diodes*
- GS electronic equipment
 - . diodes
 - . . . semiconductor diodes
 - junction diodes
 - **MIM diodes**
 - solid state devices
 - semiconductor devices
 - junction diodes
 - **MIM diodes**
- RT electron tunneling
- MSM (semiconductors)
- negative resistance devices
- semiconductor diodes
- tunnel diodes

Mimas

- DEF A satellite of Saturn orbiting at a mean distance of 186,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . . icy satellites
 - . . . **Mimas**
 - . . . Saturn satellites
 - . . . **Mimas**
- RT Saturn (planet)

MIMD (computers)

- DEF A type of parallel processor that is essentially two or more individual computers with facilities for interaction and work sharing. Used for multiple instruction multiple data stream.
- UF *multiple instruction multiple data stream*
- GS data processing equipment
 - . computers
 - . . . digital computers
 - parallel computers
 - **MIMD (computers)**
- RT architecture (computers)
- computer design

computer programming
concurrent processing
interprocessor communication
operating systems (computers)
parallel processing (computers)
SIMD (computers)

MIMO (control systems)

(added January 1991)

UF *multiple input multiple output*

RT ∞ control

control stability
control systems design
control theory
feedback control
∞ systems
systems stability

Mindlin plate theory

(added April 1998)

USE **Mindlin plates**

Mindlin plates

(added April 1998)

UF *Mindlin plate theory*
Reissner-Mindlin plates

GS structural members
. plates (structural members)

. . **Mindlin plates**

RT dynamic structural analysis
finite element method
free vibration
plate theory
Reissner theory
shear strain
structural analysis
structural vibration
thick plates

mine detectors

GS warning systems
. **mine detectors**

RT ∞ detectors
warning

Miner rule

USE **Palmgren-Miner rule**

mineral deposits

RT contacts (geology)
dredging
Earth resources
excavation
geology
lunar mining
mineralogy
minerals
mines (excavations)
mining
reserves
strip mining
underwater resources
veins (petrology)

mineral exploration

GS exploration
. **mineral exploration**

RT anthracite
excavation
minerals
mines (excavations)
mining

mineral metabolism

GS metabolism
. **mineral metabolism**

RT body fluids
caloric requirements
endocrine systems
secretions

mineral oils

GS oils
. **mineral oils**

RT lubricating oils

mineralogy

RT chondrule
crystallography
geochemistry
geology
mineral deposits
minerals
petrogenesis
petrology
∞ physical sciences
siderophile elements

minerals

DEF Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties.

UF *apatites*

ores

GS **minerals**

. akermanite
. amphiboles
. anatase
. aragonite
. asbestos
. barite
. bastnasite
. beryl
. . alexandrite
. bloedite
. brucite
. calcite
. chromites
. cohenite
. cordierite
. cryolite
. dawsonite
. dolomite (mineral)
. euxenite
. fayalite
. feldspars
. fluorite
. fluorspar
. garnets
. . gadolinium-gallium garnet
. . yttrium-aluminum garnet
. . yttrium-iron garnet
. gehlenite
. graphite
. . pyrolytic graphite
. gypsum
. hexahedrite
. illite
. ilmenite
. iron ores
. . hematite
. kamacite
. kaolinite
. kreek
. limonite
. magnetite
. merwinite
. mica
. . biotite
. . fluorophlogopite
. . muscovite
. monticellite
. montmorillonite
. nepheline
. nephelite
. olivine
. . forsterite
. perovskites
. proustite
. pyrites
. pyrophyllite
. pyroxenes
. . enstatite
. pyrrhotite
. . troilite
. quartz
. . coesite
. . stishovite
. scheelite
. schreibersite

. serpentine
. siderites
. spinel
. spodumene
. talc
. tourmaline
. vermiculite
. wurtzite
. zincblende

RT aluminum silicates

andesite
bauxite
beneficiation
biogeochemistry
bone mineral content
boreholes
calcium silicates
crystallites
diomite
dunite
Earth resources
felsite
fluorosilicates
geology
igneous rocks
impact melts
lava
limestone
lunar soil
mineral deposits
mineral exploration
mineralogy
monazite sands
mullites
∞ nutrients
obsidian
potassium silicates
rocks
rutile
shales
siderophile elements
silicates
sodium silicates
soils
underground acoustics
veins (petrology)
zeolites

∞ **mines**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT mines (excavations)
mines (ordnance)

mines (excavations)

UF *quarries*
RT core sampling
drainage
exploitation
exploration
lunar mining
materials handling
mineral deposits
mineral exploration
∞ mines
mining
pits (excavations)
reserves
stratigraphy
strip mining
subsidence
underground explosions
underground storage
underground structures
waste disposal

mines (ordnance)

GS weapons
. **mines (ordnance)**
RT ammunition
∞ mines

miniature electronic equipment

GS electronic equipment
. **miniature electronic equipment**
RT circuits

miniaturization

- ∞ electric equipment
- ∞ electronic modules
- ∞ equipment
- microminiaturization
- microminiaturized electronic devices
- micromodules
- miniaturization
- molecular electronics
- printed circuits
- solid state devices
- subminiaturization
- thin films

miniaturization

- GS **miniaturization**
 - . microminiaturization
 - . subminiaturization
- RT circuits
- miniature electronic equipment
- printed circuits
- printed resistors
- transistors
- wafers

minicomputers

- GS data processing equipment
 - . computers
 - . . . digital computers
 - **minicomputers**
 - Nova computers
- RT airborne/spaceborne computers
- Atmospheric & Oceanographic Inform Sys
- microcomputers

minima

- GS analysis (mathematics)
 - . real variables
 - . . . extremum values
 - **minima**
 - Cramer-Rao bounds
- RT cusps (mathematics)
- differential calculus
- maxima
- operations research
- optimization
- penalty function
- range (extremes)
- steepest descent method

minimal surfaces

- DEF Surfaces for which the first variation of the area integral vanish.
- RT boundary value problems
- conformal mapping
- finite element method
- ∞ surfaces

minimax technique

- RT approximation
- curve fitting
- differential games
- game theory
- greedy algorithms
- operations research
- research
- saddle points

minimization

- USE **optimization**

minimum drag

- GS dynamic characteristics
 - . drag
 - . . . **minimum drag**
- RT aircraft performance
- friction drag

minimum entropy method

- DEF Application of entropy in statistical mechanics.
- GS entropy (statistics)
 - . **minimum entropy method**

- RT ∞ methodology

minimum variance orbit determination

- UF *MINIVAR orbit determination*
- GS classical mechanics
 - . space mechanics
 - . . orbital mechanics
 - . . . **minimum variance orbit determination**
- computation
 - . orbit calculation
 - . . **minimum variance orbit determination**
- orbit determination
 - . orbit calculation
 - . . **minimum variance orbit determination**
- RT statistical analysis

mining

- GS **mining**
 - . lunar mining
 - . strip mining
- RT anthracite
- clays
- dredging
- energy policy
- excavation
- exploitation
- mineral deposits
- mineral exploration
- mines (excavations)
- underground structures

minitrack optical tracking system

- USE **minitrack system**

minitrack system

- DEF A satellite tracking system consisting of a field of separate antennas and associated receiving equipment interconnected so as to form interferometers which track a transmitting beacon in the payload itself. Used for minitrack optical tracking system and MOTS (tracking system).
- UF *minitrack optical tracking system*
- MOTS (tracking system)*
- RT Global Tracking Network
- optical tracking
- satellite tracking
- space detection and tracking system
- space surveillance (ground based)
- spacecraft tracking
- STDN (network)
- ∞ systems
 - tracking networks
 - tracking stations
- ∞ tracks

MINIVAR orbit determination

- USE **minimum variance orbit determination**

Minkowski space

- RT Feynman diagrams
- light-cone expansion
- probability theory
- space-time functions

Minnesota

- GS nations
 - . United States
 - . . **Minnesota**

minor circle turning flight

- GS turning flight
 - . **minor circle turning flight**
- RT aircraft control

- maneuvers

Minor Planet 1221

- USE **Amor asteroid**

Minor Planet 2060

- USE **Chiron**

minor planets

- USE **asteroids**

minorities

- RT American Indians
- anthropology
- communities
- culture (social sciences)
- nations
- racess (anthropology)
- sociology
- voting

minority carriers

- GS charge carriers
 - . **minority carriers**
- RT additives
- bipolar transistors
- carrier injection
- carrier lifetime
- diffusion length
- electron mobility
- electrons
- holes (electron deficiencies)
- semiconductors (materials)

MINOS computer

- GS data processing equipment
 - . computers
 - . . **MINOS computer**

Minuteman ICBM

- UF *Minuteman missiles*
- GS missiles
 - . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . **Minuteman ICBM**
 - . surface to surface missiles
 - . . intercontinental ballistic missiles
 - . . . **Minuteman ICBM**
- RT M-55 engine
- M-56 engine
- M-57 engine
- multistage rocket vehicles
- solid propellant rocket engines
- space weapons

Minuteman missiles

- USE **Minuteman ICBM**

miosis

- RT eye (anatomy)
- ophthalmology
- tetrad theory
- vision

Mir space station

- DEF The Soviet space station launched February 20, 1986; its name means peace or world in Russian. It is a manned, modular, permanent, and multi-mission station.

- GS artificial satellites
 - . space stations
 - . . **Mir space station**
 - . manned spacecraft
 - . **Mir space station**
 - . Soviet spacecraft
 - . **Mir space station**
 - . stations
 - . space stations
 - . . **Mir space station**
- RT Granat satellite
- International Space Station
- Kvant modules
- Priroda module
- space bases
- space laboratories
- space station modules

spacecraft docking
U. S. S. R. space program

Mira Ceti star

USE **Omicron Ceti star**

Mira variables

DEF Long-period (80 to over 600 days) variable stars of red giant or red supergiant type, exemplified by the star Mira Ceti. Used for long period variables.

UF *long period variables*

GS celestial bodies

. stars
. . . late stars
. . . . cool stars
. . . . **Mira variables**
. Omicron Ceti star
. variable stars
. . . . **Mira variables**
. Omicron Ceti star

RT asymptotic giant branch stars
carbon stars
M stars
red giant stars
S stars
stellar oscillations
supergiant stars

Mirage 3 aircraft

UF *Dassault Mirage 3 aircraft*

GS attack aircraft

. fighter aircraft
. . . Mirage aircraft
. . . **Mirage 3 aircraft**

Dassault aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

jet aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

monoplanes

. Mirage aircraft

. . **Mirage 3 aircraft**

single engine aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

supersonic aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

tailless aircraft

. **Mirage 3 aircraft**

Mirage aircraft

DEF Collective term for a class of French attack aircraft.

GS attack aircraft

. fighter aircraft

. . **Mirage aircraft**

. . . Mirage 3 aircraft

Dassault aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

jet aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

monoplanes

. **Mirage aircraft**

. . Mirage 3 aircraft

single engine aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

supersonic aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

Miranda

DEF A satellite of Uranus orbiting at a mean distance of 124,000 kilometers.

GS celestial bodies

. natural satellites
. . Uranus satellites
. . . **Miranda**

RT Uranus (planet)

Miranda satellite

DEF This United Kingdom satellite was launched in 1974 into a sun synchronous, low Earth orbit. Prime objective of the mission was to experiment with satellite attitude control. It ceased to operate the same year it was launched.

GS artificial satellites

. scientific satellites
. . UK satellites
. . . **Miranda satellite**
. . . synchronous satellites
. . . **Miranda satellite**

RT attitude control

Miros system

UF *modulating retrodirective optics*

GS modulation

. light modulation

. . **Miros system**

RT optical measuring instruments

∞ systems

mirror fusion

DEF An open-ended configuration which traps low beta plasmas. It is realized by associating two identical magnetic mirrors having the same axis.

RT fusion reactors

magnetic mirrors
nuclear fusion
plasma control
tandem mirrors
thermal barriers (plasma control)

mirror point

RT magnetic mirrors

radiation belts

mirrors

GS **mirrors**

. celescopes
. etalons
. Fresnel reflectors
. honeycomb mirrors
. magnetic mirrors
. . tandem mirrors
. deformable mirrors
. paraboloid mirrors
. rotating mirrors
. segmented mirrors
. solettas

RT Bragg reflectors

Cassegrain optics
circumsolar telescopes
collimators
heliostats
optical equipment
optical materials
optical resonators
∞ optics
reflecting telescopes
reflectors
solar collectors
solar reflectors
specular reflection
telescopes
x ray optics

MIS (semiconductors)

UF *metal insulator semiconductors*

GS electronic equipment

. solid state devices
. . semiconductor devices
. . . **MIS (semiconductors)**
semiconductors (materials)
. **MIS (semiconductors)**

RT SIS (semiconductors)

misalignment

SN (EXCLUDES PSYCHOLOGICAL

DISORIENTATION)

UF *misorientation*

RT attitude (inclination)

disorientation
position (location)

miscmetal

(added June 1998)

DEF An alloy consisting of a natural mixture of rare-earth metals; used in electrode materials and hydrogen-storage alloys, as a general alloy addition, and in the production of some aluminum alloys and steels.

GS alloys

. rare earth alloys
. . **miscmetal**

RT alloying

aluminum alloys
cathodic coatings
cerium
desorption
electrode materials
intermetallics
steels

miscibility

USE **solubility**

miscibility gap

RT phase separation (materials)
solubility
space processing
temperature dependence

MISFETs

USE **field effect transistors**

mismatch (electrical)

DEF Condition in which the impedance of a source does not match or equal the impedance of the connected load or transmission line.

RT electrical measurement
impedance measurement
matching

misorientation

USE **misalignment**

miss distance

GS distance

. **miss distance**

RT accuracy

air to surface missiles

missile antennas

GS antennas

. **missile antennas**

missile components

. **missile antennas**

RT aircraft antennas

directional antennas

microwave antennas

missile bodies

UF *missile cases*

GS missile components

. **missile bodies**

RT airframes

axisymmetric bodies

blunt bodies

∞ bodies

cases (containers)

finned bodies

rocket engine cases

slender bodies

streamlined bodies

missile cases

USE **missile bodies**

missile components

GS **missile components**

. missile antennas

. missile bodies

RT ∞ components

engines

fins

nose cones

warheads

missile configurations

wings

missile configurations

GS **missile configurations**
. Sandpiper target missile

RT aerodynamic configurations
aircraft configurations
∞ configurations
hammerhead configuration
launch vehicle configurations
missiles
multiengine vehicles
Patriot missile
propulsion system configurations
rocket engines
rocket vehicles

missile construction
USE **missile structures**

missile control

UF *missile guidance*
missile stabilization

RT actuators
analog computers
attitude control
automatic control
automatic flight control
beam rider guidance
∞ control
directional control
flight control
ground based control
homing
laser guidance
lateral control
longitudinal control
missiles
proportional navigation
radar homing missiles
radio control
remote control
rocket engine control
spacecraft control
star trackers
thrust vector control
visual control

missile defense

SN (SYSTEMS DESIGNED TO PROTECT MISSILES AGAINST ATTACK)

RT antimissile defense
antimissile missiles
antiradiation missiles
ballistic missile decoys
∞ defense
defense industry
defense program
hardening (systems)
military technology
missiles
optical countermeasures
reentry decoys
Safeguard system
weapons delivery

missile design

RT aerospace engineering
aircraft design
computer aided design
∞ design
∞ development
engine design
flight tests
functional design specifications
Magnus effect
reliability
structural design
systems engineering

missile detection

GS detection
. **missile detection**

RT early warning systems
electronic warfare
identifying
target acquisition

target recognition

missile engine cases
USE **rocket engine cases**

missile guidance
USE **missile control**

missile launchers

GS launchers
. **missile launchers**
. . mobile missile launchers

RT ballistic missile submarines
catapults
ground support equipment
gun launchers
launch vehicles
launching
launching sites
missiles
rocket launchers
sea launching
weapon systems

missile ranges

SN (EXCLUDES DISTANCE OF MISSILE TRAVEL)

GS ranges (facilities)
. test ranges
. . **missile ranges**
test facilities
. test ranges
. . **missile ranges**

RT ballistic ranges
downrange
hypersonic test apparatus
missiles
range safety
reentry range

missile signatures

GS signatures
. **missile signatures**

RT detection
signature analysis
target recognition

missile silos

UF *silos (missile storage)*

RT buildings
launching sites
MX missile
∞ storage

∞ **missile simulators**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT computerized simulation
flight simulators
mathematical models
missiles
simulators
training simulators
wind tunnel models

missile stabilization
USE **missile control stabilization**

missile storage

RT ground support equipment
mobile missile launchers
propellant storage
∞ storage
underground storage

missile structures

UF *missile construction*

RT airframes
∞ structures
tail assemblies

missile systems

GS weapon systems
. **missile systems**
. . Nike X systems

. . Safeguard system
aerospace systems
RT beam rider guidance
mobile missile launchers
radar homing missiles
∞ systems

missile tests

RT captive tests
engine tests
flight tests
fuel tests
ground tests
missiles
prelaunch tests
propellant tests
stability tests
static tests
test firing
test vehicles
∞ tests
wind tunnel stability tests

missile tracking

GS tracking (position)
. **missile tracking**

RT infrared tracking
laser target designators
polystation doppler tracking system
range and range rate tracking
space detection and tracking system
spacecraft tracking
tracking networks
tracking stations

missile trajectories

GS trajectories
. **missile trajectories**

RT ascent trajectories
ballistic trajectories
Cobra Dane (radar)
descent trajectories
flight mechanics
flight paths
impact prediction
parabolic flight
reentry trajectories
spinning unguided rocket trajectory
underwater trajectories

missile vibration

GS vibration
. structural vibration
. . **missile vibration**

RT bending vibration
breathing vibration
flutter
linear vibration
random vibration
self induced vibration
supersonic flutter
torsional vibration
transonic flutter

missiles

DEF Any objects thrown, dropped, fired, launched, or otherwise projected with the purpose of striking a target.

GS **missiles**
. air slew missiles
. air to air missiles
. . Falcon missile
. . Matra missile
. . Sidewinder missiles
. . Sparrow missiles
. . . Sparrow 2 missile
. . . Sparrow 3 missile
. air to surface missiles
. . Bullpup missiles
. . Condor missile
. . Harpoon missile
. . Hound Dog missile
. . Maverick missiles
. . quail missile
. . Shrike missile
. . Antelope missile

- . antiaircraft missiles
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Falcon missile
- . . Mauler missile
- . . Nike-Ajax missile
- . . Nike-Hercules missile
- . . Redeye missile
- . . SIAM missiles
- . . Sidewinder missiles
- . . tartar missile
- . . terrier missile
- . antimissile missiles
- . . Mauler missile
- . . Nike-Zeus missile
- . . Spartan missile
- . . Sprint missile
- . antiradiation missiles
- . antiship missiles
- . ballistic missiles
- . . field army ballistic missiles
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Pershing missile
- . . Poseidon missiles
- . . short range ballistic missiles
- . . Skybolt missile
- . . Subroc missile
- . . V-2 missile
- . Blue Steel missile
- . Bumblebee project
- . Corvus missile
- . Osprey missile
- . precision guided projectiles
- . radar homing missiles
- . ramjet missiles
- . . Navaho missile
- . . supersonic low altitude missile
- . Sandpiper target missile
- . SS-11 missile
- . surface to air missiles
- . . Blue Goose missile
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Chaparral missile
- . . Hawk missile
- . . Mauler missile
- . . Nike missiles
- . . . Nike-Ajax missile
- . . . Nike-Hercules missile
- . . . Nike-Zeus missile
- . . Patriot missile
- . . Redeye missile
- . . Sprint missile
- . . Talos missile
- . . tartar missile
- . . terrier missile
- . surface to surface missiles
- . . antitank missiles
- . . . Shillelagh missiles
- . . . tow missiles
- . . Corporal missile
- . . cruise missiles
- . . Navaho missile
- . . Tomahawk missiles
- . . fleet ballistic missiles
- . . . Polaris A1 missile
- . . . Polaris A2 missile
- . . . Polaris A3 missile
- . . . Poseidon missiles

- . . . Subroc missile
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . Minuteman ICBM
- . . . MX missile
- . . Titan ICBM
- . . . Titan 1 ICBM
- . . . Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Lance missile
- . . Mace missiles
- . . Pershing missile
- . . Regulus missile
- . . sergeant missiles
- . . short range ballistic missiles
- . . supersonic low altitude missile
- . . V-1 missile
- . . underwater to surface missiles
- . . Subroc missile
- RT ammunition
- antimissile defense
- antiship warfare
- artillery
- ascent propulsion systems
- auxiliary propulsion
- bombs (ordnance)
- electromagnetic missiles
- flight test vehicles
- ∞ flight vehicles
- ground support equipment
- guidance (motion)
- homing devices
- hypersonic flight
- incendiary ammunition
- launch vehicles
- launching sites
- missile configurations
- missile control
- missile defense
- missile launchers
- missile ranges
- ∞ missile simulators
- missile tests
- multiengine vehicles
- Nike X systems
- nuclear weapons
- plasma sheaths
- propulsion
- reentry
- reentry vehicles
- rocket catapults
- rocket engines
- rocket propellants
- ∞ rockets
- ∞ SCRAM
- spacecraft launching
- spin stabilization
- stage separation
- supersonic combustion ramjet engines
- supersonic flight
- terminal ballistics
- test vehicles
- torpedoes
- trajectories
- transportation
- ∞ vehicles
- warheads
- weapon systems
- weapons
- ∞ winged vehicles

missing mass (astrophysics)

DEF A problem related to a cluster of galaxies in which the mass derived from the dynamical stability of its member galaxies, the dynamical mass, is substantially larger than the mass estimated by the mass-to-luminosity ratio of the

visible parts of the galaxies, the visible mass.

- GS cosmology
- . missing mass (astrophysics)
- mass
- . missing mass (astrophysics)
- RT astronomy
- astrophysics
- dark matter
- dynamic stability
- galactic clusters
- galactic halos
- galactic structure
- large-scale structure of the universe
- mass distribution
- mass to light ratios
- massive compact halo objects
- virial theorem
- weakly interacting massive particles

mission adaptive wings

- GS airfoils
- . wings
- . . mission adaptive wings
- RT adaptive control
- F-111 aircraft
- gust alleviators
- variable geometry structures
- variable sweep wings
- wing camber
- wing profiles

mission planning

- GS planning
- . mission planning
- RT budgeting
- commerce lab
- critical path method
- estimating
- forecasting
- management
- management planning
- ∞ missions
- observation scheduling
- ∞ operations
- operations research
- payload integration
- ∞ plans
- predictions
- prelaunch summaries
- programs
- project management
- scheduling
- Ulysses mission

Mission to Planet Earth

(added April 1995)

DEF A NASA initiated program that uses both space and ground based measurement systems to provide the scientific basis for understanding global change.

UF MTPE

GS programs

. NASA programs

. . Mission to Planet Earth

- RT climate change
- Earth Observing System (EOS)
- geophysics
- global warming
- ∞ missions
- remote sensing
- scientific visualization

∞ missions

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aborted missions
- asteroid missions
- Astro missions (STS)
- Cassini mission
- Cluster Mission
- Comet Rendezvous Asteroid Flyby Mission
- Earth-Venus trajectories
- expeditions
- flyby missions
- Galileo spacecraft

Mississippi

Grand Tours
Heat Capacity Mapping Mission
Landsat follow-on missions
long duration space flight
Mariner Jupiter-Saturn flyby
Mariner Jupiter-Uranus flyby
Mars missions
mission planning
Mission to Planet Earth
planning
programs
project planning
projects
Rosetta mission
SOHO Mission
Solar Maximum Mission
Solar Maximum Mission-A
space flight
space missions
Space Shuttle missions
targets
Ulysses mission
Voyager 1977 mission

Mississippi

GS nations
. United States
. . **Mississippi**
RT Gulf of Mexico

Mississippi Delta (LA)

GS landforms
. deltas
. . **Mississippi Delta (LA)**
RT Louisiana
rivers

Mississippi River (US)

GS rivers
. **Mississippi River (US)**
RT drainage patterns
Earth resources
floods
resources
river basins

Missouri

GS nations
. United States
. . **Missouri**
RT Missouri River (US)
St Louis-Kansas City Corridor (MO)

Missouri River (US)

GS rivers
. **Missouri River (US)**
RT Iowa
Kansas
Missouri
Montana
Nebraska
North Dakota
river basins
South Dakota
United States
valleys

Missouri River Basin (US)

GS landforms
. structural basins
. . river basins
. . . **Missouri River Basin (US)**
RT rivers
watersheds

mist

SN (ATMOSPHERIC WATER)
DEF Liquid, usually water in the form of particles suspended in the atmosphere at or near the surface of the Earth; small water droplets floating or falling, approaching the form of rain, and sometimes distinguished from fog as being more transparent or as having particles perceptibly moving downward.
GS particles
. **mist**

RT aerosols
dispersions
fog
fog dispersal
haze
haze detection
precipitation (meteorology)

mistuning (turbomachinery)

(added July 1991)
RT rotating disks
 ∞ rotor blades
rotor blades (turbomachinery)
rotors
tuning
turbomachine blades
vibration

mitochondria

GS organelles
. **mitochondria**
RT cells (biology)
cytology

mitosis

GS cyto genesis
. **mitosis**
RT cell division
cells (biology)
chromosomes
cytology
cytoplasm
mutations
physiology
reproduction (biology)

mitra

RT fungi
plants (botany)

MIUS

USE **Modular Integrated Utility System**

mixed crystals

GS crystals
. **mixed crystals**
RT powder metallurgy
sintering

mixed flow

USE **multiphase flow**

mixed oxides

DEF Mixture of oxides, particularly of radioactive metals.
GS chalcogenides
. oxides
. . metal oxides
. . . **mixed oxides**
. . . . BSCCO superconductors
. . . . YBCO superconductors
RT high temperature superconductors
nuclear fuels
plutonium oxides
strontium oxides
uranium oxides

mixers

SN (EXCLUDES MIXING CIRCUITS)
RT admixtures
aeration
aerosols
agitation
baffles
blowers
carburetors
coalescing
contactors
 ∞ diffusers
 ∞ dispersion
feeders
grinding mills
mixing
mixtures
paddles
plows

plungers
separators
shakers
sprayers
stirring
tumbling motion

mixing

GS **mixing**
. colloid ing
. compound ing
. dissolving
. homogenizing
. laminar mixing
. premixing
. signal mixing
. suspending (mixing)
. turbulent mixing
RT aeration
agitation
blowing
chokes
diffusion
dilution
grinding (comminution)
jet mixing flow
liquid injection
metal powder
mixers
mixing layers (fluids)
mixing ratios
mixtures
premixed flames
 ∞ separation
shaking
spraying
swirling
tangling
trapped vortices
turbulence
vortices

mixing circuits

GS circuits
. **mixing circuits**
RT frequency converters
frequency synthesizers
heterodyning
preamplifiers

mixing depth

USE **mixing height**

mixing height

DEF The heights of the layer through which the atmosphere is well mixed. The height will vary with diurnal, seasonal, and regional variations. Used for mixing depth.

UF *mixing depth*
RT air pollution
atmospheric circulation
convection
convection currents
vertical air currents
wind (meteorology)
zonal flow (meteorology)

mixing layers (fluids)

(added September 1988)
DEF Fluid layers in which multicomponent mixing occurs.
RT advection
atmospheric boundary layer
atmospheric stratification
boundary layers
convection
Ekman layer
jet mixing flow
laminar mixing
 ∞ layers
mixing
mixing length flow theory
shear layers
turbulent boundary layer
turbulent mixing

two fluid models

mixing length flow theory
 GS flow theory
 . mixing length flow theory
 kinetic theory
 . transport theory
 . . mixing length flow theory

RT mixing layers (fluids)
 shear flow

∞ theories
 turbulence models
 turbulent flow
 turbulent mixing
 vorticity transport hypothesis

mixing ratios
 (added September 1993)
 GS dimensionless numbers
 . mixing ratios
 ratios
 . mass ratios
 . . mixing ratios

RT atmospheric composition
 atmospheric moisture
 gas mixtures
 gaseous diffusion
 humidity
 mixing
 moisture content
 water vapor

mixtures
 UF blends
 GS mixtures
 . admixtures
 . binary mixtures
 . . binary fluids
 . . eutectics
 . . . eutectic alloys
 . dispersions
 . . colloids
 . . . aerosols
 fog
 . . . colloidal propellants
 . . emulsions
 . . . photographic emulsions
 nuclear emulsions
 . . liquid-gas mixtures
 . . . aerosols
 fog
 plastisols
 smoke
 . polymer blends
 . sialon
 . slurries
 . solid suspensions
 . solutions
 . . aqueous solutions
 . . gas mixtures
 . . . air
 alveolar air
 compressed air
 expired air
 high temperature air
 liquid air
 detonable gas mixtures
 . . photographic emulsions
 . . . nuclear emulsions
 . . solid solutions

RT alloys

∞ azeotropes
 combination
 composite materials
 composition (property)
 dissolved gases
 eutectic composites
 formulations
 ingredients
 mixers
 mixing
 paste (consistency)

solubility

MJO (meteorology)
 (added September 2000)
 USE **Madden-Julian Oscillation**

ML-1 nuclear power plant
 GS electric power plants
 . nuclear power plants
 . . ML-1 nuclear power plant
 nuclear electric power generation
 . nuclear power plants
 . . ML-1 nuclear power plant

RT ∞ power plants

MLA
 USE **multispectral linear arrays**

MMH (chemistry)
 (added February 2001)
 USE **monomethylhydrazines**

MMS
 USE **multimission modular spacecraft**

mnemonics
 RT memory
 nomenclatures
 symbolic programming
 symbols

MNOS
 USE **metal-nitride-oxide-silicon**

mobile communication systems
 DEF Any configuration of mobile or transportable voice and data communication equipment which allows for communication between combinations of mobile/fixed points with or without the aid of satellites.

GS **mobile communication systems**
 . land mobile satellite service

RT communication satellites
 Iridium network
 MSAT
 radio communication
 Rayleigh fading

mobile lounges
 RT airfield surface movements
 airports
 ground handling

∞ lounges

mobile missile launchers
 GS launchers
 . missile launchers
 . . mobile missile launchers

RT ballistic missile submarines
 missile storage
 missile systems
 weapon systems

mobile quarantine facility
 RT aerospace medicine
 evacuating (transportation)

∞ facilities
 medical equipment
 medical services
 physical examinations
 physiological tests

Mobile Servicing System (ISS)
 (added September 2001)
 USE **Space Station Mobile Servicing System**

mobility
 SN (EXCLUDES CONSIDERATIONS OF MANNED AND UNMANNED CRAFT)
 GS **mobility**
 . atomic mobilities
 . carrier mobility
 . . electron mobility
 . . hole mobility
 . ionic mobility

RT ∞ conductivity
 diffusivity
 drift rate
 Hall effect
 kinetic theory
 portable equipment
 transport properties

MOCVD (vapor deposition)
 USE **metalorganic chemical vapor deposition**

modal response
 UF mode shapes
 GS responses
 . modal response

RT dynamic response
 stroking tests

Modcomp II computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . Modcomp II computer

Modcomp IV computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . Modcomp IV computer

∞ **mode**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT failure modes
 mode (statistics)
 modes

mode (statistics)
 RT average
 distribution moments
 failure modes
 mean
 median (statistics)

∞ mode
 modes
 moments
 quality control

mode coupling
 USE **coupled modes**

mode of vibration
 USE **vibration mode**

mode shapes
 USE **modal response**

mode transformers
 GS transducers
 . mode transformers
 transformers
 . mode transformers

RT impedance matching
 propagation modes
 transmission lines
 vibration mode
 waveguide tuners

model reference adaptive control
 DEF This deals with three parameters: an ideal adaptive control system whose response is agreed to be optimum; computer simulation in which both the model system and the actual system are subjected to the same stimulus; and parameters of the actual system which are adjusted to minimize the difference in the outputs of the model and the actual system. Used for MRAC (systems).

UF MRAC (systems)
 GS automatic control
 . adaptive control
 . . model reference adaptive control

RT automata theory
 autonomy

models

- ∞ control
- control theory
- cybernetics
- dynamic control
- feedback control
- feedforward control
- mathematical models
- optimal control
- self alignment
- systems simulation

models

GS models

- . aircraft models
- . astronomical models
- . . density wave model
- . . stellar models
- . atmospheric models
- . . Atmospheric General Circulation Models
- . . reference atmospheres
- . breadboard models
- . climate models
- . digital elevation models
- . dynamic models
- . electroweak model
- . environment models
- . Gutenberg zone
- . hydrology models
- . Lighthill gas model
- . mathematical models
- . . analog simulation
- . . BGK model
- . . biological models (mathematics)
- . . digital simulation
- . . Mandelstam representation
- . . Petri nets
- . . Thomas-Fermi model
- . . turbulence models
- . . . Baldwin-Lomax turbulence model
- . . . k-epsilon turbulence model
- . . . k-omega turbulence model
- . . Veneziano model
- . nuclear models
- . ocean models
- . quark models
- . . quark parton model
- . scale models
- . semispan models
- . spacecraft models
- . standard model (particle physics)
- . static models
- . three dimensional models
- . two dimensional models
- . vector dominance model
- . wind tunnel models
- . . powered models
- . multiscale models

RT

- analogs
- dummies
- layouts
- pilot plants
- replicas
- simulators
- test facilities

modems

- UF *modulators-demodulators*
- GS demodulators

- . **modems**
- modulators

- . **modems**

RT

- data transmission
- peripheral equipment (computers)
- phase demodulators
- phase modulation
- pulse amplitude modulation
- pulse communication
- pulse duration modulation
- pulse frequency modulation
- pulse modulation

pulse position modulation

Moderate Resolution Imaging Spectroradiometer
(added June 2003)

USE **MODIS (radiometry)**

moderation (energy absorption)

- GS energy absorption
- . **moderation (energy absorption)**
- . . thermalization (energy absorption)
- . . . neutron thermalization
- RT ∞ absorption
- limiters (fusion reactors)
- moderators

moderators

DEF Materials that have a high cross section for slowing down fast neutrons with a minimum of absorption, e. g. , heavy water, beryllium, used in reactor cores.

- RT ∞ beryllium
- blankets (fusion reactors)
- graphite
- heavy water
- limiters (fusion reactors)
- moderation (energy absorption)
- neutron absorbers
- nuclear reactors
- reactor materials
- water

modes

- GS **modes**
- . axial modes
- . ballooning modes
- . coupled modes
- . failure modes
- . laser modes
- . modes (standing waves)
- . propagation modes
- . . whispering gallery modes
- . pushbroom sensor modes
- . vibration mode
- . . uncoupled modes
- RT ∞ mode
- mode (statistics)
- tearing modes (plasmas)

modes (standing waves)

- GS modes
- . **modes (standing waves)**
- RT uncoupled modes
- vibration

MODFETS

DEF Heterojunction field effect transistor device structures in which only the larger (Al, Ga)As bandgap is doped with donors while the GaAs layer is left undoped. This results in high electron mobilities due to spatially separated electrons and donors. Used for modulation doped FETs.

- UF *modulation doped fet*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . heterojunction devices
- high electron mobility transistors
- **MODFETS**
- . . . transistors
- field effect transistors
- **MODFETS**
- high electron mobility transistors
- **MODFETS**
- RT aluminum gallium arsenides
- doped crystals
- energy gaps (solid state)
- gallium arsenides
- indium arsenides

ion implantation

modification

USE **revisions**

modified embedded atom method
(added February 1998)

USE **embedded atom method**

MODIS (radiometry)

(added June 2003)

DEF A high resolution spectroradiometer aboard the Terra and Aqua spacecraft designed to gather spectral data in 36 bands in order to increase the understanding of global environmental dynamics and processes. Launched in 1999.

UF *Moderate Resolution Imaging Spectroradiometer*

GS measuring instruments

- . radiation measuring instruments
- . . actinometers
- . . . radiometers
- spectroradiometers
- **MODIS (radiometry)**

RT Earth observations (from space)

- remote sensing
- Terra spacecraft

Modular Integrated Utility System

DEF A joint NASA-HUD concept incorporating various utilities -- electric power plant, water supply, heating and air conditioning, sewage treatment, and waste disposal into a single system having increased efficiency and economy. Use for MIUS.

UF *MIUS*

RT air conditioning

- communities
- electric power plants
- heating
- potable water
- sewage treatment
- ∞ systems
- utilities
- waste disposal

modular ratios

GS mechanical properties

- . **modular ratios**
- ratios

- . **modular ratios**

RT composite materials

- stress ratio
- structural analysis
- structural engineering

modularity

RT architecture (computers)

- avionics
- computer programs
- electronic modules
- systems engineering

modulated continuous radiation

GS continuous radiation

- . **modulated continuous radiation**
- electromagnetic radiation
- . **modulated continuous radiation**

RT coherent electromagnetic radiation

- phase deviation
- ∞ radiation

modulating retrodirective optics

USE **Miros system**

modulation

DEF The variation in the value of some parameter characterizing a periodic oscillation. Specifically, variation of some characteristic of a radio wave, called the carrier wave, in accordance with instantaneous values of another wave, called the modulating wave. Used for carrier modulation.

UF *carrier modulation*

GS **modulation**

- . amplitude modulation
- . . quadrature amplitude modulation
- . frequency modulation
- . . feedback frequency modulation
- . . FM/PM (modulation)
- . . frequency shift keying
- . . pulse frequency modulation
- . intermodulation
- . ionospheric cross modulation
- . light modulation
- . . Miros system
- . . ultrasonic light modulation
- . phase modulation
- . . FM/PM (modulation)
- . . phase shift keying
- . . . binary phase shift keying
- . . . quadrature phase shift keying
- . polarization modulation
- . pulse modulation
- . . pulse amplitude modulation
- . . pulse code modulation
- . . . delta modulation
- . . . differential pulse code modulation
- . . pulse frequency modulation
- . . pulse time modulation
- . . . pulse duration modulation
- . . . pulse position modulation
- . traveling wave modulation
- . velocity modulation

RT

- carrier frequencies
- carrier waves
- companding
- crystallization
- demodulation
- demodulators
- double sideband transmission
- dynamic range
- interference factor table
- modulators
- P. A. C. M. telemetry
- pulse frequency modulation telemetry
- radio transmission
- remodulation
- selective fading
- telecommunication
- wave interaction

modulation doped fets

USE **MODFETS**

modulation doping

DEF The process of doping only the larger bandgap of a heterojunction device with donors, while the other layer is left undoped. Since the electrons and donors are spatially separated, ionized impurity scattering is avoided and extremely high electron mobilities are obtained.

GS doping (materials)

- . **modulation doping**

RT

- additives
- donor materials
- doped crystals
- electron mobility
- energy gaps (solid state)
- heterojunction devices
- heterojunctions
- high electron mobility transistors
- ion implantation
- semiconductor devices
- semiconductors (materials)

modulation transfer function

UF *MTF*

GS functions (mathematics)

- . transfer functions
- . . **modulation transfer function**

RT

- figure of merit
- imaging techniques
- optical measurement
- optical transfer function

∞ performance

- system effectiveness
- systems analysis

modulators

DEF Devices to effect the process of modulation.

GS **modulators**

- . Bragg cells
 - . light modulators
 - . modems
- RT
- amplifiers
 - amplitude modulation
 - demodulators
 - electron tubes
 - frequency modulation
 - light modulation
 - matched filters
 - modulation
 - phase modulation
 - pulse modulation

modulators-demodulators

USE **modems**

modules

DEF 1, Self contained units of a launch vehicle or spacecraft that serve as building blocks for the overall structure. 2, A one package assembly of functionally associated electronic parts, usually a plug-in unit, so arranged as to function as a system or subsystem.

GS **modules**

- . airlock modules
- . chemical release modules
- . electronic modules
- . . micromodules
- . local scientific survey module
- . payload assist module
- . power modules (STS)
- . service modules
- . spacecraft docking modules
- . spacecraft modules
- . . command modules
- . . command service modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- . . . Mars Excursion Module
- . . SIM
- . space station modules
- . . Destiny Laboratory Module
- . . Kvant modules
- . . Priroda module
- . . Service Module (ISS)
- . . Unity connecting module
- . . Zarya control module

RT

- circuits
- compartments
- ∞ components
- instrument packages
- space tugs
- spare parts

modulus of elasticity

DEF The ratio of stress (nominal) to corresponding strain below the proportional limit of a material. It is expressed in force per unit area. Used for compliance (elasticity), elastic modulus, and Young modulus.

UF *compliance (elasticity)*

elastic modulus

Young modulus

GS

- mechanical properties
- . elastic properties
- . . **modulus of elasticity**

- . . . dynamic modulus of elasticity

RT

- anelasticity
- bending
- Hookes law
- hydroelasticity
- nanoindentation
- Poisson ratio
- proportional limit
- ∞ rigidity
- shear properties
- stiffness

stress-strain diagrams

Mohawk aircraft

USE **OV-1 aircraft**

Mohr circles

USE **fracture mechanics**

Moire effects

- RT beat frequencies
- birefringence
- diffraction
- ∞ effects
- fringe multiplication
- interference grating
- ∞ methodology
- Moire fringes
- Moire interferometry
- photoelastic analysis
- Schlieren photography

Moire fringes

DEF The bands which appear in the Moire effect.

- RT diffraction patterns
- fringe multiplication
- interference grating
- Moire effects
- stress analysis
- stress concentration

Moire interferometry

DEF The use of intersecting families of curves as instruments for making precise measurement, the study of indices of refractions, etc. by utilizing the interference patterns.

GS *interferometry*

- . **Moire interferometry**

- RT diffraction patterns
- holographic interferometry
- Moire effects

moisture

GS **moisture**

- . atmospheric moisture
- . soil moisture

RT

- humidity
- hygral properties
- meteorological parameters
- meteorology
- water
- water vapor

moisture content

UF *dampness*

water content

wetness

GS

- composition (property)
- . concentration (composition)
- . . **moisture content**

- . . . atmospheric moisture

RT

- atmospheric composition
- chemical properties
- humidity
- hydrothermal stress analysis
- hygroscopicity
- lysimeters
- mixing ratios
- soil moisture
- water
- water vapor

moisture detectors

USE **moisture meters**

moisture meters

UF *moisture detectors*

GS measuring instruments

- . **moisture meters**

- . . hygrometers
- . . . psychrometers

RT

- chemical analysis
- humidity

moisture resistance

humidity measurement

moisture resistance

- RT caulking
- coatings
- hydrophobicity
- hydrothermal stress analysis
- hygroscopicity
- porosity
- ∞ resistance
- sealing
- waterproofing
- weatherproofing

Mojave Desert (CA)

- GS land
 - . deserts
 - . . . **Mojave Desert (CA)**
- RT arid lands
- California
- desertification
- remote regions

MOL (orbital laboratories)

USE **manned orbital laboratories**

MOLABS

USE **lunar mobile laboratories**

∞ **mold**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT Aspergillus
- fungi
- molds
- rhizopus
- rust fungi

oldavite

- GS rocks
 - . igneous rocks
 - . . obsidian
 - . . . **oldavite**
- RT glass
- meteorites
- soils

molding materials

- GS **molding materials**
 - . sheet molding compounds
- RT binders (materials)
- casting
- clays
- cores
- injection molding
- ∞ materials
- molds
- plasters
- plastics
- resin transfer molding
- sand casting
- sands
- tenite

Moldova

(added September 1994)

- GS nations
 - . **Moldova**
- RT Europe

molds

- SN (EXCLUDES ORGANISMS)
- RT casting
- castings
- dies
- flat patterns
- foundries
- ingots
- injection molding
- mandrels
- melting
- ∞ mold
- molding materials
- organic materials
- ∞ patterns
- preforms

- pressing (forming)
- punches
- resin transfer molding
- sheet molding compounds
- tablets
- templates

molecular absorption

- GS energy absorption
 - . radiation absorption
 - . . . **molecular absorption**
- RT ∞ absorption
- atmospheric attenuation
- Beer law
- electromagnetic absorption
- light transmission

molecular beam epitaxy

- DEF Ultrahigh vacuum technique for growing very thin epitaxial layers of semiconductor crystals.
- GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **molecular beam epitaxy**
- RT atomic layer epitaxy
- indium aluminum arsenides

molecular beams

- GS beams (radiation)
 - . particle beams
 - . . neutral beams
 - . . . **molecular beams**
- RT atomic beams
- atomic clocks
- free molecular flow
- ion beams
- molecules
- rarefied gas dynamics

molecular biology

- GS life sciences
 - . **molecular biology**
- RT biochemistry
- ∞ biology
- eukaryotes
- gene expression
- genes
- physiochemistry
- prokaryotes
- proteome
- self assembly

molecular bonds

USE **chemical bonds**

molecular chains

- RT ∞ aliphatic compounds
- chains
- crystal lattices
- macromolecules
- monomers
- netting (materials/structures)

molecular clouds

- DEF Thickest and densest interstellar clouds consisting mainly of molecular hydrogen but also a high concentration of dust grains.
- RT astronomical models
- ∞ clouds
- cosmic dust
- diffuse interstellar bands
- galactic halos
- hydrogen clouds
- infrared cirrus (astronomy)
- interstellar chemistry
- interstellar gas
- interstellar masers
- interstellar matter
- methylidyne
- star formation

Submillimeter Wave Astronomy
Satellite

molecular clusters

(added January 1994)

- GS **molecular clusters**
 - . micelles
- RT agglomeration
- atomic clusters
- chemisorption
- clumps
- ∞ clusters
- fullerenes
- metal clusters
- nucleation

molecular collisions

- GS collisions
 - . **molecular collisions**
 - particle interactions
 - . molecular interactions
 - . . . **molecular collisions**
- RT atomic collisions
- BGK model
- ∞ interactions
- particle collisions
- rigid rotors (plasma physics)

molecular diffusion

- GS diffusion
 - . **molecular diffusion**
- RT atmospheric diffusion
- diffusion coefficient
- diffusion waves
- dissociation
- gaseous diffusion
- gaseous self-diffusion
- particle diffusion
- self diffusion (solid state)
- surface diffusion

molecular dissociation

USE **dissociation**

molecular dynamics

(added January 1994)

- RT computerized simulation
- crystal structure
- ∞ dynamics
- embedded atom method
- microstructure
- molecular interactions
- ∞ molecular physics
- molecular trajectories
- physical chemistry
- statistical mechanics

molecular electronics

- GS electrophysics
 - . **molecular electronics**
- RT adatoms
- DTL integrated circuits
- ∞ electronics
- integrated circuits
- Langmuir-Blodgett films
- large scale integration
- linear integrated circuits
- medium scale integration
- microelectronics
- microminiaturization
- miniature electronic equipment
- monomolecular films
- pi-electrons
- semiconductor devices
- thin films
- TTL integrated circuits
- very large scale integration

molecular energy levels

- GS level (quantity)
 - . energy levels
 - . . . **molecular energy levels**
 - . . . intermolecular forces
 - . . . rotational states
 - . . . vibrational states
- RT chemical energy

- ∞ energy
- energy of formation
- excimers
- free energy
- heat of solution
- internal energy
- ∞ nuclear energy
- molecular excitation**
 - GS excitation
 - . **molecular excitation**
 - RT atomic excitations
 - energy levels
 - ionization
 - particle collisions
 - photoexcitation
 - rotational spectra
 - rotational states
 - vibrational states
- molecular flow**
 - SN (FLOW WITH KNUDSEN NUMBERS GREATER THAN 0.01--FOR SPECIFIC FLOWS IN THIS RANGE USE NARROWER TERMS--FOR DUCTED MOLECULAR FLOW USE KNUDSEN FLOW)
 - DEF The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct.
 - GS fluid flow
 - . gas flow
 - . . . **molecular flow**
 - . . . slip flow
 - . . . transition flow
 - RT BGK model
 - boundary layer transition
 - continuum flow
 - Knudsen flow
 - low density flow
 - rarefied gas dynamics
 - transpiration
- molecular gases**
 - GS gases
 - . **molecular gases**
 - . . . polar gases
 - . . . polyatomic gases
 - . . . diatomic gases
 - RT association reactions
 - gas dynamics
 - monatomic gases
 - nonpolar gases
 - rarefied gases
 - real gases
- molecular interactions**
 - GS particle interactions
 - . **molecular interactions**
 - . . . molecular collisions
 - RT association reactions
 - configuration interaction
 - dissociation
 - ∞ interactions
 - intermolecular forces
 - internuclear properties
 - interstellar chemistry
 - ionic reactions
 - Lennard-Jones potential
 - mass flow
 - molecular dynamics
 - ∞ molecular physics
 - transport theory
- molecular ions**
 - GS ions
 - . **molecular ions**
 - . . . formyl ions
 - . . . hydronium ions
 - . . . vanadyl radical
 - RT amino radical
 - electron affinity
 - ∞ molecular physics
 - positive ions
- molecular orbitals**
 - GS orbitals
- . **molecular orbitals**
- wave functions
- . **molecular orbitals**
- RT quantum chemistry
- self consistent fields
- molecular oscillations**
 - GS oscillations
 - . **molecular oscillations**
 - RT argon lasers
 - carbon dioxide lasers
 - carbon monoxide lasers
 - gas lasers
 - oscillator strengths
- molecular oscillators**
 - GS oscillators
 - . **molecular oscillators**
 - RT lasers
 - masers
 - oscillator strengths
 - two-wavelength lasers
 - ultraviolet lasers
- ∞ **molecular physics**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT internuclear properties
 - Mayer problem
 - molecular dynamics
 - molecular interactions
 - molecular ions
 - monatomic molecules
 - ∞ physics
 - ∞ science
- molecular pumps**
 - GS pumps
 - . vacuum pumps
 - . . **molecular pumps**
 - vacuum apparatus
 - . vacuum pumps
 - . . **molecular pumps**
 - RT plasma pumping
 - pump seals
- molecular relaxation**
 - UF *chemical relaxation*
 - vibrational relaxation*
 - RT gas flow
 - population inversion
 - ∞ relaxation
 - relaxation (mechanics)
 - relaxation time
 - shock waves
 - thermodynamics
 - vibration damping
 - vibrational spectra
- molecular rotation**
 - GS gyration
 - . rotation
 - . . **molecular rotation**
 - RT microwave spectra
 - Raman spectra
 - rigid rotors (plasma physics)
 - rotational spectra
- molecular shields**
 - DEF Furlable devices used in space vacuum research to permit deployment and retrieval of instruments and the performance of experiments without contamination.
 - RT contamination
 - high vacuum
 - instrument packages
 - spaceborne experiments
- molecular sieves*
- USE **absorbents**
- molecular spectra**
 - GS spectra
 - . **molecular spectra**
 - . . . electronic spectra
 - . . Raman spectra
 - . . . rotational spectra
 - . . . vibrational spectra
 - RT absorption spectra
 - electromagnetic spectra
 - emission spectra
 - energy spectra
 - infrared spectra
 - mass spectra
 - microwave spectra
 - oxygen spectra
 - solar spectra
 - stellar spectra
 - Swan bands
 - ultraviolet spectra
 - Vegard-Kaplan bands
 - visible spectrum
- molecular spectroscopy**
 - GS spectroscopy
 - . **molecular spectroscopy**
 - . . Raman spectroscopy
 - RT absorption spectra
 - electron spectroscopy
 - emission spectra
 - infrared spectroscopy
 - line spectra
 - microwave spectra
 - optogalvanic spectroscopy
 - rotational spectra
 - spectroscopic analysis
 - ultraviolet spectroscopy
 - vacuum spectroscopy
 - x ray spectroscopy
- molecular structure**
 - RT atomic interactions
 - atomic structure
 - biopolymer denaturation
 - complex compounds
 - configuration interaction
 - coordination number
 - crystal lattices
 - enantiomers
 - hydrogen bonds
 - infrared spectroscopy
 - intermolecular forces
 - intramolecular structures
 - macromolecules
 - molecules
 - monatomic molecules
 - nuclear magnetic resonance
 - nuclear models
 - order-disorder transformations
 - polyatomic molecules
 - polywater
 - self assembly
 - ∞ structures
 - unimolecular structures
 - Wiswesser notations
- molecular theory**
 - RT Lighthill gas model
 - ∞ theories
- molecular trajectories**
 - GS trajectories
 - . **molecular trajectories**
 - RT gas flow
 - molecular dynamics
- molecular weight**
 - DEF The weight of a given molecule expressed in atomic weight units.
 - GS **molecular weight**
 - . low molecular weights
 - RT macromolecules
 - molecules
 - monatomic molecules
 - polyatomic molecules
 - weight (mass)
- molecules**
 - DEF Aggregates of two or more atoms of a

moles

substance that exists as a unit. Used for macromolecules.

- GS **molecules**
 - . macromolecules
 - . . dendrimers
 - . . monatomic molecules
 - . . polyatomic molecules
 - . . diatomic molecules
 - . . triatomic molecules
- RT atoms
 - buckminsterfullerene
 - chemical bonds
- ∞ chemical compounds
 - ions
 - low molecular weights
 - molecular beams
 - molecular structure
 - molecular weight

moles

- GS animals
 - . vertebrates
 - . . mammals
 - . . . **moles**

Molire formula

- USE **cosmic ray showers**
- secondary cosmic rays**
- spatial distribution**

Mollier diagram

- UF *enthalpy-entropy diagrams*
- GS charts
 - . graphs (charts)
 - . . **Mollier diagram**
- diagrams
 - . **Mollier diagram**
- RT enthalpy
 - entropy
 - equations of state
 - ideal fluids
 - isentrope
 - thermodynamics

mollusks

- GS animals
 - . invertebrates
 - . . **mollusks**
 - . . . cephalopods
 - octopuses
 - snails
- RT shellfish

Molniya satellites

- GS artificial satellites
 - . communication satellites
 - . . **Molniya satellites**
 - . Soviet satellites
 - . . **Molniya satellites**
- RT electric discharges
 - radio relay systems
 - satellite networks
 - telecommunication
 - television transmission
 - U. S. S. R. space program

molten carbonate fuel cells

- (added December 1995)
- GS electric generators
 - . direct power generators
 - . . fuel cells
 - . . . **molten carbonate fuel cells**
- electrochemical cells
 - . fuel cells
 - . . **molten carbonate fuel cells**
- RT carbonates
 - molten salt electrolytes

molten salt electrolytes

- GS conductors
 - . electrolytes
 - . . **molten salt electrolytes**
- RT molten carbonate fuel cells

molten salt nuclear reactors

- UF *MSRE reactors*

- GS nuclear reactors
 - . **molten salt nuclear reactors**
- RT ∞ reactors

molten salts

DEF High temperature inorganic salt or mixtures of salts used for thermal energy storage, heat exchangers, high power electric batteries, heat treatment of alloys, etc.

- RT halides
 - halites
 - inorganic compounds
 - nitrides
 - salt baths
- ∞ salts
 - sodium chlorides

molting

- RT phenology
 - shedding

molybdates

- GS molybdenum compounds
 - . **molybdates**
 - . . lead molybdates

molybdenum

- GS chemical elements
 - . **molybdenum**
- metals
 - . refractory metals
 - . . **molybdenum**
 - . . transition metals
 - . . **molybdenum**
- refractory materials
 - . refractory metals
 - . . **molybdenum**
- RT molybdenum isotopes

molybdenum alloys

- GS alloys
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . **molybdenum alloys**
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
- refractory materials
 - . refractory metal alloys
 - . . **molybdenum alloys**
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
- RT Hastelloy (trademark)
 - mulberry (alloy)
 - Permalloys (trademark)
 - stainless steels

molybdenum carbides

- GS carbon compounds
 - . carbides
 - . . **molybdenum carbides**

molybdenum compounds

- GS **molybdenum compounds**
 - . molybdates
 - . . lead molybdates
 - . . molybdenum disulfides
 - . . molybdenum oxides
- RT ∞ chemical compounds
 - ∞ Group 6B compounds
 - ∞ metal compounds

molybdenum disulfides

- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . molybdenum sulfides
 - **molybdenum disulfides**
- molybdenum compounds
 - . **molybdenum disulfides**
- sulfur compounds
 - . sulfides
 - . . inorganic sulfides

- . . . molybdenum sulfides
- **molybdenum disulfides**

molybdenum isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **molybdenum isotopes**
- RT molybdenum

molybdenum oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **molybdenum oxides**
- molybdenum compounds
 - . **molybdenum oxides**

molybdenum sulfides

- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **molybdenum sulfides**
 - molybdenum disulfides
- sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **molybdenum sulfides**
 - molybdenum disulfides

MOM (semiconductors)

- UF *metal-oxide-metal semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **MOM (semiconductors)**
- semiconductors (materials)
 - . **MOM (semiconductors)**
- RT ion implantation

moment distribution

- GS distribution (property)
 - . **moment distribution**
- RT angular distribution
 - force distribution
 - influence coefficient
 - loading moments
 - loads (forces)
 - mass distribution
 - method of moments
 - moments
 - moments of inertia
 - pressure distribution
 - static loads
 - stress concentration
 - structural analysis
 - structural design criteria

moments

- GS **moments**
 - . bending moments
 - . dipole moments
 - . . electric moments
 - . . magnetic moments
 - . . distribution moments
 - . . mean
 - . . orthogonality
 - . . standard deviation
 - . loading moments
 - . moments of inertia
 - . stability derivatives
 - . . pitching moments
 - . . rolling moments
 - . . yawing moments
 - . torque
- RT method of moments
 - mode (statistics)
 - moment distribution
 - momentum
 - skewness
 - torsion
 - variance (statistics)

moments of inertia

- UF *inertia moments*
- GS moments

. **moments of inertia**
 RT angular momentum
 center of gravity
 center of pressure
 centroids
 equations of motion
 Euler equations of motion
 inertia
 inertia principle
 Mach inertia principle
 mass
 mass distribution
 moment distribution
 pitching moments
 rolling moments
 stability derivatives
 stress analysis
 structural strain
 torque
 yawing moments

momentum
 DEF Quantity of motion.
 GS **momentum**
 . angular momentum
 . transverse momentum
 RT classical mechanics
 de Broglie wavelengths
 ∞ dynamics
 moments
 ∞ motion
 motion aftereffects
 pendulums
 turning flight

momentum energy
 USE **kinetic energy**

momentum theory
 RT conservation laws
 Newton second law
 ∞ theories

momentum transfer
 RT ∞ dynamics
 energy transfer
 gas-liquid interactions
 hydrodynamic ram effect
 kinetic theory
 kinetics
 Prandtl number
 transferring

Monaco
 GS nations
 . **Monaco**
 RT Europe

monatomic gases
 UF *atomic gases*
 GS gases
 . **monatomic gases**
 RT Chapman-Enskog theory
 molecular gases
 rare gases
 real gases

monatomic molecules
 GS molecules
 . **monatomic molecules**
 RT atoms
 chemical bonds
 ∞ chemical compounds
 ions
 low molecular weights
 ∞ molecular physics
 molecular structure
 molecular weight
 positive ions

monaural signals
 RT audio equipment
 audio frequencies
 auditory perception
 auditory signals
 loudspeakers

microphones
 sound transmission
monazite sands
 GS phosphorus compounds
 . phosphates
 . . **monazite sands**
 sediments
 . sands
 . . **monazite sands**
 soils
 . sands
 . . **monazite sands**
 RT minerals
 sedimentary rocks

Monel (trademark)
 GS alloys
 . nickel alloys
 . . **Monel (trademark)**

Monge-Ampere equation
 GS algebra
 . nonlinear equations
 . . **Monge-Ampere equation**
 analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 elliptic differential equations
 **Monge-Ampere equation**
 . . nonlinear equations
 . . . **Monge-Ampere equation**
 RT boundary value problems
 ∞ equations

Mongolia
 GS nations
 . **Mongolia**
 RT Asia

monitors
 RT aircraft instruments
 analyzers
 conical scanning
 counters
 data recorders
 ∞ detectors
 display devices
 environmental monitoring
 gas detectors
 helmet mounted displays
 in-flight monitoring
 ∞ instruments
 ∞ measurement
 measuring instruments
 optical scanners
 pollution monitoring
 radiation measuring instruments
 scanning
 warning
 warning systems

monkeys
 GS animals
 . vertebrates
 . . mammals
 . . . primates
 **monkeys**

monochromatic radiation
 SN (LIMITED TO ELECTROMAGNETIC RADIATION)
 GS electromagnetic radiation
 . **monochromatic radiation**
 Brillouin effect
 coherent electromagnetic radiation
 coherent light
 ∞ filters
 gamma rays
 infrared radiation
 ionizing radiation
 light (visible radiation)
 long wave radiation
 monochromatization

monochromators
 polarized electromagnetic radiation
 polarized light
 ∞ radiation
 radio waves
 short wave radiation
 ultraviolet radiation
 x rays

monochromatization
 UF *interference monochromatization*
 RT monochromatic radiation
 particle energy
 polarization (waves)

monochromators
 GS measuring instruments
 . **monochromators**
 radiation sources
 . **monochromators**
 RT comparators
 duochromators
 goniometers
 light sources
 monochromatic radiation
 optical equipment
 optical measuring instruments
 photogoniometers
 spectrophotometers

monocoque structures
 RT ∞ cylinders
 shells (structural forms)
 stressed-skin structures
 ∞ structures

monocrystals
 USE **single crystals**

monocular vision
 GS vision
 . **monocular vision**
 RT human factors engineering
 motion perception
 perception
 space perception

monoethanolamine (MEA)
 GS amines
 . **monoethanolamine (MEA)**

monoids
 GS algebra
 . group theory
 . . homomorphisms
 . . . **monoids**

monolithic circuits
 USE **integrated circuits**

monomers
 DEF Low molecular weight substances consisting of molecules capable of reacting with like or unlike molecules to form a polymer.
 RT dibasic compounds
 dimers
 molecular chains
 oligomers
 oxetane polymers
 ∞ polymers
 prepolymers
 trimers

monomethylhydrazines
 (*added February 2001*)
 UF *MMH (chemistry)*
 GS hydrazines
 . methylhydrazine
 . . **monomethylhydrazines**
 RT dimethylhydrazines
 hydrazine engines
 hypergolic rocket propellants
 liquid rocket propellants

monomolecular films
 UF *Langmuir monolayers*

monoplanes

- GS thin films
 - . **monomolecular films**
 - . . Langmuir-Blodgett films
- RT energy absorption films
 - ∞ films
 - integrated optics
 - ∞ layers
 - molecular electronics
 - self assembly
 - surface layers
 - surfactants
 - thin layer chromatography

monoplanes

- GS **monoplanes**
 - . A-1 aircraft
 - . A-2 aircraft
 - . A-3 aircraft
 - . A-4 aircraft
 - . A-5 aircraft
 - . A-6 aircraft
 - . A-7 aircraft
 - . A-37 aircraft
 - . AN-22 aircraft
 - . AN-24 aircraft
 - . Argosy MK-1 aircraft
 - . AVRO 707 aircraft
 - . B-26 aircraft
 - . B-47 aircraft
 - . B-50 aircraft
 - . B-52 aircraft
 - . B-57 aircraft
 - . B-58 aircraft
 - . B-66 aircraft
 - . B-70 aircraft
 - . BAC 111 aircraft
 - . Beechcraft 18 aircraft
 - . Boeing 707 aircraft
 - . Boeing 720 aircraft
 - . Boeing 733 aircraft
 - . Boeing 737 aircraft
 - . Boeing 757 aircraft
 - . Boeing 767 aircraft
 - . Breguet 940 aircraft
 - . Breguet 941 aircraft
 - . Breguet 1150 aircraft
 - . Buccaneer aircraft
 - . C-2 aircraft
 - . C-33 aircraft
 - . C-35 aircraft
 - . C-46 aircraft
 - . C-47 aircraft
 - . C-54 aircraft
 - . C-118 aircraft
 - . C-121 aircraft
 - . C-123 aircraft
 - . C-124 aircraft
 - . C-130 aircraft
 - . C-131 aircraft
 - . C-133 aircraft
 - . C-135 aircraft
 - . C-140 aircraft
 - . C-141 aircraft
 - . C-160 aircraft
 - . Canberra aircraft
 - . Cessna 172 aircraft
 - . Cessna 205 aircraft
 - . Cessna 210 aircraft
 - . Cessna 402B aircraft
 - . Cessna L-19 aircraft
 - . CL-41 aircraft
 - . CL-44 aircraft
 - . Comet 4 aircraft
 - . CV-340 aircraft
 - . CV-440 aircraft
 - . CV-880 aircraft
 - . CV-990 aircraft
 - . D-558 aircraft
 - . DC 3 aircraft
 - . DC 7 aircraft
 - . DC 8 aircraft
 - . DH 112 aircraft
 - . DH 115 aircraft
 - . DH 121 aircraft
 - . DH 125 aircraft
 - . DHC 2 aircraft
 - . DHC 4 aircraft
 - . DHC 5 aircraft
 - . DO-27 aircraft
 - . DO-28 aircraft
 - . DO-31 aircraft
 - . Electra aircraft
 - . F-2 aircraft
 - . F-4 aircraft
 - . F-5 aircraft
 - . F-8 aircraft
 - . F-9 aircraft
 - . F-17 aircraft
 - . F-27 aircraft
 - . F-28 transport aircraft
 - . F-84 aircraft
 - . F-86 aircraft
 - . F-89 aircraft
 - . F-94 aircraft
 - . F-100 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-105 aircraft
 - . F-106 aircraft
 - . FD 2 aircraft
 - . G-1 aircraft
 - . G-91 aircraft
 - . G-95/4 aircraft
 - . G-222 aircraft
 - . GA-5 aircraft
 - . H-126 aircraft
 - . HFB-320 aircraft
 - . HP-115 aircraft
 - . HS-748 aircraft
 - . IL-14 aircraft
 - . IL-62 aircraft
 - . jet provost aircraft
 - . Jindivik target aircraft
 - . L-29 jet trainer
 - . Lockheed model 18 aircraft
 - . MH-262 aircraft
 - . Mirage aircraft
 - . . Mirage 3 aircraft
 - . Boeing 717 aircraft
 - . Mystere 20 aircraft
 - . Nord 1500 aircraft
 - . OV-1 aircraft
 - . OV-10 aircraft
 - . P-3 aircraft
 - . P-51 aircraft
 - . P-166 aircraft
 - . P-308 aircraft
 - . P-1127 aircraft
 - . P-1154 aircraft
 - . PD-808 aircraft
 - . S-2 aircraft
 - . S-3 aircraft
 - . Saab 105 aircraft
 - . SC-1 aircraft
 - . SC-5 aircraft
 - . SC-7 aircraft
 - . Scimitar aircraft
 - . SE-210 aircraft
 - . Shackleton bomber
 - . T-2 aircraft
 - . T-28 aircraft
 - . T-33 aircraft
 - . T-37 aircraft
 - . T-38 aircraft
 - . T-39 aircraft
 - . TS-11 aircraft
 - . TSR-2 aircraft
 - . TU-104 aircraft
 - . TU-124 aircraft
 - . TU-134 aircraft
 - . U-2 aircraft
 - . U-10 aircraft
 - . Valiant aircraft
 - . VC-10 aircraft
 - . Victor MK-1 aircraft
 - . Viscount aircraft
 - . VJ-101 aircraft
 - . X-1 aircraft
 - . X-2 aircraft
 - . X-3 aircraft
 - . X-5 aircraft
 - . X-13 aircraft
 - . X-14 aircraft
 - . X-21 aircraft

- . X-21A aircraft
- . X-31 aircraft
- . XC-142 aircraft
- . XV-4 aircraft
- . XV-5 aircraft
- . YS-11 aircraft
- . Z-37 aircraft
- RT aerodynamic configurations
 - ∞ aircraft
 - airfoils
 - biplanes
 - cargo aircraft
 - gliders
 - ∞ low wing aircraft
 - seaplanes
 - tailless aircraft
 - water takeoff and landing aircraft
 - wing planforms
 - wing profiles
 - ∞ winged vehicles

monopole antennas

- UF *spike antennas*
- GS antennas
 - . omnidirectional antennas
 - . . **monopole antennas**
 - . . . whip antennas
- RT antenna design
 - dipole antennas
 - loop antennas
 - monopoles
 - ∞ spikes

monopoles

- GS **monopoles**
 - . magnetic monopoles
- RT ∞ dipoles
 - monopole antennas
 - multipoles
 - ∞ poles

monopropellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **monopropellants**
- RT aircraft fuels
 - chemical fuels
 - gaseous rocket propellants
 - gelled rocket propellants
 - metal propellants
 - plastic propellants
 - propellant decomposition
 - slurry propellants
 - solid rocket propellants

monopulse antennas

- GS antennas
 - . **monopulse antennas**
- RT directional antennas
 - phased arrays
 - waveguide antennas

monopulse radar

- GS radar
 - . Doppler radar
 - . . pulse Doppler radar
 - . . . **monopulse radar**
 - . pulse radar
 - . . pulse Doppler radar
 - . . . **monopulse radar**
- RT Doppler radar
 - duplexers
 - radar tracking
 - tracking radar

monosaccharides

- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . **monosaccharides**
 - hexoses
 - galactose
 - glucose
 - pentose
 - ribose

. . . . xylose

monoscopes

- GS electron tubes
 - . vacuum tubes
 - . . cathode ray tubes
 - . . . **monoscopes**
 - . television equipment
 - . **monoscopes**
- RT camera tubes
 - electron beams
 - image tubes
 - secondary emission
 - ∞ test equipment

monostable multivibrators

- GS circuits
 - . multivibrators
 - . . **monostable multivibrators**

monotectic alloys

- DEF Metallic composite materials having a dispersed phase of solidification products distributed within a matrix. The dispersed components can be selected to provide characteristics such as superconductivity or lubricity.
- GS alloys
 - . **monotectic alloys**
- RT composite materials
 - ∞ matrices
 - metal matrix composites
 - metals

monotone functions

- GS functions (mathematics)
 - . **monotone functions**
- RT analysis (mathematics)
 - calculus
 - real variables

monotony

- RT boredom
 - lethargy
 - sensory deprivation

monsoons

- DEF Seasonal winds caused primarily by the greater annual variation in air temperature over large land surfaces compared to ocean surfaces though other factors like land-relief are important.
- GS wind (meteorology)
 - . **monsoons**
- RT annual variations
 - atmospheric circulation
 - ground wind
 - Madden-Julian Oscillation
 - precipitation (meteorology)
 - sea breeze

Montana

- GS nations
 - . United States
 - . . **Montana**
- RT Bighorn Mountains (MT-WY)
 - Missouri River (US)
 - Williston Basin (North America)
 - Yellowstone National Park (ID-MT-WY)

Monte Carlo method

- GS analysis (mathematics)
 - . numerical analysis
 - . . **Monte Carlo method**
- RT diffusion theory
 - expectancy hypothesis
 - game theory
 - Markov chains
 - mathematical models
 - ∞ methodology
 - probability theory
 - random processes
 - random walk
 - renormalization group methods
 - simulation
 - statistical analysis

stochastic processes
transport theory

Monterey Bay (CA)

- GS bays (topographic features)
 - . **Monterey Bay (CA)**
- RT California
 - Pacific Ocean

month

- DEF The period of the revolution of the Moon around the Earth. The month is designated as sidereal, tropical, anomalistic, draconic, or synodical, according to whether the revolution is relative to the stars, the vernal equinox, the perigee, the ascending node, of the sun. The calendar month, which is a rough approximation of the synodical month. Used for lunation.
- UF *lunation*
- RT calendars
 - time
 - units of measurement

monticellite

- GS calcium compounds
 - . **monticellite**
 - magnesium compounds
 - . **monticellite**
 - minerals
 - . **monticellite**
 - silicon compounds
 - . silicates
 - . . **monticellite**
- RT olivine

montmorillonite

- DEF A group of monoclinic silicate clay minerals with widely varying compositions, and characterized by swelling in water.
- UF *smectite*
- GS aluminum compounds
 - . aluminum silicates
 - . . **montmorillonite**
 - clays
 - . **montmorillonite**
 - minerals
 - . **montmorillonite**
 - silicon compounds
 - . silicates
 - . . aluminum silicates
 - . . . **montmorillonite**
- RT bentonite

moods

- RT emotional factors
 - emotions
 - psychological effects
 - psychological factors
 - sensory feedback

moon

- DEF The natural satellite of the Earth.
- GS celestial bodies
 - . natural satellites
 - . . **moon**
- RT Earth-Moon system
 - light sources
 - lunar atmosphere
 - lunar bases
 - lunar communication
 - lunar composition
 - lunar craters
 - lunar crust
 - lunar dust
 - lunar eclipses
 - lunar environment
 - lunar evolution
 - lunar exploration
 - lunar far side
 - lunar geology
 - lunar gravitation
 - lunar landing sites
 - lunar limb
 - lunar luminescence
 - lunar magnetic fields
 - lunar maps

lunar occultation
lunar orbits
lunar phases
lunar photography
lunar rays
lunar shadow
lunar soil
lunar temperature
lunar topography
selenography
selenology
terraforming

moon illusion

- GS psychological effects
 - . illusions
 - . . **moon illusion**
- RT optical illusion
 - sensory feedback

moon-Earth trajectories

- GS trajectories
 - . spacecraft trajectories
 - . . lunar trajectories
 - . . . **moon-Earth trajectories**
- RT Apollo 5 flight
 - Apollo 6 flight
 - Apollo 7 flight
 - Apollo 8 flight
 - Apollo 10 flight
 - Apollo 11 flight
 - Apollo 12 flight
 - Apollo 13 flight
 - Apollo 14 flight
 - Apollo 15 flight
 - Apollo 16 flight
 - Apollo 17 flight
 - circumlunar trajectories
 - Earth-Moon trajectories
 - Goddard Trajectory Determination System
 - lunar flight
 - mass drivers
 - orbital mechanics
 - reentry trajectories
 - round trip trajectories
 - transfer orbits

moonlets

- (added July 1989)
- GS celestial bodies
 - . **moonlets**
- RT Jupiter rings
 - natural satellites
 - planetary rings
 - Saturn rings
 - Uranus rings

moonquakes

- GS seismology
 - . **moonquakes**
- RT lunar geology
 - lunar tides
 - planetary quakes
 - selenology

moons

USE **natural satellites**

mooring

- UF *moorings*
- RT airports
 - anchors (fasteners)
 - fasteners
 - ∞ joining
 - materials handling
 - multiple docking adapters
 - spacecraft docking

moorings

USE **mooring**

MOPS (propulsion systems)

USE **man operated propulsion systems**

moraines

USE **glacial drift**

morale

- RT creativity

Morehouse comet

disciplining
leadership
motivation
productivity
psychology
recreation

Morehouse comet

GS celestial bodies
. comets
. . **Morehouse comet**
RT solar system

MORL

USE **manned orbital laboratories**

morning

RT daytime
sunrise

Morocco

GS nations
. **Morocco**
RT Africa

morphine

GS bases (chemical)
. alkaloids
. . **morphine**
drugs
. narcotics
. . **morphine**
nitrogen compounds
. alkaloids
. . **morphine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **morphine**

morphological indexes

GS ratios
. indexes (ratios)
. . **morphological indexes**
RT morphology

morphology

GS **morphology**
. crystal morphology
. geomorphology
. isomorphism
. lung morphology
. polymorphism
RT anatomy
∞ biology
differentiation (biology)
geology
histology
∞ mathematics
morphological indexes
shapes
vestibules

morphotropism

USE **isomorphism**

Morse code

RT ∞ codes
communicating
keying
radio telegraphy
telecommunication

Morse potential

RT diatomic molecules
kinetic theory
potential energy

mortality

RT aging (biology)
death
expiration
life span

Mills ratio

mortars (material)

RT admixtures
bricks
cements
ceramics
concretes
grout
masonry
plasters
refractories

MOS (Japanese spacecraft)

USE **Japanese spacecraft**

MOS (semiconductors)

USE **metal oxide semiconductors**

mosaics

RT assemblies
diffraction
focal plane devices
photographs

Moscow

GS cities
. **Moscow**
RT Russian Federation
U. S. S. R.

MOSFET

USE **field effect transistors**

MOSS (space stations)

USE **space stations**

Mossbauer effect

RT crystal lattices
∞ effects
electromagnetic absorption
fluorescence
gamma rays
laser induced fluorescence
resonance scattering
resonant frequencies

mosses

USE **Bryophytes**

MOT (orbital telescopes)

USE **manned orbital telescopes**

moths

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **moths**
. silkworms
RT bollworms
infestation

motility

USE **locomotion**

∞ motion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The act, process or instance of change of position. Also called movement, especially when used in connection with problems involving the motion of one craft relative to another. Used for movement.
UF *movement*
RT acceleration (physics)
attitude (inclination)
Brownian movements
coning motion
displacement
domain wall
gliding
gyration
harmonic motion
head movement

heaving
high acceleration
immobilization
inertia
ion motion
ionic mobility
kinematics
libration
librational motion
momentum
nutation
orbits
oscillations
oscillators
particle motion
particle trajectories
pitch (inclination)
rotation
Saccadic eye movements
solar orbits
spacecraft motion
spacecraft trajectories
stellar motions
swarming
teetering
transit time
translational motion
tumbling motion
turbulence
velocity
vertical motion
vertical motion simulators
vibration
viscosity
yaw

motion aftereffects

RT equations of motion
kinetics
momentum

motion equations

USE **equations of motion**

motion perception

GS perception
. **motion perception**
RT binocular vision
monocular vision
visual perception

motion pictures

UF *cinelfluorography*
cineradiography
GS photographs
. **motion pictures**
RT animation
chronophotography
cinematography
computer animation
graphic arts
projectors
supplements
video equipment
video tapes

motion sickness

DEF The syndrome of pallor, sweating, nausea, and vomiting which is induced by unusual acceleration. Used for air sickness.
UF *air sickness*
GS sicknesses
. **motion sickness**
RT acceleration stresses (physiology)
aerospace medicine
head movement
nausea
space adaptation syndrome
vomiting

motion sickness drugs

GS drugs
. **motion sickness drugs**

RT pharmacology

motion simulation
 DEF Replication of exact motion or replication of part of a motion to provide the sensation of the motion.
 GS simulation
 . **motion simulation**
 RT flight simulation
 flight simulators
 motion simulators
 virtual reality

motion simulators
 GS simulators
 . **motion simulators**
 RT computerized simulation
 control simulation
 flight simulators
 motion simulation
 space environment simulation
 test facilities

motion stability
 GS dynamic characteristics
 . dynamic stability
 . . **motion stability**
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 . . . flow stability
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 Taylor instability
 . . . low speed stability
 . . . rotary stability
 gyroscopic stability
 . . . spacecraft stability
 stability
 . dynamic stability
 . . **motion stability**
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 . . . flow stability
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 Taylor instability
 . . . low speed stability
 . . . rotary stability
 gyroscopic stability
 . . . spacecraft stability

RT combustion stability
 coning motion
 control stability
 dynamic tests
 roughness
 sea keeping
 spacecraft motion
 stable oscillations
 surface stability

motivation
 GS **motivation**
 . contract incentives
 RT ∞ drives
 incentives
 learning
 morale
 reinforcement (psychology)

self stimulation
 ∞ stimuli

motor systems (biology)
 USE **efferent nervous systems**

motor vehicles
 DEF Automotive vehicles that do not run on rails, generally having rubber tires.
 GS surface vehicles
 . **motor vehicles**
 . . automated mixed traffic vehicles
 . . automobiles
 . . . electric automobiles
 . . electric motor vehicles
 . . . electric automobiles
 . . tractors
 . . . crawler tractors
 . . . tracked vehicles
 . . trucks
 . . . tank trucks
 RT transportation
 ∞ vehicles

motors
 SN (LIMITED TO MACHINES SUPPLIED WITH EXTERNAL ENERGY WHICH IS CONVERTED INTO FORCE AND/OR MOTION--SEE ENGINES FOR MACHINES WITH SELF-CONTAINED POWER SOURCES)
 DEF Machines supplied with external energy which is converted into force and/or motion.
 GS **motors**
 . electric motors
 . . asynchronous motors
 . . induction motors
 . . micromotors
 . . piezoelectric motors
 . . stepping motors
 . . synchronous motors
 . . torque motors
 . servomotors
 RT apogee boost motors
 ∞ electric equipment
 energy conversion efficiency
 engines
 ∞ generators
 hydraulic equipment
 stators

MOTS (tracking system)
 USE **minitrack system**

mountain inhabitants
 GS communities
 . inhabitants
 . . **mountain inhabitants**
 RT altitude acclimatization
 high altitude environments
 low temperature environments

mountains
 GS landforms
 . **mountains**
 . . Adirondack Mountains (NY)
 . . Alps Mountains (Europe)
 . . Andes Mountains (South America)
 . . Appalachian Mountains (North America)
 . . Bighorn Mountains (MT-WY)
 . . Black Hills (SD-WY)
 . . Carpathian Mountains (Europe)
 . . Cascade Range (CA-OR-WA)
 . . Caucasus Mountains (U. S. S. R.)
 . . coastal ranges (CA)
 . . Great Smoky Mountains (NC-TN)
 . . Himalayas
 . . Peninsular Ranges (CA)
 . . Pyrenees Mountains (Europe)
 . . Rocky Mountains (North America)
 . . San Juan Mountains (CO)
 . . Sierra Nevada Mountains (CA)
 . . Wind River Range (WY)
 . . Wrangell Mountains (AK)
 RT Central Piedmont (US)
 cirques (landforms)
 cones (volcanoes)

continents
 divides (landforms)
 formations
 gaps (geology)
 geomorphology
 highlands
 Mars volcanoes
 massifs
 mesas
 orography
 ∞ peaks
 peaks (landforms)
 piedmonts
 Pike's Peak (CO)
 ∞ ridges
 terraces (landforms)
 volcanoes
 volcanology
 watersheds

mounting
 GS **mounting**
 . rigid mounting
 RT assembling
 ∞ attachment
 brackets
 ∞ joining
 suspending (hanging)

mounts
 USE **supports**

mouth
 GS anatomy
 . digestive system
 . . **mouth**
 . . . lips (anatomy)
 . face (anatomy)
 . . **mouth**
 . . . lips (anatomy)
 RT salivary glands
 teeth
 tongue

movement
 USE **motion**

moving target indicators
 DEF Radar devices that employ a technique that enhances the detection and display of moving radar targets by suppressing fixed targets. Doppler processing is one method of implementation. Used for MTI indicators.
 UF *MTI radar*
 GS radar
 . **moving target indicators**
 RT cancellation circuits
 coherent radar
 Doppler radar
 over-the-horizon radar
 radar cross sections
 radar tracking
 target acquisition

Mozambique
 GS nations
 . **Mozambique**
 RT Africa

MPD thrusters
 (added April 2001)
 USE **magnetoplasmadynamic thrusters**

MPP (computers)
 USE **massively parallel processors**

MR-3 flight
 USE **Mercury MR-3 flight**

MRAC (systems)
 USE **model reference adaptive control**

MRCA aircraft
 UF *multi-role combat aircraft*
Tornado aircraft
 RT ∞ aircraft

Mrkos comet

attack aircraft
fighter aircraft
∞ military aircraft

Mrkos comet

GS celestial bodies
. comets
. . **Mrkos comet**
RT solar system

MSAT

DEF A joint Canada/United States mobile satellite system which is being developed with a voice and data communication link between mobile units and the switched telephone network or between mobile units and other mobile units via satellite. Each country will have a satellite capable of mutual backup. Launch date is planned for 1994.

GS artificial satellites
. communication satellites
. . **MSAT**
RT ground stations
land mobile satellite service
maritime satellites
mobile communication systems
radio communication
radio relay systems
satellite transmission

MSBLS

USE **microwave scanning beam landing system**

MSM (semiconductors)

DEF Semiconductor devices consisting of a semiconductor layer sandwiched between two layers of metal. Used for metal-semiconductor-metal semiconductors.

UF *metal-semiconductor-metal semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **MSM (semiconductors)**
RT MIM diodes
photodiodes
Schottky diodes
semiconductor junctions
SIS (semiconductors)

MSRE reactors

USE **molten salt nuclear reactors**

MSS (International Space Station)

(added September 2001)

USE **Space Station Mobile Servicing System**

MTBF

DEF The mean of the distribution of time (or cycles, miles, events) between successive failure. MTBF is often estimated by dividing the total operating time for like items by the total number of failures encountered. Used for mean time between failures.

UF *mean time between failures*
GS time
. **MTBF**
RT downtime
failure analysis
failure modes
life (durability)
rates (per time)
reliability

statistical analysis

MTF

USE **modulation transfer function**

MTFF (space station)

USE **man tended free flyers**

MTI radar

USE **moving target indicators**

MTPE

USE **Mission to Planet Earth**

MUBIS (scanners)

USE **multiple beam interval scanners**

mucocoles

GS cysts
. **mucocoles**
RT ∞ blisters

mucus

GS body fluids
. **mucus**
RT saliva

mud

GS sediments
. **mud**
soils
. **mud**
RT alluvium
clays
fans (landforms)
grout
ocean bottom
rain erosion
sludge
tidal flats

mufflers

RT acoustic retrofitting
aircraft noise
attenuators
baffles
damping
∞ diffusers
exhaust systems
furnaces
jet aircraft noise
noise (sound)
noise reduction
propeller noise
rocket engine noise
silencers
suppressors

mulberry (alloy)

GS alloys
. **mulberry (alloy)**
RT antimony alloys
molybdenum alloys

mullites

RT aluminum silicates
minerals

multi-anode microchannel arrays

DEF A family of photoelectric, photon counting array detectors being developed for use in instruments on both ground based and spaceborne telescopes.

GS arrays
. **multi-anode microchannel arrays**
RT anodes
microchannels
radiation detectors
spaceborne telescopes
telescopes
x ray detectors

multibeam antennas

DEF Antennas that have the ability to form

more than one beam from a single radiating aperture.

GS antennas
. **multibeam antennas**
RT beams (radiation)
lens antennas
microwave antennas
reflector antennas
satellite antennas
satellite communication

multiblock grids

(added May 1995)
UF *multiple blocked grids*
GS coordinates
. computational grids
. . structured grids (mathematics)
. . . **multiblock grids**
RT computational fluid dynamics

multichannel communication

GS telecommunication
. **multichannel communication**
RT code division multiple access
interference factor table
multiple access
radio transmitters
teleconferencing
time division multiple access

multichannel plates

USE **microchannel plates**

multicharged ions

USE **ions**

multidisciplinary design optimization

(added January 1995)

DEF Methodology for the design of complex engineering systems and subsystems in which the synergistic effects of coupling between various interacting disciplines and phenomena are analyzed and exploited at every stage of the design process.

GS optimization
. **multidisciplinary design optimization**
RT aircraft design
architecture (computers)
computer aided design
design analysis
genetic algorithms
systems engineering
Taguchi methods

multidisciplinary research

(added January 1995)

DEF Research by combining several (academic) disciplines or methods.

GS research
. **multidisciplinary research**
RT concurrent engineering
management methods
operations research
project management
research management

multiengine vehicles

RT ∞ aircraft
B-1 aircraft
launch vehicles
light transport aircraft
missile configurations
missiles
multistage rocket vehicles
recoverable launch vehicles
rocket vehicles
∞ vehicles

multigrid methods

(added September 1989)

DEF A numerical technique which attempts to accelerate the convergence of an iterative process by computing corrections to the solution on coarser meshes and propagating these changes to the fine mesh through interpolation.

- GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **multigrid methods**
- RT computational fluid dynamics
 computational grids
 finite difference theory
 finite element method
 grid generation (mathematics)
 iteration
 iterative solution
 ∞ methodology
 unstructured grids (mathematics)
- multilayer insulation**
 GS insulation
 . **multilayer insulation**
 interlayers
 . **multilayer insulation**
 RT composite materials
 cryogenic fluid storage
 fabrics
 ∞ foils
 foils (materials)
 laminates
 ∞ layers
 metal foils
 ply orientation
 sandwich structures
 ∞ sheets
- multilayer structures*
 USE **laminates**
- multiloop systems*
 USE **cascade control**
- multimedia**
 (added March 1993)
 UF *hypermedia*
interactive multimedia
intermedia
 RT audio visual equipment
 audio visual material
 computer graphics
 electronic publishing
 graphic arts
 imaging techniques
 information systems
 teleconferencing
 training devices
 video communication
 video data
 video tape recorders
 video tapes
 visual aids
 voice communication
- multimission modular spacecraft**
 DEF Future spacecraft to be operated in conjunction with the Space Shuttle orbiter vehicle and serviced by its module exchange mechanism. Used for MMS.
 UF *MMS*
 RT BESS (satellite)
 Landsat follow-on missions
 satellite networks
 Solar Maximum Mission
- multimode resonators**
 GS resonators
 . **multimode resonators**
 RT cavity resonators
 magnetrons
 propagation modes
- multipactor discharges**
 GS electric current
 . electric discharges
 . . **multipactor discharges**
 RT linear accelerators
 photomultiplier tubes
 secondary emission
- spark gaps
- multipath transmission**
 DEF The process, or condition, in which radiation travels between source and receiver via more than one path. Since there can be only one direct path, some process of reflection, refraction or scattering must be involved.
 GS transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . **multipath transmission**
 . signal transmission
 . . radio transmission
 . . . **multipath transmission**
 RT cepstral analysis
 diffraction paths
 Fermat principle
 multistatic radar
 optical paths
 ∞ paths
 radio waves
 Rayleigh fading
 sound transmission
 wave propagation
- multiphase flow**
 UF *mixed flow*
 GS fluid flow
 . **multiphase flow**
 . . two phase flow
 RT conical flow
 critical flow
 Crocco-Lee theory
 flow distortion
 flow measurement
 gas flow
 laminar flow
 liquid flow
 mass flow
 orifice flow
 pipe flow
 pressure gradients
 single-phase flow
 solids flow
 steady flow
 steam flow
 subcritical flow
 supercritical flow
 turbulent flow
 uniform flow
 unsteady flow
- multiphoton absorption**
 DEF Ionization and dissociation of a molecule under the action of powerful laser radiation. Laser-flux dependent light intensities emitted by different excited states of the molecule indicate the various absorption processes.
 GS energy absorption
 . radiation absorption
 . . electromagnetic absorption
 . . . **multiphoton absorption**
 RT ∞ absorption
 photon absorptiometry
- multiple access**
 DEF The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination.
 GS telecommunication
 . **multiple access**
 . . Aloha system
 . . carrier sense multiple access
 . . code division multiple access
 . . demand assignment multiple access
 . . frequency division multiple access
 . . time division multiple access
 transmission
 . signal transmission
 . . data transmission
 . . . **multiple access**
 Aloha system
 carrier sense multiple access
- code division multiple access
 demand assignment multiple access
 frequency division multiple access
 time division multiple access
- RT access control
 frequency division multiplexing
 multichannel communication
 packet switching
 pulse communication
 wideband communication
- multiple beam interval scanners**
 UF *MUBIS (scanners)*
 GS antennas
 . **multiple beam interval scanners**
 RT linear arrays
 radar scanning
- multiple blocked grids*
 USE **multiblock grids**
- multiple docking adapters**
 UF *MDA*
 GS adapters
 . **multiple docking adapters**
 RT airlock modules
 mooring
 orbital rendezvous
 Saturn 1 workshop
 Saturn 5 workshop
 Saturn workshops
 Skylab 1
 Skylab 2
 Skylab 3
 Skylab 4
 spacecraft docking
- multiple frequency radar*
 USE **multispectral radar**
- multiple input multiple output*
 USE **MIMO (control systems)**
- multiple instruction multiple data stream*
 USE **MIMD (computers)**
- multiple output programs**
 GS computer programs
 . **multiple output programs**
 RT multiprogramming
 readout
 time sharing
- multiple target tracking**
 (added August 1991)
 DEF The process of following movements of several targets simultaneously.
 GS tracking (position)
 . **multiple target tracking**
 RT optical tracking
 radar targets
 radar tracking
 target acquisition
 target recognition
 targets
 tracking filters
 tracking problem
- multiple target trajectory systems*
 USE **MATTS (systems)**
- multiplets*
 USE **fine structure**
- multiplex transmission*
 USE **multiplexing**
- multiplexers*
 USE **multiplexing**
- multiplexing**
 DEF The simultaneous transmission of two or more signals within a single channel. The

multiplication

three basic methods of multiplexing involve the separation of signals by time division, frequency division, and phase division. Used for multiplex transmission and multiplexers.

- UF *multiplex transmission multiplexers*
- GS transmission
 - . **multiplexing**
 - .. code division multiplexing
 - .. frequency division multiplexing
 - .. time division multiplexing
 - .. wavelength division multiplexing
- RT access control
 - carrier frequencies
 - code division multiple access
 - data transmission
 - demultiplexing
 - frequency division multiple access
 - pulse communication
 - radio transmission
 - satellite transmission
 - signal transmission

multiplication

- GS number theory
 - . **multiplication**
- RT arithmetic
 - computation
 - fringe multiplication

multiplier phototubes

- USE **photomultiplier tubes**

multipliers

DEF Devices which have two or more inputs and whose output is a representation of the product of the quantities represented by the input signals.

- GS **multipliers**
 - . channel multipliers
- RT Lagrange multipliers
 - logic circuits
 - photomultiplier tubes

multipolar fields

- RT continuum mechanics
 - field theory (physics)
 - gravitational fields
 - magnetic fields
 - multipoles

multipoles

- RT monopoles
 - multipolar fields

multiprocessing (computers)

- GS data processing
 - . **multiprocessing (computers)**
- RT associative processing (computers)
 - computers
 - concurrent processing
 - Connection Machine
 - data processing equipment
 - distributed memory
 - hypercube multiprocessors
 - interprocessor communication
 - multiprogramming
 - parallel programming
 - pipelining (computers)
 - real time operation
 - supercomputers
 - time sharing
 - vector processing (computers)

multiprogramming

- UF *multitasking (computers)*
- GS computer programming
 - . **multiprogramming**
- RT machine-independent programs
 - multiple output programs
 - multiprocessing (computers)
 - pipelining (computers)
- ∞ programming

time sharing

multipropellants

- USE **rocket propellants**

multiradar tracking

- USE **radar networks**

multi-role combat aircraft

- USE **MRCA aircraft**

multiscale models

(added November 2002)

DEF Models or simulations that effectively address phenomena across significantly different scales.

- GS models
 - . **multiscale models**
- RT computerized simulation
 - mathematical models
 - scale effect
 - scale models

multisensor applications

- GS **multisensor applications**
 - . multisensor fusion
- RT enhanced vision
 - image processing
 - imaging techniques
 - intercalibration
 - pattern recognition
 - remote sensing
 - remote sensors

multisensor fusion

(added October 1994)

DEF A combination of data or images from more than one sensor source (or from multispectral sensors) for display as a single image.

- UF *data fusion sensor fusion*
- GS multisensor applications
 - . **multisensor fusion**
- RT data integration
 - fuzzy systems
 - imaging techniques
 - remote sensing
 - robotics
 - signal processing
 - terrain analysis

multispectral band cameras

- GS optical equipment
 - . cameras
 - .. **multispectral band cameras**
- photographic equipment
 - . cameras
 - .. **multispectral band cameras**
- RT infrared photography
 - photography

multispectral band scanners

- GS optical equipment
 - . optical scanners
 - .. **multispectral band scanners**
 - ... thematic mappers (LANDSAT)
- scanners
 - . optical scanners
 - .. **multispectral band scanners**
 - ... thematic mappers (LANDSAT)
- RT band ratioing
 - change detection
 - Coastal Zone Color Scanner
 - Earth observations (from space)
 - imaging techniques
 - infrared scanners
 - ocean color scanner
 - panoramic scanning
 - photography
 - radiometric correction
 - radiometric resolution
 - scanning
 - spaceborne photography
 - spectral reconnaissance

vegetative index

multispectral linear arrays

DEF Large number of interconnected solid state detectors in a pushbroom mode wherein the forward motion of the vehicle (spacecraft) sweeps the assembly of detectors which are oriented perpendicular to the ground track. Used for MLA.

- UF *MLA*
- GS arrays
 - . antenna arrays
 - .. linear arrays
 - ... **multispectral linear arrays**
- electronic equipment
 - . solid state devices
 - .. **multispectral linear arrays**
- spacecraft instruments
 - . satellite instruments
 - .. **multispectral linear arrays**
- RT ∞ detectors
 - ∞ sensors

multispectral photography

- GS imagery
 - . photography
 - .. **multispectral photography**
 - ... infrared photography
 - ... color infrared photography
 - ... radar photography
- RT change detection
 - crop identification
 - Earth observations (from space)
 - I2S cameras
 - image resolution
 - imaging techniques
 - spectral reconnaissance

multispectral radar

- UF *dual frequency radar multiple frequency radar*
- GS radar
 - . **multispectral radar**
- RT imagery
 - imaging techniques
 - spectral reconnaissance

Multispectral Resource Sampler

DEF An experimental remote sensing instrument for satellites to measure both intensity and polarization at several wavelengths. The first one was launched in the late 1980s.

- GS artificial satellites
 - . **Multispectral Resource Sampler**
- RT remote sensing

multispectral tracking telescopes

- GS telescopes
 - . spectroscopic telescopes
 - .. **multispectral tracking telescopes**
- RT optical measuring instruments
 - optical tracking
 - tracking (position)

multistage compressors

- USE **turbocompressors**

multistage rocket vehicles

DEF Vehicles having two or more rocket units, each unit firing after the one in back of it has exhausted its propellant. Normally, each unit, or stage, is jettisoned after completing its firing.

- GS rocket vehicles
 - . **multistage rocket vehicles**
 - .. Ablestar launch vehicle
 - .. Antares rocket vehicle
 - .. Argo rocket vehicles
 - .. Astrobe rocket vehicles
 - ... Astrobee 1500 rocket vehicle
 - .. Athena rocket vehicle
 - .. Atlas launch vehicles
 - ... Atlas Able 5 launch vehicle
 - ... Atlas Agena B launch vehicle
 - ... Atlas Agena launch vehicles

. . . Atlas Centaur launch vehicle
 . . . Atlas SLV-3 launch vehicle
 . . . Berenice rocket vehicle
 . . . Black Knight rocket vehicle
 . . . Blue Scout rocket vehicle
 . . . Diamant launch vehicle
 . . . Eldo launch vehicle
 . . . EXOS sounding rocket
 . . . Jaguar rocket vehicle
 . . . Javelin rocket vehicle
 . . . Juno launch vehicles
 . . . Juno 1 launch vehicle
 . . . Juno 2 launch vehicle
 . . . Jupiter C rocket vehicle
 . . . Kappa rocket vehicles
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 . . . Lambda rocket vehicles
 . . . Little Joe 2 launch vehicle
 . . . Nike rocket vehicles
 . . . Nike-Apache rocket vehicle
 . . . Nike-Cajun rocket vehicle
 . . . Nike-Hydrac rocket vehicle
 . . . Nike-Iroquois rocket vehicle
 . . . Nike-Javelin rocket vehicle
 . . . Nike-Tomahawk rocket vehicle
 . . . Nova launch vehicles
 . . . Pegasus air-launched booster
 . . . Phoenix sounding rocket
 . . . RAM B launch vehicle
 . . . Rubis rocket vehicle
 . . . Saturn launch vehicles
 . . . Saturn 1 launch vehicles
 . . . Saturn 1 SA-1 launch vehicle
 . . . Saturn 1 SA-10 launch vehicle
 . . . Saturn 1 SA-2 launch vehicle
 . . . Saturn 1 SA-3 launch vehicle
 . . . Saturn 1 SA-4 launch vehicle
 . . . Saturn 1 SA-5 launch vehicle
 . . . Saturn 1 SA-6 launch vehicle
 . . . Saturn 1 SA-7 launch vehicle
 . . . Saturn 1 SA-8 launch vehicle
 . . . Saturn 1 SA-9 launch vehicle
 . . . Saturn 1B launch vehicles
 . . . Saturn 2 launch vehicles
 . . . Saturn 5 launch vehicles
 . . . Saturn D launch vehicle
 . . . Scout launch vehicle
 . . . Skylark rocket vehicle
 . . . Thor launch vehicles
 . . . Thor Able rocket vehicle
 . . . Thor Agena launch vehicle
 . . . Thor Delta launch vehicle
 . . . Titan launch vehicles
 . . . Titan 3 launch vehicle
 . . . Titan 4 launch vehicle
 . . . Titan 4B launch vehicle
 . . . vanguard 2 launch vehicle
 . . . Vega launch vehicle
 . . . WASP sounding rocket
 RT air launching
 expendable stages (spacecraft)
 interim stages (spacecraft)
 launch vehicles
 Minuteman ICBM
 multiengine vehicles
 Navaho missile
 payload mass ratio
 Pershing missile
 piggyback systems
 polaris missiles
 propulsive efficiency
 rocket engines
 SS-11 missile
 stage separation
 Sunblazer space probe
 Talos missile
 terrier missile
 Titan ICBM
 Trailblazer 1 reentry vehicle
 Trailblazer 2 reentry vehicle
 upper stage rocket engines
 ∞ vehicles

multistatic radar
 DEF System in which successive lobes of the antenna are sequentially engaged to provide

a tracking capability without physical movement of the antenna. Used for bistatic radar.

UF *bistatic radar*
 GS radar
 . Doppler radar
 . . **multistatic radar**
 . surveillance radar
 . . **multistatic radar**
 RT multipath transmission
 pulse radar
 radar detection
 target recognition

multitasking (computers)
 USE **multiprogramming**

multitemporal analysis
 USE **temporal resolution**

multivariable control
(added July 1991)
 RT ∞ control
 control theory
 feedback control
 linear parameter-varying control
 optimal control

multivariate statistical analysis
 GS statistical analysis
 . variance (statistics)
 . . **multivariate statistical analysis**
 . . . bivariate analysis
 . . . covariance
 . . . orthogonality
 . . . regression analysis
 regression coefficients
 RT ∞ analyzing
 correlation
 discriminant analysis (statistics)
 ∞ variance

multivibrators
 DEF Two-stage regenerative circuits with two possible states and an abrupt transition characteristic.

GS circuits
 . **multivibrators**
 . . flip-flops
 . . monostable multivibrators
 RT amplifiers
 bistable circuits
 logic circuits
 oscillators
 positive feedback
 switching circuits
 trigger circuits

muon spin rotation
 DEF Particle spin depolarization caused by sensitivity of muon spin to the presence of defects in certain metals.

GS gyration
 . rotation
 . . **muon spin rotation**
 RT charged particles
 hyperfine structure
 muons
 particle diffusion
 particle spin
 precession

muonium
 RT electrons
 mesons

muons
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **muons**
 . . fermions
 . . . leptons
 **muons**
 . . hadrons
 . . . mesons

. . . . **muons**
 . nuclear particles
 . . bosons
 . . . mesons
 **muons**
 RT baryons
 charged particles
 electron decay rate
 muon spin rotation

Murchison meteorite
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 **Murchison meteorite**
 . . . chondrites
 carbonaceous chondrites
 **Murchison meteorite**

Murray meteorite
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 **Murray meteorite**
 . . . chondrites
 carbonaceous chondrites
 **Murray meteorite**

muscle relaxants
 GS drugs
 . **muscle relaxants**

muscles
 GS anatomy
 . musculoskeletal system
 . . **muscles**
 . . . constrictors
 . . . diaphragm (anatomy)
 . . . flexors
 . . . myocardium
 . . . tendons
 RT aldolase
 ataxia
 congeners
 convulsions
 electrocardiography
 fibrillation
 glucocorticoids
 heart
 hypodynamia
 muscular fatigue
 muscular strength
 muscular tonus
 myoelectric potentials
 myoelectricity
 myoglobin
 spasms
 twitching

muscovite
 DEF An important mineral of the mica group.
 GS aluminum compounds
 . **muscovite**
 chalcogenides
 . oxides
 . . silicon oxides
 . . . **muscovite**
 minerals
 . mica
 . . **muscovite**
 silicon compounds
 . silicon oxides
 . . **muscovite**

muscular fatigue
 GS fatigue (biology)
 . **muscular fatigue**
 RT muscles
 musculoskeletal system

muscular function

stress (physiology)

muscular function

GS **muscular function**

. spasms

RT cramps

∞ functions

hypodynamia

hypokinesia

hypotonia

mechanograms

twitching

muscular strength

RT muscles

musculoskeletal system

∞ strength

muscular tonus

UF *tonus*

GS **muscular tonus**

. hypotonia

RT exercise physiology

muscles

musculoskeletal system

UF *skeleton*

GS anatomy

. **musculoskeletal system**

. . . bones

. . . femur

. . . pelvis

. . . scapula

. . . skull

. cranium

. intracranial cavity

. mastoids

. . . spine

. vertebrae

. sternum

. . . tibia

. . . ulna

. . . joints (anatomy)

. . . elbow (anatomy)

. . . knee (anatomy)

. . . wrist

. . . muscles

. . . constrictors

. . . diaphragm (anatomy)

. . . flexors

. . . myocardium

. . . tendons

. . . cartilage

RT connective tissue

exoskeletons

hypokinesia

intervertebral disks

muscular fatigue

muscular strength

sciatic region

striation

∞ systems

museums

RT anthropology

artifacts

buildings

collection

histories

libraries

mushy zones

DEF Regions of liquid plus solid phases in alloys that solidify over a range of temperatures. Used for liquid plus solid zones.

UF *liquid plus solid zones*

RT casting

cooling

metallography

phase transformations

solidification

music

RT arts

octaves

muskegs

GS landforms

. **muskegs**

RT Arctic regions

marshlands

soils

topography

water

Mustang aircraft

USE **P-51 aircraft**

mutagenesis

(added June 2000)

DEF Induction or development of a genetic mutation via a natural environmental mutagen or through the methods of genetic engineering.

RT deoxyribonucleic acid

gene expression

genes

mutagens

mutations

radiation effects

mutagens

DEF Agents that raise the frequency of mutations above the spontaneous rate.

RT air pollution

biochemistry

biological evolution

cells (biology)

chemical analysis

genetics

mutagenesis

mutations

mutations

RT biological diversity

biological evolution

cells (biology)

chromosomes

genes

genetics

mitosis

mutagenesis

mutagens

nucleogenesis

oncogenes

radiation hazards

MX missile

DEF United States strategic intercontinental ballistic missile.

UF *Peacekeeper missile*

GS missiles

. ballistic missiles

. . intercontinental ballistic missiles

. . . **MX missile**

. surface to surface missiles

. . intercontinental ballistic missiles

. . . **MX missile**

RT missile silos

myelin

RT fats

lipids

nerves

nervous system

neurons

Mylar (trademark)

GS polymeric films

. **Mylar (trademark)**

RT polyethylene terephthalate

∞ polymers

myocardial infarction

GS diseases

. heart diseases

. . infarction

. . . **myocardial infarction**

RT arteriosclerosis

blood coagulation

coronary artery disease

hypertension

necrosis

thrombosis

myocardium

GS anatomy

. circulatory system

. . cardiovascular system

. . . heart

. . . . **myocardium**

. musculoskeletal system

. muscles

. **myocardium**

RT angina pectoris

myoelectric potentials

GS myoelectricity

. **myoelectric potentials**

RT muscles

∞ potential

myoelectricity

GS **myoelectricity**

. myoelectric potentials

RT electromyography

muscles

myoglobin

GS biopolymers

. proteins

. . **myoglobin**

organic compounds

. proteins

. . **myoglobin**

RT muscles

pigments

myopia

RT vision

Mystere 20 aircraft

UF *Dassault Mystere 20 aircraft*

GS Dassault aircraft

. **Mystere 20 aircraft**

jet aircraft

. turbofan aircraft

. . **Mystere 20 aircraft**

light aircraft

. **Mystere 20 aircraft**

monoplanes

. **Mystere 20 aircraft**

passenger aircraft

. **Mystere 20 aircraft**

transport aircraft

. **Mystere 20 aircraft**

Mystere 50 aircraft

DEF A tri-engine business jet aircraft (Dassault). Used for Dassault Mystere 50 aircraft.

UF *Dassault Mystere 50 aircraft*

GS Dassault aircraft

. **Mystere 50 aircraft**

jet aircraft

. **Mystere 50 aircraft**

passenger aircraft

. **Mystere 50 aircraft**

transport aircraft

. **Mystere 50 aircraft**

RT ∞ aircraft

turbofan engines

N

N electrons

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - **N electrons**
 - . corpuscular radiation
 - . . energetic particles
 - . . . electrons
 - **N electrons**
 - . elementary particles
 - . . fermions
 - . . . leptons
 - electrons
 - **N electrons**
- RT beta particles

N-156 aircraft

USE **F-5 aircraft**

NA-300 aircraft

USE **OV-10 aircraft**

nacelle wing configurations

(added August 1998)
USE **wing nacelle configurations**

nacelles

- RT aerodynamic configurations
 - air intakes
 - airframes
 - cowlings
 - ducted bodies
 - engine inlets
 - external store separation
 - external stores
 - external tanks
 - fairings
 - housings
 - nose inlets
 - perforated shells
 - Pods (external stores)
 - protuberances
 - shells (structural forms)
 - wing-fuselage stores

Naiad

(added January 1996)

DEF A natural satellite of Neptune orbiting at a mean distance of 48,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Naiad**
- RT Neptune (planet)

naked singularities

DEF Singularities in spacetime that will be visible and communicable to the outside world, i. e. , singularities that are not shielded by an event horizon from infinity.

- GS analysis (mathematics)
 - . complex variables
 - . . singularity (mathematics)
 - . . . **naked singularities**
- RT astrophysics
 - black holes (astronomy)
 - cosmology
 - degenerate matter
 - event horizon
 - gravitational collapse
 - points (mathematics)
 - relativity
 - space-time functions
 - theoretical physics
 - white holes (astronomy)

nakhilites

(added August 1991)

DEF Achondritic stony meteorites consist-

ing of a holocrystalline aggregate of diopside (75 percent) and olivine.

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **nakhilites**
- RT chassignites
- shergottites
- SNC meteorites

NAMC aircraft

USE **Nihon aircraft**

Namibia

- UF *South West Africa*
- RT Africa
- nations
- Republic of South Africa

naming

- GS **naming**
 - . norms
- RT nomenclatures
- specifications
- standardization

nanocomposites

(added December 2000)

- GS composite materials
 - . **nanocomposites**
- RT aluminum oxides
- ceramic matrix composites
- grain size
- nanocrystals
- nanosstructure (characteristics)
- particulate reinforced composites
- polymer matrix composites
- silicon carbides
- silicon nitrides

nanocrystalline materials

(added October 1997)

- USE **nanocrystals**
- nanocrystalline structure*
- (added October 1997)
- USE **nanosstructure (characteristics)**

nanocrystals

(added October 1997)

- UF *nanocrystalline materials*
- GS crystals
 - . **nanocrystals**
- RT crystal structure
- grain size
- microcrystals
- nanocomposites
- nanoparticles
- nanosstructure (characteristics)

nanofabrication

(added January 2002)

DEF Process of, and techniques for, creating nanoscale structures and devices.

- UF *nanosstructure fabrication*
- GS fabrication
 - . **nanofabrication**
- RT atomic force microscopy
- electron beams
- lithography
- nanosstructures (devices)
- nanotechnology
- quantum electronics
- scanning tunneling microscopy
- self assembly

nanindentation

(added October 2001)

DEF A method for determining various me-

chanical properties of materials on a very small scale by observing an indentation made with a nanoscale diamond probe at a selected rate and load. Force-displacement curves derived from the indentation reflect a material's response to deformation, from which properties such as hardness and modulus of elasticity can be determined.

- GS indentation
 - . **nanindentation**
- RT atomic force microscopy
- hardness tests
- Knoop hardness
- ∞ materials tests
- mechanical properties
- microhardness
- modulus of elasticity
- nanotechnology

nanoparticles

(added March 2002)

DEF Ultra fine particles with dimensions in the range of 1 to 100 nanometers.

- GS particles
 - . **nanoparticles**
- RT fullerenes
- nanocrystals
- nanosstructure (characteristics)
- nanosstructure growth
- nanotechnology
- nanotubes
- thin films

nanosatellites

(added October 1998)

DEF Satellites with a total mass smaller than 10 kg incorporating miniaturized electronic and mechanical systems.

- UF *nanosats*
- GS artificial satellites
 - . **nanosatellites**
- RT microelectromechanical systems
- microminiaturization
- microminiaturized electronic devices
- microsatellites
- satellite constellations
- satellite design
- small satellite technology
- small scientific satellites

nanosats

(added October 1998)

USE **nanosatellites**

nanosstructure (characteristics)

(added October 1997)

- UF *nanocrystalline structure*
- GS microstructure
 - . **nanosstructure (characteristics)**
- RT carbon nanotubes
- ∞ characteristics
- crystal structure
- dendrimers
- grain size
- micelles
- nanocomposites
- nanocrystals
- nanoparticles
- nanosstructure growth
- nanotechnology
- nanotubes
- self assembly
- semiconductors (materials)

nanosstructure fabrication

(added January 2002)

USE **nanofabrication**

nanosstructure growth

(added September 2001)

nanostructures (devices)

DEF The progressive formation of nano-scale material structures by various means including catalytic formation, laser ablation, chemical vapor deposition, and plasma deposition.

- GS growth
 - . **nanostructure growth**
- RT crystal growth
 - fullerenes
 - laser ablation
 - laser deposition
 - nanoparticles
 - nanostructure (characteristics)
 - nanostructures (devices)
 - nanotechnology
 - nanotubes
 - vapor deposition

nanostructures (devices)

(added October 1997)

GS nanostructures (devices)

- . nanotubes
- . quantum dots
- . quantum wires
- . . carbon nanotubes

- RT adatoms
 - ∞ devices
 - nanofabrication
 - nanostructure growth
 - nanotechnology
 - quantum electronics
 - semiconductor devices

nanotechnology

(added June 2000)

DEF The creation of functional materials, devices, and systems through control of matter on the nanometer-length scale; exploitation of novel phenomena and properties at the nanometer scale.

- GS technologies
 - . **nanotechnology**
- RT adatoms
 - microelectromechanical systems
 - microelectronics
 - nanofabrication
 - nanoidentation
 - nanoparticles
 - nanostructure (characteristics)
 - nanostructure growth
 - nanostructures (devices)
 - nanotubes
 - quantum dots
 - quantum electronics
 - quantum wires
 - self assembly

nanotubes

(added June 2000)

DEF Nanostructures having a closed, tubular morphology that can be single-walled or multi-walled. The structures are believed to be defect free, leading to high strength despite their low density; and can be either electrically conductive or semiconductive, depending on their helicity.

- UF *nanotubules*
- GS nanostructures (devices)
 - . **nanotubes**
 - . . carbon nanotubes
- RT fullerenes
 - graphite
 - nanoparticles
 - nanostructure (characteristics)
 - nanostructure growth
 - nanotechnology
- ∞ tubes

nanotubules

(added June 2000)

USE **nanotubes**

naphthalene

- GS organic compounds
 - . cyclic compounds
 - . . cyclic hydrocarbons

- . . . **naphthalene**
- . hydrocarbons
- . . cyclic hydrocarbons
- . . . **naphthalene**

naphthenes

- GS organic compounds
 - . cyclic compounds
 - . . cyclic hydrocarbons
 - . . . **naphthenes**
 - . hydrocarbons
 - . . cyclic hydrocarbons
 - . . . **naphthenes**

nap-of-the-earth navigation

DEF Low altitude flight of helicopters during night or day utilizing electronic means for detection and recognition of landmarks and targets. Used for NOE navigation.

- UF *NOE navigation*
- GS navigation
 - . air navigation
 - . . **nap-of-the-earth navigation**
 - . . . terrain following
- RT helicopters
 - image processing
 - low altitude
 - night flights (aircraft)
 - night vision
 - target recognition
 - terrain analysis

nappes

USE **folds (geology)**

narcolepsy

- GS diseases
 - . **narcolepsy**

narcosis

DEF A state of profound stupor, produced by the toxic effect of certain substances; in diluent gas narcosis, by excessive partial pressure of the diluent.

- GS unconsciousness
 - . **narcosis**
- RT physiology
 - ∞ poisoning

narcotics

- GS drugs
 - . **narcotics**
 - . . morphine
- RT pentobarbital
 - phenobarbital
 - psychotropic drugs

narrowband

DEF A description of frequency measurement whose frequency band of energy is smaller relative to the rest of the band.

- GS bandwidth
 - . **narrowband**
- RT ∞ bands
 - broadband
 - frequencies

NASA Communication Network

USE **NASCOM network**

NASA End-to-End Data System

USE **needs (data system)**

NASA Interactive Planning System

- UF *NIPS (system)*
- RT computer programs
 - Earth resources
 - management methods
 - NASA programs
 - project planning
 - resource allocation
 - resources management
- ∞ systems

NASA programs

- GS programs

. NASA programs

- . . ACEE program
- . . Assess program
- . . ATLIT project
- . . DAST program
- . . NASA space programs
 - . . . Apollo applications program
 - . . . Apollo project
 - . . . Bioastronautical Orbital Space System
 - . . . Centaur project
 - . . . Earth & Ocean Physics Applications Program
 - . . . Earth Resources Program
 - . . . Earth Resources Survey Program
 - SEASAT program
 - . . . Echo project
 - . . . Galileo project
 - . . . Gemini project
 - . . . Helios Project
 - . . . Jupiter project
 - . . . Magellan project (NASA)
 - . . . Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - . . . Mars 69 project
 - . . . Mars 71 project
 - . . . Mercury project
 - . . . National Launch Vehicle Program
 - . . . NEW MOONS project
 - . . . Nimbus project
 - . . . OPEN Project
 - . . . Pioneer project
 - . . . Project SETI
 - . . . Ranger project
 - Agena B Ranger Program
 - Mars Surveyor 98 Program
 - . . . Rover project
 - . . . SAIL project
 - . . . Saturn project
 - . . . Scout project
 - . . . Skylab program
 - . . . Starprobe mission
 - . . . Surveyor project
 - . . . Synchronous Communications Satellite Proj
 - . . . Tektite project
 - . . . TIROS project
 - . . . Titan project
 - . . . Vanguard project
 - . . . Viking Mars program
 - . . . Voyager project
 - . . Mission to Planet Earth
 - . . National Aerospace Plane Program
 - . . quiet engine program
 - . . supersonic cruise aircraft research
 - . . TACT program
 - . . Terminal Configured Vehicle Program
 - . . Tilt Rotor Research Aircraft Program
- RT Advanced Launch System (STS)
- AgRISTARS project
- Apollo extension system
- Canadian space program
- Committee on Space Research
- Communications Technology Satellite
- Earth Resources Information System
- GARP Atlantic Tropical Experiment
- geographic applications program
- Global Atmospheric Research Program
- grants
- Gravity Probe B
- Landsat satellites
- leasing
- NASA Interactive Planning System
- NASTRAN
- NOESS
- OSS-1 payload
- payload deployment & retrieval system
- Quasat
- Questol aircraft
- ∞ research projects
- rotor systems research aircraft

SEASAT satellites
 single stage to orbit vehicles
 space programs
 space transportation system
 Spacelab
 SPHINX
 Starsite program
 StormSat satellite
 Synchronous Earth Observatory
 satellite
 technology utilization
 Transit navigation system
 university program

NASA space programs

GS programs
 . NASA programs
 . . **NASA space programs**
 . . . Apollo applications program
 . . . Apollo project
 . . . Bioastronautical Orbital Space
 System
 . . . Centaur project
 . . . Earth & Ocean Physics
 Applications Program
 . . . Earth Resources Program
 Earth Resources Survey
 Program
 SEASAT program
 . . . Echo project
 . . . Galileo project
 . . . Gemini project
 . . . Helios Project
 . . . Jupiter project
 . . . Magellan project (NASA)
 . . . Mariner program
 Mariner Venus-Mercury 1973
 Mariner-Mercury 1973
 . . . Mars 69 project
 . . . Mars 71 project
 . . . Mercury project
 . . . National Launch Vehicle Program
 . . . NEW MOONS project
 . . . Nimbus project
 . . . OPEN Project
 . . . Pioneer project
 . . . Project SETI
 . . . Ranger project
 Agena B Ranger Program
 . . . Mars Surveyor 98 Program
 . . . Rover project
 . . . SAIL project
 . . . Saturn project
 . . . Scout project
 . . . Skylab program
 . . . Starprobe mission
 . . . Surveyor project
 . . . Synchronous Communications
 Satellite Proj
 . . . Tektite project
 . . . TIROS project
 . . . Titan project
 . . . Vanguard project
 . . . Viking Mars program
 . . . Voyager project
 . space programs
 . . **NASA space programs**
 . . . Apollo applications program
 . . . Apollo project
 . . . Bioastronautical Orbital Space
 System
 . . . Centaur project
 . . . Earth & Ocean Physics
 Applications Program
 . . . Earth Resources Program
 Earth Resources Survey
 Program
 SEASAT program
 . . . Echo project
 . . . Galileo project
 . . . Gemini project
 . . . Helios Project
 . . . Jupiter project
 . . . Magellan project (NASA)
 . . . Mariner program
 Mariner Venus-Mercury 1973
 Mariner-Mercury 1973

. . . Mars 69 project
 . . . Mars 71 project
 . . . Mercury project
 . . . National Launch Vehicle Program
 . . . NEW MOONS project
 . . . Nimbus project
 . . . OPEN Project
 . . . Pioneer project
 . . . Project SETI
 . . . Ranger project
 Agena B Ranger Program
 . . . Mars Surveyor 98 Program
 . . . Rover project
 . . . SAIL project
 . . . Saturn project
 . . . Scout project
 . . . Skylab program
 . . . Starprobe mission
 . . . Surveyor project
 . . . Synchronous Communications
 Satellite Proj
 . . . Tektite project
 . . . TIROS project
 . . . Titan project
 . . . Vanguard project
 . . . Viking Mars program
 . . . Voyager project
 RT Advanced Launch System (STS)
 Cassini mission
 Cluster Mission
 Comet Rendezvous Asteroid Flyby
 Mission
 Deep Space 1 Mission
 International Space Year
 manned Mars missions
 Mars sample return missions
 Mars Surveyor 2001 Mission
 Next Generation Space Telescope
 project
 Space Station Freedom

NASA Structural Analysis program
 USE **NASTRAN**

NASCOM network

UF NASA Communication Network
 GS communicating
 . point to point communication
 . . **NASCOM network**
 networks
 . communication networks
 . . **NASCOM network**
 RT Fleet Satellite Communication System
 Global Tracking Network
 radio communication
 telecommunication

NASTRAN

UF NASA Structural Analysis program
 GS computer programs
 . applications programs (computers)
 . . **NASTRAN**
 RT bending moments
 computer techniques
 dynamic loads
 finite element method
 matrix methods
 NASA programs
 stress analysis
 structural analysis

National Aerospace Plane Program

GS programs
 . NASA programs
 . . **National Aerospace Plane
 Program**
 RT aerospace planes
 hypersonic vehicles
 transatmospheric vehicles
 X-30 vehicle

National Airspace System

RT air traffic control
 aircraft safety
 airports
 airspace

National Airspace Utilization System
 National Aviation System

National Airspace Utilization System

RT air law
 air navigation
 air traffic
 air traffic control
 aircraft approach spacing
 airspace
 collision avoidance
 flight paths
 flight plans
 flight rules
 National Airspace System
 ∞ systems

National Aviation System

RT air traffic
 air traffic control
 air transportation
 aircraft approach spacing
 flight rules
 landing aids
 National Airspace System
 ∞ systems
 traffic control

National Launch Vehicle Program

GS programs
 . NASA programs
 . . NASA space programs
 . . . **National Launch Vehicle
 Program**
 . . space programs
 . . . NASA space programs
 **National Launch Vehicle
 Program**
 RT launch vehicles
 launchers
 launching
 launching sites

National Oceanic Satellite System

DEF Joint NASA (Goddard)-DOD venture.
 RT artificial satellites
 maritime satellites
 ∞ systems

National Operational Environmental Sat Sys

USE **NOESS**

national parks

DEF Areas of scenic beauty or historical
 importance preserved and maintained by a
 national government for the enjoyment of the
 public.

GS land
 . parks
 . . **national parks**
 . . . Yellowstone National Park
 (ID-MT-WY)

National Severe Storms Project

RT meteorology
 tornadoes
 warning systems

nations

GS **nations**
 . Afghanistan
 . Albania
 . Algeria
 . Andorra
 . Angola
 . Antigua and Barbuda
 . Argentina
 . Armenia
 . Australia
 . Austria
 . Azerbaijan
 . Bahamas
 . Bahrain
 . Bangladesh
 . Barbados
 . Belarus

NATO 3B satellite

- . Belgium
- . Belize
- . Benin
- . Bhutan
- . Bolivia
- . Botswana
- . Brazil
- . Brunei
- . Bulgaria
- . Burkina
- . Burma
- . Burundi
- . Cambodia
- . Cameroon
- . Canada
 - . . Alberta
 - . . British Columbia
 - . . Manitoba
 - . . New Brunswick
 - . . Newfoundland
 - . . Northwest Territories
 - . . Nova Scotia
 - . . Ontario
 - . . Prince Edward Island
 - . . Quebec
 - . . Saskatchewan
 - . . Yukon Territory
- . Cape Verde
- . Central African Republic
- . Chad
- . Chile
- . China
- . Colombia
- . Congo (Brazzaville)
- . Costa Rica
- . Cote d'Ivoire
- . Croatia
- . Cuba
- . Cyprus
- . Czech Republic
- . Czechoslovakia
- . Denmark
- . Djibouti
- . Dominica
- . Dominican Republic
- . East Germany
- . Ecuador
- . Egypt
- . El Salvador
- . Estonia
- . Ethiopia
- . Finland
- . France
 - . . French Guiana
 - . . Guadeloupe
 - . . Martinique
- . Gabon
- . Gambia
- . Georgia (Eurasia)
- . Germany
- . Ghana
- . Greece
- . Grenada
- . Guatemala
- . Guinea
- . Guyana
- . Haiti
- . Honduras
- . Hungary
- . Iceland
- . India
- . Indonesia
- . Iran
- . Iraq
- . Ireland
- . Israel
- . Italy
- . Jamaica
- . Japan
- . Jordan
- . Kazakhstan
- . Kenya
- . Kuwait
- . Kyrgyzstan
- . Laos
- . Latvia
- . Lebanon
- . Lesotho
- . Liberia
- . Libya
- . Liechtenstein
- . Lithuania
- . Luxembourg
- . Madagascar
- . Malawi
- . Malaysia
- . Maldiv Islands
- . Mali
- . Malta
- . Mauritania
- . Mauritius
- . Mexico
- . Moldova
- . Monaco
- . Mongolia
- . Morocco
- . Mozambique
- . Nepal
- . Netherlands
- . New Zealand
- . Nicaragua
- . Niger
- . Nigeria
- . North Korea
- . Norway
- . Oman
- . Pakistan
- . Panama
- . Papua New Guinea
- . Paraguay
- . Peru
- . Philippines
- . Poland
- . Portugal
 - . . Azores
- . Qatar
- . Republic of South Africa
- . Romania
- . Russian Federation
- . Rwanda
- . San Marino
- . Saudi Arabia
- . Senegal
- . Seychelles
- . Sierra Leone
- . Sikkim
- . Singapore
- . Slovakia
- . Somalia
- . South Korea
- . Southern Yemen
- . Spain
 - . . Canary Islands
- . Sri Lanka
- . Sudan
- . Surinam
- . Swaziland
- . Sweden
- . Switzerland
- . Syria
- . Taiwan
- . Tajikistan
- . Tanzania
- . Thailand
- . Tibet
- . Togo
- . Trinidad and Tobago
- . Tunisia
- . Turkey
- . Turkmenistan
- . U. S. S. R.
- . Uganda
- . Ukraine
- . United Arab Emirates
- . United Kingdom
 - . . England
 - . . Gibraltar
 - . . Northern Ireland
 - . . Scotland
 - . . Wales
- . United States
 - . . Alabama
 - . . Alaska
 - . . Arizona
 - . . Arkansas
 - . . California
 - . . Colorado
 - . . Connecticut
 - . . Delaware
 - . . District of Columbia
 - . . Florida
 - . . Georgia
 - . . Guam
 - . . Hawaii
 - . . Idaho
 - . . Illinois
 - . . Indiana
 - . . Iowa
 - . . Kansas
 - . . Kentucky
 - . . Louisiana
 - . . Maine
 - . . Maryland
 - . . Massachusetts
 - . . Michigan
 - . . Minnesota
 - . . Mississippi
 - . . Missouri
 - . . Montana
 - . . Nebraska
 - . . Nevada
 - . . New Hampshire
 - . . New Jersey
 - . . New Mexico
 - . . New York
 - . . North Carolina
 - . . North Dakota
 - . . Ohio
 - . . Oklahoma
 - . . Oregon
 - . . Pennsylvania
 - . . Puerto Rico
 - . . Rhode Island
 - . . South Carolina
 - . . South Dakota
 - . . Tennessee
 - . . Texas
 - . . Utah
 - . . Vermont
 - . . Virgin Islands
 - . . Virginia
 - . . Washington
 - . . West Virginia
 - . . Wisconsin
 - . . Wyoming
 - . Bosnia and Herzegovina
 - . Democratic Republic of Congo
 - . Serbska Republic
 - . Uruguay
 - . Uzbekistan
 - . Vatican City
 - . Venezuela
 - . Vietnam
 - . West Germany
 - . Yemen
 - . Yugoslavia
 - . Zambia
 - . Zimbabwe
- RT Africa
- Asia
- cities
- Commonwealth of Independent States
- communities
- demography
- developing nations
- Europe
- federations
- Hong Kong
- international law
- minorities
- Namibia
- politics
- regimes
- Spanish Sahara
- United Nations
- NATO 3B satellite
- GS artificial satellites
- . communication satellites

- .. Communications Technology Satellite
- ... **NATO 3B satellite**
- natural convection*
- USE **free convection**
- natural frequencies*
- USE **resonant frequencies**
- natural gas**
- DEF (A) Hydrocarbons that exist as a gas or vapor at ordinary pressures and temperatures. Methane is the most important, but ethane, propane, or others may be present. (B) Gaseous hydrocarbons trapped in the zone of ground water saturation under pressure from, and partially dissolved in, underlying water or petroleum.
- GS fuels
 - . chemical fuels
 - . hydrocarbon fuels
 - . . . fossil fuels
 - **natural gas**
 - liquefied natural gas
 - . gaseous fuels
 - . **natural gas**
 - . . . liquefied natural gas
 - gases
 - . flammable gases
 - . . gaseous fuels
 - . . . **natural gas**
 - liquefied natural gas
 - geophysical fluids
 - . **natural gas**
 - . . liquefied natural gas
 - organic compounds
 - . hydrocarbons
 - . . **natural gas**
 - . . . liquefied natural gas
 - resources
 - . Earth resources
 - . . fossil fuels
 - . . . **natural gas**
 - liquefied natural gas
- RT methane
 - natural gas exploration
 - oil fields
 - petroleum products
- natural gas exploration**
- DEF Searching the geological features to identify locations for stimulating wells for recovery of natural gas.
- GS exploration
 - . **natural gas exploration**
- RT drilling
 - methane
 - natural gas
 - oil exploration
 - photogeology
- natural language (computers)**
- DEF A computer language whose rules reflect and describe current rather than prescribed usage. The language is often loose and ambiguous in interpretation.
- GS languages
 - . programming languages
 - . . **natural language (computers)**
- RT computer programming
 - context
 - data processing
 - knowledge representation
- natural language processing**
- (added September 1993)
- RT artificial intelligence
 - expert systems
 - human-computer interface
 - information analysis
 - knowledge based systems
 - linguistics
 - machine translation
 - parsing algorithms
 - semantics
- syntax
- natural lasers*
- USE **lasers**
- natural satellites**
- SN (EXCLUDES PLANETS)
- UF *Dactyl*
 - moons*
 - planetary satellites*
- GS celestial bodies
 - . **natural satellites**
 - . . icy satellites
 - . . . Ariel
 - . . . Callisto
 - . . . Dione
 - . . . Enceladus
 - . . . Europa
 - . . . Ganymede
 - . . . Hyperion
 - . . . Iapetus
 - . . . Mimas
 - . . . Rhea (astronomy)
 - . . . Tethys
 - . . . Titania
 - . . . Jupiter satellites
 - . . . Adrastea
 - . . . Amalthea
 - . . . Carme
 - . . . Elara
 - . . . Galilean satellites
 - Callisto
 - Europa
 - Ganymede
 - Io
 - . . . Himalia
 - . . . Leda
 - . . . Lysithea
 - . . . Metis
 - . . . Pasiphae
 - . . . Sinope
 - . . . Thebe
 - . . Mars satellites
 - . . . Deimos
 - . . . Phobos
 - . . moon
 - . . Neptune satellites
 - . . . Galatea
 - . . . Larissa
 - . . . Naiad
 - . . . Nereid
 - . . . Proteus
 - . . . Triton
 - . . Pluto satellites
 - . . . Charon
 - . . Saturn satellites
 - . . . Calypso
 - . . . Dione
 - . . . Enceladus
 - . . . Epimetheus
 - . . . Helene
 - . . . Hyperion
 - . . . Iapetus
 - . . . Janus
 - . . . Mimas
 - . . . Pandora
 - . . . Phoebe
 - . . . Prometheus
 - . . . Rhea (astronomy)
 - . . . Telesto
 - . . . Tethys
 - . . . Titan
 - . . Uranus satellites
 - . . . Ariel
 - . . . Cordelia
 - . . . Miranda
 - . . . Oberon
 - . . . Puck
 - . . . Titania
 - . . . Umbriel
- RT artificial satellites
 - Cyrrillid meteoroids
 - Earth-Moon system
 - meteoroids
 - moonlets
 - planets
 - Roche limit
- satellite atmospheres
- satellite surfaces
- ∞ satellites
 - Saturn rings
 - solar system
 - tektites
 - Uranus rings
- nausea**
- DEF A feeling of discomfort in the region of the stomach, with aversion to food and a tendency to vomit.
- GS signs and symptoms
 - . **nausea**
- RT antiemetics and antinauseants
 - motion sickness
 - vomiting
- nautical charts**
- DEF Charts and maps of oceans, coasts and harbors now compiled from satellite data for precision and correction of local errors.
- GS charts
 - . **nautical charts**
- RT navigation aids
 - navigation satellites
 - surface navigation
- Navaho missile**
- GS missiles
 - . ramjet missiles
 - . . **Navaho missile**
 - . surface to surface missiles
 - . . cruise missiles
 - . . . **Navaho missile**
- RT liquid propellant rocket engines
 - multistage rocket vehicles
 - ramjet engines
- Navier-Stokes equation**
- DEF The equation of motion for a viscous fluid.
- GS equations of motion
 - . **Navier-Stokes equation**
 - flow equations
 - . **Navier-Stokes equation**
- RT Burger equation
 - computational fluid dynamics
 - direct numerical simulation
- ∞ equations
 - flow theory
 - incompressible flow
 - incompressible fluids
 - large eddy simulation
 - Milne-Thomson method
 - Newtonian fluids
 - Oseen approximation
 - Reynolds averaging
 - Reynolds equation
 - Reynolds stress
 - viscous flow
 - viscous fluids
- navigation**
- DEF The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft.
- GS **navigation**
 - . air navigation
 - . . all-weather air navigation
 - . . area navigation
 - . . nap-of-the-earth navigation
 - . . . terrain following
 - . autonomous navigation
 - . celestial navigation
 - . . Astroguide Navigation System
 - . . astronavigation
 - . dead reckoning
 - . digital navigation
 - . Doppler navigation
 - . hybrid navigation systems
 - . inertial navigation
 - . . Astroguide Navigation System
 - . . gimballess inertial navigation
 - . Omega Navigation System

navigation aids

- . polar navigation
- . radar navigation
- . radio navigation
- . . hyperbolic navigation
- . . . Decca navigation
- . . . LORAC navigation system
- . . . loran
- loran C
- loran D
- . . . Shoran
- . . Tacan
- . . VHF omnirange navigation
- . space navigation
- . . interplanetary navigation
- . proportional navigation
- . surface navigation
- RT automatic flight control
- azimuth
- bay ice
- declination
- distance measuring equipment
- ∞ fixing
- flight control
- flight paths
- Global Positioning System
- guidance (motion)
- gyroscopic coupling
- homing devices
- latitude measurement
- locomotion
- longitude measurement
- orbital position estimation
- plotting
- position (location)
- position errors
- positioning
- star trackers
- stationkeeping
- ∞ systems
- triangulation

navigation aids

- GS **navigation aids**
- . beacons
- . . airport beacons
- . . . discrete address beacon system
- . . radar beacons
- . . . discrete address beacon system
- . . radio beacons
- . . . omnidirectional radio ranges
- . . . self calibrating omnirange
- . . radio direction finders
- . Light Airborne Multipurpose System
- . microwave scanning beam landing system
- . navigation instruments
- . . attitude indicators
- . . . gyro horizons
- . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . radio direction finders
- . TERCOM
- RT ∞ aids
- air navigation
- air traffic control
- aircraft equipment
- aircraft instruments
- aircraft safety
- airports
- all-weather air navigation
- altimeters
- approach indicators
- automatic flight control
- automatic pilots
- automatic traffic advisory and resolution
- autonomous navigation
- buoys
- charts
- Decca navigation
- display devices
- distance measuring equipment
- echo sounding
- flight control
- flight management systems

- flight paths
- gyrostabilizers
- head-up displays
- heliports
- homing devices
- hybrid navigation systems
- inertial navigation
- Kalman filters
- landing aids
- laser range finders
- LORAC navigation system
- loran
- loran C
- loran D
- maps
- ∞ mars
- military air facilities
- nautical charts
- plotters
- position indicators
- radio navigation
- range finders
- reduced order filters
- reference stars
- sextants
- Shoran
- solar sensors
- sonar
- star trackers
- surface navigation
- Tacan
- VHF omnirange navigation
- weather

navigation instruments

- GS navigation aids
- . **navigation instruments**
- . . attitude indicators
- . . . gyro horizons
- . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . radio direction finders
- RT aircraft equipment
- aircraft instruments
- altimeters
- autonomous navigation
- boresight error
- flight control
- flight instruments
- gimballess inertial navigation
- horizon scanners
- hybrid navigation systems
- inertial platforms
- ∞ instruments
- Kalman-Schmidt filtering
- laser range finders
- Light Airborne Multipurpose System
- LORAC navigation system
- loran
- measuring instruments
- position indicators
- radar
- solar sensors
- star trackers
- TERCOM

navigation satellites

- GS artificial satellites
- . **navigation satellites**
- . . Aerosat satellites
- . . Explorer 22 satellite
- . . navigation technology satellites
- . . NAVSTAR satellites
- . . Nova satellites
- . . Refsat
- . . Transit Attitude Control satellite
- . . Transit satellites
- RT active satellites
- ATS
- geodetic satellites
- LOCATES system
- meteorological satellites
- military spacecraft
- nautical charts
- passive satellites

- satellite navigation systems
- satellite networks
- synchronous satellites
- Transit navigation system

navigation technology satellites

- DEF Class of navigation satellites utilizing the global positioning system as well as a precise frequency and timing system. Used for NTS.
- UF *NTS*
- GS artificial satellites
- . navigation satellites
- . . **navigation technology satellites**
- RT NAVSTAR satellites

navigators

- GS personnel
- . **navigators**
- RT flight crews
- flying personnel

Navion aircraft

- GS **Navion aircraft**
- . G-1 aircraft
- RT ∞ aircraft

Navion G-1 aircraft

- USE **G-1 aircraft**

Navion Rangemaster aircraft

- USE **G-1 aircraft**

NAVSTAR satellites

- GS artificial satellites
- . navigation satellites
- . . **NAVSTAR satellites**
- RT active satellites
- ATS
- geodetic satellites
- INMARSAT satellites
- navigation technology satellites
- Refsat
- satellite networks

navy

- GS armed forces
- . **navy**
- RT aircraft carriers
- ballistic missile submarines
- Fleet Satellite Communication System
- nuclear powered ships
- ships
- submarines
- trident submarine
- ∞ vessels

N-body problem

- USE **many body problem**

NC-130 aircraft

- USE **C-130 aircraft**

NDM semiconductor devices

- SN (NEGATIVE DIFFERENTIAL MOBILITY SEMICONDUCTOR DEVICES)
- UF *negative diff mobility semiconductors*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . **NDM semiconductor devices**
- RT conduction bands
- ∞ devices
- diffusivity
- electron mobility
- ionic mobility

NDVI (remote sensing)

(added June 2001)

- USE **normalized difference vegetation index**

Near Earth Asteroid Rendezvous Mission

(added March 1996)

- GS space missions
- . asteroid missions

. . **Near Earth Asteroid Rendezvous Mission**

. flyby missions

. . **Near Earth Asteroid Rendezvous Mission**

RT Comet Rendezvous Asteroid Flyby Mission
Earth orbits
EROS asteroid
near Earth objects
rendezvous trajectories
Rosetta mission

near Earth objects

(added November 2001)

DEF Asteroids, meteoroids, or short-period comets having trajectories that intersect the orbit of Earth or that are within 0. 3 Astronomical Units (AU) of Earth. Asteroids and comets with perihelion distance less than 1. 3 AU.

UF *NEO (astronomy)*

GS celestial bodies

. **near Earth objects**

RT asteroid collisions
asteroids
cometary collisions
comets
Earth orbital environments
meteorite collisions
meteorites
Near Earth Asteroid Rendezvous Mission
space debris

near fields

GS electromagnetic fields

. **near fields**

RT antenna radiation patterns
antennas
electromagnetic radiation
far fields
laser arrays
radio equipment
sidelobes

near infrared radiation

SN (0. 75 TO 3 MICRONS)

GS electromagnetic radiation

. infrared radiation

. . **near infrared radiation**

RT far infrared radiation
infrared photometry
light (visible radiation)

∞ radiation
radiative heat transfer
radiative transfer
terrestrial radiation
thermal radiation

near ultraviolet radiation

SN (2000 TO 4000 ANGSTROMS)

GS electromagnetic radiation

. ultraviolet radiation

. . **near ultraviolet radiation**

RT far ultraviolet radiation
light (visible radiation)

∞ radiation

near wakes

GS wakes

. **near wakes**

nearshore water

GS water

. **nearshore water**

. . coastal water

RT marine environments
oceans
sea water
vadose water
water depth
wetlands

Nebraska

GS nations

. United States

. . Nebraska

RT Missouri River (US)

Sand Hills Region (NE)

nebulae

DEF Clouds of interstellar gas and dust, seen either as a luminous patch of light or a dark cloud against a bright background. The term nebula was coined to describe objects that appeared fuzzy when viewed through early telescopes.

GS celestial bodies

. **nebulae**

. . Cassiopeia A

. . Crab nebula

. . Gum nebula

. . H I regions

. . H II regions

. . Herbig-Haro objects

. . Orion nebula

. . planetary nebulae

. . reflection nebulae

. . solar nebula

RT galaxies

interstellar matter

irregular galaxies

Maffei galaxies

Magellanic clouds

North Polar Spur (astronomy)

Ophiuchi clouds

Opik theory

solar corona

star formation

supernovae

neck (anatomy)

GS anatomy

. **neck (anatomy)**

RT vertebrae

necrosis

(added October 2000)

DEF One of the two mechanisms by which cell death occurs (the other being the physiological process of APOPTOSIS). A pathological process caused by the progressive degradative action of enzymes that is generally associated with severe cellular trauma. It is characterized by mitochondrial swelling, nuclear flocculation, uncontrolled cell lysis, and ultimately cell death. In general, cell or tissue death caused by disease or injury.

UF *pathological cell death*

GS pathological effects

. **necrosis**

RT apoptosis

cells (biology)

cytology

death

diseases

hypoxia

injuries

myocardial infarction

pathology

tissues (biology)

needle bearings

GS bearings

. antifriction bearings

. . roller bearings

. . . **needle bearings**

RT ball bearings

needles

RT dendritic crystals

sewing

single crystals

surgical instruments

needs (data system)

UF *NASA End-to-End Data System*

GS data systems

. **needs (data system)**

end-to-end data systems

. **needs (data system)**

RT data acquisition

data processing

satellite instruments

∞ systems

VSAT (network)

neel temperature

GS temperature

. **neel temperature**

RT antiferromagnetism

magnetic permeability

phase transformations

specific heat

thermal expansion

negative conductance

RT avalanche diodes

gallium arsenides

Gunn effect

tunnel diodes

negative diff mobility semiconductors

USE **NDM semiconductor devices**

negative electron affinity

GS affinity

. **negative electron affinity**

RT electron affinity

electron emission

gallium arsenides

photoelectric emission

semiconductors (materials)

negative feedback

DEF Feedback which results in decreasing the amplification. Used for degenerative feedback.

UF *degenerative feedback*

GS feedback

. **negative feedback**

RT automatic control

damping

degeneration

feedback control

nonlinear feedback

oscillators

transfer functions

negative ions

DEF Ions singly or in groups which acquire negative charges by gaining one or more electrons.

GS ions

. **negative ions**

. . anions

RT free radicals

ionic mobility

nitrogen ions

oxygen ions

plasma physics

negative matter

(added August 1991)

SN (NOT ANTIMATTER)

DEF A hypothetical form of matter whose active-gravitational, passive-gravitational, inertial, and rest mass are opposite in sign to normal, positive matter. Negative matter is not antimatter.

GS matter (physics)

. **negative matter**

RT antimatter

condensed matter physics

extraterrestrial matter

mass

negative matter propulsion

(added August 1991)

GS propulsion

. spacecraft propulsion

. . **negative matter propulsion**

RT interplanetary flight

interstellar travel

matter-antimatter propulsion

negative resistance circuits

rocket engines

negative resistance circuits

GS circuits
. **negative resistance circuits**
RT ∞ resistance
tunnel diodes

negative resistance devices

RT aluminum gallium arsenides
gallium arsenides
Gunn diodes
Gunn effect
MIM diodes
negatrons
parametric amplifiers
Ramsauer effect
∞ resistance
resonant tunneling

negatrons

DEF Negative electrons. Sometimes shortened to negatons.
GS particles
. charged particles
. . . energetic particles
. . . electrons
. . . . **negatrons**
. corpuscular radiation
. energetic particles
. . . electrons
. . . . **negatrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. **negatrons**
RT negative resistance devices

Nembutal (trademark)

GS drugs
. **Nembutal (trademark)**
ketones
. **Nembutal (trademark)**
sodium compounds
. **Nembutal (trademark)**
RT pentobarbital sodium

Nemesis (star)

UF *solar companion star*
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . companion stars
. **Nemesis (star)**
RT dwarf stars
extinction
Oort cloud
solar neighborhood
stellar orbits
stellar systems

NEO (astronomy)

(added November 2001)
USE **near Earth objects**

neodymium

GS chemical elements
. rare earth elements
. . **neodymium**
metals
. rare earth elements
. . **neodymium**
RT didymium

neodymium alloys

GS alloys
. rare earth alloys
. . **neodymium alloys**

neodymium compounds

GS rare earth compounds
. **neodymium compounds**
RT ∞ chemical compounds

∞ metal compounds

neodymium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **neodymium isotopes**
. rare earth elements
. . **neodymium isotopes**
metals
. rare earth elements
. . **neodymium isotopes**

neodymium lasers

GS stimulated emission devices
. lasers
. . **neodymium lasers**
RT coherent light
glass lasers
optical pumping
rare earth elements

neon

GS chemical elements
. rare gases
. . **neon**
. . . liquid neon
. . . neon isotopes
gases
. rare gases
. . **neon**
. . . liquid neon
. . . neon isotopes

neon 19

USE **neon isotopes**

neon isotopes

UF *neon 19*
GS chemical elements
. nuclides
. . isotopes
. . . **neon isotopes**
. rare gases
. . neon
. . . **neon isotopes**
gases
. rare gases
. . neon
. . . **neon isotopes**

neopentane

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . pentanes
. **neopentane**

neoplasms

GS diseases
. tumors
. . **neoplasms**
. . . cancer
. . . . leukemias
RT carcinogens
cysts
metastasis

neoprenes

USE **chloroprene resins**

neotectonics

(added May 2002)
DEF Study of the most recent crustal movements and structures of the Earth or other terrestrial planets.
GS geology
. tectonics
. . **neotectonics**
RT Earth movements
plates (tectonics)
sea floor spreading
structural properties (geology)

subduction (geology)

Nepal

GS nations
. **Nepal**
RT Asia

nephanalysis

DEF A type of analysis using satellite cloud pictures to study the relationship between cloud formation and storm systems.
RT Alpine meteorology
anvil clouds
Atmospheric Cloud Physics Lab
(Spacelab)
cap clouds
chemical analysis
cirrocumulus clouds
cirrostratus clouds
cloud cover
cloud physics
clouds (meteorology)
convection clouds
meteorological instruments
meteorology
nephelometers
precipitation (meteorology)
synoptic measurement
synoptic meteorology
weather forecasting

nepheline

GS aluminum compounds
. **nepheline**
minerals
. **nepheline**
potassium compounds
. **nepheline**
silicon compounds
. silicates
. . **nepheline**
sodium compounds
. **nepheline**
RT nephelite

nephelite

GS aluminum compounds
. **nephelite**
chalcogenides
. oxides
. . silicon oxides
. . . **nephelite**
minerals
. **nephelite**
silicon compounds
. silicon oxides
. . **nephelite**
RT nepheline

nephelometers

DEF General name for instruments which measure, at more than one angle, the scattering function of particles suspended in a medium. Instruments for chemical analysis by measuring the light scattering properties of a suspension.
GS measuring instruments
. optical measuring instruments
. . **nephelometers**
optical equipment
. optical measuring instruments
. . **nephelometers**
RT nephanalysis
optical measurement
photometers

nephritis

GS diseases
. kidney diseases
. . **nephritis**
RT bacterial diseases

Neptune (planet)

GS celestial bodies
. planets
. . gas giant planets
. . . **Neptune (planet)**

- RT Galatea
Larissa
Naiad
Neptune atmosphere
Neptune satellites
Nereid
Proteus
Triton
Voyager 2 spacecraft
- Neptune atmosphere**
DEF The atmosphere of the planet Neptune which is primarily composed of hydrogen and methane.
GS environments
. extraterrestrial environments
. . . planetary environments
. . . planetary atmospheres
. . . **Neptune atmosphere**
RT aerospace environments
∞ atmospheres
gas giant planets
hydrogen
methane
Neptune (planet)
planetary ionospheres
Triton
- Neptune satellites**
(added August 1989)
GS celestial bodies
. natural satellites
. . **Neptune satellites**
. . . Galatea
. . . Larissa
. . . Naiad
. . . Nereid
. . . Proteus
. . . Triton
RT Neptune (planet)
- neptunium**
GS chemical elements
. actinide series
. . . transuranium elements
. . . **neptunium**
. neptunium isotopes
. nuclides
. isotopes
. radioactive isotopes
. transuranium elements
. **neptunium**
. neptunium isotopes
metals
. actinide series
. . . transuranium elements
. . . **neptunium**
. neptunium isotopes
- neptunium compounds**
GS actinide series compounds
. **neptunium compounds**
RT ∞ chemical compounds
∞ metal compounds
- neptunium isotopes**
GS chemical elements
. actinide series
. . . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**
. nuclides
. isotopes
. radioactive isotopes
. transuranium elements
. neptunium
. **neptunium isotopes**
metals
. actinide series
. . . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**
- Nereid**
(added August 1989)
GS celestial bodies
. natural satellites
. . . Neptune satellites
. . . **Nereid**
RT Neptune (planet)
- Nernst generators**
USE **thermomagnetic cooling**
- Nernst heat theorem**
USE **Nernst-Ettingshausen effect**
- Nernst-Ettingshausen effect**
UF *Nernst heat theorem*
GS galvanomagnetic effects
. **Nernst-Ettingshausen effect**
RT ∞ effects
temperature effects
thermomagnetic effects
- NERVA (engine)**
USE **nuclear engine for rocket vehicles**
- nerves**
GS anatomy
. nervous system
. . **nerves**
. . . ganglia
. . . oculomotor nerves
RT carotid sinus body
carotid sinus reflex
His bundle
myelin
neuritis
neurons
sciatic region
synapses
- nervous system**
UF *vasomotor nervous system*
GS anatomy
. **nervous system**
. . afferent nervous systems
. . . autonomic nervous system
. . . sympathetic nervous system
. . . central nervous system
. . . brain
. brain stem
. cerebellum
. cerebral ventricles
. cerebrum
. cerebral cortex
. occipital lobes
. diencephalon
. hypothalamus
. pineal gland
. thalamus
. hippocampus
. . . spinal cord
. . efferent nervous systems
. . . nerves
. . . ganglia
. . . oculomotor nerves
. . . peripheral nervous system
RT electrophysiology
homeostasis
myelin
neurasthenia
neuritis
neuroglia
neurons
neuropsychiatry
neurotransmitters
proprioceptors
psychopharmacology
sense organs
synapses
∞ systems
- Netherlands**
UF *Holland*
GS nations
. **Netherlands**
RT Astronomical Netherlands Satellite
Europe
Netherlands space program
- Surinam
- Netherlands space program**
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Netherlands space program**
RT Astronomical Netherlands Satellite
Infrared Astronomy Satellite
Netherlands
- ∞ nets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)
RT coordinates
distribution functions
geodetic coordinates
graph theory
Kirchhoff law of networks
netting (materials/structures)
networks
Petri nets
structured grids (mathematics)
superposition (mathematics)
topology
trees (mathematics)
- netting (materials/structures)**
(added July 1995)
RT camouflage
coverings
crosslinking
crystal growth
fibers
filament winding
laminates
molecular chains
∞ nets
parachute fabrics
webs (sheets)
- network analysis**
UF *Tellegen theory*
GS **network analysis**
. critical path method
. . sneak circuit analysis
RT ∞ analyzing
circuits
data flow analysis
distributed parameter systems
duality principle
electric terminals
equivalent circuits
Foster theory
gyrators
hydraulic equipment
insertion
Kirchhoff law of networks
LC circuits
∞ paths
RC circuits
RL circuits
RLC circuits
signal flow graphs
superposition (mathematics)
- network control**
DEF The management of acquisition, routing, and switching primarily in satellite communication.
RT communication networks
communication satellites
computer networks
∞ control
local area networks
packet switching
satellite networks
transmission efficiency
- network synthesis**
UF *Tellegen theory*
RT communication theory
equivalent circuits
hydraulic equipment
Kirchhoff law of networks

networks

LC circuits
 networks
 RC circuits
 Richards theorem
 RL circuits
 RLC circuits
 superposition (mathematics)
 switching theory
 ∞ synthesis
 topology

networks

GS **networks**
 . belief networks
 . communication networks
 . . Aloha system
 . . Deep Space Network
 . . internets
 . . . ARPA computer network
 . . . World Wide Web
 . . Iridium network
 . . local area networks
 . . NASCOM network
 . . VSAT (network)
 . . wide area networks
 . computer networks
 . . internets
 . . . ARPA computer network
 . . . World Wide Web
 . . client server systems
 . . local area networks
 . . wide area networks
 . defense communications system (DCS)
 . electric networks
 . iterative networks
 . neural nets
 . Orion (radio interferometry network)
 . Petri nets
 . quadrupole networks
 . satellite networks
 . . Argos system
 . . satellite constellations
 . . . Iridium network
 . . VSAT (network)
 . tracking networks
 . . Deep Space Network
 . . Global Tracking Network
 . . manned space flight network
 . . MATTS (systems)
 . . polystation doppler tracking system
 . . radar networks
 . . space detection and tracking system
 . . Space Flight Tracking and Data Network
 . . STDN (network)
 RT data links
 educational television
 gravimetry
 ground stations
 information systems
 ∞ nets
 network synthesis
 protocol (computers)
 telecommunication

Neumann problem

GS analysis (mathematics)
 . real variables
 . . **Neumann problem**
 boundary value problems
 . **Neumann problem**
 RT differential equations
 partial differential equations
 ∞ problems

neural nets

GS networks
 . **neural nets**
 RT associative memory
 backpropagation (artificial intelligence)
 belief networks
 cybernetics
 evolvable hardware
 Gabor filters
 genetic algorithms

logic circuits
 membership functions

neurasthenia

GS diseases
 . **neurasthenia**
 RT nervous system

neuristors

GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **neuristors**
 RT bionics

neuritis

GS diseases
 . **neuritis**
 RT nerves
 nervous system

neuroblasts

GS cells (biology)
 . neurons
 . . **neuroblasts**
 RT embryology

neuroglia

GS tissues (biology)
 . **neuroglia**
 RT brain
 cells (biology)
 ganglia
 nervous system
 spinal cord

neurology

DEF The study of the anatomy, physiology, and pathology of the nervous system. Used for neuroscience.
 UF *neuroscience*
 GS medical science
 . **neurology**
 RT brain
 chemical defense
 electrophysiology
 life sciences
 neuropsychiatry
 thresholds (perception)

neuromuscular transmission

RT bioelectricity
 cholinesterase
 neurotransmitters
 peripheral nervous system
 synapses

neuron transmission

USE **bioelectricity**

neurons

GS cells (biology)
 . **neurons**
 . . axons
 . . neuroblasts
 RT blood-brain barrier
 myelin
 nerves
 nervous system
 synapses
 syncoders

neuropsychiatry

GS physiology
 . **neuropsychiatry**
 RT dopamine
 ganglia
 information processing (biology)
 ion channels (biology)
 ontogeny
 psychotropic drugs
 ∞ science

neuropsychiatry

GS medical science
 . psychiatry

. . **neuropsychiatry**
 RT human behavior
 ∞ medicine
 mental health
 nervous system
 neurology
 psychotherapy

neuroscience

USE **neurology**

neuroses

GS **neuroses**
 . neurotic depression
 RT fear
 fear of flying
 psychoses

neurospora

GS plants (botany)
 . fungi
 . . **neurospora**
 RT genetics

neurotic depression

GS neuroses
 . **neurotic depression**
 RT ∞ depression
 psychotic depression

neurotransmitters

DEF Chemical substances secreted by the terminal ends of axons, which stimulate a muscle fiber contraction or an impulse in other neurons.
 RT axons
 catecholamine
 cells (biology)
 dopamine
 epinephrine
 nervous system
 neuromuscular transmission
 norepinephrine
 synapses

neurotropism

GS tropism
 . **neurotropism**

neutral atmospheres

RT ∞ atmospheres
 neutral gases

neutral atoms

DEF Atoms in which the number of electrons surrounding the nucleus equals the number of protons in the nucleus resulting in no net electric charge.
 GS atoms
 . **neutral atoms**
 RT atomic beams
 charge distribution
 ∞ elements
 H I regions
 neutral beams
 neutral gases

neutral beams

GS beams (radiation)
 . particle beams
 . . **neutral beams**
 . . . molecular beams
 . . . neutron beams
 RT atomic beams
 beam injection
 beam neutralization
 neutral atoms
 particles
 pion beams

neutral buoyancy simulation

GS environmental tests
 . underwater tests
 . . **neutral buoyancy simulation**
 simulation
 . environment simulation

- .. space environment simulation
 - ... weightlessness simulation
 - ... **neutral buoyancy simulation**
- RT buoyancy
- space simulators
- weightlessness
- neutral currents**
- DEF Weak interaction currents that carry zero electric charge.
- RT current distribution
- gravitational collapse
- neutral particles
- neutrinos
- neutron stars
- particle interactions
- stellar evolution
- neutral gases**
- DEF In astronomy, gas clouds of some nebulae which have not been ionized by hot stars.
- GS gases
- neutral gases**
- RT cosmic gases
- H I regions
- hydrogen clouds
- interplanetary gas
- interstellar gas
- ionized gases
- neutral atmospheres
- neutral atoms
- plasmas (physics)
- neutral particles**
- GS particles
- neutral particles**
- .. gravitinos
- .. neutrons
- ... cold neutrons
- ... fast neutrons
- ... photoneutrons
- ... solar neutrons
- ... thermal neutrons
- RT electron recombination
- neutral currents
- neutral sheets**
- RT atmospheric physics
- charged particles
- Earth magnetosphere
- particle motion
- plasma physics
- ∞ sheets
- neutralizers**
- RT additives
- ∞ agents
- buffers (chemistry)
- dischargers
- inhibitors
- preservatives
- retardants
- stabilizers (agents)
- suppressors
- neutrino beams**
- DEF Organized collections of neutrinos traveling outward from the source.
- GS beams (radiation)
- particle beams
- .. **neutrino beams**
- neutrinos**
- DEF Subatomic particles of zero, or near zero, rest mass, having no electric charge, postulated by Fermi (1934) in order to explain apparent contradictions to the law of conservation of energy in beta particle emission.
- GS particles
- elementary particles
- .. fermions
- ... leptons
- ... **neutrinos**
- ... solar neutrinos
- RT antineutrinos
- dark matter
- gravitinos
- neutral currents
- neutron absorbers**
- GS absorbers (materials)
- neutron absorbers**
- RT control rods
- moderators
- poisoning (reaction inhibition)
- radiation absorption
- radiation shielding
- neutron activation analysis**
- GS activation analysis
- neutron activation analysis**
- chemical tests
- chemical analysis
- .. **neutron activation analysis**
- RT mass spectrometers
- microanalysis
- qualitative analysis
- quantitative analysis
- spectroscopic analysis
- neutron beams**
- GS beams (radiation)
- particle beams
- .. neutral beams
- ... **neutron beams**
- nuclear radiation
- neutron beams**
- RT atomic beams
- particles
- pion beams
- proton beams
- neutron counters**
- UF *neutron detectors*
- GS measuring instruments
- counters
- .. radiation counters
- ... **neutron counters**
- ... neutron spectrometers
- radiation measuring instruments
- .. radiation counters
- ... **neutron counters**
- ... neutron spectrometers
- RT dosimeters
- Geiger counters
- ionization chambers
- proportional counters
- scintillation counters
- spark chambers
- neutron cross sections**
- RT absorption cross sections
- ∞ cross sections
- nuclear particles
- scattering cross sections
- stopping power
- neutron decay**
- GS decay
- particle decay
- .. **neutron decay**
- RT hot atoms
- neutron detectors*
- USE **neutron counters**
- neutron diffraction**
- GS diffraction
- neutron diffraction**
- RT crystallography
- neutron distribution**
- GS distribution (property)
- neutron distribution**
- RT nuclear particles
- neutron emission**
- GS decay
- radioactive decay
- .. **neutron emission**
- emission
- particle emission
- .. **neutron emission**
- nuclear reactions
- radioactive decay
- .. **neutron emission**
- RT neutrons
- selection rules (nuclear physics)
- neutron flux*
- USE **flux (rate)**
- neutron flux density**
- SN (LIMITED TO NEUTRON EMISSION OR DETECTION RATE PER UNIT AREA)
- DEF A measure of the intensity of neutron radiation within a given range of neutron energies; the product of the neutron density and velocity, measured in neutrons per square meter-second or neutrons per square centimeter-second.
- GS rates (per time)
- flux density
- .. radiant flux density
- ... particle flux density
- ... **neutron flux density**
- RT high flux isotope reactors
- irradiance
- nuclear fission
- radiance
- radiancy
- radiation shielding
- solar neutrons
- neutron irradiation**
- GS irradiation
- neutron irradiation**
- RT ion irradiation
- neutron transmutation doping
- transmutation
- neutron physics**
- RT ∞ physics
- ∞ science
- neutron radiography**
- DEF Nondestructive testing and inspection utilizing neutron beams from nuclear reactors, particle accelerators, and/or radioisotopes. Imagery displaying structural defects utilizes neutron image recorders or screens.
- GS imagery
- radiography
- .. **neutron radiography**
- nondestructive tests
- neutron radiography**
- RT ∞ materials tests
- neutron scattering**
- UF *Legendre code*
- GS nuclear reactions
- nuclear scattering
- .. **neutron scattering**
- scattering
- nuclear scattering
- .. **neutron scattering**
- RT elementary particles
- nuclear particles
- resonance scattering
- neutron sources**
- GS radiation sources
- neutron sources**
- RT linear accelerators
- nuclear fuels
- nuclear research and test reactors
- particle accelerators
- spent fuels
- neutron spectra**
- GS spectra
- energy spectra
- .. **neutron spectra**
- neutron spectrometers**
- UF *triple axis spectrometers*
- GS measuring instruments

neutron stars

- . counters
 - . . . radiation counters
 - . . . neutron counters
 - **neutron spectrometers**
- . radiation measuring instruments
- . radiation counters
- . . . neutron counters
- **neutron spectrometers**
- . spectrometers
- . . **neutron spectrometers**

neutron stars

- SN (EXCLUDES TRACKS OF PARTICLES EMANATING FROM A NUCLEAR COLLISION)
- GS celestial bodies
 - . stars
 - . . **neutron stars**
 - . . . magnetars
 - . . . pulsars
 - . . . soft gamma repeaters
- RT degenerate matter
 - gravitational binding energy
 - gravitational lenses
 - neutral currents
 - starquakes
 - supernova remnants
 - x ray binaries
 - x ray stars

neutron thermalization

- GS energy absorption
 - . moderation (energy absorption)
 - . . thermalization (energy absorption)
 - . . . **neutron thermalization**

neutron transmutation

- USE **nuclear reactions**

neutron transmutation doping

- (added June 2003)

- DEF A doping technique for creating impurity isotopes from the host atoms of a material through the use of thermal neutron irradiation and subsequent radioactive decay

- GS doping (materials)
 - . **neutron transmutation doping**
- RT additives
 - doped crystals
 - neutron irradiation
 - transmutation

neutrons

- DEF Subatomic particles with no electric charge, and with a mass of 1.67482 times 10 to the minus 24 gram.

- GS particles
 - . elementary particles
 - . . fermions
 - . . . **neutrons**
 - cold neutrons
 - fast neutrons
 - photoneutrons
 - solar neutrons
 - thermal neutrons
 - . neutral particles
 - . . **neutrons**
 - . . . cold neutrons
 - . . . fast neutrons
 - . . . photoneutrons
 - . . . solar neutrons
 - . . . thermal neutrons
- RT baryons
 - chain reactions (nuclear physics)
 - charged particles
 - corpuscular radiation
 - cosmic rays
 - neutron emission
 - nuclear radiation
 - nuclei (nuclear physics)
 - nucleon potential
 - nucleons
 - radiation effects
 - radiation shielding

Nevada

- GS nations

- . United States
 - . . **Nevada**
- RT Great Basin (US)
 - Lake Tahoe (CA-NV)
 - Pyramid Lake (NV)
 - Southern California

New Brunswick

- GS nations
 - . Canada
 - . . **New Brunswick**

New England (US)

- GS regions
 - . **New England (US)**
- RT United States

New Guinea (island)

- GS landforms
 - . islands
 - . . Pacific islands
 - . . . **New Guinea (island)**
- RT Papua New Guinea
 - Torres Strait

New Hampshire

- GS nations
 - . United States
 - . . **New Hampshire**
- RT St Lawrence Valley (North America)

New Haven (CT)

- GS cities
 - . **New Haven (CT)**
- RT Connecticut

New Jersey

- GS nations
 - . United States
 - . . **New Jersey**
- RT Delaware Bay (US)
 - Delaware River Basin (US)
 - Hudson River (NY-NJ)

New Mexico

- GS nations
 - . United States
 - . . **New Mexico**
- RT Colorado Plateau (US)
 - Rio Grande (North America)

NEW MOONS project

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **NEW MOONS project**
 - . . projects
 - . . **NEW MOONS project**
 - . . space programs
 - . . NASA space programs
 - . . . **NEW MOONS project**
- RT nuclear propulsion
 - structural weight
 - weight analysis

New York

- GS nations
 - . United States
 - . . **New York**
- RT Adirondack Mountains (NY)
 - Delaware River Basin (US)
 - Hudson River (NY-NJ)
 - Lake Champlain Basin (NY-VT)
 - Long Island (NY)
 - New York City (NY)
 - St Lawrence Valley (North America)
 - Susquehanna River Basin (MD-NY-PA)

New York City (NY)

- GS cities
 - . **New York City (NY)**
- RT New York

New Zealand

- GS landforms

- . islands
 - . . Pacific islands
 - . . . **New Zealand**
- nations
 - . **New Zealand**
- RT New Zealand space program

New Zealand space program

- (added June 1989)

- GS programs
 - . space programs
 - . . **New Zealand space program**
- RT New Zealand

Newfoundland

- GS landforms
 - . islands
 - . . **Newfoundland**
- nations
 - . Canada
 - . . **Newfoundland**

news

- RT documentation

news media

- RT data acquisition
 - information
 - Internet resources
 - ∞ journals

newton

- DEF The unit of force in the SI system; that force which gives to a mass of 1 kilogram an acceleration of 1 meter per second squared.

- RT ∞ force
 - kinetics
 - Newtonian fluids
 - nonNewtonian fluids

Newton methods

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **Newton methods**
 - Newton-Raphson method
 - . . . iteration
 - . . . **Newton methods**
 - Newton-Raphson method
- RT iterative solution
 - problem solving
 - roots of equations

Newton pressure law

- GS laws
 - . **Newton pressure law**
- RT compressible flow
 - laminar flow
 - Newtonian fluids
 - Prandtl-Meyer expansion
 - pressure
 - pressure distribution

Newton second law

- GS kinetics
 - . **Newton second law**
 - laws
 - . **Newton second law**
- RT conservation
 - momentum theory

Newton Theory

- GS kinetics
 - . **Newton Theory**
 - theoretical physics
 - . **Newton Theory**
- RT conservation laws
 - Newtonian fluids
 - nonNewtonian fluids
 - nonrelativistic mechanics
 - ∞ theories

Newton-Busemann law

- GS laws

. **Newton-Busemann law**

Newtonian fluids

- RT anisotropic fluids
- ∞ fluids
- Navier-Stokes equation
- newton
- Newton pressure law
- Newton Theory
- nonNewtonian fluids
- stress-strain-time relations
- viscous fluids

Newton-Raphson method

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . Newton methods
 - **Newton-Raphson method**
 - . . iteration
 - . . . Newton methods
 - **Newton-Raphson method**
- RT ∞ methodology

Next Generation Space Telescope project

- (added December 1999)
- DEF Project in the NASA Origins program with the goal of developing a spaceborne observatory to succeed the Hubble Space Telescope after 2005. The telescope is foreseen to have an aperture of 8 meters and be optimized for near infrared wavelengths (0. 6-10+ microns) in order to enable the exploration of the most remote high redshift universe.
- UF *NGST project*
- GS programs
 - . projects
 - . . **Next Generation Space Telescope project**
- RT astronomical observatories
 - infrared telescopes
 - James Webb Space Telescope
 - NASA space programs
 - spaceborne telescopes

NGST project

- (added December 1999)
- USE **Next Generation Space Telescope project**

Nicaragua

- GS nations
 - . **Nicaragua**
- RT Central America

Nichrome (trademark)

- GS alloys
 - . nickel alloys
 - . . **Nichrome (trademark)**

nickel

- GS chemical elements
 - . **nickel**
 - . . nickel isotopes
 - metals
 - . transition metals
 - . . **nickel**
 - . . . nickel isotopes
- RT constantan

nickel alloys

- GS alloys
 - . **nickel alloys**
 - . . Astroloy (trademark)
 - . . Hastelloy (trademark)
 - . . Inconel (trademark)
 - . . kamacite
 - . . Monel (trademark)
 - . . Nichrome (trademark)
 - . . nitinol alloys
 - . . Rene 41
 - . . Rene 63
 - . . Rene 77
 - . . Rene 95
 - . . Udimet alloys
 - . . Waspaloy

- RT aluminides
- gold alloys
- heat resistant alloys
- nickel aluminides
- nimonic alloys
- Permalloys (trademark)
- shape memory alloys
- silicon alloys
- stainless steels
- sulfidation

nickel aluminides

- (added June 1997)
- GS aluminum compounds
 - . aluminides
 - . . **nickel aluminides**
 - nickel compounds
 - . . **nickel aluminides**
- RT intermetallics
 - nickel alloys

nickel cadmium batteries

- DEF Alkaline storage batteries in which the positive active material is nickel oxide and the negative contains cadmium.
- UF *cadmium nickel batteries*
- GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **nickel cadmium batteries**
- RT dry cells
 - silver cadmium batteries

nickel coatings

- GS coatings
 - . metal coatings
 - . . **nickel coatings**
- RT corrosion prevention
 - metal films
 - protective coatings

nickel compounds

- GS **nickel compounds**
 - . cohenite
 - . nickel aluminides
 - . nickel fluorides
 - . nickel oxides
 - . schreibersite
- RT ∞ chemical compounds
- ∞ Group 8 compounds
- ∞ metal compounds

nickel fluorides

- GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **nickel fluorides**
 - . . halides
 - . . fluorides
 - . . . metal fluorides
 - **nickel fluorides**
 - . . metal halides
 - . . . metal fluorides
 - **nickel fluorides**
 - nickel compounds
 - . **nickel fluorides**

nickel hydrogen batteries

- GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **nickel hydrogen batteries**
- RT energy storage
 - hydrogen-based energy
 - spacecraft power supplies

nickel iron batteries

- DEF Alkaline-type electric cells using potassium hydroxide as the electrolyte and anodes of steel wool substrate with active iron material and cathodes of nickel plated steel wool substrate with active nickel material.
- GS electrochemical cells
 - . electric batteries
 - . . **nickel iron batteries**

- RT lead acid batteries
- nickel zinc batteries
- storage batteries

nickel isotopes

- GS chemical elements
 - . nickel
 - . . **nickel isotopes**
 - . . nuclides
 - . . . isotopes
 - **nickel isotopes**
 - metals
 - . transition metals
 - . . nickel
 - . . . **nickel isotopes**

nickel oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **nickel oxides**
- nickel compounds
- . **nickel oxides**

nickel plate

- GS plating
 - . **nickel plate**
- RT electroplating
 - gold coatings

nickel steels

- DEF Steels containing nickel as a main alloying element.
- GS alloys
 - . iron alloys
 - . . steels
 - . . . **nickel steels**
- RT stainless steels

nickel zinc batteries

- UF *zinc nickel batteries*
- GS electric generators
 - . direct power generators
 - . . primary batteries
 - . . . dry cells
 - **nickel zinc batteries**
 - electrochemical cells
 - . electric batteries
 - . . primary batteries
 - . . . dry cells
 - **nickel zinc batteries**
 - . . storage batteries
 - . . . **nickel zinc batteries**
- RT nickel iron batteries

nicotinamide

- GS bases (chemical)
 - . alkaloids
 - . . **nicotinamide**
 - nitrogen compounds
 - . alkaloids
 - . . **nicotinamide**
 - . amides
 - . . **nicotinamide**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **nicotinamide**
 - vitamins
 - . **nicotinamide**

nicotine

- GS bases (chemical)
 - . alkaloids
 - . . **nicotine**
 - nitrogen compounds
 - . alkaloids
 - . . **nicotine**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **nicotine**

nicotinic acid

RT tobacco

nicotinic acid

GS acids
. carboxylic acids
. . . **nicotinic acid**
organic compounds
. carboxylic acids
. . . **nicotinic acid**
. cyclic compounds
. heterocyclic compounds
. . . **nicotinic acid**
vitamins
. **nicotinic acid**

Niger

GS nations
. **Niger**
RT Africa

Nigeria

GS nations
. **Nigeria**
RT Africa

night

RT darkening
darkness
daytime
diurnal variations
evening
shadows
sky brightness
twilight glow

night airglow

USE **nightglow**

night E layer

USE **E region**
night sky

night F layer

USE **F region**
night sky

night flights (aircraft)

RT ∞ aircraft
approach control
blind landing
darkness
flight instruments
instrument approach
instrument landing systems
nap-of-the-earth navigation
radar
radio beacons
visibility

night sky

UF *night E layer*
night F layer
GS sky
. **night sky**
RT airglow
auroras
gegenschein
nightglow
sky brightness
twilight glow
zodiacal light

night vision

GS vision
. **night vision**
RT dark adaptation
enhanced vision
image intensifiers
light adaptation
microchannels
nap-of-the-earth navigation

nightglow

UF *night airglow*
GS atmospheric radiation
. sky radiation

. . airglow
. . . **nightglow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . **nightglow**
RT biometeorology
night sky
radio auroras
sky brightness

nigotrons

GS electron tubes
. vacuum tubes
. . microwave tubes
. . . magnetrons
. . . . **nigotrons**
microwave equipment
. microwave oscillators
. . magnetrons
. . . **nigotrons**
. microwave tubes
. . magnetrons
. . . **nigotrons**
oscillators
. microwave oscillators
. . magnetrons
. . . **nigotrons**

Nihon aircraft

UF *NAMC aircraft*
GS **Nihon aircraft**
. YS-11 aircraft
RT ∞ aircraft

Nihon YS-11 aircraft

USE **YS-11 aircraft**

Nike booster rocket engines

GS engines
. rocket engines
. . booster rocket engines
. . . **Nike booster rocket engines**
. . solid propellant rocket engines
. . . **Nike booster rocket engines**
RT ∞ Nike rockets

Nike missiles

GS missiles
. surface to air missiles
. . **Nike missiles**
. . . Nike-Ajax missile
. . . Nike-Hercules missile
. . . Nike-Zeus missile
RT anti-aircraft missiles
antimissile missiles
∞ Nike rockets
Sentinel system

Nike project

GS programs
. projects
. . **Nike project**
RT ∞ Nike rockets

Nike rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . **Nike rocket vehicles**
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
RT ∞ Nike rockets
∞ vehicles

∞ Nike rockets

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT Nike booster rocket engines
Nike missiles
Nike project

Nike rocket vehicles

Nike X systems

GS weapon systems
. missile systems
. . **Nike X systems**
RT antimissile missiles
missiles
surface to air missiles
∞ systems

Nike-Ajax missile

GS missiles
. anti-aircraft missile
. . **Nike-Ajax missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Ajax missile**
RT Argo rocket vehicles
EXOS sounding rocket
liquid propellant rocket engines
solid propellant rocket engines
Trailblazer 1 reentry vehicle

Nike-Apache rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Apache rocket vehicle**
RT solid propellant rocket engines

Nike-Cajun rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Cajun rocket vehicle**
RT Cajun rocket vehicle
solid propellant rocket engines

Nike-Hercules missile

GS missiles
. anti-aircraft missiles
. . **Nike-Hercules missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Hercules missile**
RT solid propellant rocket engines

Nike-Hydac rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Hydac rocket vehicle**
RT ∞ vehicles

Nike-Iroquois rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Iroquois rocket vehicle**
RT ∞ vehicles

Nike-Javelin rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Javelin rocket vehicle**
RT solid propellant rocket engines
sounding rockets

Nike-Tomahawk rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Tomahawk rocket vehicle**
RT solid propellant rocket engines

Nike-Zeus missile

UF *Zeus missile*
GS missiles
. antimissile missiles
. . **Nike-Zeus missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Zeus missile**
RT solid propellant rocket engines

- Spartan missile
Sprint missile
- nimbostratus clouds**
UF *nimbus clouds*
GS clouds (meteorology)
. **nimbostratus clouds**
RT cumulonimbus clouds
precipitation (meteorology)
stratus clouds
- Nimbus 1 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 1 satellite**
RT cloud photography
Thor Agena launch vehicle
- Nimbus 2 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 2 satellite**
RT cloud photography
Thor Agena launch vehicle
- Nimbus 3 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 3 satellite**
- Nimbus 4 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 4 satellite**
- Nimbus 5 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 5 satellite**
- Nimbus 6 satellite**
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 6 satellite**
- Nimbus 7 satellite**
DEF One in a series of meteorological satellites.
GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . **Nimbus 7 satellite**
RT Total Ozone Mapping Spectrometer
- nimbus clouds*
USE **nimbostratus clouds**
- Nimbus project**
GS programs
. NASA programs
. . . NASA space programs
. . . **Nimbus project**
. projects
. . . **Nimbus project**
. space programs
. . . NASA space programs
. . . **Nimbus project**
RT cloud photography
meteorological satellites
satellite observation
- Nimbus satellites**
GS artificial satellites
. meteorological satellites
. . . **Nimbus satellites**
. . . Nimbus 1 satellite
. . . Nimbus 2 satellite
. . . Nimbus 3 satellite
. . . Nimbus 4 satellite
. . . Nimbus 5 satellite
- . . . Nimbus 6 satellite
. . . Nimbus 7 satellite
- RT cloud photography
ESSA satellites
infrared photography
satellite observation
Thor Agena launch vehicle
- nimonic alloys**
GS alloys
. heat resistant alloys
. . . **nimonic alloys**
RT iron alloys
nickel alloys
- NIMPHE (engine)*
USE **hydrazine engines**
- Nimrod accelerator**
GS particle accelerators
. **Nimrod accelerator**
RT ∞ accelerators
- niobates**
GS niobium compounds
. **niobates**
. . . lithium niobates
RT euxenite
oxides
∞ oxygen compounds
- niobium**
UF *columbium*
GS chemical elements
. **niobium**
. . . niobium isotopes
. . . niobium 95
metals
. refractory metals
. . . **niobium**
. . . niobium isotopes
. . . . niobium 95
. . . . transition metals
. . . **niobium**
. . . niobium isotopes
. . . . niobium 95
refractory materials
. refractory metals
. . . **niobium**
. . . niobium isotopes
. . . . niobium 95
- niobium 95**
GS chemical elements
. niobium
. . . niobium isotopes
. . . **niobium 95**
. nuclides
. . . isotopes
. . . niobium isotopes
. . . . **niobium 95**
. . . radioactive isotopes
. . . . **niobium 95**
metals
. refractory metals
. . . niobium
. . . niobium isotopes
. . . . **niobium 95**
. . . transition metals
. . . niobium
. . . niobium isotopes
. . . . **niobium 95**
refractory materials
. refractory metals
. . . niobium
. . . niobium isotopes
. . . . **niobium 95**
- niobium alloys**
GS alloys
. heat resistant alloys
. . . refractory metal alloys
. . . **niobium alloys**
refractory materials
. refractory metal alloys
. . . **niobium alloys**
- RT hafnium alloys
- niobium carbides**
GS carbon compounds
. carbides
. . . **niobium carbides**
niobium compounds
. **niobium carbides**
- niobium compounds**
GS **niobium compounds**
. niobates
. . . lithium niobates
. . . niobium carbides
. . . niobium iodides
. . . niobium oxides
. . . niobium stannides
RT ∞ chemical compounds
∞ Group 5B compounds
∞ metal compounds
- niobium iodides**
GS halogen compounds
. halides
. . . metal halides
. . . **niobium iodides**
. iodine compounds
. . . iodides
. . . **niobium iodides**
niobium compounds
. **niobium iodides**
- niobium isotopes**
GS chemical elements
. niobium
. . . **niobium isotopes**
. . . . niobium 95
. . . nuclides
. . . isotopes
. . . . **niobium isotopes**
. . . . niobium 95
metals
. refractory metals
. . . niobium
. . . **niobium isotopes**
. . . . niobium 95
. . . transition metals
. . . niobium
. . . **niobium isotopes**
. . . . niobium 95
refractory materials
. refractory metals
. . . niobium
. . . **niobium isotopes**
. . . . niobium 95
- niobium oxides**
GS chalcogenides
. oxides
. . . metal oxides
. . . **niobium oxides**
niobium compounds
. **niobium oxides**
- niobium stannides**
GS niobium compounds
. **niobium stannides**
tin compounds
. stannides
. . . **niobium stannides**
- NIPS (system)*
USE **NASA Interactive Planning System**
- nitinol alloys**
DEF Shape memory alloys of titanium and nickel.
GS alloys
. nickel alloys
. . . **nitinol alloys**
. . . shape memory alloys
. . . **nitinol alloys**
. . . titanium alloys
. . . **nitinol alloys**
ferroelastic materials
. shape memory alloys

nitramine propellants

- . . . **nitinol alloys**
- nitramine propellants**
 - GS propellants
 - . rocket propellants
 - . . . **nitramine propellants**
 - . solid propellants
 - . . . **nitramine propellants**
 - RT oxidizers
- nitrasol explosives**
 - GS explosives
 - . **nitrasol explosives**
 - propellants
 - . **nitrasol explosives**
- nitrate esters**
 - GS esters
 - . **nitrate esters**
 - . . isopropyl nitrate
 - . . propyl nitrate
 - nitrogen compounds
 - . **nitrate esters**
 - . . isopropyl nitrate
 - . . propyl nitrate
- nitrates**
 - GS nitrogen compounds
 - . **nitrates**
 - . . dinitrates
 - . . inorganic nitrates
 - . . . ammonium nitrates
 - . . . hydrazine nitrate
 - . . . potassium nitrates
 - . . . silver nitrates
 - . . . sodium nitrates
 - . . methyl nitrate
 - . . organic nitrates
 - . . cellulose nitrate
 - . . . nitroforms
 - hydrazine nitroform
 - . . . nitroglycerin
 - . . . PETN
- nitration**
 - GS chemical reactions
 - . **nitration**
 - RT denitrogenation
- nitric acid**
 - GS acids
 - . **nitric acid**
 - nitrogen compounds
 - . **nitric acid**
 - RT nitrous acid
- nitric oxide**
 - GS chalcogenides
 - . oxides
 - . . nitrogen oxides
 - . . . **nitric oxide**
 - nitrogen compounds
 - . nitrogen oxides
 - . . **nitric oxide**
 - RT nitrosyls
- nitrides**
 - GS nitrogen compounds
 - . **nitrides**
 - . . boron nitrides
 - . . metal nitrides
 - . . . aluminum nitrides
 - . . . beryllium nitrides
 - . . . gallium nitrides
 - . . . tantalum nitrides
 - . . . titanium nitrides
 - . . . zirconium nitrides
 - . carbon nitrides
 - . . oxynitrides
 - . . silicon nitrides
 - RT ceramic nuclear fuels
 - molten salts
- nitriding**
 - GS chemical reactions
 - . **nitriding**

- hardening (materials)
- . **nitriding**
- heat treatment
- . **nitriding**

- nitriles**
 - GS **nitriles**
 - . acetonitrile
 - . acrylonitriles
 - . . polyacrylonitrile
 - . malononitrile
 - . phosphonitriles
 - RT cyano compounds
- nitrites**
 - GS nitrogen compounds
 - . **nitrites**
- nitro compounds**
 - GS nitrogen compounds
 - . **nitro compounds**
 - . . nitrobenzenes
 - . . . trinitrotoluene
 - . . nitroglycerin
 - . . nitroguanidine
 - . . nitromethane
 - . . nitropropane
 - . . picrates
 - . . . ammonium picrates
 - . . polybutadiene tetranitramine
 - . . tetryl
 - . . trinitro compounds
 - RT ∞ chemical compounds
- nitroamines**
 - GS amines
 - . **nitroamines**
 - nitrogen compounds
 - . **nitroamines**
- nitrobacter**
 - GS microorganisms
 - . bacteria
 - . . **nitrobacter**
- nitrobenzenes**
 - GS nitrogen compounds
 - . nitro compounds
 - . . **nitrobenzenes**
 - . . . trinitrotoluene
- nitrocellulose*
 - USE **cellulose nitrate**
- nitrofluoramines**
 - GS amines
 - . fluoroamines
 - . . **nitrofluoramines**
 - halogen compounds
 - . fluorine compounds
 - . . fluoro compounds
 - . . . fluorine organic compounds
 - fluoroamines
 - **nitrofluoramines**
 - nitrogen compounds
 - . **nitrofluoramines**
 - organic compounds
 - . fluorine organic compounds
 - . . fluoroamines
 - . . . **nitrofluoramines**
- nitroformates**
 - GS formates
 - . **nitroformates**
 - nitrogen compounds
 - . **nitroformates**
- nitroforms**
 - GS esters
 - . organic nitrates
 - . . **nitroforms**
 - . . . hydrazine nitroform
 - nitrogen compounds
 - . nitrates
 - . . organic nitrates
 - . . . **nitroforms**

- hydrazine nitroform

- nitrogen**
 - GS chemical elements
 - . **nitrogen**
 - . liquid nitrogen
 - . . nitrogen isotopes
 - . . . nitrogen 15
 - . . . nitrogen 16
 - . . solid nitrogen
 - gases
 - . **nitrogen**
 - . liquid nitrogen
 - . . nitrogen isotopes
 - . . . nitrogen 15
 - . . . nitrogen 16
 - . . solid nitrogen
 - RT Kjeldahl method
 - nitrogen atoms
 - nitrogen ions
 - nitrogen lasers
 - nitrogenation
 - nitrolysis
 - reaction bonding
 - sialon
 - Vegard-Kaplan bands
 - Wolf-Rayet stars
- nitrogen 15**
 - GS chemical elements
 - . nitrogen
 - . . nitrogen isotopes
 - . . . **nitrogen 15**
 - . . nuclides
 - . . isotopes
 - . . . nitrogen isotopes
 - **nitrogen 15**
 - gases
 - . nitrogen
 - . . nitrogen isotopes
 - . . . **nitrogen 15**
- nitrogen 16**
 - GS chemical elements
 - . nitrogen
 - . . nitrogen isotopes
 - . . . **nitrogen 16**
 - . . nuclides
 - . . isotopes
 - . . . nitrogen isotopes
 - **nitrogen 16**
 - . . . radioactive isotopes
 - **nitrogen 16**
 - gases
 - . nitrogen
 - . . nitrogen isotopes
 - . . . **nitrogen 16**
- nitrogen atoms**
 - GS atoms
 - . **nitrogen atoms**
 - RT nitrogen
- nitrogen compounds**
 - GS **nitrogen compounds**
 - . alkaloids
 - . . atropine
 - . . betaines
 - . . caffeine
 - . . colchicine
 - . . ergotamine
 - . . hyoscine
 - . . lysergine
 - . . morphine
 - . . nicotinamide
 - . . nicotine
 - . . pilocarpine
 - . . reserpine
 - . . strychnine
 - . . tropyll compounds
 - . amides
 - . . acetanilide
 - . . acetazolamide
 - . . carbamides
 - . . cyanamides
 - . . formhydroxamic acid

- . . . nicotinamide
- . . . oxamic acids
- . . . polyimides
- bismaleimide
- Kapton (trademark)
- . . . succinimides
- . . . ureas
- difluorourea
- thioureas
- thiuronium
- . ammonia
- . . liquid ammonia
- . azides (inorganic)
- . . hydrogen azides
- . . sodium azides
- . azides (organic)
- . . sodium azides
- . . triaminoguanidinium azide
- . azo compounds
- . . HMX
- . . RDX
- . cyano compounds
- . . cyanamides
- . . cyanoacetylene
- . . isocyanates
- . . . diisocyanates
- . . . fulminates
- . folic acid
- . hydrazinium compounds
- . hydrazoic acid
- . hydrazones
- . hydrocyanic acid
- . imides
- . . bismaleimide
- . . succinimides
- . imines
- . nitrate esters
- . . isopropyl nitrate
- . . propyl nitrate
- . nitrates
- . . dinitrates
- . . inorganic nitrates
- . . . ammonium nitrates
- . . . hydrazine nitrate
- . . . potassium nitrates
- . . . silver nitrates
- . . . sodium nitrates
- . . methyl nitrate
- . . organic nitrates
- . . . cellulose nitrate
- . . . nitroforms
- hydrazine nitroform
- . . . nitroglycerin
- . . . PETN
- . nitric acid
- . nitrides
- . . boron nitrides
- . . metal nitrides
- . . . aluminum nitrides
- . . . beryllium nitrides
- . . . gallium nitrides
- . . . tantalum nitrides
- . . . titanium nitrides
- . . . zirconium nitrides
- . . carbon nitrides
- . . oxynitrides
- . . silicon nitrides
- . nitrites
- . nitro compounds
- . . nitrobenzenes
- . . . trinitrotoluene
- . . nitroglycerin
- . . nitroguanidine
- . . nitromethane
- . . nitropropane
- . . picrates
- . . . ammonium picrates
- . . polybutadiene tetranitramine
- . . tetryl
- . . trinitro compounds
- . nitroamines
- . nitrofluoramines
- . nitroformates
- . nitrogen fluorides
- . nitrogen hydrides
- . . amino radical
- . nitrogen oxides

- . . nitric oxide
- . . nitrogen dioxide
- . . nitrogen tetroxide
- . . nitrous oxides
- . . nitrogen polymers
- . . polyacrylonitrile
- . . polybenzimidazole
- . . polybutadiene tetranitramine
- . . Pyrrones (trademark)
- . nitrosamine
- . nitroso compounds
- . . nitrosyls
- . . . nitrosyl chlorides
- . . nitroxychlorides
- . nitryl chlorides
- . nitryl fluorides
- . phosphonitriles
- . quinoline
- . thiazine (trademark)
- . thymine
- . trinitramine
- . tryptophan
- . uracil
- . xanthines
- . . caffeine
- . . guanines
- . . uric acid
- RT ∞ chemical compounds
- cyanides
- ∞ Group 5A compounds
- phosphazene

nitrogen dioxide

- GS chalcogenides
- . oxides
- . . nitrogen oxides
- . . . **nitrogen dioxide**
- nitrogen compounds
- . nitrogen oxides
- . . **nitrogen dioxide**

nitrogen fixation

- USE **nitrogenation**

nitrogen fluorides

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **nitrogen fluorides**
- . halides
- . . fluorides
- . . . **nitrogen fluorides**
- nitrogen compounds
- . **nitrogen fluorides**

nitrogen hydrides

- GS hydrogen compounds
- . hydrides
- . . **nitrogen hydrides**
- . . . amino radical
- nitrogen compounds
- . **nitrogen hydrides**
- . . amino radical
- RT ammonia
- hydrazoic acid

nitrogen ions

- GS ions
- . **nitrogen ions**
- RT negative ions
- nitrogen

nitrogen isotopes

- GS chemical elements
- . nitrogen
- . . **nitrogen isotopes**
- . . . nitrogen 15
- . . . nitrogen 16
- . . . nuclides
- . . . isotopes
- . . . **nitrogen isotopes**
- nitrogen 15
- nitrogen 16
- gases
- . nitrogen
- . . **nitrogen isotopes**

- . . . nitrogen 15
- . . . nitrogen 16

nitrogen lasers

- DEF Stimulated emission devices in which the nitrogen molecule is the lasing medium.
- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **nitrogen lasers**
- RT lasing
- nitrogen
- population inversion
- pulsed lasers
- ultraviolet lasers

nitrogen metabolism

- GS metabolism
- . **nitrogen metabolism**
- RT biochemistry
- ∞ biology
- enzymology
- hydrogen metabolism
- nutrition

nitrogen oxides

- GS chalcogenides
- . oxides
- . . **nitrogen oxides**
- . . . nitric oxide
- . . . nitrogen dioxide
- . . . nitrogen tetroxide
- . . . nitrous oxides
- nitrogen compounds
- . **nitrogen oxides**
- . . nitric oxide
- . . nitrogen dioxide
- . . nitrogen tetroxide
- . . nitrous oxides
- RT nitrosyls
- nitrous acid
- photochemical oxidants

nitrogen plasma

- GS particles
- . charged particles
- . energetic particles
- . . plasmas (physics)
- . . . **nitrogen plasma**
- . corpuscular radiation
- . energetic particles
- . . plasmas (physics)
- . . . **nitrogen plasma**

nitrogen polymers

- GS nitrogen compounds
- . **nitrogen polymers**
- . . polyacrylonitrile
- . . polybenzimidazole
- . . polybutadiene tetranitramine
- . . Pyrrones (trademark)
- RT ∞ polymers

nitrogen tetroxide

- GS chalcogenides
- . oxides
- . . nitrogen oxides
- . . . **nitrogen tetroxide**
- nitrogen compounds
- . nitrogen oxides
- . . **nitrogen tetroxide**
- RT liquid rocket propellants
- rocket oxidizers

nitrogenation

- UF *nitrogen fixation*
- GS chemical reactions
- . **nitrogenation**
- RT leguminous plants
- lightning
- nitrogen

nitroglycerin

- GS esters
- . organic nitrates
- . . **nitroglycerin**

nitroguanidine

nitrogen compounds
. nitrates
. . . organic nitrates
. . . . **nitroglycerin**
. nitro compounds
. . . **nitroglycerin**
RT double base propellants
double base rocket propellants
dynamite
explosives
glycerides
glycerols

nitroguanidine

UF *HBNQ*
GS nitrogen compounds
. nitro compounds
. . . **nitroguanidine**
RT explosives
solid propellants

nitrolysis

GS chemical reactions
. **nitrolysis**
decomposition
. **nitrolysis**
RT cracking (chemical engineering)
nitrogen

nitromethane

GS nitrogen compounds
. nitro compounds
. . . **nitromethane**
RT BSX
explosives

nitronium compounds

GS **nitronium compounds**
. nitronium perchlorate
RT ∞ chemical compounds

nitronium perchlorate

GS halogen compounds
. chlorine compounds
. . . perchlorates
. . . . **nitronium perchlorate**
nitronium compounds
. **nitronium perchlorate**
RT rocket oxidizers

nitropropane

GS nitrogen compounds
. nitro compounds
. . . **nitropropane**
organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . alkanes
. . . . **nitropropane**
RT propane

nitrosamine

GS amines
. **nitrosamine**
nitrogen compounds
. **nitrosamine**

nitroso compounds

GS nitrogen compounds
. **nitroso compounds**
. . . nitrosyls
. . . nitrosyl chlorides
RT ∞ chemical compounds
organic compounds

nitrosyl chlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **nitrosyl chlorides**
. halides
. . . chlorides
. . . . **nitrosyl chlorides**
nitrosyls
. . . **nitrosyl chlorides**
nitrogen compounds

. nitroso compounds
. . . nitrosyls
. . . . **nitrosyl chlorides**

nitrosyls

GS halogen compounds
. **nitrosyls**
. . . nitrosyl chlorides
nitrogen compounds
. nitroso compounds
. . . **nitrosyls**
. . . nitrosyl chlorides
RT amines
esters
halides
nitric oxide
nitrogen oxides

nitrous acid

RT air pollution
atmospheric chemistry
nitric acid
nitrogen oxides
reaction kinetics

nitrous oxides

GS chalcogenides
. oxides
. . . nitrogen oxides
. . . . **nitrous oxides**
nitrogen compounds
. nitrogen oxides
. . . **nitrous oxides**

nitroxyl chlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **nitroxyl chlorides**
. halides
. . . chlorides
. . . . **nitroxyl chlorides**
nitrogen compounds
. **nitroxyl chlorides**

nitryl chlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **nitryl chlorides**
. halides
. . . chlorides
. . . . **nitryl chlorides**
nitrogen compounds
. **nitryl chlorides**

nitryl fluorides

GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . **nitryl fluorides**
. halides
. . . fluorides
. . . . **nitryl fluorides**
nitrogen compounds
. **nitryl fluorides**

NMR

USE **nuclear magnetic resonance**

n-n junctions

GS semiconductor junctions
. **n-n junctions**

NOAA 2 satellite

GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 2 satellite**

NOAA 3 satellite

GS artificial satellites
. meteorological satellites
. . . NOAA satellites

. . . **NOAA 3 satellite**

NOAA 4 satellite

DEF One of a series of meteorological satellites launched by NASA for the National Oceanic and Atmospheric Administration.
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 4 satellite**

NOAA 5 satellite

DEF One of a series of environmental satellites launched by NASA for the National Oceanic and Atmospheric Administration for the sensing and recording of atmospheric, hydrological, and oceanographic environmental data.
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 5 satellite**

NOAA 6 satellite

DEF Designation for a NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 6 satellite**
. . . TIROS satellites
. . . TIROS N series satellites
. . . . **NOAA 6 satellite**
RT Advanced Very High Resolution Radiometer

NOAA 7 satellite

DEF Designation for the seventh NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 7 satellite**
RT Advanced Very High Resolution Radiometer
TIROS N series satellites

NOAA 8 satellite

UF *NOAA E*
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 8 satellite**
RT Advanced Very High Resolution Radiometer
SarSat

NOAA 9 satellite

(added July 1990)
UF *NOAA F satellite*
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 9 satellite**

NOAA 10 satellite

(added July 1990)
UF *NOAA G satellite*
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 10 satellite**

NOAA 11 satellite

(added May 1997)
GS artificial satellites
. meteorological satellites
. . . NOAA satellites
. . . . **NOAA 11 satellite**
RT Advanced Very High Resolution Radiometer
Solar Backscatter UV Spectrometer

NOAA 12 satellite

(added May 1997)

- GS artificial satellites
 . meteorological satellites
 . . NOAA satellites
 . . . **NOAA 12 satellite**
- RT Advanced Very High Resolution Radiometer
 microwave sounding
- NOAA 14 satellite**
(added May 1997)
- GS artificial satellites
 . meteorological satellites
 . . NOAA satellites
 . . . **NOAA 14 satellite**
- RT Solar Backscatter UV Spectrometer
- NOAA E**
 USE **NOAA 8 satellite**
- NOAA F satellite**
 USE **NOAA 9 satellite**
- NOAA G satellite**
 USE **NOAA 10 satellite**
- NOAA satellites**
- GS artificial satellites
 . meteorological satellites
 . . **NOAA satellites**
 . . . NOAA 2 satellite
 . . . NOAA 3 satellite
 . . . NOAA 4 satellite
 . . . NOAA 5 satellite
 . . . NOAA 6 satellite
 . . . NOAA 7 satellite
 . . . NOAA 8 satellite
 . . . NOAA 9 satellite
 . . . NOAA 10 satellite
 . . . NOAA 11 satellite
 . . . NOAA 12 satellite
 . . . NOAA 14 satellite
- RT Advanced Microwave Sounding Unit
 SMS 1
 SMS 2
- nobelium**
- GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **nobelium**
 . . nuclides
 . . isotopes
 . . . radioactive isotopes
 . . . transuranium elements
 **nobelium**
 metals
 . actinide series
 . . transuranium elements
 . . . **nobelium**
- RT nobelium isotopes
- nobelium isotopes**
- GS chemical elements
 . nuclides
 . . isotopes
 . . . **nobelium isotopes**
- RT nobelium
- noble gases*
 USE **rare gases**
- noble metals**
- UF *precious metals*
- GS metals
 . **noble metals**
 . . gold
 . . . gold isotopes
 gold 198
 . . ruthenium
 . . . ruthenium isotopes
 . . silver
 . . . silver isotopes
- RT ∞ Group 1B compounds
- noctilucence*
 USE **luminescence**
- noctilucent clouds**
- DEF Clouds of unknown composition which occur at great heights, 75 to 90 kilometers. They resemble thin cirrus clouds, but usually with a bluish or silverish color, although sometimes orange to red, standing out against a dark night sky. Sometimes called luminous clouds.
- GS clouds (meteorology)
 . **noctilucent clouds**
- RT luminescence
- nocturnal variations**
- GS variations
 . magnetic variations
 . . **nocturnal variations**
 . . periodic variations
 . . . **nocturnal variations**
- RT diurnal variations
 geomagnetic micropulsations
 geomagnetic pulsations
- nodes (standing waves)**
- DEF Points, lines, or surfaces in standing waves where some characteristic of the wave field has essentially zero amplitude.
- RT antinodes
 harmonics
 resonant frequencies
 standing waves
 vibration
 wavelengths
 ∞ waves
- nodules**
- RT leguminous plants
 particles
 spheres
 spherulites
- NOE navigation*
 USE **nap-of-the-earth navigation**
- NOESS**
- SN (NATIONAL OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM)
 DEF The acronym for the National Operational Environmental Satellite System. This term is no longer in use. Used for National Operational Environmental Sat Sys.
- UF *National Operational Environmental Sat Sys*
- RT meteorological satellites
 meteorology
 NASA programs
 observation
 ∞ systems
- ∞ **noise**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Any undesired signal (electrical or acoustic) that tends to interfere with the reception, interpretation, or processing of the desired signal.
- RT background noise
 continuous noise
 effective perceived noise levels
 electromagnetic noise
 hum
 information theory
 noise (sound)
 noise injuries
 noise propagation
 noise spectra
 random noise
 signal to noise ratios
 spatial filtering
 white noise
- noise (sound)**
- UF *noise hazards*
- GS elastic waves
 . sound waves
 . . **noise (sound)**
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . . engine noise
 rocket engine noise
 . . . flow noise
 . . . thermal noise
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones
- RT acoustics
 aeolian tones
 aircraft hazards
 ambience
 auditory stimuli
 auditory tasks
 background noise
 echoes
 effective perceived noise levels
 flight hazards
 human factors engineering
 hypersonic shock
 jet blast effects
 loudness
 mufflers
 ∞ noise
 noise measurement
 noise spectra
 operational hazards
 random noise
 random vibration
 reverberation
 shock waves
 sound pressure
 underwater acoustics
 white noise
- noise attenuation*
 USE **noise reduction**
- noise elimination*
 USE **noise reduction**
- noise generators**
- RT electromagnetic noise
 ∞ generators
 radio frequency interference
 random noise
 sound generators
 sound propagation
- noise hazards*
 USE **hazards**
noise (sound)
- noise injuries**
- GS injuries
 . **noise injuries**
- RT ear protectors
 ∞ noise
- noise intensity**
- RT aircraft noise
 auditory stimuli
 effective perceived noise levels
 electromagnetic noise
 ∞ intensity
 propeller noise
 psychoacoustics
 sirens
 sound intensity
- noise measurement**
- GS acoustic measurement
 . **noise measurement**
- RT aerodynamic noise
 aircraft noise
 background noise
 jet aircraft noise
 loudness

noise meters

∞ measurement
noise (sound)
propeller noise
sound intensity

noise meters

SN (LIMITED TO ACOUSTIC NOISE)
GS measuring instruments
. **noise meters**
RT acoustic measurement
field intensity meters
pressure measurement

noise pollution

DEF Objectional or harmful levels of noise.
GS pollution
. **noise pollution**
RT acoustics
audio frequencies
environment effects
environment pollution
environmental quality
human reactions
human tolerances
physiological effects
physiological factors
sound waves

noise prediction

DEF Estimation of intensity and frequencies based on analyses of probable oscillation of vibration producing components.
GS predictions
. **noise prediction**
. . noise prediction (aircraft)

noise prediction (aircraft)

DEF Estimating or forecasting of aircraft noise. Used for aircraft noise prediction.
UF *aircraft noise prediction*
GS predictions
. noise prediction
. . **noise prediction (aircraft)**
RT aeroacoustics
∞ aircraft
aircraft noise
estimates
forecasting
propeller noise
sound waves

noise propagation

RT acoustics
coherence coefficient
continuous noise
far fields
∞ noise
signal to noise ratios
sound propagation

noise reduction

UF *noise attenuation*
noise elimination
noise suppressors
RT acoustic attenuation
acoustic ducts
acoustic retrofitting
acoustics
aerodynamic noise
aircraft noise
coaxial nozzles
ear protectors
echo suppressors
effective perceived noise levels
electrical grounding
electromagnetic interference
electromagnetic noise
flight rules
grazing flow
Helmholtz resonators
interference immunity
isolators
jet aircraft noise
loudness
mufflers
propeller noise

quiet engine program
∞ reduction
shock wave attenuation
silence
squelch circuits
suppressors
synchrophasing
vibration isolators

noise spectra

GS spectra
. **noise spectra**
RT acoustic frequencies
background noise
channel noise
electromagnetic compatibility
electromagnetic noise
electromagnetic spectra
∞ noise
noise (sound)
radiation spectra
random noise
random signals
shock spectra
signal to noise ratios
white noise

noise storms

GS storms
. **noise storms**
RT cosmic noise
electromagnetic noise
ionospheric storms
magnetic storms
radio frequency interference
solar storms

noise suppressors

USE **noise reduction**

noise temperature

GS temperature
. **noise temperature**
RT electromagnetic noise
electron energy
electron states
temperature measurement
thermal noise

noise threshold

RT auditory fatigue
auditory perception
background noise
signal to noise ratios
∞ thresholds

noise tolerance

RT hazards
human tolerances
tolerances (physiology)

Nomad launch vehicle

GS launch vehicles
. **Nomad launch vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Nomad launch vehicle**
RT Atlas launch vehicles
liquid propellant rocket engines

nomenclatures

RT definition
descriptions
dictionaries
mnemonics
naming
semantics
symbols
terminology

thesauri

nominal values

USE **approximation**

nomograms

USE **nomographs**

nomographs

DEF On charts or graphs, lines of constant value of given quantities with respect to either space or time. Used for isopleths and nomograms.
UF *isopleths*
nomograms
GS analysis (mathematics)
. numerical analysis
. . **nomographs**
RT charts
graphs (charts)

nonadiabatic conditions

DEF In thermodynamics, changes in volume, temperature, flow, etc., accompanied by a transfer of heat.
GS conditions
. **nonadiabatic conditions**
RT energy transfer
heat transfer
nonisothermal processes
thermodynamics

nonadiabatic processes

USE **heat transfer**

nonadiabatic theory

RT adiabatic equations
charged particles
energy dissipation
ionization cross sections
magnetic disturbances
∞ theories
wave propagation

nonanes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **nonanes**

nonaqueous electrolytes

GS conductors
. electrolytes
. . **nonaqueous electrolytes**
RT electric batteries
∞ electric cells
electrochemistry
electrolytic cells
primary batteries
storage batteries
wet cells

noncondensable gases

GS gases
. **noncondensable gases**
RT critical temperature
gas-liquid interactions
liquefaction

nonconductors

USE **electrical insulation**

nonconservative forces

RT conservation
conservation equations
conservation laws
continuity equation
∞ force

nondestructive tests

DEF Testing that does not alter the material under test in a permanent manner or introduce any permanent changes to the material properties and structure.

- UF *flaw detection*
- GS **nondestructive tests**
 - . neutron radiography
- RT
 - acoustic emission
 - acoustic imaging
 - adhesion tests
 - chemical tests
 - destructive tests
 - electronic equipment tests
 - engine tests
 - ground penetrating radar
 - hardness tests
 - high temperature tests
 - infrared inspection
 - inspection
 - load tests
 - low temperature tests
 - ∞ materials tests
 - nonintrusive measurement
 - photoacoustic microscopy
 - preventive maintenance
 - quality control
 - radiography
 - reliability
 - SH waves
 - shearography
 - static tests
 - ∞ tests
 - thermography
 - tolerances (mechanics)
 - ultrasonic flaw detection
 - ultrasonic spectroscopy
 - ultrasonic tests
 - x ray inspection
- nonelectrolytes**
 - RT electrolytes
- nonequilibrium conditions**
 - GS conditions
 - . **nonequilibrium conditions**
 - RT ∞ equilibrium
 - unsteady state
- nonequilibrium drag*
 - USE **friction drag**
- nonequilibrium flow**
 - GS fluid flow
 - . gas flow
 - . . **nonequilibrium flow**
 - RT equilibrium flow
 - ∞ fluids
 - heat transmission
 - oscillating flow
 - quasi-steady states
 - unsteady flow
- nonequilibrium ionization**
 - GS ionization
 - . **nonequilibrium ionization**
- nonequilibrium plasmas**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **nonequilibrium plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **nonequilibrium plasmas**
 - RT magnetohydrodynamic stability
 - nonuniform plasmas
 - plasma composition
 - plasma potentials
 - plasma radiation
 - plasma sheaths
 - rotating plasmas
- nonequilibrium radiation**
 - GS electromagnetic radiation
 - . **nonequilibrium radiation**
 - RT nonthermal radiation
- shock wave propagation
- nonequilibrium thermodynamics**
 - GS thermodynamics
 - . **nonequilibrium thermodynamics**
 - RT irreversible processes
- nonEuclidian geometry*
 - USE **differential geometry**
- nonferrous metals**
 - GS metals
 - . **nonferrous metals**
 - RT chemical elements
 - conductors
 - ∞ metallurgy
- nonflammable materials**
 - RT asbestos
 - fireproofing
 - ∞ inorganic materials
 - Kevlar (trademark)
 - ∞ materials
 - oxides
 - refractory materials
- nongray atmospheres**
 - RT ∞ atmospheres
 - black body radiation
 - emissivity
 - gray gas
 - planetary atmospheres
- nongray gas**
 - GS gases
 - . **nongray gas**
 - RT ∞ atmospheres
 - black body radiation
 - emissivity
 - heat transfer
 - spectral emission
 - thermal radiation
 - thermodynamics
- nonholonomic equations**
 - GS analysis (mathematics)
 - . complex variables
 - . . **nonholonomic equations**
 - RT analytic functions
 - ∞ equations
- nonhomogeneity*
 - USE **inhomogeneity**
- nonintrusive measurement**
 - (added September 1992)
 - UF *non-intrusive measurement*
 - RT flow measurement
 - laser doppler velocimeters
 - ∞ measurement
 - nondestructive tests
 - optical measurement
 - pressure sensitive paints
 - temperature measurement
 - temperature sensitive paints
- non-intrusive measurement*
 - USE **nonintrusive measurement**
- nonisentropy**
 - GS isentropic processes
 - . **nonisentropy**
 - RT entropy
 - ∞ processes
- nonisothermal processes**
 - DEF In thermodynamics, compression or expansion of substances at nonuniform temperatures.
 - RT energy transfer
 - heat transfer
 - nonadiabatic conditions
 - pressure effects
 - ∞ processes
 - temperature gradients
- thermodynamics
- nonisotropic plates*
 - USE **anisotropic plates**
- nonisotropy*
 - USE **anisotropy**
- nonlifting vehicles*
 - USE **ballistic vehicles**
- nonlinear equations**
 - GS algebra
 - . **nonlinear equations**
 - . . cubic equations
 - . . Duffing differential equation
 - . . Monge-Ampere equation
 - . . nonlinear evolution equations
 - . . quadratic equations
 - . . quartic equations
 - analysis (mathematics)
 - . real variables
 - . . **nonlinear equations**
 - . . . cubic equations
 - . . . Duffing differential equation
 - . . . Monge-Ampere equation
 - . . . nonlinear evolution equations
 - . . . quadratic equations
 - . . . quartic equations
 - RT Born-Infeld theory
 - differential equations
 - ∞ equations
 - field theory (algebra)
 - integral equations
 - polynomials
 - roots of equations
- nonlinear evolution equations**
 - GS algebra
 - . nonlinear equations
 - . . **nonlinear evolution equations**
 - analysis (mathematics)
 - . real variables
 - . . nonlinear equations
 - . . . **nonlinear evolution equations**
 - RT difference equations
 - ∞ equations
- nonlinear feedback**
 - GS feedback
 - . **nonlinear feedback**
 - RT feedback amplifiers
 - feedback control
 - negative feedback
 - positive feedback
 - sensory feedback
 - transfer functions
- nonlinear filters**
 - RT electric filters
 - electromagnetic wave filters
 - ∞ filters
 - linear filters
- nonlinear optics**
 - DEF Study of the interaction of radiation with matter in which certain variables describing the response of the matter are not proportional to variables describing the radiation.
 - RT birefringence
 - chromophores
 - electromagnetic radiation
 - electro-optical effect
 - four-wave mixing
 - geometrical optics
 - gradient index optics
 - optical bistability
 - ∞ optics
 - quantum dots
 - quantum optics
 - quantum wires
 - Raman spectra
 - Sagnac effect
- nonlinear programming**
 - DEF An optimization problem in which any

nonlinear systems

or all of the following are nonlinear in the variables: (A) the objective functions, (B) the defining relationships among the variables, the plant description, (C) the constraints.

- GS optimization
 - . mathematical programming
 - . . **nonlinear programming** research
 - . **nonlinear programming**
- RT ∞ applications of mathematics
- constraints
- formalism
- linear programming
- operations research
- ∞ programming

nonlinear systems

- SN (DYNAMIC SYSTEMS HAVING NONLINEAR RESPONSES)
- RT attractors (mathematics)
- chaos
- control equipment
- distributed parameter systems
- dynamic programming
- dynamical systems
- linear systems
- strange attractors
- ∞ systems
- tracking problem
- uncertain systems

nonlinearity

- UF *quasilinearity*
- RT differential equations
- functions (mathematics)
- linearity
- magnetic amplifiers
- variability
- Volterra equations

nonNewtonian flow

DEF The rate of flow of a material that is not proportional to the degree of force applied.

- GS fluid flow
 - . **nonNewtonian flow**
- RT liquid flow
- steady flow
- thixotropy
- unsteady flow
- viscoelasticity
- viscoplasticity

nonNewtonian fluids

DEF Fluids that exhibit a viscosity which varies with changing shear stress or shear rate.

- RT colloids
- ∞ fluids
- gelatins
- gels
- newton
- Newton Theory
- Newtonian fluids
- rheology
- viscoelasticity
- viscoplasticity
- viscous fluids

nonohmic effect

- RT barrier layers
- contact resistance
- ∞ effects
- space charge

nonoscillatory action

- GS oscillations
 - . **nonoscillatory action**
- RT oscillation dampers
- oscillators
- vibration damping

nonparametric statistics

- GS statistical analysis
 - . **nonparametric statistics**

RT ∞ statistics

nonpoint sources

DEF Undetermined or general areas from which pollutants, contaminants, and/or other unwanted materials or wastes enter the environment.

- RT contaminants
- contamination
- diffusion
- environments
- gases
- liquids
- particles
- ∞ points
- poisons
- pollution
- public health
- radioactive wastes
- ∞ sources
- toxicology
- wastes

nonpolar gases

- GS gases
 - . **nonpolar gases**
- RT molecular gases
- rare gases

nonreflection

USE **energy absorption**

nonrelativistic electrons

USE **electrons**

nonrelativistic mechanics

- RT Newton Theory
- relativity

nonresonance

- RT microwave resonance
- transmission lines
- traveling waves

nonrigidity

USE **flexibility**

nonspherical optics

USE **aspheric optics**

nonstabilized oscillation

- GS oscillations
 - . **nonstabilized oscillation**
- RT oscillation dampers
- oscillators
- pilot induced oscillation
- stable oscillations
- vibration damping

nonsynchronization

- RT deviation
- incoherence
- ∞ interference
- nonuniformity

nonthermal emission

USE **nonthermal radiation**

nonthermal radiation

- UF *nonthermal emission*
- GS electromagnetic radiation
 - . **nonthermal radiation**
 - . . cyclotron radiation
 - . . . ion cyclotron radiation
 - . . . synchrotron radiation
- RT galactic radiation
- magnetic fields
- nonequilibrium radiation
- ∞ radiation
- radio waves
- thermal radiation

nonuniform flow

- GS fluid flow
 - . **nonuniform flow**

- RT flow characteristics
- gas flow
- turbulent flow
- uniform flow
- unsteady flow

nonuniform magnetic fields

- GS magnetic fields
 - . **nonuniform magnetic fields**
- RT diffraction radiation
- lines of force
- magnetic anomalies
- magnetic mirrors

nonuniform plasmas

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **nonuniform plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **nonuniform plasmas**
- RT Kelvin-Helmholtz instability
- low density research
- magnetohydrodynamic stability
- nonequilibrium plasmas
- plasma composition
- plasma oscillations
- plasma waves
- rarefied plasmas

nonuniformity

- RT flexibility
- inhomogeneity
- irregularities
- nonsynchronization
- oscillations
- turbulence

nonviscous flow

USE **inviscid flow**

noon

- DEF The instant at which a time reference is over the upper branch of the reference meridian.
- RT daytime
- zenith

Nord 262 aircraft

USE **MH-262 aircraft**

Nord 1500 aircraft

- UF *Griffon aircraft*
- GS jet aircraft
 - . **Nord 1500 aircraft**
 - monoplanes
 - . **Nord 1500 aircraft**
 - Nord aircraft
 - . **Nord 1500 aircraft**
 - research vehicles
 - . research aircraft
 - . . **Nord 1500 aircraft**
 - supersonic aircraft
 - . **Nord 1500 aircraft**
- RT ∞ aircraft

Nord aircraft

- GS **Nord aircraft**
 - . C-160 aircraft
 - . MH-262 aircraft
 - . Nord 1500 aircraft
- RT ∞ aircraft

norepinephrine

DEF Precursor of epinephrine that is secreted by the adrenal medulla and is a widespread central and autonomic neurotransmitter. Norepinephrine is the principal transmitter of most postganglionic sympathetic fibers and of the diffuse projection system in the brain arising from the locus ceruleus. It is also found in plants and is used pharmacologically as a sympathomimetic.

GS amines

- . catecholamine
 - . . . **norepinephrine**
 - drugs
 - . stimulants
 - . . . **norepinephrine**
 - RT dopamine
 - neurotransmitters
- norleucine**
- GS acids
 - . amino acids
 - . . leucine
 - . . . **norleucine**
 - organic compounds
 - . amino acids
 - . . leucine
 - . . . **norleucine**
- normal density functions**
- UF *Gaussian distributions*
 - normal distributions*
 - GS functions (mathematics)
 - . probability density functions
 - . . **normal density functions**
 - statistical analysis
 - . probability density functions
 - . . **normal density functions**
 - RT continuity (mathematics)
 - discrete functions
 - histograms
- normal distributions*
- USE **normal density functions**
- normal force distribution*
- USE **force distribution**
- normal shock waves**
- GS elastic waves
 - . shock waves
 - . . **normal shock waves**
 - RT longitudinal waves
 - magneto hydrodynamic waves
 - oblique shock waves
 - plane waves
 - shock layers
- normality**
- RT asymptotic properties
 - average
 - mean
 - median (statistics)
 - norms
 - statistical tests
- normalized difference vegetation index**
(added June 2001)
- DEF A transformation of satellite-based measurements computed as the ratio of reflectance in the red and near-infrared portions of the spectrum. Reflectance in the red region decreases with increasing chlorophyll content of the plant canopy, while reflectance in the infrared increases with increasing wet plant biomass. The index value represents greenness, density, and vigor of vegetation.
- UF *NDVI (remote sensing)*
 - GS ratios
 - . indexes (ratios)
 - . . vegetative index
 - . . . **normalized difference vegetation index**
 - RT crop vigor
 - image classification
 - remote sensing
 - satellite imagery
 - vegetation
- ∞ **normalizing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT normalizing (heat treatment)
 - normalizing (statistics)
- regularity
- normalizing (heat treatment)**
- GS heat treatment
 - . **normalizing (heat treatment)**
 - RT annealing
 - hardening (materials)
 - laser annealing
 - ∞ normalizing
 - tempering
- normalizing (statistics)**
- RT evaluation
 - ∞ normalizing
 - quality control
 - ratings
 - renormalization group methods
- norms**
- GS naming
 - . **norms**
 - RT average
 - ethics
 - median (statistics)
 - normality
 - psychometrics
 - value
- North America**
- GS continents
 - . **North America**
 - RT Appalachian Mountains (North America)
 - Canada
 - Central America
 - Lower California (Mexico)
 - Mexico
 - tundra
 - United States
 - Williston Basin (North America)
- North American aircraft**
- GS **North American aircraft**
 - . A-2 aircraft
 - . A-5 aircraft
 - . B-1 aircraft
 - . B-70 aircraft
 - . F-86 aircraft
 - . F-100 aircraft
 - . OV-10 aircraft
 - . P-51 aircraft
 - . T-2 aircraft
 - . T-28 aircraft
 - . T-39 aircraft
 - . X-15 aircraft
 - RT ∞ aircraft
- North Atlantic Treaty Organization (NATO)**
- GS organizations
 - . **North Atlantic Treaty Organization (NATO)**
 - RT international cooperation
- North Carolina**
- GS nations
 - . United States
 - . . **North Carolina**
 - RT Cape Hatteras (NC)
 - Great Smoky Mountains (NC-TN)
 - Outer Banks (NC)
 - Sand Hills Region (GA-NC-SC)
- North Dakota**
- GS nations
 - . United States
 - . . **North Dakota**
 - RT Missouri River (US)
 - Williston Basin (North America)
- North Korea**
- UF *Democratic Peoples Republic of Korea*
 - GS nations
 - . **North Korea**
 - RT Asia
 - ∞ Korea
- South Korea
- North Polar Spur (astronomy)**
- DEF One of the largest sources of diffuse radio emission outside the galactic plane. The Spur, a ridge of enhanced emission, may be the remnant of the shells of supernovae which exploded over 100,000 years ago.
- GS electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . galactic radio waves
 - **North Polar Spur (astronomy)**
 - extraterrestrial radiation
 - . extraterrestrial radio waves
 - . . galactic radio waves
 - . . . **North Polar Spur (astronomy)**
 - galactic radiation
 - . galactic radio waves
 - . . . **North Polar Spur (astronomy)**
 - RT nebulae
 - supernova remnants
 - x ray spectra
- North Sea**
- GS seas
 - . **North Sea**
 - RT English Channel
- North Vietnam*
- USE **Vietnam**
- Northern Hemisphere**
- GS **Northern Hemisphere**
 - . Arctic regions
 - . . subarctic regions
 - RT ∞ hemispheres
 - northern sky
 - Southern Hemisphere
- Northern Ireland**
(added November 1989)
- GS nations
 - . United Kingdom
 - . . **Northern Ireland**
 - RT Europe
- northern sky**
- DEF That part of the sky visible from the northern hemisphere.
- RT astronomical catalogs
 - astronomical coordinates
 - astronomical observatories
 - Northern Hemisphere
 - sky surveys (astronomy)
 - Southern sky
- Northrop aircraft**
- GS **Northrop aircraft**
 - . A-9 aircraft
 - . F-5 aircraft
 - . F-18 aircraft
 - . F-20 aircraft
 - . F-89 aircraft
 - . T-38 aircraft
 - . X-21 aircraft
 - . X-21A aircraft
 - RT ∞ aircraft
- Northwest Territories**
- GS nations
 - . Canada
 - . . **Northwest Territories**
- Norton County achondrite**
- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **Norton County achondrite**
- Norway**
- GS nations
 - . **Norway**
 - RT Europe
 - fjords

Norwegian space program

Norwegian space program
Scandinavia

Norwegian space program

(added August 1990)

GS programs
. space programs
. . European space programs
. . . **Norwegian space program**
RT Norway

∞ nose

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED—CONSULT THE TERMS
LISTED BELOW)
RT nose (anatomy)
noses (forebodies)

nose (anatomy)

GS anatomy
. face (anatomy)
. . **nose (anatomy)**
. respiratory system
. . **nose (anatomy)**
RT head (anatomy)
∞ nose
paranasal sinuses
sinuses

nose caps

USE **nose cones**

nose cones

DEF The cone shaped leading ends of
rocket vehicles, consisting (a) of chambers in
which satellites, instruments, animals, plants, or
auxiliary equipment may be carried, and (b) of
outer surfaces built to withstand high tempera-
tures generated by aerodynamic heating. Used
for nose caps.

UF *nose caps*
GS cones
. **nose cones**
. . ablative nose cones
. . rocket nose cones
forebodies
. noses (forebodies)
. . **nose cones**
. . . ablative nose cones
. . . rocket nose cones
RT ablative materials
aeroshells
blunt bodies
∞ caps
circular cones
half cones
missile components
ogives
reentry shielding
reentry vehicles
spacecraft components
spacecraft shielding
spherical caps
warheads

nose fins

GS fins
. **nose fins**
RT control surfaces
finned bodies
noses (forebodies)
vanes

nose inlets

GS intake systems
. **nose inlets**
RT air intakes
annular ducts
bypass ratio
ducted bodies
ducts
hypersonic inlets
inlet airframe configurations
nacelles
noses (forebodies)
scoops
side inlets

supersonic inlets
∞ water intakes

nose tips

DEF The foremost, sharp points of bombs,
rockets, missiles, and other symmetrical bodies.
GS tips
. **nose tips**
RT aerodynamic configurations
airfoil profiles
noses (forebodies)

nose wheels

GS wheels
. vehicle wheels
. . **nose wheels**
RT brakes (for arresting motion)
landing gear

noses (forebodies)

GS forebodies
. **noses (forebodies)**
. . nose cones
. . . ablative nose cones
. . . rocket nose cones
RT aircraft structures
∞ nose
nose fins
nose inlets
nose tips

Nostoc

GS plants (botany)
. algae
. . blue green algae
. . . **Nostoc**
. thermophilic plants
. . blue green algae
. . . **Nostoc**

notation

USE **coding**

notch sensitivity

GS mechanical properties
. toughness
. . **notch sensitivity**
sensitivity
. **notch sensitivity**
RT Charpy impact test
fatigue (materials)
impact strength
impact tests

notch strength

GS mechanical properties
. **notch strength**
RT brittleness
ductility
fatigue tests
impact tests
∞ strength
stress concentration
stress intensity factors

notch tests

UF *notched metals*
GS **notch tests**
. Charpy impact test
RT brittleness
crack opening displacement
drop tests
fatigue tests
hardness
impact tests
stress concentration
∞ tests

notched metals

USE **notch tests**

notches

RT crack opening displacement
passageways

V grooves

Nova computers

DEF A series of minicomputers built by Data
General.
GS data processing equipment
. computers
. . digital computers
. . . minicomputers
. . . . **Nova computers**

Nova Laser System

DEF Laser fusion system utilizing large
neodymium glass lasers for irradiating DT pel-
lets.
GS stimulated emission devices
. lasers
. . high power lasers
. . . **Nova Laser System**
RT laser fusion
laser outputs
Shiva laser system
∞ systems

Nova launch vehicles

GS launch vehicles
. **Nova launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . **Nova launch vehicles**
RT F-1 rocket engine
J-2 engine
liquid propellant rocket engines
M-1 engine
∞ vehicles

Nova satellites

DEF A second generation Navy navigation
satellite which replaces the transit satellites.
GS artificial satellites
. navigation satellites
. . **Nova satellites**
RT Discos (satellite attitude control)
Transit navigation system

Nova Scotia

GS nations
. Canada
. . **Nova Scotia**

novae

GS celestial bodies
. stars
. . variable stars
. . . **novae**
. . . . dwarf novae
. . . . Hercules nova
RT cataclysmic variables
shock waves
stellar mass
stellar mass ejection
supernovae
symbiotic stars

novocain

GS drugs
. anesthetics
. . **novocain**

nowcasting

DEF A self contained short period meteorolo-
gical forecast for the immediate future cover-
ing a period of up to six hours.
GS meteorology
. weather forecasting
. . **nowcasting**
predictions
. forecasting
. . weather forecasting
. . . **nowcasting**
RT aviation meteorology

- hindcasting
- noxious materials*
USE **contaminants**
- Nozomi Mars Orbiter**
(added August 1998)
DEF A Japanese Mars mission spacecraft designed to study the Martian upper atmosphere and its interaction with the solar wind, and to develop technologies for use in future planetary missions. Specifically, instruments on the spacecraft enable the measurement of the structure, composition and dynamics of the ionosphere; aeronomy effects of the solar wind; the escape of atmospheric constituents; the intrinsic magnetic field; and dust in the upper atmosphere and in-orbit around Mars.
UF *Planet-B spacecraft*
GS interplanetary spacecraft
. Mars probes
. . **Nozomi Mars Orbiter**
Japanese spacecraft
. **Nozomi Mars Orbiter**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Nozomi Mars Orbiter**
RT aeronomy
Deimos
Phobos
planetary atmospheres
solar planetary interactions
- nozzle coefficient*
USE **nozzle flow**
- nozzle design**
RT aerospike engines
∞ design
engine design
∞ nozzles
- nozzle efficiency**
DEF The efficiency with which a nozzle converts potential energy into kinetic energy, commonly expressed as the ratio of the actual change in kinetic energy to the ideal change at the given pressure ratio.
GS efficiency
. **nozzle efficiency**
RT ∞ nozzles
power efficiency
propulsive efficiency
thermodynamic efficiency
- nozzle flow**
UF *nozzle coefficient*
GS fluid flow
. internal flow
. . **nozzle flow**
RT aerothermochemistry
annular flow
choked flow
corner flow
discharge coefficient
exhaust gases
exhaust nozzles
fissionable materials
flow geometry
flow noise
fluid injection
injectors
jet flow
outlet flow
pneumatic probes
screech tones
supersonic jet flow
transonic flow
- nozzle geometry**
GS geometry
. **nozzle geometry**
RT coaxial nozzles
conical nozzles
convergent nozzles
- convergent-divergent nozzles
discharge coefficient
divergent nozzles
mass flow factors
∞ nozzles
pipe nozzles
plug nozzles
shrouded nozzles
spike nozzles
throats
- nozzle inserts**
GS inserts
. **nozzle inserts**
RT ablative materials
chokes
conical nozzles
convergent-divergent nozzles
exhaust nozzles
∞ nozzles
rocket nozzles
throats
- nozzle thrust coefficients**
GS coefficients
. **nozzle thrust coefficients**
RT discharge coefficient
flow coefficients
influence coefficient
thrust
thrust vector control
- nozzle walls**
GS walls
. **nozzle walls**
RT conical nozzles
convergent nozzles
divergent nozzles
jet amplifiers
∞ nozzles
refractory materials
shrouded nozzles
throats
- nozzleless rocket engines**
GS engines
. rocket engines
. . **nozzleless rocket engines**
RT rocket nozzles
- ∞ **nozzles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT acoustic nozzles
annular nozzles
atomizers
blowers
chokes
chokes (restrictions)
coaxial nozzles
conical nozzles
convergent nozzles
convergent-divergent nozzles
∞ diffusers
divergent nozzles
dual thrust nozzles
exhaust nozzles
flow measurement
funnels
hypersonic nozzles
injectors
inlet nozzles
magnetic nozzles
nozzle design
nozzle efficiency
nozzle geometry
nozzle inserts
nozzle walls
orifices
outlets
pipe nozzles
plug nozzles
rocket nozzles
shrouded nozzles
sonic nozzles
spike nozzles
- spray nozzles
sprayers
supersonic nozzles
transonic nozzles
turbines
vents
wind tunnel nozzles
- n-p junctions*
USE **p-n junctions**
- n-p-n junctions**
GS semiconductor junctions
. **n-p-n junctions**
RT bipolar transistors
- NRX reactors**
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **NRX reactors**
. nuclear research and test reactors
. . **NRX reactors**
RT KIWI reactors
nuclear engine for rocket vehicles
- NTS*
USE **navigation technology satellites**
- n-type semiconductors**
GS semiconductors (materials)
. **n-type semiconductors**
RT electrons
Schottky diodes
semiconductor junctions
Suhl effect
- nu factor**
RT Poisson ratio
- nuclear astrophysics**
(added July 1988)
GS astrophysics
. **nuclear astrophysics**
nuclear physics
. **nuclear astrophysics**
RT cosmology
nuclear particles
stellar physics
- nuclear auxiliary power units**
GS auxiliary power sources
. **nuclear auxiliary power units**
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
nuclear electric power generation
. **nuclear auxiliary power units**
. . SNAP
. . . fission electric cells
. . . . SNAP 2

nuclear binding energy

- ... SNAP 4
- ... SNAP 8
- ... SNAP 10A
- ... SNAP 1
- ... SNAP 3
- ... SNAP 7
- ... SNAP 9A
- ... SNAP 11
- ... SNAP 13
- ... SNAP 15
- ... SNAP 17
- ... SNAP 19
- ... SNAP 21
- ... SNAP 23
- ... SNAP 27
- ... SNAP 29
- ... SNAP 50
- ... space power reactors
- ... fission electric cells
- ... SNAP 2
- ... SNAP 4
- ... SNAP 8
- ... SNAP 10A
- ... SNAP 50
- ... space power unit reactors
- RT ∞ power supplies
- radioisotope batteries
- spacecraft power supplies
- thermoelectric generators
- thermoelectric power generation

nuclear binding energy

- GS binding energy
- . **nuclear binding energy**
- RT activation energy
- ∞ energy
- gravitational binding energy
- ionization potentials

nuclear bulge (galaxies)

USE **galactic bulge**

nuclear capture

- GS nuclear reactions
- . nuclear interactions
- . . **nuclear capture**
- ... electron capture
- particle interactions
- . elementary particle interactions
- . . **nuclear capture**
- ... electron capture
- . nuclear interactions
- . . **nuclear capture**
- ... electron capture
- RT activation energy
- capture effect
- electron transitions
- energy levels
- ∞ interactions
- irradiation
- spin
- transition probabilities

nuclear chemistry

- RT atomic structure
- ∞ chemistry
- isomers
- ∞ nuclear energy
- physical chemistry
- plasma chemistry
- quantum chemistry
- radiochemistry

nuclear deformation

- GS deformation
- . **nuclear deformation**

nuclear devices

- DEF Devices whose explosive potency is derived from nuclear fission of atoms of fissionable material with the consequent conversion of part of their mass into energy.
- GS explosive devices
- . **nuclear devices**
- RT ∞ devices
- fission weapons

- thermonuclear explosions
- warheads

nuclear electric power generation

- UF *nuclear power generation*
- GS **nuclear electric power generation**

- . nuclear auxiliary power units
- . . SNAP
- ... fission electric cells
- ... SNAP 2
- ... SNAP 4
- ... SNAP 8
- ... SNAP 10A
- ... SNAP 1
- ... SNAP 3
- ... SNAP 7
- ... SNAP 9A
- ... SNAP 11
- ... SNAP 13
- ... SNAP 15
- ... SNAP 17
- ... SNAP 19
- ... SNAP 21
- ... SNAP 23
- ... SNAP 27
- ... SNAP 29
- ... SNAP 50
- . . space power reactors
- ... fission electric cells
- ... SNAP 2
- ... SNAP 4
- ... SNAP 8
- ... SNAP 10A
- ... SNAP 50
- . . space power unit reactors
- . nuclear power plants
- . . Enrico Fermi atomic power plant
- . . Hallam Nuclear Power Facility
- . . ML-1 nuclear power plant
- . nuclear power reactors
- . . KIWI reactors
- ... KIWI B reactors
- ... KIWI B-1 Reactor
- ... KIWI B-4 Reactor
- . . Pathfinder nuclear reactor
- . . plutonium recycle test reactor
- . . space power reactors
- ... fission electric cells
- ... SNAP 2
- ... SNAP 4
- ... SNAP 8
- ... SNAP 10A
- ... SNAP 50
- . . space power unit reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- . . thermonuclear power generation
- RT electric generators
- ∞ nuclear energy

nuclear electric propulsion

- GS propulsion
- . nuclear propulsion
- . . **nuclear electric propulsion**
- RT electric propulsion
- electrothermal engines
- fusion propulsion
- ion propulsion
- marine propulsion
- plasma propulsion
- spacecraft propulsion

nuclear emulsions

- DEF Very thick photographic emulsions used in the study of cosmic rays and other energetic particles. The paths of the particles through the thick emulsions are recorded in three dimensions.
- GS mixtures
- . dispersions
- . . emulsions
- ... photographic emulsions
- ... **nuclear emulsions**
- . solutions
- . . photographic emulsions
- . . **nuclear emulsions**

- RT dosimeters
- radiation counters
- radiation measuring instruments

∞ **nuclear energy**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF All forms of energy released in the course of a nuclear fission or a nuclear transformation.
- UF *atomic energy*
- RT annular core pulse reactors
- atomic theory
- chemical energy
- energy policy
- energy storage
- molecular energy levels
- nuclear chemistry
- nuclear electric power generation
- nuclear fission
- nuclear fuels
- nuclear fusion
- nuclear heat
- nuclear physics
- nuclear propulsion
- nuclear reactors
- nuclear research
- nuclear warfare
- nuclear weapons
- nucleonics
- spent fuels

nuclear engine for rocket vehicles

- UF *NERVA (engine)*
- GS engines
- . rocket engines
- . . **nuclear engine for rocket vehicles**

- RT booster rocket engines
- KIWI reactors
- NRX reactors
- Phoebus nuclear reactor
- Rover project
- sustainer rocket engines
- ∞ vehicles
- water cooled reactors

nuclear explosion effect

- RT ∞ effects
- fallout
- radiation effects
- radiation hazards

nuclear explosions

- UF *atomic explosions*
- GS explosions
- . **nuclear explosions**
- . . thermonuclear explosions
- RT aerial explosions
- artificial radiation belts
- civil defense
- cratering
- fallout
- ∞ fireballs
- Fishbowl Operation
- high energy interactions
- radiation hazards
- underground explosions
- underwater explosions
- Vela satellites

nuclear fission

- GS nuclear reactions
- . **nuclear fission**
- . . chain reactions (nuclear physics)
- RT critical experiments
- critical mass
- decay
- fissile fuels
- fission products
- fusion reactors
- fusion-fission hybrid reactors
- high energy interactions
- neutron flux density
- ∞ nuclear energy
- radioactive decay

- radioactive materials
- subcritical mass
- nuclear fuel burnup**
 - GS combustion
 - . fuel combustion
 - . . **nuclear fuel burnup**
 - RT critical mass
 - reactor physics
 - reactor technology
- nuclear fuel elements**
 - UF *fuel elements (nuclear reactors)*
 - RT annular core pulse reactors
 - ∞ elements
 - fuels
 - plutonium alloys
 - reactor cores
 - reactor materials
 - uranium alloys
 - uranium carbides
- nuclear fuel reprocessing**
 - DEF Periodic chemical, physical, and metallurgical treatment of materials used as fuel elements in nuclear reactors to recover and purify residual fissionable and fertile materials.
 - GS reclamation
 - . materials recovery
 - . . **nuclear fuel reprocessing**
 - RT nuclear fuels
 - ∞ processing
 - ∞ recovery
 - recycling
 - spent fuels
- nuclear fuels**
 - DEF Fissionable materials of reasonable long life, used or usable in producing energy in a nuclear reactor. Used for reactor fuels.
 - UF *reactor fuels*
 - GS fuels
 - . **nuclear fuels**
 - . . ceramic nuclear fuels
 - . . fissile fuels
 - . . fissionium
 - . . spent fuels
 - RT annular core pulse reactors
 - deuterium
 - energy policy
 - fission
 - fissionable materials
 - fuel capsules
 - fuel production
 - inertial fusion (reactor)
 - mixed oxides
 - neutron sources
 - ∞ nuclear energy
 - nuclear fuel reprocessing
 - pellets
 - plutonium
 - plutonium alloys
 - plutonium compounds
 - reactor cores
 - reactor materials
 - reactor startup tests
 - sol-gel processes
 - thorium
 - thorium alloys
 - thorium compounds
 - tritium
 - uranium
 - uranium 233
 - uranium 235
 - uranium 238
 - uranium alloys
 - uranium carbides
 - uranium compounds
 - uranium oxides
- nuclear fusion**
 - UF *nucleosynthesis*
 - GS nuclear reactions
 - . thermonuclear reactions
 - . . **nuclear fusion**
 - . . . controlled fusion
- RT collisional plasmas
 - degenerate matter
 - dense plasmas
 - deuteron irradiation
 - ∞ fusion
 - fusion propulsion
 - fusion reactors
 - fusion weapons
 - fusion-fission hybrid reactors
 - high energy interactions
 - irradiation
 - magnetic mirrors
 - mirror fusion
 - ∞ nuclear energy
 - plasma focus
 - railgun accelerators
 - star formation
 - stellar interiors
 - stellar physics
 - ∞ synthesis
 - tokamak devices
- nuclear gyroscopes**
 - GS gyroscopes
 - . **nuclear gyroscopes**
- nuclear heat**
 - GS heat
 - . **nuclear heat**
 - RT ∞ nuclear energy
- nuclear interactions**
 - GS nuclear reactions
 - . **nuclear interactions**
 - . . nuclear capture
 - . . . electron capture
 - . . . spin-orbit interactions
 - . . . electron capture
 - . . . weak interactions (field theory)
 - particle interactions
 - . **nuclear interactions**
 - . . nuclear capture
 - . . . electron capture
 - . . . spin-orbit interactions
 - . . . electron capture
 - . . . weak interactions (field theory)
 - RT collision parameters
 - elementary particles
 - high energy interactions
 - ∞ interactions
 - strong interactions (field theory)
- nuclear isobars**
 - RT chemical elements
 - ∞ isobars
 - isotopes
 - nuclei (nuclear physics)
 - nuclides
- nuclear lightbulb engines**
 - GS engines
 - . rocket engines
 - . . nuclear rocket engines
 - . . . **nuclear lightbulb engines**
 - RT gaseous fission reactors
- nuclear magnetic resonance**
 - UF *knight shift*
 - NMR*
 - GS resonance
 - . magnetic resonance
 - . . **nuclear magnetic resonance**
 - . . . proton magnetic resonance
 - . . . proton resonance
 - RT magnetic signals
 - magnetometers
 - molecular structure
 - paramagnetic resonance
 - particle spin
 - Planck's constant
 - spin resonance
 - spin-lattice relaxation
- nuclear medicine**
 - DEF That branch of medicine dealing with the effect of radiation such as x rays, gamma rays, and energetic particles on the body and with the prevention and cure of physiological injuries resulting from such radiation. Used for radiation medicine.
 - UF *radiation medicine*
 - GS medical science
 - . **nuclear medicine**
 - . . radiobiology
 - RT antiradiation drugs
 - health physics
 - ∞ radiation
 - radiopathology
- nuclear meteorology**
 - GS meteorology
 - . **nuclear meteorology**
 - RT fallout
- nuclear models**
 - GS models
 - . **nuclear models**
 - RT atomic structure
 - energy levels
 - molecular structure
 - quark parton model
- nuclear particles**
 - GS particles
 - . **nuclear particles**
 - . . antiparticles
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . . positrons
 - . . beta particles
 - . . bosons
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
 - . . nucleons
 - . . photoelectrons
 - RT corpuscular radiation
 - cosmic rays
 - elementary particles
 - fission products
 - gamma ray bursts
 - neutron cross sections
 - neutron distribution
 - neutron scattering
 - nuclear astrophysics
 - nucleon potential
 - nucleon-nucleon scattering
 - particle accelerators
 - particle tracks
 - photoneutrons
 - pi-electrons
 - positron annihilation
 - proton resonance
 - protons
- nuclear physics**
 - GS **nuclear physics**
 - . nuclear astrophysics
 - . reactor physics
 - RT atomic structure
 - current algebra
 - electromagnetic absorption
 - field theory (physics)
 - health physics
 - ∞ nuclear energy
 - nucleonics
 - parity

nuclear potential

- particle spin
- ∞ physics
- quantum theory
- ∞ science
- theoretical physics

nuclear potential

- GS potential energy
- . **nuclear potential**
- RT nucleon potential

nuclear power generation

- USE **nuclear electric power generation**

nuclear power plants

- GS electric power plants
- . **nuclear power plants**
- . . Enrico Fermi atomic power plant
- . . Hallam Nuclear Power Facility
- . . ML-1 nuclear power plant
- nuclear electric power generation
- . **nuclear power plants**
- . . Enrico Fermi atomic power plant
- . . Hallam Nuclear Power Facility
- . . ML-1 nuclear power plant
- RT plasma core reactors

nuclear power reactors

- GS nuclear electric power generation
- . **nuclear power reactors**
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Pathfinder nuclear reactor
- . . plutonium recycle test reactor
- . . space power reactors
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- nuclear reactors
- . **nuclear power reactors**
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Pathfinder nuclear reactor
- . . plutonium recycle test reactor
- . . space power reactors
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- RT boiling water reactors
- breeder reactors
- fast nuclear reactors
- fast oxide reactors
- high temperature gas cooled reactors
- liquid metal fast breeder reactors
- power reactors
- pressurized water reactors
- SNAP
- sodium graphite reactors

nuclear powered ships

- GS surface vehicles
- . **nuclear powered ships**
- . . Savannah nuclear ship
- water vehicles
- . ships
- . . **nuclear powered ships**
- . . . Savannah nuclear ship
- RT aircraft carriers

- cargo ships
- navy
- submarines

nuclear propelled aircraft

- RT ∞ aircraft
- ∞ military aircraft
- research aircraft

nuclear propulsion

- UF *chemonuclear propulsion*
- thermonuclear propulsion*
- GS propulsion
- . **nuclear propulsion**
- . . fusion propulsion
- . . nuclear electric propulsion
- RT aircraft engines
- gaseous fission reactors
- high temperature nuclear reactors
- high temperature propellants
- magnetic nozzles
- marine propulsion
- matter-antimatter propulsion
- mercury ion engines
- NEW MOONS project
- ∞ nuclear energy
- Rover project
- Savannah nuclear ship
- spacecraft propulsion
- trident submarine
- underwater propulsion

nuclear pumped lasers

- DEF Lasers in which the excitation is supplied by a nuclear reactor as a high flux source or by the kinetic energy of the fission fragments only.
- GS stimulated emission devices
- . lasers
- . . **nuclear pumped lasers**
- RT optical pumping
- optical resonance

nuclear pumping

- DEF Laser-like pumping produced by electrons generated in nuclear reactions or, in general, by beams of charged particles.
- RT electron pumping
- energy transfer
- fission products
- gas lasers
- lasers
- optical pumping
- population inversion
- ∞ pumping
- stimulated emission
- stimulated emission devices

nuclear quadrupole resonance

- GS resonance
- . **nuclear quadrupole resonance**
- RT energy levels
- quadrupoles

nuclear radiation

- DEF Corpuscular emissions, such as alpha and beta particles, or electromagnetic radiation, such as gamma rays, originating in the nucleus of the atom.
- GS **nuclear radiation**
- . beta particles
- . fast neutrons
- . gamma ray beams
- . gamma rays
- . . gamma ray bursts
- . neutron beams
- . photoneutrons
- . post-blast nuclear radiation
- . spallation
- . thermal neutrons
- RT alpha particles
- bremsstrahlung
- Cerenkov radiation
- corpuscular radiation
- electromagnetic radiation
- electron pumping

- electron radiation
- electrons
- elementary particles
- emission spectra
- fission products
- gamma ray absorption
- health physics
- high energy interactions
- ionizing radiation
- irradiation
- neutrons
- particle production
- photons
- ∞ radiation
- radiation effects
- radiation hazards
- radioactive contaminants
- radioactive decay
- radioactive materials
- radioactivity
- radiobiology
- radiochemistry
- Vela satellites

nuclear radiation spectroscopy

- GS spectroscopy
- . **nuclear radiation spectroscopy**
- RT mass spectroscopy
- spectroscopic analysis
- vacuum spectroscopy

nuclear ramjet engines

- GS engines
- . rocket engines
- . . **nuclear ramjet engines**
- RT Pluto reactors
- ∞ rockets
- supersonic low altitude missile

nuclear reactions

- UF *neutron transmutation*
- GS **nuclear reactions**
- . nuclear fission
- . . chain reactions (nuclear physics)
- . nuclear interactions
- . . nuclear capture
- . . . electron capture
- . . . spin-orbit interactions
- . . . electron capture
- . . weak interactions (field theory)
- . nuclear scattering
- . . neutron scattering
- . . resonance scattering
- . nuclear transformations
- . . transmutation
- . photonuclear reactions
- . proton scattering
- . proton-proton reactions
- . radioactive decay
- . . alpha decay
- . . neutron emission
- . spallation
- . thermonuclear reactions
- . . nuclear fusion
- . . . controlled fusion
- RT Bragg curve
- Compton effect
- critical experiments
- critical mass
- electron scattering
- emission
- half life
- high energy interactions
- inhour equation
- ∞ interactions
- internal conversion
- pair production
- particle interactions
- particle production
- photoneutrons
- poisoning (reaction inhibition)
- pomerons
- radiation absorption
- radiogenic materials
- ∞ reaction
- reaction kinetics
- reactivity

nuclear scattering

fusion propulsion
ion engines
magnetic nozzles
mercury ion engines
Phoebus nuclear reactor
Pluto reactors
restartable rocket engines
∞ rockets
sustainer rocket engines

nuclear scattering

SN (SCATTERING CAUSED BY NUCLEUS
AND NOT BY ORBITAL ELECTRONS)
GS nuclear reactions
. **nuclear scattering**
. . neutron scattering
. . resonance scattering
scattering
. **nuclear scattering**
. . neutron scattering
. . resonance scattering
RT angular distribution
backscattering
coherent scattering
elastic scattering
electron scattering
forward scattering
incoherent scattering
inelastic scattering
Mandelstam representation

nuclear shielding

USE **radiation shielding**

nuclear spin

GS spin
. particle spin
. . **nuclear spin**
RT electron spin
energy levels
Kondo effect
magnetic resonance
Overhauser effect
quantum numbers
quantum theory
yrast state

nuclear structure

RT energy levels
even-even nuclei
odd-odd nuclei

nuclear test reactors

USE **nuclear research and test reactors**

nuclear transformations

GS nuclear reactions
. **nuclear transformations**
. . transmutation

nuclear vulnerability

DEF The resistance of structures or materials to nuclear radiation or explosions.
GS vulnerability
. **nuclear vulnerability**
RT penetration
radiation effects
thermonuclear explosions

nuclear warfare

GS warfare
. **nuclear warfare**
RT civil defense
hardening (systems)
∞ nuclear energy

nuclear warheads

GS weapons
. warheads
. . **nuclear warheads**

nuclear wastes

USE **radioactive wastes**

nuclear weapons

GS weapons

. nuclear weapons

. . fission weapons
. . fusion weapons
RT bombs (ordnance)
explosives
missiles
∞ nuclear energy
projectiles
∞ rockets
space weapons
torpedoes
warheads
weapon systems
weapons delivery

nuclease

GS biopolymers
. proteins
. . enzymes
. . . **nuclease**
organic compounds
. proteins
. . enzymes
. . . **nuclease**

nuclease boiling

GS phase transformations
. vaporizing
. . boiling
. . . **nuclease boiling**
. . . . Leidenfrost phenomenon
RT film boiling
heat transfer
heat transfer coefficients
nucleation

nucleation

GS **nucleation**
. cloud seeding
RT accumulations
Aitken nuclei
atomic clusters
condensation nuclei
condensing
crystal growth
crystallization
drop size
∞ formation
heat treatment
ice nuclei
initiation
inoculation
jet condensers
metal clusters
molecular clusters
nuclease boiling
∞ nuclei
recrystallization
supercooling

∞ nuclei

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT active galactic nuclei
Aitken nuclei
charged particles
chromosomes
condensation nuclei
ice nuclei
nucleation
nuclei (cytology)
nuclei (nuclear physics)
nucleogenesis
odd-odd nuclei

nuclei (cytology)

GS organelles
. **nuclei (cytology)**
RT cells (biology)
cytology
cytoplasm
genetics
∞ nuclei

nuclei (nuclear physics)

DEF The positively charged cores of atoms

with which are associated practically the whole mass of each atom but only a minute part of its volume.

GS particles
. charged particles
. . energetic particles
. . . **nuclei (nuclear physics)**
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. corpuscular radiation
. energetic particles
. . **nuclei (nuclear physics)**
. . . alpha particles
. . . deuterons
. . . even-even nuclei
. . . heavy nuclei
. . . hypernuclei
. . . odd-even nuclei
. . . odd-odd nuclei
. . . tritons
RT atoms
corpuscular radiation
cosmic rays
elementary particles
ions
isotopes
neutrons
nuclear isobars
∞ nuclei
nucleons
∞ physics
protons
yrast state

nucleic acid denaturation

USE **biopolymer denaturation**

nucleic acids

GS acids
. **nucleic acids**
. . deoxyribonucleic acid
. . ribonucleic acids
biopolymers
. **nucleic acids**
. . deoxyribonucleic acid
. . ribonucleic acids
organic compounds
. **nucleic acids**
. . deoxyribonucleic acid
. . ribonucleic acids
RT biopolymer denaturation
guanosines
proteins
uridylic acid

nucleogenesis

RT genetics
mutations
∞ nuclei

nucleon potential

RT neutrons
nuclear particles
nucleon potential
∞ potential
protons
∞ radiation

nucleonics

RT ∞ electronics
∞ nuclear energy
nuclear physics
technologies

nucleon-nucleon interactions

GS particle interactions
. elementary particle interactions
. . **nucleon-nucleon interactions**
RT charged particles

- ∞ interactions
- nucleon-nucleon scattering**
 - GS scattering
 - . nucleon-nucleon scattering
 - RT nuclear particles
 - particle collisions
 - Pomeranchuk theorem
- nucleons**
 - DEF In the classification of subatomic particles according to mass, the second heaviest type of particles; their mass is intermediate between that of the meson and the hyperon.
 - GS particles
 - . elementary particles
 - . . nucleons
 - . nuclear particles
 - . . nucleons
 - RT alpha particles
 - antinucleons
 - baryons
 - charged particles
 - fast neutrons
 - hyperons
 - neutrons
 - nuclei (nuclear physics)
 - protons
 - vector dominance model
- nucleophiles**
 - GS electron attachment
 - . nucleophiles
- nucleosides**
 - GS organic compounds
 - . carbohydrates
 - . . glucosides
 - . . . nucleosides
 - adenines
 - guanosines
 - RT ribose
 - thymidine
- nucleosynthesis*
 - USE **nuclear fusion**
- nucleotides**
 - GS organic compounds
 - . nucleotides
 - . . adenines
 - . . adenosines
 - . . . adenosine diphosphate
 - . . . adenosine triphosphate
 - . . . cyclic AMP
 - . . polynucleotides
 - . . pyridine nucleotides
 - . . uridylic acid
 - RT biopolymers
 - proteins
- nuclides**
 - DEF Individual atoms of a given atomic number Z and mass number A.
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . aluminum isotopes
 - aluminum 26
 - aluminum 27
 - . . . antimony isotopes
 - . . . argon isotopes
 - . . . arsenic isotopes
 - . . . barium isotopes
 - . . . beryllium isotopes
 - beryllium 7
 - beryllium 9
 - beryllium 10
 - . . . bismuth isotopes
 - . . . boron isotopes
 - boron 10
 - . . . bromine isotopes
 - . . . cadmium isotopes
 - . . . calcium isotopes
 - . . . carbon isotopes
 - carbon 12
 - carbon 13
 - carbon 14
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . . cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . . . cesium vapor
 - . . . chromium isotopes
 - . . . cobalt isotopes
 - cobalt 58
 - cobalt 60
 - . . . dysprosium isotopes
 - . . . erbium isotopes
 - . . . europium isotopes
 - . . . fluorine isotopes
 - . . . gadolinium isotopes
 - . . . gallium isotopes
 - . . . germanium isotopes
 - . . . gold isotopes
 - gold 198
 - . . . hafnium isotopes
 - . . . helium isotopes
 - . . . holmium isotopes
 - . . . hydrogen isotopes
 - deuterium
 - hydrogen 4
 - metallic hydrogen
 - tritium
 - iodine isotopes
 - iodine 125
 - iodine 131
 - iodine 132
 - . . . iridium isotopes
 - . . . iron isotopes
 - iron 57
 - iron 58
 - iron 59
 - . . . krypton isotopes
 - krypton 85
 - . . . lanthanum isotopes
 - . . . lead isotopes
 - . . . lithium isotopes
 - . . . lutetium
 - lutetium isotopes
 - . . . magnesium isotopes
 - . . . manganese isotopes
 - . . . mercury isotopes
 - . . . molybdenum isotopes
 - . . . neodymium isotopes
 - . . . neon isotopes
 - . . . nickel isotopes
 - . . . niobium isotopes
 - niobium 95
 - . . . nitrogen isotopes
 - nitrogen 15
 - nitrogen 16
 - . . . nobelium isotopes
 - . . . osmium isotopes
 - . . . oxygen isotopes
 - oxygen 17
 - oxygen 18
 - . . . palladium isotopes
 - . . . phosphorus isotopes
 - phosphorus 32
 - . . . platinum isotopes
 - . . . polonium isotopes
 - polonium 208
 - polonium 209
 - polonium 210
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - . . . praseodymium isotopes
 - . . . promethium isotopes
 - . . . protactinium isotopes
 - . . . radioactive isotopes
 - astatine isotopes
 - beryllium 7
 - beryllium 9
 - beryllium 10
 - carbon 14
 - cerium 137
 - cerium 144
 - cesium 134
 - cesium 137
 - cesium 144
 - cobalt 58
 - cobalt 60
 - copper isotopes
 - gold 198
 - indium isotopes
 - iodine 125
 - iodine 131
 - iodine 132
 - iron 59
 - krypton 85
 - niobium 95
 - nitrogen 16
 - phosphorus 32
 - polonium 208
 - polonium 209
 - polonium 210
 - potassium 38
 - potassium 40
 - rubidium 86
 - sodium 22
 - sodium 24
 - strontium 85
 - strontium 88
 - strontium 89
 - strontium 90
 - transuranium elements
 - americium
 - americium isotopes
 - americium 241
 - berkelium
 - californium
 - californium isotopes
 - curium
 - curium isotopes
 - curium 242
 - curium 244
 - einsteinium
 - fermium
 - lawrencium
 - mendelevium
 - neptunium
 - neptunium isotopes
 - nobelium
 - plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - sergenium
 - tritium
 - uranium 232
 - uranium 233
 - uranium 238
 - xenon 133
 - xenon 135
 - zirconium 95
 - . . . radium isotopes
 - radium 226
 - . . . radon isotopes
 - . . . rhenium isotopes
 - . . . rhodium isotopes
 - . . . rubidium isotopes
 - rubidium 86
 - . . . ruthenium isotopes
 - . . . samarium isotopes
 - . . . scandium isotopes
 - . . . selenium isotopes
 - . . . silicon isotopes
 - . . . silver isotopes
 - . . . sodium isotopes
 - sodium 22
 - sodium 24
 - . . . strontium isotopes
 - strontium 85
 - strontium 87
 - strontium 89
 - strontium 90
 - . . . sulfur isotopes
 - . . . tantalum isotopes
 - . . . technetium isotopes
 - . . . tellurium

null hypothesis

- tellurium isotopes
- terbium isotopes
- thallium isotopes
- thorium isotopes
- thulium isotopes
- tin isotopes
- titanium isotopes
- tungsten isotopes
- uranium isotopes
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- vanadium isotopes
- xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- ytterbium isotopes
- yttrium isotopes
- zinc isotopes
- zirconium isotopes
- zirconium 95

RT isotopic enrichment
nuclear isobars
particle mass

null hypothesis

GS hypotheses
. **null hypothesis**

RT confidence limits
degrees of freedom
significance
statistical tests

null zones

GS regions
. **null zones**

RT diffraction patterns
field theory (physics)

∞ force
interferometry
radiation distribution
speckle interferometry
very long base interferometry

number theory

GS **number theory**
. addition theorem
. arithmetic
. double precision arithmetic
. fixed point arithmetic
. floating point arithmetic
. congruences
. diophantine equation
. dividing (mathematics)
. exponents
. induction (mathematics)
. integers
. multiplication
. subtraction

RT addition
combinatorial analysis
decimals
digits

∞ division
enumeration
Fibonacci numbers
functions (mathematics)

∞ induction
infinity

∞ mathematics

∞ numbers
quaternions
subgroups

∞ theories
uniqueness theorem

∞ numbers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT alphanumeric characters
Biot number
complex numbers
coordination number

counting
Damkohler number
decimals
digits
dimensionless numbers
double precision arithmetic
Fibonacci numbers
integers
number theory
quantum numbers
random numbers
real numbers

numerical analysis

DEF Study of approximation methods using arithmetic techniques for the solution of mathematical problems.

GS analysis (mathematics)

. **numerical analysis**
. approximation
. . . Born approximation
. . . Born-Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non-oscillatory schemes
. . . finite difference theory
. . . . finite difference time domain method
. . . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . . Newton-Raphson method
. . . boundary element method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor-corrector methods
. . . Rayleigh-Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
. . . . Trefftz method
. . boundary integral method
. . computational astrophysics
. . computational chemistry
. . computational electromagnetics
. . computational fluid dynamics
. . difference equations
. . error analysis
. . finite volume method
. . . Godunov method
. . flux difference splitting
. . flux vector splitting
. . Glimm method
. . Graeff calculus
. . interpolation
. . iteration
. . . conjugate gradient method
. . iterative solution
. . . Newton methods
. . . . Newton-Raphson method
. . . predictor-corrector methods
. . Monte Carlo method
. . nomographs
. . numerical integration
. . . Runge-Kutta method
. . direct numerical simulation
. . space-time CE/SE method
. . truncation errors

RT adjoints
algorithms
alternating direction implicit methods

∞ analyzing

∞ applications of mathematics

asymptotes
computational grids
computer programming
Crank-Nicholson method
differential equations
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
isoparametric finite elements
linear programming
mathematical tables

∞ mathematics
method of moments
significance
spatial marching
time marching
trajectory analysis

numerical aperture

(added January 1995)

DEF The sine of the vertex angle of the largest cone of meridional rays that can enter or leave an optical system or element, multiplied by the refractive index of the medium in which the vertex of the cone is located. Generally measured with respect to an object or image point, and will vary as that point is moved.

GS openings

. apertures

. . **numerical aperture**

RT fiber optics
geometrical optics
lenses
optical coupling
optical fibers
optical properties
resolution

numerical control

UF *computerized control*

GS automatic control

. **numerical control**

RT ∞ automation
computer programs

∞ control
control systems design
digital command systems
digital techniques
electric control
interactive control
machine tools
production engineering
sequential control
standardization

numerical data bases

GS data bases

. **numerical data bases**

RT information retrieval
on-line systems

numerical differentiation

DEF Approximate estimation of a derivative of a function by numerical techniques.

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **numerical differentiation**

. real variables

. . **numerical differentiation**

RT algorithms

computer techniques
differential calculus
differential equations
estimating
functions (mathematics)

∞ theories

numerical flow visualization

GS flow visualization

. **numerical flow visualization**

information analysis
. scientific visualization

. . **numerical flow visualization**

RT computational fluid dynamics
computerized simulation

flow distribution
hydraulic analogies

numerical integration

UF *Cowell method*
GS analysis (mathematics)
. numerical analysis
. . . **numerical integration**
. . . Runge-Kutta method
. real variables
. . . measure and integration
. . . **numerical integration**
. . . . Runge-Kutta method
RT differential equations
digital integrators
integral calculus

numerical stability

GS stability
. **numerical stability**
RT approximation
backward differencing
difference equations
differential equations
ill-conditioned problems
(mathematics)
ill-posed problems (mathematics)
strange attractors

numerical weather forecasting

GS meteorology
. weather forecasting
. . . **numerical weather forecasting**
predictions
. forecasting
. . . weather forecasting
. . . **numerical weather forecasting**
RT Atmospheric General Circulation
Models
atmospheric models
aviation meteorology
computerized simulation
long range weather forecasting
mathematical models
statistical weather forecasting

nunataks

GS landforms
. islands
. . . **nunataks**
RT Arctic regions
rocks
sea ice

Nusselt number

DEF A number expressing the ratio of convective to conductive heat transfer between a solid boundary and a moving fluid, defined as h/k where h is the heat transfer coefficient, l is the characteristic length, and k is the thermal conductivity of the fluid. (Named after Wilhelm Nusselt, German engineer.)

GS dimensionless numbers
. **Nusselt number**
ratios
. **Nusselt number**
RT Brinkman number
convective heat transfer
heat transfer

Prandtl number
Schmidt number

nutaton

DEF The oscillation of the axis of any rotating body, as a gyroscope rotor. Specifically, in astronomy, irregularities in the precessional motion of the equinoxes because of varying positions of the moon and, to a lesser extent, of other celestial bodies with respect to the ecliptic. Used for nutational oscillation.

UF *nutational oscillation*

GS **nutaton**

. Chandler wobble

RT

actuation
coning motion
displacement
 ∞ dynamics
Earth orientation
kinematics
libration
librational motion
 ∞ motion
perturbation
polar wandering (geology)
precession
rotation
vibration

nutaton dampers

RT control moment gyroscopes
 ∞ dampers
oscillation dampers
spacecraft stability

nutational oscillation

USE **nutaton**

 ∞ **nutrients**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aquaculture
caloric requirements
carbohydrates
eutrophication
fats
fatty acids
fishes
life support systems
lipid metabolism
lipids
minerals
nutrition
nutritional requirements
proteins
trace elements
vitamins

nutrition

RT biochemistry
broths
caloric requirements
diets
 ∞ food
metabolism
nitrogen metabolism
 ∞ nutrients
nutritional requirements

space flight feeding

nutritional requirementsGS **nutritional requirements**

. caloric requirements
atrophy
 ∞ nutrients
nutrition
space flight feeding
synthetic food

nuts (fasteners)

GS fasteners
. **nuts (fasteners)**
RT anchors (fasteners)
bolts
holders
screws
threads

nuts (fruits)

RT angiosperms
orchards
seeds

Nylon (trademark)

GS fibers
. synthetic fibers
. . . **Nylon (trademark)**
plastics
. synthetic resins
. . . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Nylon (trademark)**
resins
. synthetic resins
. . . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Nylon (trademark)**
RT polymeric films
 ∞ polymers

nylon resins

USE **polyamide resins**

Nyquist diagram

GS diagrams
. **Nyquist diagram**
RT control stability
transfer functions

Nyquist frequencies

GS frequencies
. **Nyquist frequencies**
RT linear receivers

nystagmus

DEF An involuntary oscillation of the eye-balls, especially occurring as a result of eye fixations and stimulations of the inner ear during rotation of the body.

GS eye movements
. **nystagmus**
. . . vestibular nystagmus
RT electronystagmography
eye (anatomy)

O

O ring seals

- GS seals (stoppers)
 - . **O ring seals**
- RT gaskets
 - glands (seals)
 - hermetic seals
 - labyrinth seals
- ∞ rings
 - Space Shuttle Boosters

O stars

- GS celestial bodies
 - . stars
 - . . . early stars
 - . . . hot stars
 - **O stars**
- RT blue stars
 - Population I stars
 - Wolf-Rayet stars

Oak Ridge isochronous cyclotron

- UF *ORIC cyclotron*
- GS particle accelerators
 - . cyclotrons
 - . . **Oak Ridge isochronous cyclotron**

OAO

- UF *Orbiting Astronomical Observatory*
 - S-18 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
- RT Agena B rocket vehicle
 - Atlas launch vehicles
 - HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - manned orbital telescopes

OAO 1

- UF *OAO-A*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
- RT Atlas Centaur launch vehicle

OAO 2

- UF *OAO-A2*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**

- RT Atlas Centaur launch vehicle

OAO 3

- UF *Copernicus spacecraft*
 - OAO-C*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 3**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 3**
- RT Atlas Centaur launch vehicle

OAO-A

- USE **OAO 1**

OAO-A2

- USE **OAO 2**

OAO-C

- USE **OAO 3**

oases

- RT aquifers
 - arid lands
 - desertification
 - deserts
 - potable water
 - springs (water)
 - vegetation
 - wells

oats

- GS farm crops
 - . grains (food)
 - . . **oats**
 - plants (botany)
 - . **oats**
- RT agriculture
 - botany
 - crop growth
 - crop vigor
 - curing
 - Earth resources
- ∞ food
 - grasses
 - irrigation
 - seeds

Oberon

- DEF A satellite of Uranus orbiting at a mean distance of 587,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Oberon**
- RT Uranus (planet)

obesity

- RT body fluids
 - body measurement (biology)
 - body size (biology)
 - body volume (biology)
 - body weight
 - metabolism

object programs

- GS computer programs
 - . **object programs**

object-oriented programming

- (added October 1991)
- DEF The use of a programming language consisting of a sequence of commands directed at objects.
- GS computer programming

. object-oriented programming

- RT Ada (programming language)
- C++ (programming language)
- Java (programming language)
- software development tools
- software engineering

oblate spheroids

- DEF Ellipsoids of revolution, the shorter axis of which is the axis of revolution.
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . spheroids
 - **oblate spheroids**
- RT ellipticity
 - fineness ratio
 - flattening
 - geodesy
 - geoids
 - prolate spheroids
 - shapes
 - solar oblateness

oblique coordinates

- DEF Magnitudes defining a point relative to two intersecting nonperpendicular lines, called axes.
- GS coordinates
 - . **oblique coordinates**
- RT Cartesian coordinates

oblique shock waves

- DEF Shock waves attached to the bow and tail of an aerodynamic vehicle moving faster than the speed of sound. The sides of the oblique shock waves form the Mach cone.
- GS elastic waves
 - . shock waves
 - . . **oblique shock waves**
- RT magnetohydrodynamic waves
 - normal shock waves
 - shock layers
 - supersonic compressors

oblique wings

- GS airfoils
 - . wings
 - . . **oblique wings**
- RT aerodynamic configurations
 - aircraft parts
 - aircraft structures
 - drone aircraft
 - pilotless aircraft
 - remotely piloted vehicles
 - wing planforms

obliqueness

- DEF The state of being neither perpendicular nor horizontal.
- RT angles (geometry)
- incident radiation

obscuration

- USE **occultation**

observability (systems)

- DEF The property of a system for which observations of the output variables always is sufficient to determine the initial values of all state variables.
- RT boundary value problems
 - control theory
 - dependent variables
 - feedback control
 - independent variables
 - observation
 - parameter identification
 - state vectors
 - system identification

- ∞ systems
- systems analysis
- systems engineering

observation

GS observation

- . Earth observations (from space)
- . . satellite observation
- . radio observation
- . sky surveys (astronomy)
- . space observations (from Earth)
- . visual observation

RT

- counting
- data acquisition
- detection
- evaluation
- examination
- forest fire detection
- NOESS
- observability (systems)

∞ performance

- reconnaissance
- surveillance

observation aircraft

GS observation aircraft

- . Cessna L-19 aircraft
- . OH-4 helicopter
- . OH-5 helicopter
- . OH-6 helicopter
- . OV-1 aircraft
- . OV-10 aircraft

RT ∞ aircraft

- antisubmarine warfare aircraft
- arc clouds
- balloons
- flying platforms
- gliders
- HS-801 aircraft
- light aircraft
- light helicopters

∞ military aircraft

- reconnaissance aircraft
- utility aircraft
- weather reconnaissance aircraft

observation scheduling

(added November 2002)

DEF The development of chronologies and observational plans for remote-sensing satellites, astronomical and planetary observatories, and other observational platforms.

GS scheduling

- . **observation scheduling**

RT

- astronomical observatories
- Earth observations (from space)
- mission planning
- remote sensing
- space observations (from Earth)

observatories

GS observatories

- . astronomical observatories
- . . astronomical satellites
- . . . Astronomical Netherlands Satellite
- . . . Gamma Ray Observatory
- . . . Ginga satellite
- . . . HEAO
- HEAO 1
- HEAO 2
- HEAO 3
- HEAO 4
- . . . Hubble Space Telescope
- . . . Infrared Astronomy Satellite
- . . . Infrared Space Observatory (ISO)
- . . . IUE
- . . . Large Deployable Reflector
- . . . Magellan ultraviolet astronomy satellite
- . . . OAO
- OAO 1
- OAO 2
- OAO 3
- OSO
- AOSO

- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- . . . Quasat
- . . . SAS
- . . . Explorer 53 satellite
- . . . SAS-1
- . . . SAS-2
- . . . SAS-3
- . . . James Webb Space Telescope
- . . . LISA (observatory)
- . . . Space Infrared Telescope Facility
- . . . Spartan satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Tenma satellite
- . . . X Ray Astrophysics Facility
- . . . XMM-Newton telescope
- . . Astroplane
- . . ROSAT mission
- . . SOFIA (airborne observatory)
- . . solar observatories
- . . . OSO
- AOSO
- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- . . . Pinhole Occulter Facility
- . . . European Southern Observatory
- . . LIGO (observatory)
- . . geophysical observatories
- . . . OGO
- . . . EGO
- . . . OGO-3
- . . . OGO-5
- . . . OGO-A
- . . . POGO
- . . . OGO-4
- . . . OGO-6
- . . . OGO-C
- . . . OSO
- AOSO
- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- . . . Jodrell Bank Observatory
- . . . Kuiper Airborne Observatory
- . . . lunar observatories

RT artificial satellites

obsidian

GS rocks

- . igneous rocks
- . . **obsidian**
- . . . moldavite

RT glass

- minerals
- powder (particles)
- pumice
- silicon dioxide
- soils

obsidian glass

GS glass

- . **obsidian glass**

obstacle avoidance

DEF The use of sensors utilizing laser triangulation as means of preventing collisions, es-

pecially in the operation of roving vehicles on planetary surfaces.

RT aircraft maneuvers

- evasive actions
- tactics
- terrain following
- vulnerability

obstacles

USE barriers

obstructing

USE blocking

occipital lobes

GS anatomy

- . nervous system
- . . central nervous system
- . . . brain
- cerebrum
- **occipital lobes**

occlusion

DEF Specifically, the trapping of undissolved gas in a solid during solidification.

RT degassing

- gas-metal interactions
- gas-solid interfaces
- solidification

occultation

DEF The disappearance of a body behind another body of larger apparent size. Used for obscuration.

UF obscuration

GS occultation

- . lunar occultation
- . . solar eclipses
- . . radio occultation
- . . stellar occultation

RT ∞ conjunction

- eclipses
- extinguishing
- Pinhole Occulter Facility

∞ transit

occupation

RT industrial safety

- personnel
- work

occupational diseases

GS diseases

- . **occupational diseases**

RT

- anemias
- carbon monoxide poisoning
- cataracts
- emphysema
- hazards
- health physics
- lead poisoning
- leukemias
- operational hazards
- public health
- pulmonary lesions
- radiation hazards
- toxic hazards
- tumors

occurrences

RT events

ocean bottom

RT beds (geology)

- continental shelves
- core sampling
- cratons
- deep water
- geology
- marine chemistry
- mid-ocean ridges
- mud
- oceanography
- sea floor spreading
- seamounts
- sediments

ocean color scanner

sludge
underwater resources

ocean color scanner

DEF A multispectral scanning radiometer which is geared to observe ocean features such as chlorophyll, sediments, and topography in the invisible and thermal ranges of radiation.

GS scanners

. ocean color scanner

. . Coastal Zone Color Scanner
. . Sea-viewing Wide Field-of-view
Sensor

RT

chlorophylls
coastal water
colorimetry
multispectral band scanners
ocean data acquisitions systems
oceanographic parameters
oceanography
photomapping
remote sensors
water color

ocean currents

GS

circulation
. water circulation
. . water currents
. . . **ocean currents**
. . . . coastal currents
. . . . el Nino
. . . . Gulf Stream
. . . . Lomonosov current

RT

core sampling
∞ currents
fluid flow
frontal waves
gyres
hydrography
Kelvin waves
littoral drift
littoral transport
ocean dynamics
oceanography
oceans
pressure ice
salinity
Spitsbergen (Norway)
thermohaline circulation
tidal waves
tide powered generators
tide powered machines
tidepower
tides
TOPEX
upwelling water
waterwave energy conversion
waterwave powered machines

ocean data acquisitions systems

UF

ocean data platforms
ocean data stations
ODAS

RT

Argos system
automatic weather stations
buoys
Coastal Zone Color Scanner

∞ data

data acquisition
ground stations
instrument packages
meteorological parameters
ocean color scanner
oceanographic parameters
ships
transoceanic systems
underwater research laboratories
weather stations

ocean data platforms

USE **ocean data acquisitions systems**

ocean data stations

USE **ocean data acquisitions systems**

ocean dynamics

DEF The study of the controlling forces in

different ocean phenomena.

RT

air water interactions
dynamic characteristics
∞ dynamics
fluid dynamics
hydrodynamics
ocean currents
ocean models
ocean surface
oceanography
QuikSCAT satellite
thermohaline circulation
water waves

ocean floor spreading

USE **sea floor spreading**

ocean models

GS

models
. **ocean models**
RT air water interactions
atmospheric models
climate models
dynamic models
marine environments
mathematical models
ocean dynamics
oceanography
Sargasso Sea
sea roughness
sea states

ocean surface

RT

Earth surface
fluid flow
hydrography
ocean dynamics
oceanographic parameters
oceanography
polynyas
Sargasso Sea
sea level
sea roughness
sea states
sea surface temperature
sea truth
sea water
Sea-viewing Wide Field-of-view
Sensor
storm surges
∞ surfaces
tidal waves
tide powered generators
tide powered machines
tidepower
tides
TOPEX
waterwave energy conversion
waterwave powered machines

ocean temperature

DEF Surface or subsurface temperature of an entire or specific region of an ocean.

GS

oceanographic parameters
. **ocean temperature**
. . sea surface temperature
temperature
. water temperature
. . **ocean temperature**
. . . sea surface temperature

RT

el Nino
oceanography
oceans
offshore energy sources
sea states
sea truth
sea water
seas
solar sea power plants
surface temperature
temperature distribution
temperature gradients
thermal pollution

thermohaline circulation

ocean thermal energy conversion

GS

energy conversion
. **ocean thermal energy conversion**
RT ∞ conversion
∞ energy sources
geothermal energy conversion
geothermal technology
renewable energy
solar sea power plants
temperature

oceanographic parameters

GS

oceanographic parameters
. ocean temperature
. . sea surface temperature

RT

Atmospheric & Oceanographic Inform
Sys
Coastal Zone Color Scanner
hindcasting
integrated global ocean station
systems
meteorological parameters
ocean color scanner
ocean data acquisitions systems
ocean surface
salinity
sea states

oceanography

DEF The science that deals with the study and exploration of seas and oceans.

RT

artificial harbors
Atmospheric & Oceanographic Inform
Sys
bathymeters
bay ice
breakwaters
coastal currents
Coastal Zone Color Scanner
core sampling
deep scattering layers
deep water
deepwater terminals
Earth & Ocean Physics Applications
Program
Earth planetary structure
Earth resources
Earth sciences
environmental monitoring
EROS (satellites)
estuaries
fiords
frontal waves
GARP Atlantic Tropical Experiment
geography
geology
geophysics
gyres
harbors
hydroclimatology
hydrography
hydrology
ice floes
ice mapping
isthmuses
Landsat satellites
marine biology
marine environments
marine meteorology
marine resources
marine technology
marshlands
meteorology
mid-ocean ridges
ocean bottom
ocean color scanner
ocean currents
ocean dynamics
ocean models
ocean surface
ocean temperature
oceans
offshore docking
offshore platforms
oil slicks

pelagic zone
 ∞ physical sciences
 red tide
 reefs
 Sargasso Sea
 ∞ science
 sea grasses
 sea ice
 sea level
 sea roughness
 sea states
 sea surface temperature
 sea water
 seas
 SEASAT 1
 SEASAT program
 SEASAT satellites
 SEASAT-B satellite
 seaweeds
 shallow water
 shipyards
 shoals
 shorelines
 storm surges
 tanker terminals
 thermoclines
 tidal waves
 tide powered generators
 tidepower
 tides
 TOPEX
 topography
 underwater research laboratories
 underwater resources
 water circulation
 water currents
 waterfowl
 waterwave energy
 waterwave energy conversion
 wetlands

oceans

DEF The continuous salt water bodies that surround the continents and fill the Earth's great depressions.

GS **oceans**

. Antarctic Ocean
 . Arctic Ocean
 . Atlantic Ocean
 . extraterrestrial oceans
 . Indian Ocean
 . Pacific Ocean

RT

coastal currents
 coastal water
 coasts
 deep water
 Earth hydrosphere
 geography
 keys (islands)
 marine resources
 nearshore water
 ocean currents
 ocean temperature
 oceanography
 seas
 seaweeds
 shallow water
 shoals
 shorelines
 sounds (topographic features)
 thermal pollution
 tidal flats
 tide powered generators
 water color
 water depth
 water resources
 waterwave energy conversion

Octahedral Research Satellites

USE **Environmental Research Satellites**

octahedrite

USE **anatase**

octahedrons

GS geometry

. Euclidean geometry
 . . polyhedrons
 . . . **octahedrons**

∞ **octane**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT antiknock additives
 octanes

octane number

RT gasoline

octanes

SN (ACYCLIC HYDROCARBONS)
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkanes
 **octanes**
 RT antiknock additives
 ∞ octane

octaves

DEF The intervals between two frequencies having the ratio 1:2.

GS range (extremes)
 . frequency ranges
 . . **octaves**

RT acoustics
 music

octets

GS valence
 . **octets**
 RT atomic structure
 chemical bonds

octoates

GS esters
 . **octoates**

octol (explosive)

GS explosives
 . **octol (explosive)**

octopuses

GS animals
 . invertebrates
 . . mollusks
 . . . cephalopods
 **octopuses**

ocular circulation

GS circulation
 . blood circulation
 . . **ocular circulation**

oculogavic illusions

GS psychological effects
 . illusions
 . . **oculogavic illusions**
 RT gravireceptors
 otolith organs
 vertical perception

oculometers

GS measuring instruments
 . optical measuring instruments
 . . **oculometers**
 optical equipment
 . optical measuring instruments
 . . **oculometers**
 RT eye movements
 ∞ instruments
 optical tracking

oculomotor nerves

GS anatomy
 . nervous system
 . . nerves
 . . . **oculomotor nerves**
 . sense organs
 . . eye (anatomy)
 . . . **oculomotor nerves**

RT vision

ODAS

USE **ocean data acquisitions systems**

odd-even nuclei

GS particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **odd-even nuclei**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **odd-even nuclei**
 RT even-even nuclei
 odd-odd nuclei

odd-odd nuclei

GS particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **odd-odd nuclei**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **odd-odd nuclei**
 RT even-even nuclei
 nuclear structure
 ∞ nuclei
 odd-even nuclei

Odessa meteorite

GS celestial bodies
 . meteorites
 . . iron meteorites
 . . . **Odessa meteorite**

odors

RT air pollution
 combustion products
 exhaust gases
 gases

offgassing

DEF The relative high mass loss characteristic of many nonmetallic materials upon initial vacuum exposure.

RT degassing
 vacuum
 vacuum effects

office automation

RT ∞ automation
 man machine systems
 word processing

Office of Space & Terrest Applc Payloads

USE **OSTA-1 payload**
OSTA-2 payload
OSTA-3 payload

off-on control

DEF Flicker control, especially as applied to rockets. Used for bang-bang control.

UF *bang-bang control*
 GS automatic control
 . **off-on control**

RT ∞ control
 control equipment
 control theory
 proportional control
 servocontrol
 solenoid valves

offshore docking

RT artificial harbors
 cargo ships
 deepwater terminals
 marine technology
 marine transportation
 oceanography
 ship terminals
 tanker ships
 tanker terminals

offshore energy sources

- ∞ tankers
- terminal facilities
- transportation
- offshore energy sources**
- RT crude oil
- deepwater terminals
- drilling
- energy technology
- marine technology
- ocean temperature
- oil exploration
- oil fields
- sea breeze
- seepage
- offshore platforms**
- RT artificial harbors
- cargo ships
- deepwater terminals
- marine technology
- oceanography
- ∞ platforms
- tanker ships
- tanker terminals
- ∞ tankers
- terminal facilities
- transportation
- offshore reactor sites**
- GS sites
- . **offshore reactor sites**
- RT reactor design
- reactor safety
- reactor technology
- remote regions
- OFT**
- USE **Space Transportation System flights**
- OFT 1**
- USE **Space Transportation System 1 flight**
- OFT 2**
- USE **Space Transportation System 2 flight**
- OFT 3**
- USE **Space Transportation System 3 flight**
- OFT 4**
- USE **Space Transportation System 4 flight**
- ogee shape**
- GS shapes
- . **ogee shape**
- RT variable sweep wings
- ogee wings**
- USE **variable sweep wings**
- ogives**
- DEF Bodies of revolution formed by rotating a circular arc about an axis that intersects the arc; the shape of these bodies; also noses of projectiles or the like so shaped.
- RT bodies of revolution
- ellipsoids
- fairings
- nose cones
- spheres
- streamlined bodies
- symmetrical bodies
- OGO**
- UF *Orbiting Geophysical Observatory*
- GS artificial satellites
- . geophysical satellites
- . . . **OGO**
- EGO
- OGO-3
- OGO-5
- OGO-A
- POGO
- OGO-4
- OGO-6
- OGO-C
- observatories
- . geophysical observatories
- . . **OGO**
- . . . EGO
- OGO-3
- OGO-5
- OGO-A
- POGO
- OGO-4
- OGO-6
- OGO-C
- RT Gamma Ray Observatory
- OGO-3**
- UF *OGO-B*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . **OGO-3**
- observatories
- . geophysical observatories
- . . OGO
- . . . **OGO-3**
- RT Thor Agena launch vehicle
- OGO-4**
- UF *OGO-D*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . POGO
- **OGO-4**
- observatories
- . geophysical observatories
- . . OGO
- . . . POGO
- **OGO-4**
- RT geodesy
- OGO-5**
- UF *OGO-E*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . **OGO-5**
- observatories
- . geophysical observatories
- . . OGO
- . . . **OGO-5**
- RT geodesy
- OGO-6**
- UF *OGO-F*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . POGO
- **OGO-6**
- observatories
- . geophysical observatories
- . . OGO
- . . . POGO
- **OGO-6**
- OGO-A**
- UF *S-49 satellite*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . **OGO-A**
- observatories
- . geophysical observatories
- . . OGO
- . . . **OGO-A**
- RT Atlas Agena launch vehicles
- OGO-B**
- USE **OGO-3**
- OGO-C**
- UF *S-50 satellite*
- GS artificial satellites
- . geophysical satellites
- . . OGO
- . . . POGO
- **OGO-C**
- observatories
- . geophysical observatories
- . . OGO
- . . . POGO
- **OGO-C**
- OGO-D**
- USE **OGO-4**
- OGO-E**
- USE **OGO-5**
- OGO-F**
- USE **OGO-6**
- OH-4 helicopter**
- UF *HO-4 helicopter*
- GS Bell aircraft
- . **OH-4 helicopter**
- light aircraft
- . light helicopters
- . . **OH-4 helicopter**
- observation aircraft
- . **OH-4 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . light helicopters
- **OH-4 helicopter**
- military helicopters
- **OH-4 helicopter**
- OH-5 helicopter**
- UF *FH-1100 helicopter*
- HO-5 helicopter*
- GS Fairchild-Hiller aircraft
- . **OH-5 helicopter**
- Hiller aircraft
- . **OH-5 helicopter**
- light aircraft
- . light helicopters
- . . **OH-5 helicopter**
- observation aircraft
- . **OH-5 helicopter**
- passenger aircraft
- . **OH-5 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . light helicopters
- **OH-5 helicopter**
- military helicopters
- **OH-5 helicopter**
- RT rigid rotor helicopters
- OH-6 helicopter**
- UF *HO-6 helicopter*
- LOH helicopter*
- GS Hughes aircraft
- . **OH-6 helicopter**
- light aircraft
- . light helicopters
- . . **OH-6 helicopter**
- observation aircraft
- . **OH-6 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . light helicopters
- **OH-6 helicopter**
- military helicopters

... **OH-6 helicopter**

OH-13 helicopter

UF *H-13 helicopter*
Sioux helicopter
UH-13 helicopter

GS Bell aircraft
. **OH-13 helicopter**
light aircraft
. **OH-13 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . military helicopters
. . . . **OH-13 helicopter**

OH-23 helicopter

UF *H-23 helicopter*
Raven helicopter
UH-12 helicopter

GS Fairchild-Hiller aircraft
. **OH-23 helicopter**
light aircraft
. **OH-23 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . military helicopters
. . . . **OH-23 helicopter**

OH-58 helicopter

GS light aircraft
. light helicopters
. . **OH-58 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . light helicopters
. . . . **OH-58 helicopter**
. . . military helicopters
. . . . **OH-58 helicopter**

Ohio

GS nations
. United States
. . **Ohio**

RT Ohio River (US)
Wabash River Basin (IL-IN-OH)

Ohio River (US)

GS rivers
. **Ohio River (US)**

RT Illinois
Indiana
Kentucky
Ohio
Pennsylvania
West Virginia

ohmic dissipation

UF *Joule heating*

GS dissipation
. **ohmic dissipation**

RT Joule-Thomson effect
levitation melting
losses

ohmmeters

DEF Direct-reading instruments for measuring electrical resistance. They are provided with a scale, usually graduated in either ohms, megohms, or both. If the scale is graduated in megohms, the instrument is usually called a megohmmeter.

GS measuring instruments
. **ohmmeters**

RT electrical conductivity meters
electrical impedance
electrical measurement
electrical resistance
resistance thermometers
transconductance
Wheatstone bridges

Ohms law

DEF The current in an electric circuit is

inversely proportional to the resistance of the circuit and is directly proportional to the electromotive force in the circuit. Ohm's law applies, strictly speaking, only to linear constant-current circuits.

GS circuits
. **Ohms law**
laws
. **Ohms law**

RT ∞ conductivity
electric current
electrical resistance
electricity
electromotive forces
transconductance
volt-ampere characteristics

Ohzora satellite

USE **EXOS-C satellite**

oil additives

GS additives
. **oil additives**

oil exploration

GS exploration
. **oil exploration**

RT crude oil
drilling
energy policy
geology
natural gas exploration
offshore energy sources
tar sands
underwater resources

oil fields

DEF Surface boundary of an area from which petroleum is obtained; may correspond to an oil pool or may be circumscribed by political or legal limits.

GS resources
. Earth resources
. . **oil fields**

RT crude oil
drilling
methane
natural gas
offshore energy sources
oils
tar sands

oil pollution

GS pollution
. environment pollution
. . water pollution
. . . **oil pollution**

RT coastal ecology
environmental cleanup
wetlands

oil recovery

RT energy technology
reclamation
 ∞ recovery
reuse

oil slicks

UF *slicks*

RT dumping
environment pollution
environmental cleanup
oceanography
pollution
spilling
water pollution

oils

GS **oils**
. castor oil
. crude oil
. fuel oils
. lubricating oils
. mineral oils
. shale oil

RT energy policy

fats
fuels
greases
hydraulic fluids
kerogen
lipid metabolism
lubricants
oil fields
petroleum products
pitch (material)
retort processing
tar sands

Okazaki-Levy-Rudenko comet
(added May 1991)

GS celestial bodies
. comets
. . **Okazaki-Levy-Rudenko comet**

Okhansk meteorite

GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Okhansk meteorite**

RT iron meteorites

Oklahoma

GS nations
. United States
. . **Oklahoma**

RT Lake Texoma (OK-TX)

olefins

USE **alkenes**

oleic acid

GS acids
. carboxylic acids
. . fatty acids
. . . **oleic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **oleic acid**

olfactory perception

UF *smell*

GS perception
. sensory perception
. . **olfactory perception**

RT chemoreceptors
sense organs

oligomers
(added January 1990)

GS **oligomers**
. dimers
. trimers

RT monomers
polymer chemistry
polymerization
 ∞ polymers

olivine

GS minerals
. **olivine**
. . forsterite

RT dunite
igneous rocks
monticellite
peridotite
regolith
rocks
soils

Oman

GS nations

. Oman

OMCVD (*vapor deposition*)

USE **metalorganic chemical vapor deposition**

OME

USE **Orbit Maneuvering Engine (Space Shuttle)**

Omega Navigation System

DEF A very long distance navigation system operating at approximately 10 kHz (kilohertz), in which hyperbolic lines of position are determined by measurement of the difference in travel time of continuous wave signals from two transmitters separated by 5000 nmi (nautical miles) to 6000 nmi (9000 km to 11000 km) or in which changes in distances from the transmitters are measured by counting RF (radio frequency) wavelengths in the space of lanes as the vehicle moves from a known position, the lanes being counted by phase comparison with a stable oscillator aboard the vehicle.

GS navigation

. **Omega Navigation System**

RT air navigation

∞ systems

omega-mesons

GS particles

. elementary particles
. bosons
. mesons

. . . . **omega-mesons**

. fermions

. baryons

. . . . **omega-mesons**

. hadrons

. baryons

. . . . **omega-mesons**

. mesons

. . . . **omega-mesons**

. nuclear particles

. bosons

. mesons

. . . . **omega-mesons**

RT charged particles

eta-mesons

omegatrons

GS particle accelerators

. cyclotrons

. . **omegatrons**

Omicron Ceti star

UF *Mira Ceti star*

GS celestial bodies

. stars

. . giant stars

. . . **Omicron Ceti star**

. . late stars

. . . cool stars

. . . . Mira variables

. . . . **Omicron Ceti star**

. . variable stars

. . . Mira variables

. . . . **Omicron Ceti star**

omnidirectional antennas

GS antennas

. **omnidirectional antennas**

. . monopole antennas

. . . whip antennas

. . . turnstile antennas

RT dipole antennas

directional antennas

microwave antennas

radio antennas

omnidirectional radio ranges

GS navigation aids

. beacons

. . radio beacons

. . . **omnidirectional radio ranges**

. . . . self calibrating omnirange

radio equipment

. radio transmitters

. . radio beacons

. . . **omnidirectional radio ranges**

. . . . self calibrating omnirange

transmitters

. radio transmitters

. . radio beacons

. . . **omnidirectional radio ranges**

. . . . self calibrating omnirange

RT distance measuring equipment

radio navigation

solar compasses

Omnipol HC-3 helicopter

USE **HC-3 helicopter**

Omnipol L-29 aircraft

USE **L-29 jet trainer**

Omnipol Z-37 aircraft

USE **Z-37 aircraft**

omnirange navigation

USE **VHF omnirange navigation**

onboard computers

USE **airborne/spaceborne computers**

onboard data processing

DEF Processing of acquired data aboard an aircraft, satellite, etc. , rather than transmission to ground stations for processing.

GS data processing

. **onboard data processing**

RT airborne/spaceborne computers

∞ data

flight management systems

image processing

microprocessors

real time operation

signal processing

onboard equipment

GS **onboard equipment**

. airborne equipment

. . airborne/spaceborne computers

. . Light Airborne Multipurpose

System

. . TERCOM

. airborne lasers

. aircraft equipment

. . bombing equipment

. . ejection seats

. . . flying ejection seats

. . TERCOM

. spacecraft equipment

. . spacecraft electronic equipment

RT airborne surveillance radar

∞ aircraft

bubble technique

crew procedures (preflight)

∞ equipment

flight instruments

flight operations

flight safety

heating equipment

life support systems

lighting equipment

radar equipment

radio equipment

spacecraft instruments

stowage (onboard equipment)

survival equipment

telecommunication

∞ test equipment

training devices

oncogenes

(*added July 2002*)

DEF Genes that have the potential of turning any normal cell into one that is cancerous.

UF *cancer genes*

transforming genes

GS genes

. **oncogenes**

RT cancer

gene expression

mutations

one dimensional flow

GS fluid flow

. **one dimensional flow**

RT annular flow

axial flow

core flow

flow geometry

Hugoniot equation of state

three dimensional flow

two dimensional flow

one-phase flow

USE **single-phase flow**

anisotropy

USE **anisotropy**

on-line programming

GS computer programming

. **on-line programming**

on-line systems

DEF Systems where the input data enters the computer directly from the point of origin and/or in which output data is transmitted directly to where it is used.

RT client server systems

computer programs

computer techniques

data management

data processing

information retrieval

information systems

integrated library systems

numerical data bases

∞ systems

websites

Onsager phenomenological coefficient

GS coefficients

. **Onsager phenomenological**

coefficient

RT flux density

plasmas (physics)

statistical mechanics

variational principles

Onsager relationship

RT ∞ equilibrium

irreversible processes

thermodynamics

Ontario

GS nations

. Canada

. . **Ontario**

ontogenesis

USE **ontogeny**

ontogeny

UF *ontogenesis*

RT biogeny

evolution (development)

growth

neurophysiology

oocytes

USE **gametocytes**

Oort cloud

DEF A region of millions of comets between 30,000 and 100,000 A. U. from the sun. Comets are perturbed out of the Oort cloud by passing stars and fall into the inner solar system. The Oort cloud was named after the Dutch astronomer, Jan Hendrik Oort.

RT ∞ clouds

comet nuclei

comets

- Hale-Bopp comet
Kuiper belt
Nemesis (star)
solar system
- opacifiers**
GS additives
. **opacifiers**
RT ∞ agents
fillers
- opacity**
DEF Of an optical path, the reciprocal of transmission.
GS electromagnetic properties
. optical properties
. . **opacity**
RT absorptance
absorptivity
acoustics
atmospheric optics
attenuation coefficients
clarity
density (mass/volume)
electromagnetic absorption
haze
Kramers-Kronig formula
light (visible radiation)
light transmission
refractivity
translucence
transmission efficiency
transmissivity
transparence
turbidity
underwater optics
visibility
- opalescence**
RT iridescence
optical properties
- open channel flow**
GS fluid flow
. internal flow
. . channel flow
. . . **open channel flow**
. liquid flow
. . **open channel flow**
RT cavity flow
laminar flow
meanders
pipe flow
turbulent flow
water flow
- open circuit voltage**
DEF The steady state or equilibrium potential of an electrode in absence of external current flow to or from the electrode.
GS potential energy
. electric potential
. . **open circuit voltage**
RT bias
capacitance
electrical properties
electrical resistivity
electromotive forces
energy conversion efficiency
overvoltage
∞ potential
power gain
short circuit currents
solar cells
static electricity
volt-ampere characteristics
- open clusters**
GS celestial bodies
. star clusters
. . **open clusters**
. . . Pleiades cluster
. . . Praesepe star clusters
- RT Population I stars
- OPEN Project**
DEF A former NASA project now absorbed by the International Solar Terrestrial Physics Project. It proposed a simultaneous study of plasmas in the Earth's magnetosphere and neighborhood using the following four instrumented spacecraft: interplanetary physics laboratory (IPL), geomagnetic tail laboratory (GTL), polar plasma laboratory (PPL), and equatorial magnetosphere laboratory (EML). Used for Origin of Plasmas in Earth Neighborhood.
UF *Origin of Plasmas in Earth Neighborhood*
GS programs
. NASA programs
. . NASA space programs
. . . **OPEN Project**
. projects
. . **OPEN Project**
. space programs
. . NASA space programs
. . . **OPEN Project**
RT Earth atmosphere
Earth magnetosphere
plasma diagnostics
plasma physics
plasmasphere
satellite-borne instruments
space plasmas
- open source licensing (computers)**
(added April 2002)
DEF An arrangement between a software developer and the public that enables public access to a computer program's source code for the purpose of facilitating continued and efficient software development.
GS licensing
. **open source licensing (computers)**
RT computer programming
intellectual property
operating systems (computers)
software engineering
source programs
- openings**
UF *cut-outs*
GS **openings**
. apertures
. . irises (mechanical apertures)
. . numerical aperture
. . synthetic apertures
. ports (openings)
. slits
RT annular ducts
cavities
cracks
curtains
doors
duct geometry
ducts
egress
exhaust nozzles
exhaust systems
gaps
gates (openings)
ingress (spacecraft passageway)
inlet nozzles
intake systems
orifices
outlets
passageways
perforated plates
pipe nozzles
slots
vents
windows (apertures)
- operating costs**
DEF The price for operating a system exclusive of the cost of the system itself.
GS costs
. **operating costs**
- RT airline operations
economic analysis
energy policy
maintenance
production costs
systems analysis
- operating systems (computers)**
DEF Computer programs for expediting, controlling and/or recording computer use by other programs. Used for executive systems (computers).
UF *executive systems (computers)*
GS computer programs
. computer systems programs
. . **operating systems (computers)**
. . . disk operating system (DOS)
. . . UNIX (operating system)
RT assembler routines
compilers
computer information security
computer systems design
input/output routines
MIMD (computers)
open source licensing (computers)
∞ routines
SIMD (computers)
∞ systems
windows (computer programs)
- operating temperature**
GS temperature
. **operating temperature**
RT ambient temperature
combustion temperature
high temperature superconductors
room temperature
wall temperature
- operational amplifiers**
GS amplifiers
. **operational amplifiers**
RT amplifier design
analog circuits
analog computers
differential amplifiers
feedback amplifiers
linear integrated circuits
transistor amplifiers
- operational calculus**
RT ∞ applications of mathematics
calculus
calculus of variations
differential equations
Fourier analysis
integral calculus
linear equations
- operational hazards**
GS hazards
. **operational hazards**
RT air piracy
aircraft hazards
cumulative damage
flight hazards
meteoroid hazards
noise (sound)
occupational diseases
radiation hazards
- operational problems**
RT airline operations
∞ operations
∞ problems
systems engineering
- ∞ **operations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air drop operations
air traffic control
airline operations
chemical engineering
chemical reactions
clinical medicine

deployment
 Fishbowl Operation
 loading operations
 mechanization
 mission planning
 operational problems
 operations research
 orifices
 preflight operations
 premature operation
 production engineering
 programs
 projects
 rescue operations
 sequencing
 strategy
 surgery
 systems engineering

operations research

GS optimization
 . **operations research**
 RT ∞ applications of mathematics
 computer systems simulation
 computerized simulation
 constraints
 control systems design
 critical path method
 decision theory
 Delphi method (forecasting)
 dynamic programming
 experiment design
 forecasting
 . . . functions (mathematics)
 game theory
 group technology (manufacturing)
 information theory
 Lagrange multipliers
 linear prediction
 linear programming
 management
 management methods
 management planning
 mathematical models
 mathematical programming
 matrix management
 minima
 minimax technique
 mission planning
 multidisciplinary research
 nonlinear programming
 ∞ operations
 ∞ paths
 pattern method (forecasting)
 probability theory
 probe method (forecasting)
 profile method (forecasting)
 project planning
 quality control
 queueing theory
 rand project
 Rayleigh distribution
 research and development
 research management
 risk
 saddle points (game theory)
 sequencing
 simulation
 statistical analysis
 stochastic processes
 strategy
 ∞ synthesis
 synthesis (chemistry)
 systems analysis
 systems engineering
 systems management
 systems simulation
 traveling salesman problem
 urban development
 war games

operator performance

GS human performance
 . **operator performance**
 RT astronaut performance
 computer systems performance
 mental performance

∞ performance
 pilot performance
 psychomotor performance
 situational awareness

∞ **operators**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT operators (mathematics)
 operators (personnel)
 reactor cores

operators (mathematics)

UF *differential operators*
Fredholm operators
 GS **operators (mathematics)**
 . Bergman operator
 . linear operators
 RT functions (mathematics)
 integral transformations
 Laplace transformation
 matrix theory
 ∞ operators
 perturbation theory
 S matrix theory

operators (personnel)

GS personnel
 . **operators (personnel)**
 . . pilots (personnel)
 . . . aircraft pilots
 . . . test pilots
 RT ∞ operators

Ophiuchi clouds

DEF Dense concentrations of interstellar gas near the stars Rho Ophiuchi and Zeta Ophiuchi.
 RT cloud physics
 ∞ clouds
 interstellar gas
 interstellar matter
 nebulae

ophthalmodynamometry

RT blood pressure
 eye (anatomy)
 vision

ophthalmology

GS medical science
 . **ophthalmology**
 RT electronystagmography
 eye (anatomy)
 eye diseases
 eye examinations
 miosis
 vestibular nystagmus

Opik theory

RT nebulae
 Orion constellation
 Orion nebula
 supernovae
 ∞ theories

optical absorption

USE **electromagnetic absorption**
light transmission

optical activity

DEF Ability to rotate the plane of vibration of polarized light to the right or left.
 RT biochemistry
 carbohydrates
 chromophores
 ∞ optics
 organic chemistry
 polarimetry
 polarized light

stereochemistry

optical amplifiers

USE **light amplifiers**

optical bistability

DEF A property of certain materials in which a nonlinear response is exhibited when under the influence of an external driving coherent light, thereby allowing these materials to behave like optical switches.
 GS electromagnetic properties
 . optical properties
 . . **optical bistability**
 RT four-wave mixing
 hysteresis
 integrated optics
 light transmission
 nonlinear optics
 optical data storage materials
 optical equipment
 optical measuring instruments
 optical memory (data storage)
 optical switching
 optical waveguides
 switching circuits

optical communication

UF *laser communication*
light communication
optical signals
 GS telecommunication
 . communication
 . . **optical communication**
 . . . free-space optical communication
 RT dye lasers
 ground-air-ground communication
 high power lasers
 interplanetary communication
 lasers
 lunar communication
 optical fibers
 ∞ optics
 polarization modulation
 quantum communication
 satellite communication
 space communication
 spacecraft communication
 tunable lasers
 visual signals
 wireless communication

optical computers

DEF Computers which use light rather than electricity for all or part of their operation. They perform multiple tasks in parallel as opposed to electronic computers which would perform those tasks sequentially. Such increased processing capability makes them suited for aerospace problems which involve systems that have a large number of degrees of freedom, i. e. , large space structures, pattern recognition activity, and robotics.
 GS data processing equipment
 . computers
 . . **optical computers**
 RT coherent light
 computer design
 electro-optics
 free-space optical interconnects
 optical data processing
 optical equipment
 optical interconnects
 optical memory (data storage)

optical control

(added September 1993)
 DEF The control of light sensitive devices by means optical radiation.
 RT automatic control
 cascade control
 ∞ control
 control equipment
 controllers
 electric control
 electronic control

- electro-optics
- feedback control
- optical equipment
- remote control
- optical correction procedure**
 - GS correction
 - . **optical correction procedure**
 - procedures
 - . **optical correction procedure**
 - RT adaptive optics
 - adjusting
 - anisoplanatism
 - errors
 - honeycomb mirrors
 - instrument errors
 - lens design
 - ∞ optics
 - photographic measurement
 - photographs
 - position errors
 - seeing (astronomy)
 - segmented mirrors
 - self focusing
- optical correlators**
 - (added March 1990)
 - GS correlators
 - . **optical correlators**
 - RT image correlators
 - optical data processing
- optical countermeasures**
 - DEF Equipment for exploiting the vulnerability of laser guided weapon systems.
 - GS countermeasures
 - . **optical countermeasures**
 - RT air defense
 - antimissile defense
 - deception
 - electronic countermeasures
 - military technology
 - missile defense
 - optical radar
 - ∞ optics
 - space surveillance (spaceborne)
 - stealth technology
- optical coupling**
 - GS coupling
 - . electromagnetic coupling
 - . . **optical coupling**
 - RT couples
 - cross coupling
 - cross polarization
 - laser arrays
 - laser mode locking
 - light transmission
 - microwave coupling
 - numerical aperture
 - ∞ optics
 - phase locked systems
 - polarization (waves)
- optical data processing**
 - GS data processing
 - . **optical data processing**
 - RT character recognition
 - ∞ data
 - data acquisition
 - data processing equipment
 - gray scale
 - image classification
 - image processing
 - lasers
 - light modulators
 - light valves
 - optical computers
 - optical correlators
 - optical disks
 - optical relay systems
 - ∞ optics
 - photonics
 - ∞ processing
 - readers
 - scanners
- tomography
- optical data storage materials**
 - GS optical materials
 - . **optical data storage materials**
 - RT ∞ data
 - data recording
 - data storage
 - laser applications
 - optical bistability
 - optical memory (data storage)
 - ∞ optics
 - photographic film
 - video disks
- optical density**
 - DEF The image intensity or density in terms of, or measured by, a reflectance densitometer.
 - RT ∞ density
 - microdensitometers
 - ∞ optics
 - translucence
 - transmittance
 - transparence
 - turbidity
 - underwater optics
- optical depolarization**
 - RT light (visible radiation)
 - ∞ optics
 - polarized light
- optical depth*
- USE **optical thickness**
- optical disks**
 - UF *compact disk read-only memory devices*
 - GS computer components
 - . computer storage devices
 - . . **optical disks**
 - RT CD-ROM
 - data storage
 - laser applications
 - optical data processing
 - optical equipment
 - optical memory (data storage)
 - video disks
- optical emission*
- USE **light emission**
- optical emission spectroscopy**
 - GS spectroscopy
 - . **optical emission spectroscopy**
 - . . laser spectroscopy
 - . . . optogalvanic spectroscopy
 - RT auroral spectroscopy
 - electron spectroscopy
 - emission spectra
 - light (visible radiation)
 - ∞ optics
- optical equipment**
 - GS **optical equipment**
 - . binoculars
 - . cameras
 - . . Baker-Nunn camera
 - . . ballistic cameras
 - . . CCD cameras
 - . . Delft camera
 - . . diffraction limited cameras
 - . . faint object camera
 - . . high speed cameras
 - . . . framing cameras
 - . . digital cameras
 - . . I2S cameras
 - . . Lallemand cameras
 - . . multispectral band cameras
 - . . panoramic cameras
 - . . pinhole cameras
 - . . Schmidt cameras
 - . . streak cameras
 - . . television cameras
 - . collimators
 - . endoscopes
 - . eyepieces
 - . heliometers
 - . . pyroheliometers
 - . image converters
 - . . telescopes
 - . image tubes
 - . . thermicons
 - . laser doppler velocimeters
 - . optical gyroscopes
 - . optical measuring instruments
 - . . cathetometers
 - . . diffractometers
 - . . Ebert spectrometers
 - . . ellipsometers
 - . . etalons
 - . . geodimeters
 - . . haploscopes
 - . . infrared spectrometers
 - . . . filter wheel infrared spectrometers
 - . . light scattering meters
 - . . microdensitometers
 - . . nephelometers
 - . . oculometers
 - . . optical pyrometers
 - . . optical range finders
 - . . . laser range finders
 - . . photogoniometers
 - . . photometers
 - . . . electrophotometers
 - . . . ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - . . . ultraviolet spectrophotometers
 - . . polarimeters
 - . . reflectometers
 - . . . microwave reflectometers
 - . . refractometers
 - . . sextants
 - . . spectrophotometers
 - . . . infrared spectrophotometers
 - . . . ultraviolet spectrophotometers
 - . . transits
 - . . . theodolites
 - cinetheodolites
 - . . transmissometers
 - . . optical microscopes
 - . . optical scanners
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - . . periscopes
 - . . photographic rectifiers
 - . . polariscopes
 - . . Senarmont polariscopes
 - . . prisms
 - . . scatter plates (optics)
 - . . spectroheliographs
 - . . stroboscopes
 - . . wide angle lenses
 - RT absorption spectroscopy
 - acoustic microscopes
 - circumsolar telescopes
 - densitometers
 - Fabry-Perot spectrometers
 - geometrical optics
 - horizon scanners
 - infrared interferometers
 - infrared scanners
 - interferometers
 - lenses
 - look angles (electronics)
 - Mach-Zehnder interferometers
 - microchannels
 - microscopes
 - mirrors
 - monochromators
 - optical bistability
 - optical computers
 - optical control
 - optical disks
 - ∞ optics
 - optogalvanic spectroscopy
 - photographic equipment
 - radio telescopes
 - reflecting telescopes
 - refracting telescopes

optical fibers

- reticles
- Scanner project
- scanners
- spectrometers
- telescopes
- tripods
- video equipment

optical fibers

- GS fibers
 - . **optical fibers**
 - . . . scintillating fibers
- optical materials
 - . **optical fibers**
 - . . . scintillating fibers
- waveguides
 - . optical waveguides
 - . . . **optical fibers**
 - scintillating fibers
- RT Bragg gratings
- communication cables
- fiber lasers
- fiber optics
- fly by light control
- glass fibers
- numerical aperture
- optical communication
- plastic fibers
- transmission lines

optical filters

- GS electromagnetic wave filters
 - . **optical filters**
 - . . . birefringent filters
 - . . . infrared filters
 - . . . ultraviolet filters
- RT adaptive filters
- apodization
- bandpass filters
- bandstop filters
- Bragg gratings
- diaphragms (mechanics)
- didymium
- electric filters
- filtergrams
- ∞ filters
- ∞ gratings
- gratings (spectra)
- high pass filters
- lenses
- low pass filters
- optical relay systems
- ∞ optics
- photographic equipment
- photographic film
- Rowland circles
- sunglasses
- transmission
- tunable filters

optical flow (image analysis)

- (added May 1993)
- RT computer vision
- image analysis
- image processing
- ∞ optics
- scene analysis
- three dimensional motion

optical generators

- USE **laser cavities**

optical gyroscopes

- GS gyroscopes
 - . **optical gyroscopes**
 - optical equipment
 - . **optical gyroscopes**
- RT laser gyroscopes
- ∞ optics
- Sagnac effect

optical heterodyning

- GS heterodyning
 - . **optical heterodyning**
- RT Doppler effect
- light modulation

- ∞ optics

optical illusion

- GS psychological effects
 - . illusions
 - . . . **optical illusion**
 - elevator illusion
- RT moon illusion
- ∞ optics

optical images

- USE **images**

optical interconnects

- (added June 1998)
- GS **optical interconnects**
 - . free-space optical interconnects
- RT connectors
- electric connectors
- integrated optics
- optical computers
- optical switching
- optoelectronic devices
- photonics

optical maser modulation

- USE **light modulation**

optical masers

- USE **lasers**

optical materials

- (added September 1988)
- GS **optical materials**
 - . glass fibers
 - . optical data storage materials
 - . optical fibers
 - . . . scintillating fibers
- RT aspheric optics
- chromophores
- glass
- infrared windows
- lenses
- ∞ materials
- materials selection
- mirrors
- windows (apertures)

optical measurement

- SN (MEASUREMENTS OF OPTICAL PROPERTIES, QUANTITIES OR CONDITIONS)
- GS **optical measurement**
 - . colorimetry
 - . optometry
 - . photometry
 - . . . astronomical photometry
 - stellar spectrophotometry
 - electrophotometry
 - infrared photometry
 - spectrophotometry
 - stellar spectrophotometry
 - telephotometry
 - ultraviolet photometry
 - visual photometry
 - polarimetry
 - astronomical polarimetry
- RT chemical analysis
- collimators
- densitometers
- diffractionmeters
- electro-optical photography
- ellipsometry
- emissivity
- etalons
- Faraday effect
- gamma ray spectrometers
- geodimeters
- geometrical optics
- grazing incidence
- in situ measurement
- infrared interferometers
- interferometers
- light (visible radiation)
- ∞ measurement
- microdensitometers
- modulation transfer function

- nephelometers
- nonintrusive measurement
- ∞ optics
- phase contrast
- photographic measurement
- photometers
- photothermal deflection spectroscopy
- polarimeters
- pressure sensitive paints
- ray tracing
- reflectance
- reflectometers
- refractometers
- Ronchi test
- spectral signatures
- spectrometers
- spectrophotometers
- stroboscopes

optical measuring instruments

- SN (INSTRUMENTS UTILIZING OPTICAL PRINCIPLES FOR MEASUREMENT)
- UF **optical sensors**
- GS measuring instruments
 - . **optical measuring instruments**
 - . . . cathetometers
 - . . . diffractometers
 - . . . Ebert spectrometers
 - . . . ellipsometers
 - . . . etalons
 - . . . geodimeters
 - . . . haploscopes
 - . . . infrared spectrometers
 - filter wheel infrared spectrometers
 - light scattering meters
 - microdensitometers
 - nephelometers
 - oculometers
 - optical pyrometers
 - optical range finders
 - laser range finders
 - photogoniometers
 - photometers
 - electrophotometers
 - ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - ultraviolet spectrophotometers
 - polarimeters
 - reflectometers
 - microwave reflectometers
 - refractometers
 - sextants
 - spectrophotometers
 - infrared spectrophotometers
 - ultraviolet spectrophotometers
 - transits
 - theodolites
 - cinetheodolites
 - transmissometers
- optical equipment
- optical measuring instruments**
- . . . cathetometers
- . . . diffractometers
- . . . Ebert spectrometers
- . . . ellipsometers
- . . . etalons
- . . . geodimeters
- . . . haploscopes
- . . . infrared spectrometers
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- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers

- . . . polarimeters
- . . . reflectometers
- microwave reflectometers
- . . . refractometers
- . . . sextants
- . . . spectrophotometers
- infrared spectrophotometers
- ultraviolet spectrophotometers
- . . . transits
- theodolites
- cinetheodolites
- . . . transmissometers
- RT absorption spectroscopy
- cinespectrographs
- colorimetry
- densitometers
- Fabry-Perot spectrometers
- faint object camera
- goniometers
- guidance sensors
- infrared interferometers
- interferometers
- laser doppler velocimeters
- Mach-Zehnder interferometers
- microscopes
- Miros system
- monochromators
- multispectral tracking telescopes
- optical bistability
- ∞ optics
- optogalvanic spectroscopy
- periscopes
- polarimetry
- polariscopes
- radiation measuring instruments
- reflecting telescopes
- refracting telescopes
- self focusing
- Senarmont polariscopes
- solar instruments
- telephotometry
- telescopes
- optical memory (data storage)**
- GS memory (computers)
 - . **optical memory (data storage)**
- RT associative memory
- CD-ROM
- coherent light
- computer storage devices
- ∞ data
- holography
- lasers
- optical bistability
- optical computers
- optical data storage materials
- optical disks
- ∞ optics
- video disks
- optical methods*
- USE **optics**
- optical microscopes**
- GS microscopes
 - . **optical microscopes**
 - optical equipment
 - . **optical microscopes**
- RT electron microscopes
- ∞ optics
- optical modulation*
- USE **light modulation**
- optical paths**
- DEF Lines of sight or the paths followed by rays of light through optical systems.
- RT diffraction paths
- geometrical optics
- holographic optical elements
- multipath transmission
- ∞ optics
- ∞ paths
- phase contrast
- photon beams
- Sagnac effect

- underwater optics
- Voigt effect
- wave dispersion
- optical polarization**
- RT circular polarization
- linear polarization
- optical properties
- ∞ optics
- ∞ polarization
- polarization modulation
- polarized light
- polarizers
- polarography
- optical properties**
- SN (INCLUDES PROPERTIES AND EFFECTS OF VISIBLE, INFRARED AND ULTRAVIOLET ELECTROMAGNETIC WAVES)
- GS electromagnetic properties
 - . **optical properties**
 - . . . absorptance
 - . . . absorptivity
 - . . . birefringence
 - Kerr electrooptical effect
 - . . . brightness
 - sky brightness
 - . . . brightness distribution
 - . . . color
 - iridescence
 - stellar color
 - water color
 - . . . dichroism
 - . . . luminosity
 - stellar luminosity
 - . . . opacity
 - . . . optical bistability
 - . . . optical reflection
 - . . . phosphorescence
 - . . . photoconductivity
 - . . . photoviscoelasticity
 - . . . radiance
 - . . . reflectance
 - bidirectional reflectance
 - spectral reflectance
 - . . . refractivity
 - photorefractivity
 - . . . stigmatism
 - . . . translucence
 - . . . transmissivity
 - . . . transmittance
 - . . . transparency
 - . . . turbidity
- RT acousto-optics
- albedo
- birefringent filters
- clarity
- coefficients
- coherent radiation
- cross polarization
- darkness
- diffraction
- electrical properties
- electromagnetic absorption
- emittance
- excitons
- Faraday effect
- geometrical optics
- glare
- glass
- gradient index optics
- haze
- infrared absorption
- isotropy
- Kerr magneto-optical effect
- light (visible radiation)
- light transmission
- lumens
- luminance
- lunar albedo
- metallic glasses
- numerical aperture
- opalescence
- optical polarization
- ∞ optics
- ∞ orientation
- photoelectricity

- photons
- phototropism
- physical optics
- ∞ physical properties
- polarization (waves)
- ∞ properties
- ∞ solid state physics
- surface properties
- thermochromatic materials
- thermodynamic properties
- visibility
- wave dispersion
- optical pumping**
- GS **optical pumping**
 - . laser pumping
- RT electron pumping
- electron-hole drops
- excimer lasers
- fiber lasers
- gamma ray lasers
- glass lasers
- HCN lasers
- krypton fluoride lasers
- laser cooling
- laser propulsion
- lasers
- maser pumping
- metal vapor lasers
- neodymium lasers
- nuclear pumped lasers
- nuclear pumping
- ∞ optics
- pulse repetition rate
- ∞ pumping
- rare gas-halide lasers
- solar-pumped lasers
- stimulated emission
- stimulated emission devices
- optical pyrometers**
- DEF Devices for measuring the temperature of an incandescent radiating body by comparing its brightness for a selected wavelength interval within the visible spectrum with that of a standard source; a monochromatic radiation pyrometer.
- GS measuring instruments
 - . optical measuring instruments
 - . . **optical pyrometers**
 - . . . temperature measuring instruments
 - . . . **optical pyrometers**
 - optical equipment
 - . optical measuring instruments
 - . . **optical pyrometers**
- RT ∞ optics
- radiation pyrometers
- optical radar**
- UF *laser radar*
- lidar*
- GS radar
 - . **optical radar**
 - . . differential absorption lidar
- RT infrared radar
- laser altimeters
- laser applications
- optical countermeasures
- ∞ optics
- over-the-horizon radar
- radar detection
- optical range finders**
- GS measuring instruments
 - . distance measuring equipment
 - . . range finders
 - . . . **optical range finders**
 - laser range finders
 - . . . optical measuring instruments
 - . . . **optical range finders**
 - laser range finders
 - optical equipment
 - . optical measuring instruments
 - . . **optical range finders**
 - . . . laser range finders
- RT lunar rangefinding

optical reflection

∞ optics

optical reflection

GS electromagnetic properties
. optical properties
. . . **optical reflection**
reflection

RT antireflection coatings
electromagnetic absorption
geometrical optics
incident radiation
infrared reflection
light transmission
∞ optics
reflectance
reflected waves
spread reflection

optical relay systems

DEF Systems using photocouplers in which the output device is a light sensitive switch that provides the same on and off operations as the contacts of a relay.

RT electro-optics
imaging techniques
laser applications
optical data processing
optical filters
optical resonators
optical switching
∞ optics
pattern recognition
∞ systems

optical resonance

GS emission
. light emission
. . . luminescence
. . . . **optical resonance**
resonance
. **optical resonance**
RT nuclear pumped lasers
∞ optics
plasma radiation
plasma spectra
resonance lines
spectrum analysis

optical resonators

GS resonators
. **optical resonators**
RT field mode theory
laser modes
laser outputs
lasers
light modulation
mirrors
optical relay systems
∞ optics

optical satellite tracking program

RT ∞ optics
satellite tracking

optical scanners

DEF A light source and phototube combined as a single unit for scanning moving strips of paper or other materials in photoelectric side-register control systems.

GS optical equipment
. **optical scanners**
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
scanners
. **optical scanners**
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
RT character recognition
data acquisition
monitors
∞ optics
photon beams
readers

television cameras

optical sensors

USE **optical measuring instruments**

optical signals

USE **optical communication**

optical slant range

DEF The horizontal distance in a homogeneous atmosphere for which the attenuation is the same as that actually encountered along the true oblique path.

GS distance
. **optical slant range**
RT ∞ optics
radar range

optical spectrum

USE **light (visible radiation) spectra**

optical switching

UF *electro-optical switching*
optoelectronic switching
photonic switching
GS switching
. **optical switching**
RT acousto-optics
asynchronous transfer mode
electro-optics
free-space optical interconnects
integrated optics
light modulation
magneto-optics
optical bistability
optical interconnects
optical relay systems
optoelectronic devices
photonics
semiconductor lasers
switching circuits

optical thickness

DEF A measure of the cumulative attenuation of electromagnetic radiation in transit through a medium. In calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth.

UF *optical depth*
RT antireflection coatings
Fermat principle
∞ optics
refractivity
thickness

optical tracking

UF *visual tracking*
GS tracking (position)
. **optical tracking**
RT ballistic cameras
boresight error
boresights
compensatory tracking
Global Tracking Network
infrared tracking
minitrack system
multiple target tracking
multispectral tracking telescopes
oculometers
∞ optics
photographic tracking
range and range rate tracking
space detection and tracking system
spacecraft tracking
STDN (network)
visual observation

optical transfer function

UF *OTF*
GS functions (mathematics)
. transfer functions
. . . **optical transfer function**
RT adaptive optics

cost analysis
figure of merit
imaging techniques
modulation transfer function

∞ optics

∞ performance
spaceborne telescopes
system effectiveness
systems analysis
systems engineering
telescopes

optical transition

RT electron transitions
emission spectra
Franck-Condon principle
lasing
luminescence
∞ optics

optical waveguides

DEF Any device or component that guides optical energy.
GS waveguides
. **optical waveguides**
. . optical fibers
. . . scintillating fibers
RT corrugated waveguides
dielectric waveguides
integrated optics
laser outputs
light beams
light transmission
optical bistability
∞ optics
photonics
photorefractivity
waveguide lasers

∞ **optics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Branch of physical science concerned with the transmission, generation, manipulation, and detection of electromagnetic radiation in the wavelength range from vacuum ultraviolet to the far infrared.

UF *optical methods*

RT acousto-optics
adaptive optics
angular resolution
aspheric optics
asphericity
astigmatism
atmospheric optics
atom optics
Cassegrain optics
caustics (optics)
chromophores
crystal optics
defocusing
diffraction patterns
diffraction propagation
diffractive optics
electron optics
electro-optical effect
electro-optical photography
electro-optics
fiber optics
foci
Fresnel lenses
geometrical optics
gradient index optics
Huygens principle
images
imaging techniques
integrated optics
ion optics
laser cavities
lasers
lens design
lenses
light (visible radiation)
light amplifiers
light emission
light modulation

- magneto-optics
mirrors
nonlinear optics
optical activity
optical communication
optical correction procedure
optical countermeasures
optical coupling
optical data processing
optical data storage materials
optical density
optical depolarization
optical emission spectroscopy
optical equipment
optical filters
optical flow (image analysis)
optical gyroscopes
optical heterodyning
optical illusion
optical measurement
optical measuring instruments
optical memory (data storage)
optical microscopes
optical paths
optical polarization
optical properties
optical pumping
optical pyrometers
optical radar
optical range finders
optical reflection
optical relay systems
optical resonance
optical resonators
optical satellite tracking program
optical scanners
optical slant range
optical thickness
optical tracking
optical transfer function
optical transition
optical waveguides
parallax
photics
photoelastic analysis
physical optics
prefocusing
quantum optics
reflection
resolution
scatter plates (optics)
∞ science
 Snells law
 spectroscopy
 squeezed states (quantum theory)
 Starlab
 underwater optics
 x ray optics
- optimal control**
UF *optimum control*
GS automatic control
 optimal control
 . . H-2 control
 . . H-infinity control
 . . linear quadratic Gaussian control
 . . time optimal control
 optimization
 optimal control
 . . H-2 control
 . . H-infinity control
 . . linear quadratic Gaussian control
 . . time optimal control
RT adaptive control
∞ control
 control systems design
 control theory
 differential games
 feedback control
 feedforward control
 genetic algorithms
 inventory controls
 Kalman-Schmidt filtering
 linear quadratic regulator
 model reference adaptive control
 multivariable control
 parameter identification
- pursuit-evasion games
tracking problem
trajectory control
zero sum games
- optimization**
DEF The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique.
UF *minimization*
reduction (mathematics)
GS **optimization**
 . flight optimization
 . genetic algorithms
 . linear quadratic regulator
 . . linear quadratic Gaussian control
 . . mathematical programming
 . . dynamic programming
 . . linear programming
 . . nonlinear programming
 . . quadratic programming
 . multidisciplinary design optimization
 . operations research
 . optimal control
 . . H-2 control
 . . H-infinity control
 . . linear quadratic Gaussian control
 . . time optimal control
 . design optimization
 . simplex method
 . trajectory optimization
 . . shape optimization
RT ∞ applications of mathematics
 backpropagation (artificial intelligence)
 Bellman theory
 Bolza problems
 constraints
 correlation
 ∞ design
 design analysis
 differential calculus
 efficiency
 extremum values
 games
 gradients
 greedy algorithms
 Hessian matrices
 Kalman filters
 Kalman-Schmidt filtering
 Lagrange multipliers
 least squares method
 maxima
 minima
 parameter identification
 penalty function
 planning
 pontryagin principle
 quality control
 range (extremes)
 ∞ reduction
 scheduling
 sensitivity analysis
 simulated annealing
 static models
 steepest descent method
 stopping
 system identification
 Taguchi methods
 trajectory control
 Wiener filtering
- optimum control*
USE **optimal control**
- optimum thrust programming*
USE **thrust programming**
- options**
RT alternatives
 contracts
 selection
 site selection
- subcontracts
- optoelectronic devices**
DEF Electronic devices combining optic and electric ports.
GS **optoelectronic devices**
 . light emitting diodes
 . photodiodes
 . phototransistors
RT electro-optics
 fiber optics
 free-space optical interconnects
 integrated circuits
 integrated optics
 optical interconnects
 optical switching
 photonics
- optoelectronic switching*
USE **optical switching**
- optogalvanic spectroscopy**
DEF A method of obtaining absorption spectra of atomic and molecular species in flames and electrical discharges by measuring voltage and current changes upon laser irradiation.
GS spectroscopy
 . absorption spectroscopy
 . . **optogalvanic spectroscopy**
 . . optical emission spectroscopy
 . . laser spectroscopy
 . . . **optogalvanic spectroscopy**
 utilization
 . laser applications
 . . laser spectroscopy
 . . . **optogalvanic spectroscopy**
RT flame spectroscopy
 Fraunhofer lines
 gas spectroscopy
 infrared spectroscopy
 molecular spectroscopy
 optical equipment
 optical measuring instruments
 Raman spectroscopy
 ultraviolet spectroscopy
 volt-ampere characteristics
- optometry**
GS optical measurement
 optometry
RT anastigmatism
 blindness
 eye (anatomy)
 haploscopes
 ∞ measurement
 medical science
 vision
- oral hygiene**
GS hygiene
 . **oral hygiene**
RT cleanliness
 dentistry
 health
 public health
 teeth
 tooth diseases
- oratory*
USE **public speaking**
- ORBIS**
UF *orbiting radio beacon ionospheric sounder*
GS artificial satellites
 . scientific satellites
 . . **ORBIS**
 . . . ORBIS CAL satellite
RT ionospheric propagation
 ionospheric sounding
 radio beacons
- ORBIS CAL satellite**
GS artificial satellites
 . gravity gradient satellites

orbit calculation

. . **ORBIS CAL satellite**
. . scientific satellites
. . ORBIS
. . . **ORBIS CAL satellite**
RT ionospheric propagation
ionospheric sounding
radio beacons

orbit calculation
UF *satellite orbit calculation*
GS computation
. **orbit calculation**
. . minimum variance orbit determination
. . orbital position estimation
orbit determination
. **orbit calculation**
. . minimum variance orbit determination
. . orbital position estimation
RT flight mechanics
Goddard Trajectory Determination System
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)
quadratures

orbit decay
RT aerodynamic drag
atmospheric entry
flight mechanics
orbital mechanics
satellite lifetime
spacecraft breakup

orbit determination
(added December 1998)
GS **orbit determination**
. airborne range and orbit determination
. orbit calculation
. . minimum variance orbit determination
. . orbital position estimation
RT Global Positioning System
position errors
satellite tracking
space navigation
spacecraft control
spacecraft position indicators

orbit equations
USE **orbital mechanics**

orbit insertion
(added January 1991)
DEF The process by which a spacecraft enters into a desired orbit around a celestial body.
GS insertion
. **orbit insertion**
RT ascent trajectories
orbital maneuvers
orbital mechanics
payload delivery (STS)
satellite orbits
spacecraft launching
spacecraft maneuvers
spacecraft orbits
transfer orbits

Orbit Maneuvering Engine (Space Shuttle)
UF *OME*
GS engines
. rocket engines
. . microrocket engines
. . . **Orbit Maneuvering Engine (Space Shuttle)**
RT Aeromaneuvering Orbit to Orbit Shuttle
orbital maneuvers

space shuttles

orbit perturbation
UF *evection*
GS perturbation
. **orbit perturbation**
. . satellite perturbation
RT drift rate
long term effects
lunar effects
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)
perturbation theory
Schach effect
vinti theory

orbit spectrum utilization
DEF Telecommunication techniques in spectrum conservation for reducing user costs.
RT communication satellites
frequency assignment
radio relay systems
satellite orbits
systems engineering
television systems

orbit transfer vehicles
DEF Concept of propulsive (velocity producing) rockets or stages for use with crew transfer modules, manned sortie modules, or other payloads. Used for OTV.
UF *OTV*
GS **orbit transfer vehicles**
. Aeromaneuvering Orbit to Orbit Shuttle
RT Inertial Upper Stage
orbital maneuvering vehicles
orbital servicing
payload delivery (STS)
payload deployment & retrieval system
payload retrieval (STS)
space shuttles
space transportation
space tugs
∞ spacecraft
∞ vehicles

orbital assembly
UF *construction in space*
spacecraft orbital assembly
GS assembling
. **orbital assembly**
RT Crew Equipment Translation Aid (ISS)
expandable structures
inflatable spacecraft
self erecting devices
space erectable structures
Space Operations Center (NASA)
Space Station Mobile Servicing System
space station modules
space station structures
spacecraft modules
spacecraft structures

orbital breakup
USE **spacecraft breakup**

orbital elements
DEF A set of seven parameters defining the orbit of a body attracted by a central, inverse square force.
RT apsides
∞ elements
orbit calculation
orbit perturbation
orbits
perihelions

perturbation theory

Orbital Flight Test 1 (shuttle)
USE **Space Transportation System 1 flight**

Orbital Flight Test 2 (shuttle)
USE **Space Transportation System 2 flight**

Orbital Flight Test 3 (shuttle)
USE **Space Transportation System 3 flight**

Orbital Flight Test 4 (shuttle)
USE **Space Transportation System 4 flight**

orbital flight tests (shuttle)
USE **Space Transportation System flights**

orbital launching
SN (LAUNCHING FROM AN ORBIT-EXCLUDES LAUNCHING INTO ORBIT FROM GROUND)
GS launching
. rocket launching
. . **orbital launching**
RT interplanetary trajectories
lunar launch
payload delivery (STS)
spacecraft launching
transfer orbits

orbital lifetime
DEF The predicted lifetime of a satellite in orbit, usually based on such criteria as solar flux density, atmospheric density, the lessening of the eccentricity of elliptical orbits, or the gravitational effects of the sun or the moon.
RT attitude control
Earth orbits

orbital maneuvering vehicles
RT orbit transfer vehicles
orbital servicing
power modules (STS)
remotely piloted vehicles
∞ spacecraft

orbital maneuvers
GS maneuvers
. **orbital maneuvers**
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT formation flying
orbit insertion
Orbit Maneuvering Engine (Space Shuttle)
space navigation
space shuttles

orbital mechanics
UF *orbit equations*
GS classical mechanics
. space mechanics
. . **orbital mechanics**
. . . Kepler laws
. . . minimum variance orbit determination
RT Aeromaneuvering Orbit to Orbit Shuttle
apsides
astrodynamics
celestial mechanics
circular orbits
drift rate
Earth orbital rendezvous
Earth orbits
Earth-Mars trajectories
Earth-Mercury trajectories
Earth-Moon system
elliptical orbits
equatorial orbits

- flight mechanics
 - flight optimization
 - Goddard Trajectory Determination System
 - Hansen lunar theory
 - Hill lunar theory
 - Hill method
 - interplanetary trajectories
 - interplanetary transfer orbits
 - Lagrangian equilibrium points
 - lunar orbital rendezvous
 - lunar orbits
 - many body problem
 - ∞ mechanics (physics)
 - moon-Earth trajectories
 - orbit calculation
 - orbit decay
 - orbit insertion
 - orbit perturbation
 - orbital resonances (celestial mechanics)
 - orbits
 - parking orbits
 - perturbation
 - planetary landing
 - Poynting-Robertson effect
 - quadratures
 - rendezvous
 - rendezvous trajectories
 - retrograde orbits
 - round trip trajectories
 - satellite orbits
 - satellite perturbation
 - space navigation
 - spacecraft orbits
 - stationkeeping
 - swingby technique
 - thrust programming
 - trajectory analysis
 - transearth injection
 - transfer orbits
 - translunar injection
 - twenty-four hour orbits
 - two body problem
- orbital motion*
USE **orbits**
- orbital position estimation**
GS computation
 . orbit calculation
 . . **orbital position estimation**
 estimating
 . **orbital position estimation**
 orbit determination
 . orbit calculation
 . . **orbital position estimation**
RT celestial sphere
Goddard Trajectory Determination System
 navigation
∞ orientation
 position (location)
 position errors
∞ range
 satellite orbits
 spacecraft orbits
 spacecraft position indicators
 state estimation
- orbital rendezvous**
UF *satellite rendezvous*
GS maneuvers
 . orbital maneuvers
 . . **orbital rendezvous**
 . . . Earth orbital rendezvous
 . . . lunar orbital rendezvous
 rendezvous
 . space rendezvous
 . . **orbital rendezvous**
 . . . Earth orbital rendezvous
 . . . lunar orbital rendezvous
RT Atlas launch vehicles
 multiple docking adapters
 payload retrieval (STS)
 rendezvous guidance
 rendezvous spacecraft
- rendezvous trajectories
 - spacecraft docking
 - spacecraft trajectories
 - tethering
- orbital resonances (celestial mechanics)**
DEF Systems of two or more satellites (including planets) that orbit the same primary and whose orbital mean motions are in a ratio of small whole numbers.
GS resonance
 . **orbital resonances (celestial mechanics)**
RT astrodynamics
 celestial mechanics
 gravitational effects
 libration
 librational motion
 orbit calculation
 orbit perturbation
 orbital mechanics
 oscillations
 planetary orbits
 planetary systems
 satellite orbits
 solar orbits
- orbital servicing**
DEF The replenishing of propellants, pressurants, coolants, and the replacement of modules and experiments, during some phase of a spacecraft flight to extend the mission and lifetime, or change the payloads.
UF *satellite repair*
RT Columbus space station
 large space structures
 man tended free flyers
 manned maneuvering units
 orbit transfer vehicles
 orbital maneuvering vehicles
 payload transfer
 Space Operations Center (NASA)
 space platforms
 Space Shuttle payloads
 Space Station Freedom
 space stations
 space transportation system
 space tugs
 telerobotics
- orbital shots**
RT ∞ shot
 spacecraft launching
- orbital simulators*
USE **space simulators**
- orbital space tests**
RT CRRES (satellite)
 environmental tests
 large space structures
 space mechanics
 space stations
 structural analysis
 ∞ tests
- Orbital Test Satellite (ESA)*
USE **OTS (ESA)**
- orbital transfer*
USE **transfer orbits**
- orbital velocity**
DEF The average velocity at which an Earth satellite or other orbiting body travel around its primary. The velocity of such a body at any given point in its orbit, i. e. , orbital velocity at the apogee is less than at the perigee.
GS rates (per time)
 . **orbital velocity**
 velocity
 . **orbital velocity**
RT angular velocity
 escape velocity
 ∞ hypervelocity
- velocity errors
- orbital workers**
GS personnel
 . flying personnel
 . . astronauts
 . . . **orbital workers**
RT astronaut locomotion
 extravehicular activity
 space maintenance
 space tools
 work capacity
- orbital workshops**
GS artificial satellites
 . **orbital workshops**
 . . Saturn workshops
 . . . Saturn 1 workshop
 . . . Saturn 5 workshop
 . . Skylab 1
 . . Skylab 2
 . . Skylab 3
 . . Skylab 4
 manned spacecraft
 . **orbital workshops**
 . . Saturn workshops
 . . . Saturn 1 workshop
 . . . Saturn 5 workshop
 . . Skylab 1
 . . Skylab 2
 . . Skylab 3
 . . Skylab 4
RT Apollo extension system
 containerless melts
 manned orbital laboratories
 Skylab program
 space laboratories
 space processing
 space stations
- orbitals**
GS **orbitals**
 . electron orbitals
 . molecular orbitals
 . Slater orbitals
RT Jahn-Teller effect
 orbits
 Schwarzschild metric
- Orbiting Astronomical Observatory*
USE **OAQ**
- orbiting dipoles**
GS electric charge
 . electric dipoles
 . . **orbiting dipoles**
RT communication equipment
 ∞ dipoles
- Orbiting Frog Otolith**
GS artificial satellites
 . biosatellites
 . . **Orbiting Frog Otolith**
 spaceborne experiments
 . **Orbiting Frog Otolith**
RT biological effects
 biometrics
 biotelemetry
 instrument packages
 international cooperation
 Italian space program
 otolith organs
- Orbiting Geophysical Observatory*
USE **OGO**
- orbiting lunar stations**
GS artificial satellites
 . lunar satellites
 . . **orbiting lunar stations**
 . space stations
 . . **orbiting lunar stations**
 lunar spacecraft
 . lunar satellites
 . . **orbiting lunar stations**
 stations

orbitrons

. space stations
. . **orbiting lunar stations**
RT lunar bases
∞ spacecraft

orbiting radio beacon ionospheric sounder
USE **ORBIS**

Orbiting Solar Observatory
USE **OSO**

orbitrons

RT electron clouds
electron tubes
ionization gages
space charge
vacuum gages

orbits

DEF The paths of bodies or particles under the influence of a gravitational or other force. Used for orbital motion and periodic orbits.

UF *orbital motion*
periodic orbits

GS

orbits
. circular orbits
. . . stationary orbits
. Earth orbits
. . . geosynchronous orbits
. . . low Earth orbits
. . . twenty-four hour orbits
. eccentric orbits
. elliptical orbits
. . . transfer orbits
. . . interplanetary transfer orbits
. equatorial orbits
. . . stationary orbits
. lunar orbits
. planetary orbits
. retrograde orbits
. solar orbits
. spacecraft orbits
. . . satellite orbits
. . . . geosynchronous orbits
. . . . parking orbits
. . . . stationary orbits
. . . . twenty-four hour orbits
. . . transfer orbits
. . . interplanetary transfer orbits
. polar orbits
. stellar orbits
. Trojan orbits

RT airborne range and orbit determination

apexes
aphelions
apogees
artificial satellites
astrodynamics
celestial bodies
celestial mechanics
∞ conjunction
Earth-Venus trajectories
ephemerides
flight optimization
flight paths
four body problem
ground tracks
∞ inclination
interplanetary flight
lunar flight
many body problem
∞ motion
orbital elements
orbital mechanics
orbitals
∞ paths
perigees
perihelions
quadratures
Roche limit
satellite ground tracks
Schwarzschild metric
space flight
space navigation
spacecraft guidance

stationkeeping
suborbital flight
three body problem
trajectories
two body problem

orchards

RT agriculture
blight
citrus trees
crop growth
crop vigor
∞ crops
curing
farm crops
∞ food
frost damage
fruits
irrigation
nuts (fruits)
plants (botany)
rural land use
silviculture
trees (plants)

order-disorder transformations

RT antiphase boundaries
atomic structure
cluster variation method
crystal defects
crystal lattices
crystal structure
crystallography
holes (electron deficiencies)
metallography
microstructure
molecular structure
phase transformations
solid solutions
∞ transformations

ordnance

RT air to surface missiles
ammunition
armor
ballistics
explosives
ground support equipment
pyrotechnics
tanks (combat vehicles)
trajectories
warfare
weapon systems
weapons

Oregon

GS nations
. United States
. . **Oregon**
RT Cascade Range (CA-OR-WA)
Columbia River Basin (ID-OR-WA)

ores

USE **minerals**

organ weight

GS weight (mass)
. **organ weight**

organelles

GS **organelles**
. chloroplasts
. . endoplasmic reticulum
. . sarcoplasmic reticulum
. lysosomes
. mitochondria
. nuclei (cytology)
RT cells (biology)
cytology
cytoplasm

organic aluminum compounds

GS aluminum compounds
. **organic aluminum compounds**
organometallic compounds
. **organic aluminum compounds**

RT ∞ chemical compounds
∞ metal compounds

organic boron compounds

GS boron compounds
. **organic boron compounds**
organic compounds
. **organic boron compounds**
RT ∞ chemical compounds

organic charge transfer salts

DEF Organic compounds exhibiting temperature-dependent electrical, magnetic, and heat transfer properties.
GS organic compounds
. **organic charge transfer salts**
RT charge transfer devices
organic superconductors
∞ salts
semiconductors (materials)

organic chemistry

DEF The study of the composition, properties, structure, and reactions of carbon-based compounds, specifically hydrocarbons and their derivatives, and normally excluding carbon oxides, metallic carbonates, carbides, and carbon-sulfur and carbon-nitrogen compounds.

RT biochemistry
∞ chemistry
cracking (chemical engineering)
cyclic compounds
Diels-Alder reactions
histochemical analysis
methoxy systems
optical activity
physiochemistry

organic compounds

GS **organic compounds**
. acetyl compounds
. . acetylacetone
. . acetylsalicylic acid
. amino acids
. . alanine
. . . phenylalanine
. . aspartic acid
. . cysteine
. . dopa
. . folic acid
. . glutamic acid
. . glutamine
. . glycine
. . hippuric acid
. . histidine
. . leucine
. . . norleucine
. . lysine
. . melanoidin
. . methionine
. . thyroxine
. . tryptophan
. . tyrosine
. carbohydrates
. . citric acid
. . glucosides
. . . nucleosides
. . . . adenines
. . . . guanosines
. . polysaccharides
. . cellulose
. . . Fortisan (trademark)
. . chitin
. . dextrans
. . . glycogens
. . . starches
. . sugars
. . . dextrans
. . . inositols
. . . lactose
. . . mannitol
. . . monosaccharides
. . . . hexoses
. galactose
. glucose
. pentose

. ribose
 xylose
 sucrose
 carboxylic acids
 acrylic acid
 alanine
 phenylalanine
 aspartic acid
 citric acid
 dicarboxylic acids
 fatty acids
 acetic acid
 ethylenediaminetetraacetic acids
 iodoacetic acid
 acetylsalicylic acid
 benzoic acid
 benzoic acid
 lipoic acid
 oleic acid
 palmitic acid
 propionic acid
 sebamic acid
 valeric acid
 folic acid
 formhydroxamic acid
 formic acid
 Hexogenes (trademark)
 lactic acid
 lysine
 nicotinic acid
 oxalic acid
 oxamic acids
 tryptophan
 choline
 coenzymes
 adenosine diphosphate
 adenosine triphosphate
 cyclic AMP
 glutathione
 thiamine
 cyclic compounds
 cyclic hydrocarbons
 anthracene
 benzene
 chlorobenzenes
 colchicine
 cyclobutane
 cyclohexane
 cyclopropane
 durene
 indene
 menthol
 naphthalene
 naphthenes
 polycyclic aromatic hydrocarbons
 heterocyclic compounds
 acriflavine
 adenosines
 adenosine diphosphate
 adenosine triphosphate
 cyclic AMP
 alkaloids
 atropine
 betaines
 caffeine
 colchicine
 ergotamine
 hyoscyne
 lysergine
 morphine
 nicotinamide
 nicotine
 pilocarpine
 reserpine
 strychnine
 tropl compounds
 anisole
 ascorbic acid
 azines
 cyanurates
 cyanuric acid
 meclizine
 methylene blue
 phenothiazines
 azoles
 acetazolamide
 oxazole
 pyrroles
 carbazoles
 indoles
 tryptophan
 azulene
 bioflavonoids
 biotin
 carnitine
 cyanocobalamin
 cytidylic acid
 dimenhydrinate
 endrin
 ethylene oxide
 folic acid
 furans
 tetrahydrofuran
 guanethidine
 HMX
 nicotinic acid
 phthalocyanin
 phylloquinone
 piperidine
 promethazine
 purines
 adenines
 xanthines
 caffeine
 guanines
 uric acid
 pyridines
 pyridoxine
 pyrimidines
 alloxan
 thymidine
 thymine
 uracil
 RDX
 retinene
 riboflavin
 tetracyclines
 tetrazoles
 thiamine
 thiazine (trademark)
 thiophenes
 tocopherol
 trimethadione
 rhodamine
 diethyl compounds
 diethyl ether
 diethyl hydrogen phosphite (DEHP)
 dimethyl compounds
 dimethylhydrazines
 fluorine organic compounds
 fluoroamines
 nitrofluoramines
 trifluoroamine oxide
 fluorocarbons
 fluorohydrocarbons
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 fluoropolymers
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 hydrocarbons
 aliphatic hydrocarbons
 alkanes
 butanes
 cetane
 ethane
 heptanes
 methane
 nitropropane
 nonanes
 octanes
 paraffins
 ceresin
 pentanes
 neopentane
 propane
 alkenes
 butenes
 ethylene
 vinylidene
 hexenes
 propylene
 trienes
 alkynes
 acetylene
 oxyacetylene
 dienes
 butadiene
 heptadiene
 hexadiene
 polybutadiene
 carotene
 cubane
 cyanoacetylene
 cyclic hydrocarbons
 anthracene
 benzene
 chlorobenzenes
 colchicine
 cyclobutane
 cyclohexane
 cyclopropane
 durene
 indene
 menthol
 naphthalene
 naphthenes
 polycyclic aromatic hydrocarbons
 diphenyl compounds
 diphenyl hydantoin
 fluorohydrocarbons
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 mesitylene
 methylene
 methylidyne
 natural gas
 liquefied natural gas
 phenanthrene
 pyrenes
 quinoxalines
 stilbene
 toluene
 triphenyls
 xylene
 kerogen
 lead organic compounds
 lead acetates
 lipids
 calciferol
 castor oil
 fats
 lipoproteins
 phylloquinone
 retinene
 steroids
 cholesterol
 corticosteroids
 aldosterone
 hydroxycorticosteroid
 cortisone
 glucocorticoids
 estrogens
 prostaglandins
 tocopherol
 nucleic acids
 deoxyribonucleic acid
 ribonucleic acids
 nucleotides
 adenines
 adenosines
 adenosine diphosphate
 adenosine triphosphate
 cyclic AMP
 polynucleotides
 pyridine nucleotides
 uridylic acid
 organic boron compounds
 organic charge transfer salts
 organic germanium compounds
 organic liquids
 organic lithium compounds
 organic peroxides

organic coolants

- . organic phosphorus compounds
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- . organic silicon compounds
- . . triphenyl silicon
- . organic sulfur compounds
- . organic tin compounds
- . pentanone
- . peptides
- . . polypeptides
- . . . glutathione
- . . . hypertensin
- . polynuclear organic compounds
- . propargyl groups
- . proteins
- . . albumins
- . . aspartates
- . . calmodulin
- . . elastin
- . . enzymes
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . protease
- . . . thrombin
- . . . trypsin
- . . fibrin
- . . globulins
- . . . fibrinogen
- . . . gamma globulin
- . . . hemoglobin
- . . . carboxyhemoglobin
- . . . oxyhemoglobin
- . . keratins
- . . lipoproteins
- . . melanin
- . . myoglobin
- . . proteinoids
- . . prothrombin
- . . protoproteins
- . . quinoline
- . . quinones
- . . serotonin
- . volatile organic compounds
- RT alcohols
- aldehydes
- ∞ aliphatic compounds
- alkyl compounds
- ∞ aromatic compounds
- ∞ chemical compounds
- chemical evolution
- esters
- ethers
- hydroxyl compounds
- metabolites
- methoxy systems
- methyl compounds
- nitroso compounds
- organic superconductors
- organic wastes (fuel conversion)
- organometallic compounds
- ∞ salts

organic coolants

GS coolants

- . **organic coolants**

organic cooled reactors

UF *orgel reactor*

GS nuclear reactors

- . liquid cooled reactors
- . . **organic cooled reactors**
- . . . experimental organic cooled reactors

RT reactor design

reactor technology

organic fluorine compounds

USE **fluorine organic compounds**

organic germanium compounds

GS germanium compounds

- . **organic germanium compounds**
- organic compounds
- . **organic germanium compounds**
- organometallic compounds
- . **organic germanium compounds**

RT ∞ chemical compounds

∞ metal compounds

organic lasers

GS stimulated emission devices

- . lasers
- . . **organic lasers**
- . . . dye lasers

RT carbon dioxide lasers

carbon lasers

chemical lasers

gas lasers

infrared lasers

liquid lasers

organic liquids

GS liquids

- . **organic liquids**
- organic compounds
- . **organic liquids**

RT pyruvates

xanthic acids

organic lithium compounds

GS lithium compounds

- . **organic lithium compounds**
- organic compounds
- . **organic lithium compounds**
- organometallic compounds
- . **organic lithium compounds**

RT ∞ chemical compounds

∞ metal compounds

organic materials

GS **organic materials**

- . peat

RT biodegradability

carbonaceous materials

cork (materials)

cotton fibers

elastomers

linen

∞ materials

molds

paper (material)

phase change materials

plastics

∞ polymers

rosin

rubber

silk

thermochromatic materials

wood

wool

organic moderated reactors

GS nuclear reactors

- . **organic moderated reactors**
- . . experimental organic cooled reactors

organic nitrates

GS esters

- . **organic nitrates**
- . . cellulose nitrate
- . . nitroforms
- . . . hydrazine nitroform
- . . . nitroglycerin
- . . . PETN
- nitrogen compounds
- . nitrates
- . . **organic nitrates**
- . . . cellulose nitrate
- . . . nitroforms

- . . . hydrazine nitroform
- . . . nitroglycerin
- . . . PETN

organic peroxides

DEF Organic compounds containing radical groups combined with oxides in which two atoms of oxygen are linked together, e. g. , diethyl peroxide.

GS chalcogenides

- . oxides
- . . anhydrides
- . . . peroxides
- **organic peroxides**

organic compounds

- . **organic peroxides**

RT air pollution

hydrocarbons

inorganic peroxides

organic phosphorus compounds

GS organic compounds

- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid

phosphorus compounds

- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid

RT ∞ chemical compounds

organic semiconductors

GS semiconductors (materials)

- . **organic semiconductors**

RT ∞ chemical compounds

conducting polymers

conductors

organic superconductors

semiconductor devices

organic silicon compounds

GS organic compounds

- . **organic silicon compounds**
- . . triphenyl silicon

silicon compounds

- . **organic silicon compounds**
- . . triphenyl silicon

RT ∞ chemical compounds

organic solids

DEF Solid materials composed of organic materials.

GS solids

- . **organic solids**

RT astronomical spectroscopy

cosmic dust

dissolved organic matter

planetary atmospheres

organic sulfur compounds

GS organic compounds

- . **organic sulfur compounds**
- sulfur compounds
- . **organic sulfur compounds**

RT ∞ chemical compounds

organic superconductors

(added May 1991)

GS conductors

- . superconductors (materials)
- . . **organic superconductors**

RT organic charge transfer salts

organic compounds

organic semiconductors

organic tin compounds

GS organic compounds

- . **organic tin compounds**
- organometallic compounds
- . **organic tin compounds**
- tin compounds
- . **organic tin compounds**

- RT ∞ chemical compounds
∞ metal compounds
- organic wastes (fuel conversion)**
RT ∞ conversion
energy conversion
garbage
human wastes
metabolic wastes
organic compounds
residues
sewage
sludge
wastes
- organisms**
RT animals
biomass
carbon cycle
deep scattering layers
plants (botany)
- organizations**
UF *associations*
GS **organizations**
. European Space Agency
. federations
. . . bureaus (organizations)
. ISRO
. North Atlantic Treaty Organization (NATO)
. World Meteorological Organization
RT teams
United Nations
- organizing**
RT personnel
unionization
- organometallic compounds**
UF *metalloorganic compounds*
GS **organometallic compounds**
. chlorophylls
. ferrocenes
. . . alkylferrocene
. hemoglobin
. . . carboxyhemoglobin
. . . oxyhemoglobin
. organic aluminum compounds
. organic germanium compounds
. organic lithium compounds
. organic tin compounds
. porphines
RT alkoxides
chelates
∞ chemical compounds
∞ metal compounds
metalloids
metalloorganic chemical vapor deposition
organic compounds
synthetic metals
tetrabutyls
- organometallic polymers**
UF *metalloxiloxane polymers*
metalloxane polymers
RT dendrimers
polycarbosilanes
∞ polymers
polysilanes
- organometallic vapor deposition*
USE **metalloorganic chemical vapor deposition**
- organs**
SN (FOR SPECIFIC ORGANS, ORGAN SUBSTRUCTURES AND ORGAN SYSTEMS SEE ANATOMY)
GS **organs**
. viscera
RT anatomy
cells (biology)
circulatory system
digestive system
gastrointestinal system
- genitourinary system
glands (anatomy)
respiratory system
sense organs
tissue engineering
tissues (biology)
- OR-gates*
USE **gates (circuits)**
- orgel reactor*
USE **organic cooled reactors**
- Orgueil meteorite**
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . carbonaceous meteorites
. carbonaceous chondrites
. **Orgueil meteorite**
. chondrites
. carbonaceous chondrites
. **Orgueil meteorite**
- ORIC cyclotron*
USE **Oak Ridge isochronous cyclotron**
- ∞ **orientation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT alignment
attitude (inclination)
azimuth
bearing (direction)
Bragg angle
collimation
crystallography
directivity
education
fiber orientation
field strength
horizontal orientation
instrument orientation
isotropy
optical properties
orbital position estimation
ply orientation
polarization (spin alignment)
polarization (waves)
position (location)
positioning
sound localization
vertical orientation
vertical perception
visual perception
- orifice flow**
GS fluid flow
. **orifice flow**
RT choked flow
critical flow
∞ flow
gas flow
grazing flow
laminar flow
liquid flow
multiphase flow
orifices
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
unsteady flow
- orifices**
RT annular ducts
apertures
cavities
chokes (fuel systems)
chokes (restrictions)
ducts
flow measurement
- flowmeters
gaps
injectors
∞ nozzles
openings
∞ operations
orifice flow
ports (openings)
spray nozzles
throats
Venturi tubes
- Origin of Plasmas in Earth Neighborhood*
USE **OPEN Project**
- ∞ **origins**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT causes
coordinates
derivation
graphs (charts)
meteorite parent bodies
petrogenesis
- Orion (radio interferometry network)**
DEF An operational radio interferometry observational network.
GS networks
. **Orion (radio interferometry network)**
RT radio interferometers
radio receivers
tracking networks
- Orion aircraft*
USE **P-3 aircraft**
- Orion constellation**
GS constellations
. **Orion constellation**
RT Opik theory
Orion nebula
Sigma Orionis
- Orion nebula**
DEF An H 11 region about 500 pc distant and barely visible to the naked eye in the center of Orion's sword.
GS celestial bodies
. nebulae
. . . **Orion nebula**
hydrogen clouds
. **Orion nebula**
RT astrophysics
Cassiopeia A
Crab nebula
galaxies
Gum nebula
interstellar gas
interstellar matter
irregular galaxies
Magellanic clouds
Milky Way Galaxy
Opik theory
Orion constellation
planetary nebulae
stellar coronas
supernovae
- Orionid meteoroids**
GS celestial bodies
. meteoroid showers
. . . **Orionid meteoroids**
. meteoroids
. . . **Orionid meteoroids**

Orlicz space

RT Aquarid meteoroids

Orlicz space

RT set theory

ornithopter aircraft

USE **research aircraft**

Ornstein-Uhlenbeck process

RT ∞ processes

orographic clouds

USE **cap clouds**

orography

GS geography

. **orography**

geology

. **orography**

RT cones (volcanoes)

geomorphology

isostasy

Mars volcanoes

mountains

peaks (landforms)

volcanoes

volcanology

orries

USE **astronomical models**

Orr-Sommerfeld equations

RT ∞ equations

flow distortion

flow stability

flow theory

quantum mechanics

velocity distribution

orthicons

GS electron tubes

. camera tubes

. . **orthicons**

. . . image orthicons

RT image intensifiers

photocathodes

television cameras

television equipment

ortho hydrogen

GS gases

. **ortho hydrogen**

RT hydrogen

ortho para conversion

GS isomerization

. **ortho para conversion**

RT ∞ conversion

para hydrogen

orthogonal functions

GS analysis (mathematics)

. complex variables

. . **orthogonal functions**

. . . Walsh function

functions (mathematics)

. **orthogonal functions**

. . Walsh function

RT Bessel functions

exponential functions

function space

Hankel functions

hyperbolic functions

Laguerre functions

Legendre functions

linear transformations

Mathieu function

orthogonality

orthonormal functions

quality control

orthogonal multiplexing theory

RT pulse communication

signal transmission

∞ theories

wave interaction

wavelength division multiplexing

orthogonality

UF *Kronecker product*

GS moments

. distribution moments

. . **orthogonality**

statistical analysis

. variance (statistics)

. . multivariate statistical analysis

. . . **orthogonality**

RT covariance

experiment design

factor analysis

orthogonal functions

quality control

orthography

RT handwriting

intelligibility

languages

linguistics

semantics

syntax

words (language)

orthonormal functions

GS functions (mathematics)

. **orthonormal functions**

RT orthogonal functions

wavelet analysis

orthopedics

GS medical science

. **orthopedics**

orthophotography

GS imagery

. photography

. . **orthophotography**

RT aerial photography

color photography

mapping

orthostatic tolerance

RT bed rest

blood pressure

head down tilt

head up tilt

human tolerances

lower body negative pressure

posture

tolerances (physiology)

orthotropic cylinders

RT ∞ cylinders

cylindrical bodies

cylindrical shells

rocket engine cases

orthotropic plates

GS structural members

. plates (structural members)

. . **orthotropic plates**

orthotropic shells

GS shells (structural forms)

. **orthotropic shells**

RT cylindrical shells

metal shells

reinforced shells

shell stability

thin walled shells

orthotropism

RT plates (structural members)

oscillating cylinders

RT ∞ cylinders

cylindrical bodies

cylindrical shells

oscillations

vibration

oscillating flow

GS fluid flow

. unsteady flow

. . **oscillating flow**

RT buffeting

compressibility effects

flow distortion

nonequilibrium flow

small perturbation flow

Strouhal number

surface tension driven convection

oscillation dampers

RT ∞ absorbers

∞ dampers

Maxwell bodies

nonoscillatory action

nonstabilized oscillation

nutration dampers

springs (elastic)

vibration isolators

oscillations

DEF Fluctuations or vibrations on each side of a mean value or position. One oscillation is half an oscillatory cycle, consisting of a fluctuation or vibration in one direction; half a vibration. The variation, usually with time, of the magnitude of a quantity with respect to a specified reference when the magnitude is alternately greater and smaller than the reference. Used for phugoid oscillations.

UF *phugoid oscillations*

GS **oscillations**

. airfoil oscillations

. . wing oscillations

. . . wing rock

. electron oscillations

. harmonic oscillation

. hydrofoil oscillations

. molecular oscillations

. nonoscillatory action

. nonstabilized oscillation

. plasma oscillations

. pressure oscillations

. self oscillation

. Southern Oscillation

. stable oscillations

. stellar oscillations

. . solar oscillations

. transient oscillations

. transverse oscillation

. . H waves

. Madden-Julian Oscillation

. quasi-biennial oscillation

. undamped oscillations

RT amplitudes

Brunt-Vaisala frequency

crystal oscillators

damping

feedback

∞ motion

nonuniformity

orbital resonances (celestial

mechanics)

oscillating cylinders

oscillators

pendulums

periodic variations

perturbation

resonance

resonant vibration

∞ rhythm

spacecraft motion

springs (elastic)

syntony

traveling wave tubes

vibration

vibration tests

oscillator strengths

DEF A quantum mechanical analog of the number of dispersion electrons having a given natural frequency in an atom, used in an equa-

tion for the absorption coefficient of a spectral line.

RT absorption spectra
absorptivity
electron oscillations
electron transitions
line spectra
molecular oscillations
molecular oscillators
oscillators
spectral line width

oscillators

DEF Nonrotating devices for producing alternating current.

UF *wave oscillators*

GS **oscillators**

. autodynes
. crystal oscillators
. . . piezoelectric crystals
. harmonic oscillators
. mechanical oscillators
. . . pendulums
. . . . gyrosopic pendulums
. microwave oscillators
. . . magnetrons
. . . . nigotrons
. molecular oscillators
. relaxation oscillators
. . . phantastrons
. synchronized oscillators
. vacuum tube oscillators
. voltage controlled oscillators

RT

amplifiers
automatic frequency control
cavity resonators
circuits
electron tubes
feedback
feedback amplifiers
flip-flops
frequency pulling
frequency stability
frequency synthesizers
harmonic generators
inverters
microwave tubes
∞ motion
multivibrators
negative feedback
nonoscillatory action
nonstabilized oscillation
oscillations
oscillator strengths
parametrons
periodic variations
perturbation
positive feedback
resonant frequencies
resonators
self excitation
semiconductor devices
signal generators
solid state devices
subharmonic generators
superconducting cavity resonators
transformers
vibration

oscillograms

USE **oscillographs**

oscillographs

UF *oscillograms*

GS measuring instruments

. **oscillographs**
recording instruments
. **oscillographs**

RT

Barkhausen effect
electrical measurement
oscilloscopes
time measurement

oscilloscopes

DEF Instruments for producing visual repre-

sentations of oscillations or changes in an electric current.

RT cathode ray tubes
electronic equipment tests
flying spot scanners
frequency analyzers
oscillographs
sweep circuits
sweep frequency
synchrosopes
video equipment

osculations

USE **double cusps**

Oseen approximation

GS analysis (mathematics)

. numerical analysis
. . . approximation
. . . . **Oseen approximation**
RT incompressible fluids
Navier-Stokes equation
Roshko prediction
Stokes flow
viscous fluids

osmium

GS chemical elements

. **osmium**
. . . osmium isotopes
metals
. refractory metals
. . . **osmium**
. . . . osmium isotopes
. transition metals
. . . **osmium**
. . . . osmium isotopes
refractory materials
. refractory metals
. . . **osmium**
. . . . osmium isotopes

osmium alloys

GS alloys

. heat resistant alloys
. . . refractory metal alloys
. . . . **osmium alloys**
refractory materials
. refractory metal alloys
. . . **osmium alloys**

osmium compounds

RT ∞ chemical compounds

∞ Group 8 compounds
∞ metal compounds

osmium isotopes

GS chemical elements

. nuclides
. . . isotopes
. . . . **osmium isotopes**
. osmium
. . . **osmium isotopes**
metals
. refractory metals
. . . osmium
. . . . **osmium isotopes**
. transition metals
. . . osmium
. . . . **osmium isotopes**
refractory materials
. refractory metals
. . . osmium
. . . . **osmium isotopes**

osmometers

GS measuring instruments

. pressure gages
. . . **osmometers**

osmosis

UF *hypertonía*

osmotic pressure

GS **osmosis**

. reverse osmosis
RT cell membranes (biology)

demineralizing
desalinization
diaphragms (mechanics)
diffusion
extraction
homeostasis
isotonicity
membranes
permeating
pressure
∞ separation
water balance

osmotic pressure

USE **osmosis**

OSO

UF *Orbiting Solar Observatory*

GS artificial satellites

. geophysical satellites

. . . **OSO**

. . . . AOSO

. . . . OSO-1

. . . . OSO-2

. . . . OSO-3

. . . . OSO-4

. . . . OSO-5

. . . . OSO-6

. . . . OSO-7

. . . . OSO-8

. . . . OSO-C

. scientific satellites

. . . astronomical satellites

. . . . **OSO**

. AOSO

. OSO-1

. OSO-2

. OSO-3

. OSO-4

. OSO-5

. OSO-6

. OSO-7

. OSO-8

. OSO-C

observatories

. astronomical observatories

. . . astronomical satellites

. . . . **OSO**

. AOSO

. OSO-1

. OSO-2

. OSO-3

. OSO-4

. OSO-5

. OSO-6

. OSO-7

. OSO-8

. OSO-C

. . . solar observatories

. . . . **OSO**

. AOSO

. OSO-1

. OSO-2

. OSO-3

. OSO-4

. OSO-5

. OSO-6

. OSO-7

. OSO-8

. OSO-C

. . . geophysical observatories

. . . . **OSO**

. AOSO

. OSO-1

. OSO-2

. OSO-3

. OSO-4

. OSO-5

. OSO-6

. OSO-7

. OSO-8

. OSO-C

RT

sun

Thor Delta launch vehicle

OSO-1

UF *OSO-A*

- GS *S-16 satellite*
artificial satellites
. geophysical satellites
.. OSO
... **OSO-1**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-1**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-1**
.. solar observatories
... OSO
... **OSO-1**
. geophysical observatories
.. OSO
... **OSO-1**
- RT Delta launch vehicle
- OSO-2**
UF *OSO-B*
S-17 satellite
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-2**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-2**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-2**
.. solar observatories
... OSO
... **OSO-2**
. geophysical observatories
.. OSO
... **OSO-2**
- RT Delta launch vehicle
- OSO-3**
UF *OSO-E*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-3**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-3**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-3**
.. solar observatories
... OSO
... **OSO-3**
. geophysical observatories
.. OSO
... **OSO-3**
- OSO-4**
UF *OSO-D*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-4**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-4**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-4**
.. solar observatories
... OSO
... **OSO-4**
. geophysical observatories
- .. OSO
... **OSO-4**
RT Delta launch vehicle
- OSO-5**
UF *OSO-F*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-5**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-5**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-5**
.. solar observatories
... OSO
... **OSO-5**
. geophysical observatories
.. OSO
... **OSO-5**
- OSO-6**
UF *OSO-G*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-6**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-6**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-6**
.. solar observatories
... OSO
... **OSO-6**
. geophysical observatories
.. OSO
... **OSO-6**
- OSO-7**
UF *OSO-H*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-7**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-7**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-7**
.. solar observatories
... OSO
... **OSO-7**
. geophysical observatories
.. OSO
... **OSO-7**
- RT dual spin spacecraft
- OSO-8**
DEF One of a series of NASA orbiting solar observatories developed mainly for solar research. Used for OSO-J.
UF *OSO-J*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-8**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-8**
observatories
. astronomical observatories
- .. astronomical satellites
... OSO
... **OSO-8**
.. solar observatories
... OSO
... **OSO-8**
.. geophysical observatories
.. OSO
... **OSO-8**
- OSO-A
USE **OSO-1**
- OSO-B
USE **OSO-2**
- OSO-C**
UF *S-57 satellite*
GS artificial satellites
. geophysical satellites
.. OSO
... **OSO-C**
. scientific satellites
.. astronomical satellites
... OSO
... **OSO-C**
observatories
. astronomical observatories
.. astronomical satellites
... OSO
... **OSO-C**
.. solar observatories
... OSO
... **OSO-C**
. geophysical observatories
.. OSO
... **OSO-C**
- RT Delta launch vehicle
- OSO-D
USE **OSO-4**
- OSO-E
USE **OSO-3**
- OSO-F
USE **OSO-5**
- OSO-G
USE **OSO-6**
- OSO-H
USE **OSO-7**
- OSO-J
USE **OSO-8**
- Osprey aircraft*
USE **V-22 aircraft**
- Osprey missile**
GS missiles
. **Osprey missile**
RT J-85 engine
- OSS-1 payload**
DEF Experiment package flown aboard the Space Shuttle STS-3 in 1982 which was sponsored by the NASA Office of Space Sciences from which the acronym is derived.
GS payloads
. Space Shuttle payloads
.. **OSS-1 payload**
RT exploration
Get Away Specials (STS)
investigation
NASA programs
space transportation system
spaceborne experiments
- OSTA-1 payload**
SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
DEF Spaceborne experiments flown aboard the Space Shuttle STS-2 in 1981 which was sponsored by the NASA Office of Space &

Terrestrial Applications from which the acronym is derived. Used for Office of Space & Terrestrial Applicable Payloads.

- UF *Office of Space & Terrestrial Applicable Payloads*
- GS payloads
 - . Space Shuttle payloads
 - . . . **OSTA-1 payload**
- RT space transportation system
 - spaceborne experiments

OSTA-2 payload

- SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
- UF *Office of Space & Terrestrial Applicable Payloads*
- GS payloads
 - . **OSTA-2 payload**
- RT space transportation system
 - SpaceLab

OSTA-3 payload

SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 DEF Spaceborne systems flown aboard the Space Shuttle STS-17, sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. The systems included the feature identification and location experiment-1 (FILE-1), the measurement of atmospheric pollution from satellite (MAPS), the imaging camera-B, and the large format camera/attitude reference system (LFC/ARS). Used for Office of Space & Terrestrial Applicable Payloads.

- UF *Office of Space & Terrestrial Applicable Payloads*
- GS payloads
 - . Space Shuttle payloads
 - . . . **OSTA-3 payload**
- RT remote sensing
 - space transportation system
 - spaceborne experiments
 - spacecraft equipment

osteoblasts

(added June 2001)

DEF Bone-forming cells that secrete an extracellular matrix. Hydroxyapatite crystals are then deposited into the matrix to form bone.

- GS cells (biology)
 - . **osteoblasts**
- RT bone demineralization
 - bone mineral content
 - bones
 - cytogenesis
 - fibroblasts
 - osteoporosis

osteoporosis

DEF A medical condition whose chief symptom is the loss of internal bone mass.

- GS diseases
 - . **osteoporosis**
- RT bone demineralization
 - bone mineral content
 - bones
 - calcium metabolism
 - metabolism
 - osteoblasts

Ostwald coarsening

USE **Ostwald ripening**

Ostwald ripening

(added March 1994)

- UF *Ostwald coarsening*
- RT coarseness
 - crystallization
 - grain size
 - microstructure
 - phase transformations
 - precipitation (chemistry)
 - solid solutions

solidification

OT-2

USE **ESSA 2 satellite**

OT-3

USE **ESSA 1 satellite**

OTF

USE **optical transfer function**

otolaryngology

- GS medical science
 - . **otolaryngology**
- RT ear

otolith organs

DEF Structures of the inner ear (utricle and saccule) which respond to linear acceleration and tilting.

- GS anatomy
 - . sense organs
 - . . ear
 - . . . labyrinth
 - **otolith organs**
 - gravireceptors
 - **otolith organs**
 - receptors (physiology)
 - gravireceptors
 - **otolith organs**
- RT oculogravic illusions
 - Orbiting Frog Otolith
 - semicircular canals
 - vertical perception

otology

- GS medical science
 - . **otology**
- RT ear

OTS (ESA)

- UF *Orbital Test Satellite (ESA)*
- GS artificial satellites
 - . ESA satellites
 - . . **OTS (ESA)**
 - . . . ESA spacecraft
 - . . . ESA satellites
 - . . . **OTS (ESA)**
- RT European Communications Satellite
 - European space programs

Otto cycle

- GS cycles
 - . thermodynamic cycles
 - . . **Otto cycle**
- RT Rankine cycle

OTV

USE **orbit transfer vehicles**

outcrops

- RT folds (geology)
 - formations
 - geology

Outer Banks (NC)

- GS landforms
 - . barriers (landforms)
 - . . **Outer Banks (NC)**
- RT Atlantic Ocean
 - islands
 - North Carolina

outer planet missions

USE **Grand Tours**

outer planet spacecraft

USE **outer planets explorers**

outer planets explorers

- UF *outer planet spacecraft*
 - planetary explorer
- RT Delta launch vehicle
 - Explorer satellites
 - flyby missions

Grand Tours
 interplanetary flight
 Mars probes
 ∞ spacecraft
 TOPS (spacecraft)
 Venus probes

outer radiation belt

- GS particles
 - . charged particles
 - . . magnetically trapped particles
 - . . . radiation belts
 - **outer radiation belt**
 - corpuscular radiation
 - radiation belts
 - **outer radiation belt**
 - trapped particles
 - magnetically trapped particles
 - radiation belts
 - **outer radiation belt**
- RT artificial radiation belts
 - inner radiation belt
 - proton belts
- ∞ radiation

outer space treaty

- GS policies
 - . foreign policy
 - . . international relations
 - . . . international cooperation
 - **outer space treaty**
- RT conventions
 - international law
 - research and development
 - resource allocation
 - space law

outgassing

DEF The evolution of gas from a material in a vacuum.

- RT degassing
 - desorption
 - evolution (liberation)
 - gas evolution
 - purging
 - residual gas
 - transpiration
 - vacuum
 - vacuum pumps

outlet flow

- GS fluid flow
 - . **outlet flow**
- RT cascade flow
 - channel flow
- ∞ flow
 - flow characteristics
 - nozzle flow

outlets

- GS **outlets**
 - . vents
- RT apertures
 - cavities
- ∞ discharge
 - doors
 - ducts
 - egress
 - exhaust nozzles
 - exhaust systems
 - gates (openings)
 - ∞ nozzles
 - openings
 - output
 - pipe nozzles
 - plugs
 - ports (openings)
 - ∞ terminals

outlets (geology)

USE **estuaries**

outliers (landforms)

DEF Areas or groups of rocks surrounded by rocks of older age. Used for klippen.

UF *klippen*

outliers (statistics)

GS landforms
. **outliers (landforms)**
RT formations
rocks
soil erosion

outliers (statistics)

DEF In sets of data values so far removed from other values in the distribution that their presence cannot be attributed to the random combination of change causes.

RT mathematical models
probability theory
statistical analysis
statistical distributions
statistical tests

output

DEF The yield or product of an activity furnished by man, machine, or system. Used for dummy loads.

UF *dummy loads*

GS **output**
. cardiac output
. . heart minute volume
. . stroke volume
. laser outputs
. maser outputs

RT ∞ capacity
catchers
computer systems performance
delivery
efflux
input
outlets
∞ performance
power conditioning
printouts
∞ production
products
readout
supplying
tracking problem
transfer functions
transmission
yield

OV-1 aircraft

UF *AO-1 aircraft*
Grumman OV-1C aircraft
Mohawk aircraft

GS Grumman aircraft
. **OV-1 aircraft**
jet aircraft
. turboprop aircraft
. . **OV-1 aircraft**
monoplanes
. **OV-1 aircraft**
observation aircraft
. **OV-1 aircraft**

RT ∞ aircraft

OV-1 satellites

GS artificial satellites
. scientific satellites
. . **OV-1 satellites**
RT gravity gradient satellites
spin stabilization

OV-2 satellites

GS artificial satellites
. scientific satellites
. . **OV-2 satellites**
RT gravity gradient satellites
spin stabilization

OV-3 satellites

GS artificial satellites
. scientific satellites
. . **OV-3 satellites**
RT gravity gradient satellites
spin stabilization

OV-4 satellites

GS artificial satellites
. scientific satellites

. . **OV-4 satellites**
RT gravity gradient satellites
spin stabilization

OV-5 satellites

GS artificial satellites
. scientific satellites
. . **OV-5 satellites**
RT gravity gradient satellites
spin stabilization

OV-10 aircraft

UF *NA-300 aircraft*
GS attack aircraft
. COIN aircraft
. . **OV-10 aircraft**
jet aircraft
. turboprop aircraft
. . **OV-10 aircraft**
monoplanes
. **OV-10 aircraft**
North American aircraft
. **OV-10 aircraft**
observation aircraft
. **OV-10 aircraft**
RT ∞ aircraft

ovaries

GS anatomy
. genitourinary system
. . reproductive systems
. . . sex glands
. . . . gonads
. **ovaries**
. glands (anatomy)
. . endocrine glands
. . . gonads
. . . . **ovaries**
. . sex glands
. . . gonads
. . . . **ovaries**
RT eggs
menstruation

ovens

GS heating equipment
. **ovens**
RT baking
dry heat
furnaces
waste energy utilization

overcast

USE **cloud cover**

overcompression

USE **overconsolidation**

overconsolidation

UF *overcompression*
RT consolidation
foundations

Overhauser effect

DEF In atomic physics, a radio frequency field applied to a substance in an external magnetic field, whose nuclei have spin 1/2 and which has unpaired electrons at the electron spin resonance frequency. This results in polarization of the nuclei as great as if the nuclei had the much larger electron magnetic moment.

RT ∞ effects
magnetic resonance
nuclear spin
∞ polarization
resonance

overpressure

DEF (1) The pressure resulting from the blast wave of an explosion. It is referred to as positive when it exceeds atmospheric pressure and negative during the passage of the wave when resulting pressures are less than atmospheric pressure. (2) The transient pressure, usually expressed in pounds per square inch, exceeding existing atmospheric pressure mani-

fested in the blast wave from an explosion. During some period of the passage of the wave past a point, the overpressure is negative.

GS pressure
. **overpressure**
RT blast loads
dynamic pressure

over-the-horizon radar

GS radar
. search radar
. . **over-the-horizon radar**
RT early warning systems
moving target indicators
optical radar
radar detection
radar range

overtones

USE **harmonics**

overvoltage

RT circuit protection
decomposition
electric potential
Geiger counters
open circuit voltage
polarization (charge separation)
surges

oxalates

GS **oxalates**
. cobalt oxalates
RT oxalic acid
∞ oxygen compounds

oxalic acid

GS acids
. carboxylic acids
. . **oxalic acid**
organic compounds
. carboxylic acids
. . **oxalic acid**
RT oxalates

oxamic acids

GS acids
. carboxylic acids
. . **oxamic acids**
nitrogen compounds
. amides
. . **oxamic acids**
organic compounds
. carboxylic acids
. . **oxamic acids**

oxazole

DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen and one oxygen atom.

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . **oxazole**

oxetane polymers

(added August 1994)

RT alkenes
binders (materials)
carbonyl compounds
monomers
photochemical reactions
∞ polymers
propellants

oxidase

GS acids
. **oxidase**
biopolymers
. proteins
. . enzymes
. . . **oxidase**
organic compounds
. proteins
. . enzymes

. . . oxidase

oxidation

DEF A reaction in which electrons are removed from a reactant. Sometimes, more specifically the combination of a reactant with oxygen.

- GS chemical reactions
 - . **oxidation**
 - . . electrochemical oxidation
 - . . photooxidation
 - . . rusting
- RT association reactions
 - charring
 - chemical attack
 - combustion
 - combustion chemistry
 - corrosion
 - degradation
 - dehydrogenation
 - dopa
 - electron transfer
 - epoxidation
 - erosive burning
 - fuel combustion
 - hot corrosion
 - hydrocarbon combustion
 - metal combustion
 - oxidizers
 - oxygenation
 - passivity
 - reduction (chemistry)
 - roasting
 - thermal resistance
 - turbulent combustion

oxidation resistance

- GS corrosion resistance
 - . **oxidation resistance**
- RT passivity
- ∞ resistance
 - rusting
 - siliconizing
 - thermal resistance

oxidation-reduction reactions

DEF An oxidizing chemical change, where an element's positive valence is increased (electron loss), accompanied by a simultaneous reduction of an associated element (electron gain).

- GS chemical reactions
 - . **oxidation-reduction reactions**
- RT electrochemistry
 - reduction (chemistry)

oxide dispersion strengthening

(added February 1994)

- GS dispersion strengthening
 - . **oxide dispersion strengthening**
- RT alloys
 - hardening (materials)
 - heat resistant alloys

oxide films

- RT cathodic coatings
- ∞ films
 - metal oxides
 - metal surfaces
 - surface layers
 - thin films

oxides

- GS chalcogenides
 - . **oxides**
 - . . alkoxides
 - . . anhydrides
 - . . . peroxides
 - inorganic peroxides
 - hydrogen peroxide
 - organic peroxides
 - potassium peroxides
 - sodium peroxides
 - . . boron oxides
 - . . brucite
 - . . carbon monoxide

- . . carbon suboxides
- . . chlorine oxides
- . . dioxides
 - . . . carbon dioxide
 - . . . flint
 - . . . hydrogen peroxide
 - . . . silicon dioxide
 - quartz
 - coesite
 - stishovite
 - sulfur dioxides
 - germanium oxides
 - . . heavy water
 - . . indium oxides
 - . . metal oxides
 - . . . alkaline earth oxides
 - barium oxides
 - beryllium oxides
 - alexandrite
 - calcium oxides
 - akermanite
 - periclase
 - aluminum oxides
 - alexandrite
 - sapphire
 - bismuth oxides
 - cerium oxides
 - cesium oxides
 - chromium oxides
 - cobalt oxides
 - copper oxides
 - gallium oxides
 - hafnium oxides
 - iron oxides
 - hematite
 - ilmenite
 - magnetite
 - lanthanum oxides
 - lead oxides
 - lithium oxides
 - manganese oxides
 - Hopcalite (trademark)
 - mercury oxides
 - mixed oxides
 - BSCCO superconductors
 - YBCO superconductors
 - molybdenum oxides
 - nickel oxides
 - niobium oxides
 - platinum oxides
 - plutonium oxides
 - potassium oxides
 - scandium oxides
 - silver oxides
 - sodium peroxides
 - strontium oxides
 - tantalum oxides
 - thorium oxides
 - tin oxides
 - titanium oxides
 - anatase
 - ilmenite
 - rutile
 - tungsten oxides
 - scheelite
 - uranium oxides
 - vanadium oxides
 - yttrium oxides
 - zinc oxides
 - zirconium oxides
 - yttria-stabilized zirconia
 - nitrogen oxides
 - nitric oxide
 - nitrogen dioxide
 - nitrogen tetroxide
 - nitrous oxides
 - phosphorus oxides
 - pyroxenes
 - enstatite
 - selenium oxides
 - silicon oxides
 - muscovite
 - nephelite
 - silicon dioxide
 - quartz

- coesite
- stishovite
- spodumene
- sulfur oxides
 - sulfur dioxides
- RT anodic coatings
 - cathodic coatings
 - ethylene oxide
 - euxenite
 - insulation
 - metal coatings
 - niobates
 - nonflammable materials
- ∞ oxygen compounds
 - solid oxide fuel cells
 - water

oxidizers

DEF Specifically, substances (not necessarily containing oxygen) that support the combustion of a fuel or propellant.

- GS **oxidizers**
 - . high energy oxidizers
 - . liquid oxidizers
 - . liquid oxygen
 - . photochemical oxidants
 - . rocket oxidizers
 - . . FLOX
 - . . TAGN
- RT ∞ agents
 - air pollution
 - fluorine
 - fuels
 - nitramine propellants
 - oxidation

oximetry

- RT biochemical oxygen demand
 - blood
 - hyperoxia
 - hypoxia
 - oxygen consumption

oxosilanes

USE **polysilanes**

oxyacetylene

- GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkynes
 - **oxyacetylene**
- RT acetylene
 - detonable gas mixtures
- ∞ oxygen compounds

oxyalkylation

USE **alkylation**

oxyfluorides

- GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **oxyfluorides**
 - . . halides
 - . . . fluorides
 - **oxyfluorides**
- RT ∞ oxygen compounds

oxygen

- GS chemical elements
 - . **oxygen**
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
 - gases
 - . **oxygen**
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
- RT Chlorella
 - high pressure oxygen
 - oxygen atoms
 - oxygen ions

- oxygen plasma
 - ozone
 - reaction bonding
 - Schumann-Runge bands
 - sialon
 - oxygen 17**
 - DEF An isotope of oxygen.
 - GS chemical elements
 - . nuclides
 - . . . isotopes
 - oxygen isotopes
 - **oxygen 17**
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 17**
 - . gases
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 17**
 - oxygen 18**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . oxygen isotopes
 - **oxygen 18**
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 18**
 - . gases
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 18**
 - oxygen afterglow**
 - GS afterglows
 - . **oxygen afterglow**
 - oxygen analyzers**
 - UF *oxygen detectors*
 - GS measuring instruments
 - . **oxygen analyzers**
 - RT gas analysis
 - oxygen atoms**
 - GS atoms
 - . **oxygen atoms**
 - RT oxygen
 - oxygen breathing**
 - RT ∞ breathing
 - ∞ **oxygen compounds**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT acids
 - aluminates
 - arsenates
 - borates
 - bromates
 - carbohydrates
 - carbon suboxides
 - carbonates
 - ∞ chemical compounds
 - chlorates
 - chromates
 - germanium oxides
 - niobates
 - oxalates
 - oxides
 - oxyacetylene
 - oxyfluorides
 - oxygen fluorides
 - ozonates
 - ozone fluoride
 - ozonides
 - stannates
- oxygen consumption**
 - GS consumption
 - . **oxygen consumption**
 - RT biochemical oxygen demand
 - hyperoxia
 - hypoxia
 - metabolism
- oximetry
- oxygen deficiency*
 - USE **hypoxia**
- oxygen detectors*
 - USE **oxygen analyzers**
- oxygen fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **oxygen fluorides**
 - . halides
 - . . fluorides
 - . . . **oxygen fluorides**
 - RT ∞ oxygen compounds
- oxygen ions**
 - GS ions
 - . **oxygen ions**
 - RT free radicals
 - negative ions
 - oxygen
- oxygen isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **oxygen isotopes**
 - oxygen 17
 - oxygen 18
 - . oxygen
 - . . **oxygen isotopes**
 - . . . oxygen 17
 - . . . oxygen 18
 - . gases
 - . oxygen
 - . . **oxygen isotopes**
 - . . . oxygen 17
 - . . . oxygen 18
- oxygen masks**
 - GS breathing apparatus
 - . **oxygen masks**
 - masks
 - . **oxygen masks**
 - oxygen supply equipment
 - . **oxygen masks**
 - RT high altitude breathing
 - life support systems
 - portable life support systems
- oxygen metabolism**
 - GS metabolism
 - . **oxygen metabolism**
 - RT hydrogen metabolism
 - respiration
- oxygen plasma**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **oxygen plasma**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **oxygen plasma**
 - RT argon plasma
 - helium plasma
 - hydrogen plasma
 - oxygen
- oxygen production**
 - RT closed ecological systems
 - gas exchange
 - in situ resource utilization
- oxygen recombination**
 - GS chemical reactions
 - . atomic recombination
 - . . **oxygen recombination**
 - recombination reactions
 - . atomic recombination
 - . . **oxygen recombination**
- ionization
- oxygen regulators**
 - GS control equipment
 - . regulators
 - . . **oxygen regulators**
 - RT flow regulators
 - pressure regulators
- oxygen spectra**
 - GS spectra
 - . **oxygen spectra**
 - RT airglow
 - Herzberg bands
 - molecular spectra
 - solar spectra
- oxygen supply equipment**
 - UF *oxygen systems*
 - GS **oxygen supply equipment**
 - . oxygen masks
 - RT AEPS
 - air conditioning equipment
 - breathing apparatus
 - cabin atmospheres
 - compressed air
 - controlled atmospheres
 - emergency life sustaining systems
 - life support systems
 - pressurized cabins
 - survival equipment
- oxygen systems*
 - USE **oxygen supply equipment**
- oxygen tension**
 - GS pressure
 - . partial pressure
 - . . **oxygen tension**
 - . . . hypoxemia
- oxygen toxicity*
 - USE **hyperoxia**
- oxygenation**
 - GS chemical reactions
 - . **oxygenation**
 - RT aeration
 - dissolved gases
 - oxidation
- oxygen-hydrocarbon rocket engines**
 - (added May 1989)
 - UF *liquid oxygen hydrocarbon rocket engines*
 - LOX-hydrocarbon rocket engines*
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **oxygen-hydrocarbon rocket engines**
 - RT booster rocket engines
 - liquid oxygen
 - reusable rocket engines
 - spacecraft propulsion
- oxyhalides**
 - GS halogen compounds
 - . halides
 - . . **oxyhalides**
- oxyhemoglobin**
 - GS biopolymers
 - . proteins
 - . . hemoglobin
 - . . . **oxyhemoglobin**
 - organic compounds
 - . proteins
 - . . hemoglobin
 - . . . **oxyhemoglobin**
 - organometallic compounds
 - . hemoglobin
 - . . **oxyhemoglobin**

RT erythrocytes

oxynitrides

DEF Base for a broad field of nitrogen ceramics utilizing silicon, aluminum, and other elements to produce high temperature refractory materials.

GS nitrogen compounds
 . nitrides
 . . **oxynitrides**
 RT ∞ chemical compounds
 ∞ Group 5A compounds

ozonates

RT ∞ oxygen compounds
 ozone

ozone

DEF A very active form of oxygen that may be produced by the corona, arcing, or ultra-violet rays.

GS gases
 . **ozone**
 RT Halogen Occultation Experiment
 oxygen
 ozonates
 ozone fluoride
 ozonides
 ozonometry
 photochemical oxidants
 quasi-biennial oscillation
 SAGE satellite
 Solar Mesosphere Explorer

volatile organic compounds

ozone depletion

(added December 1991)

UF *ozone holes*
 GS depletion
 . **ozone depletion**
 RT air pollution
 Antarctic regions
 Arctic regions
 atmospheric composition
 chlorofluorocarbons
 chlorofluoromethane
 ozonometry
 ozonosphere
 Total Ozone Mapping Spectrometer

ozone fluoride

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **ozone fluoride**
 . halides
 . . fluorides
 . . . **ozone fluoride**
 RT ∞ oxygen compounds
 ozone

ozone holes

USE **ozone depletion**

ozone layer

USE **ozonosphere**

ozonides

RT ∞ oxygen compounds

ozone

ozonometry

GS chemical tests
 . chemical analysis
 . . gas analysis
 . . . **ozonometry**
 RT ozone
 ozone depletion
 Total Ozone Mapping Spectrometer

ozonosphere

DEF The general stratum of the upper atmosphere in which there is an appreciable ozone concentration and in which ozone plays an important part in the radiation balance of the atmosphere. This region lies roughly between 10 and 50 kilometers, with maximum ozone concentration at about 20 to 25 kilometers. Used for ozone layer.

UF *ozone layer*
 GS Earth atmosphere
 . middle atmosphere
 . . stratosphere
 . . . **ozonosphere**
 RT chemosphere
 chlorofluorocarbons
 homosphere
 ozone depletion
 Umkehr effect
 upper atmosphere

P

P band

- SN (225 TO 390 MHZ)
- GS frequencies
 - . radio frequencies
 - . . . microwave frequencies
 - **P band**
 - . . . ultrahigh frequencies
 - **P band**
 - . . . very high frequencies
 - **P band**

P waves

- GS elastic waves
 - . **P waves**
- RT compressible fluids
 - compression waves
 - crustal fractures
 - dilatational waves
- S waves
 - seismic waves
 - surface waves

P-1 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - **P-1 engine**
 - . . solid propellant rocket engines
 - **P-1 engine**

P-3 aircraft

- UF *Orion aircraft*
- P3V aircraft*
- GS antisubmarine warfare aircraft
 - . **P-3 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **P-3 aircraft**
 - Lockheed aircraft
 - . **P-3 aircraft**
 - monoplanes
 - . **P-3 aircraft**
 - RT ∞ aircraft
 - turboprop engines

P3V aircraft

- USE **P-3 aircraft**

P-51 aircraft

- UF *Mustang aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . **P-51 aircraft**
 - monoplanes
 - . **P-51 aircraft**
 - North American aircraft
 - . **P-51 aircraft**
 - single engine aircraft
 - . **P-51 aircraft**
 - RT ∞ aircraft

P78-2 satellite

- USE **SCATHA satellite**

P-84 aircraft

- USE **jet provost aircraft**

P-160 aircraft

- UF *ME P-160 aircraft*
- Messerschmitt ME P-160 aircraft*
- GS commercial aircraft
 - . **P-160 aircraft**
 - passenger aircraft
 - . **P-160 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **P-160 aircraft**

RT ∞ aircraft

P-166 aircraft

- UF *Piaggio P-166 aircraft*
- GS monoplanes
 - . **P-166 aircraft**
 - passenger aircraft
 - . **P-166 aircraft**
 - Piaggio aircraft*
 - . **P-166 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **P-166 aircraft**
 - RT ∞ aircraft

P-308 aircraft

- UF *ME P-308 aircraft*
- Messerschmitt ME P-308 aircraft*
- GS attack aircraft
 - . **P-308 aircraft**
 - jet aircraft
 - . **P-308 aircraft**
 - monoplanes
 - . **P-308 aircraft**
 - RT ∞ aircraft

P-531 helicopter

- UF *Scout helicopter*
- Westland P-531 helicopter*
- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **P-531 helicopter**
 - Westland aircraft
 - . **P-531 helicopter**
 - RT antisubmarine warfare aircraft
 - passenger aircraft

P-1127 aircraft

- UF *Hawker P-1127 aircraft*
- Kestrel aircraft*
- VZ-12 aircraft*
- XV-6A aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . **P-1127 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1127 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **P-1127 aircraft**
 - monoplanes
 - . **P-1127 aircraft**
 - single engine aircraft
 - . **P-1127 aircraft**
 - V/STOL aircraft
 - . **P-1127 aircraft**
 - RT ∞ aircraft
 - Bristol-Siddeley BS 53 engine
 - Harrier aircraft
 - turbofan engines

P-1154 aircraft

- UF *Hawker P-1154 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . **P-1154 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1154 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **P-1154 aircraft**
 - monoplanes
 - . **P-1154 aircraft**
 - single engine aircraft
 - . **P-1154 aircraft**
 - supersonic aircraft
 - . **P-1154 aircraft**
 - V/STOL aircraft
 - . **P-1154 aircraft**

RT ∞ aircraft

turbofan engines

P. A. C. M. telemetry

- SN (PULSE AMPLITUDE CODE MODULATION)
- GS telecommunication
 - . telemetry
 - . . P. A. C. M. telemetry transmission
 - . signal transmission
 - . . telemetry
 - . . . P. A. C. M. telemetry
 - RT amplitude modulation
 - communication equipment
 - differential pulse code modulation
 - modulation
 - pulse amplitude modulation
 - pulse code modulation

PA-34 Seneca aircraft

- UF *Seneca aircraft*
- GS light aircraft
 - . Piper aircraft
 - . . **PA-34 Seneca aircraft**
 - RT ∞ aircraft
 - ATLIT project
 - GAW-1 airfoil
 - General Dynamics aircraft

PACE

- USE **Physics and Chemistry Experiment in Space**

Pacific islands

- GS landforms
 - . islands
 - . . **Pacific islands**
 - . . . Guam
 - . . . Japan
 - . . . Johnston Island
 - . . . Kurile Islands
 - . . . New Guinea (island)
 - . . . New Zealand
 - . . . Philippines
 - . . . Samoa

Pacific Northwest (US)

- GS regions
 - . **Pacific Northwest (US)**
- RT Canada
 - United States

Pacific Ocean

- GS oceans
 - . **Pacific Ocean**
- RT Bering Sea
 - coastal ranges (CA)
 - el Nino
 - Gulf of Alaska
 - Gulf of California (Mexico)
 - Indonesia
 - mid-ocean ridges
 - Monterey Bay (CA)
 - San Francisco Bay (CA)
 - Sea of Okhotsk
 - Southern California

packages

DEF Any assemblies or apparatus, complete in themselves or practically so, identifiable as units and readily available for use or installation.

GS packages

- . instrument packages
- . . Apollo Lunar Surface Experiments Package
- . . EASEP
- . . EREP
- RT bags
 - boxes (containers)

bundles
cartridges
cases (containers)
∞ containers
∞ instruments
packaging

packaging

DEF (1) The technique of preparing goods for distribution; (2) The design criteria, processes, and procedures used to protect materials from deterioration and damage from the time manufacturing is completed until use or disposal; (3) The processes and procedures used to protect an item in a unit package.

GS **packaging**
. electronic packaging
RT ∞ containers
corrosion prevention
encapsulating
enclosure
hauling
hoppers
inhibitors
marking
materials handling
packages
∞ packing
preserving
sealers
spiral wrapping
∞ storage
transportation
vermiculite
weatherproofing
∞ wrap

packet switching

DEF Switching circuit system for multiple access time division data transmission.

GS switching
. **packet switching**
RT asynchronous transfer mode
beam switching
communication networks
data transmission
interruption
microwave switching
multiple access
network control
packet transmission
packets (communication)
protocol (computers)
radio transmission
sequencing
signal transmission
switching circuits
switching theory
telecommunication
time division multiple access

packet transmission

DEF Transmission of bursts of digital data.

GS telecommunication
. **packet transmission**
. . Aloha system
transmission
. signal transmission
. . data transmission
. . . **packet transmission**
. . . . Aloha system
RT asynchronous transfer mode
automatic repeat request
carrier sense multiple access
channel capacity
message processing
packet switching
packets (communication)
satellite communication
spacecraft communication
transmission efficiency

packets (communication)

DEF Digital data messages which are almost always preceded by headers (containing address information and other control characters)

and followed by control characters which signify the end of a message.

UF *bursts (communication)*
RT Aloha system
communication networks
data transmission
packet switching
packet transmission
transmission efficiency
wave packets
wide area networks

∞ **packing**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT packaging
packing density
packings (seals)
sealing

packing density

GS density (number/volume)
. **packing density**
RT Bravais crystals
crystal structure
crystals
∞ packing
void ratio

packings (seals)

GS seals (stoppers)
. **packings (seals)**
RT bearings
glands (seals)
labyrinth seals
∞ packing
pumps
sealers
sealing
shafts (machine elements)
valves

∞ **pad**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cushions
foundations
launching pads

paddles

RT folding structures
mixers
solar generators
turbomachine blades

Pade approximation

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **Pade approximation**
. numerical analysis
. . approximation
. . . **Pade approximation**
. real variables
. . series (mathematics)
. . . **Pade approximation**

PAGEOS satellite

GS artificial satellites
. geodetic satellites
. . **PAGEOS satellite**
. passive satellites
. . **PAGEOS satellite**
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite

PAH

USE **polycyclic aromatic hydrocarbons**

pain

GS perception
. sensory perception

. . **pain**
RT analgesia

pain sensitivity

GS perception
. sensory perception
. . **pain sensitivity**
sensitivity
. **pain sensitivity**

paint removal

(added August 1995)
UF *paint stripping*
GS removal
. **paint removal**
RT abrasives
cleaning
solvents
∞ stripping
surface treatment

paint stripping

USE **paint removal**

paints

GS coatings
. **paints**
. . pressure sensitive paints
. . temperature sensitive paints
RT fillers
finishes
metal coatings
pigments
primers (coatings)
protective coatings
rubber coatings
sealers
sprayed coatings
turpentine
varnishes

pair production

GS particle production
. **pair production**
RT electromagnetic absorption
electron emission
electron photon cascades
electron-positron pairs
emission
high energy interactions
nuclear reactions
photoproduction
positron annihilation
positrons

Pakistan

GS nations
. **Pakistan**
RT Asia
Bangladesh
Himalayas
Pakistan space program

Pakistan space program

(added November 1989)
GS programs
. space programs
. . **Pakistan space program**
RT Pakistan

Palapa 2 satellite

UF *Palapa B satellite*
GS artificial satellites
. communication satellites
. . Palapa satellites
. . . **Palapa 2 satellite**
RT Indonesian space program
international cooperation

Palapa B satellite

USE **Palapa 2 satellite**

Palapa satellites

DEF Satellites launched by the US for the Indonesian government for their domestic communications network.

paleobiology

- GS artificial satellites
 - . communication satellites
 - . . . **Palapa satellites**
 - . . . Palapa 2 satellite
- RT Indonesian space program
- international cooperation

paleobiology

- DEF The study of life and organisms that existed in the geologic past.
- RT archaeobacteria
 - ∞ biology
 - Cretaceous-Tertiary boundary
 - fossils
 - geochemistry
 - geochronology
 - paleontology

paleoclimatology

- DEF The study of climates in the geologic past, involving fossil, glacial, isotropic, or other data.
- GS climatology
 - . **paleoclimatology**
- RT climate
- climate change
- paleontology
- primitive Earth atmosphere

paleomagnetism

- UF *archaeomagnetism*
- GS magnetic fields
 - . **paleomagnetism**
 - magnetic properties
 - . **paleomagnetism**
- RT archaeology
- cones (volcanoes)
- continental drift
- geology
- geomagnetism
- geophysics
- magnetostratigraphy
- Mars volcanoes
- remanence
- rocks
- volcanoes
- volcanology

paleontology

- RT archaeobacteria
- Cambrian Period
- Cenozoic Era
- Cretaceous Period
- Cretaceous-Tertiary boundary
- formations
- fossils
- geochemistry
- geochronology
- geological surveys
- geology
- histories
- Mesozoic Era
- paleobiology
- paleoclimatology
- Paleozoic Era
- Precambrian period
- protobiology
- stratigraphy
- Tertiary Period

Paleozoic Era

- (*added June 1989*)
- DEF An era of geologic time, from the end of the Precambrian Period to the beginning of the Mesozoic Era, or about 570 to about 225 million years ago.
- GS **Paleozoic Era**
 - . Cambrian Period
- RT geochronology
- Mesozoic Era
- paleontology
- Precambrian period

palladium

- GS chemical elements
 - . **palladium**

- metals
- . transition metals
- . . . **palladium**
- RT palladium isotopes

palladium alloys

- GS alloys
 - . **palladium alloys**

palladium compounds

- RT ∞ chemical compounds
- metals
- transition metals

palladium isotopes

- GS chemical elements
 - . nuclides
 - . . . isotopes
 - . . . **palladium isotopes**
- RT palladium

Palmar sweat index

- RT perspiration
- stress (physiology)
- stress (psychology)

Palmgren-Miner rule

- UF *Miner rule*
- GS rules
 - . **Palmgren-Miner rule**
- RT fatigue life

palmitic acid

- GS acids
 - . carboxylic acids
 - . . fatty acids
 - . . . **palmitic acid**
- organic compounds
 - . carboxylic acids
 - . . fatty acids
 - . . . **palmitic acid**
- RT fats

Palo Verde Valley (CA)

- GS valleys
 - . **Palo Verde Valley (CA)**
- RT California
- deserts

PAM (modulation)

- USE **pulse amplitude modulation**

pampas

- DEF A vast treeless grassy plain of temperate regions, especially as used in Argentina and adjacent parts of Uruguay. It is comparable to the prairies of North America, the steppes of the Eurasia, and the veld of South Africa.
- GS land
 - . plains
 - . . **pampas**
- landforms
 - . plains
 - . . **pampas**

PAN (polyacrylonitrile)

- USE **polyacrylonitrile**

Panama

- GS nations
 - . **Panama**
- RT canals
- Central America

Panama Canal Zone

- GS regions
 - . **Panama Canal Zone**
- RT Caribbean Sea
- Central America
- United States

pancreas

- GS anatomy
 - . digestive system
 - . . **pancreas**

- . glands (anatomy)
- . . endocrine glands
- . . . **pancreas**
- RT diabetes mellitus
- gastrointestinal system
- trypsin

Pandora

- (*added July 1995*)
- DEF A natural satellite of Saturn, orbiting at a mean distance of 141,700 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Pandora**
- RT Saturn (planet)

panel flutter

- GS vibration
 - . structural vibration
 - . . flutter
 - . . . **panel flutter**
 - . . self induced vibration
 - . . . **panel flutter**
- RT aerodynamic noise
- aeroelasticity
- bending vibration

panel method (fluid dynamics)

- DEF Technique for analyzing and predicting the properties and characteristics of fluid flow; sometimes called the finite element method.
- GS procedures
 - . **panel method (fluid dynamics)**
- RT Bernoulli theorem
- boundary layers
- computational fluid dynamics
- finite element method
- ∞ flow
- flow theory
- fluid dynamics
- flux vector splitting
- gas-solid interactions
- ∞ methodology
- turbulence
- vortex lattice method

panels

- SN (EXCLUDES GROUPS OF PEOPLE)
- GS **panels**
 - . curved panels
 - . rectangular panels
 - . wing panels
- RT baffles
- ceilings (architecture)
- ∞ construction materials
- dividers
- flat plates
- ∞ plates
- ∞ sheets
- shielding
- thin plates
- walls

panic

- RT emotional factors
- emotions
- fear
- human behavior

panoramic cameras

- GS optical equipment
 - . cameras
 - . . **panoramic cameras**
- photographic equipment
 - . cameras
 - . . **panoramic cameras**
- RT camera shutters
- focusing
- lenses
- photography
- wide angle lenses

panoramic scanning

- GS scanning
 - . **panoramic scanning**

- RT conical scanning
frequency scanning
multispectral band scanners
radar scanning
scanners
searching
surveillance
- panspermia**
DEF The theory that holds that reproductive bodies of living organisms exist throughout the universe and develop wherever the environment is favorable.
RT abiogenesis
aerospace environments
bacteria
biological evolution
exobiology
extraterrestrial life
fungi
- PANT program**
DEF The passive nosetip technology (PANT) program is an investigation of flow phenomena over reentry vehicle nosetips by the Air Force. Used for ablative nosetips and passive nosetip technology.
UF *ablated nosetips*
passive nosetip technology
GS programs
. **PANT program**
- Pantar chondrites**
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . chondrites
. . . . **Pantar chondrites**
- Panther aircraft*
USE **F-9 aircraft**
- papain**
GS biopolymers
. proteins
. . . enzymes
. . . . **papain**
organic compounds
. proteins
. . . enzymes
. . . . **papain**
RT pepsin
- paper (material)**
DEF Felted or matted sheets of cellulose fibers, formed on a fine wire screen from a dilute water suspension, and bonded together as the water is removed and the sheet is dried.
RT boards (paper)
Kraft process (woodpulp)
∞ materials
organic materials
webs (sheets)
wood
- paper chromatography**
GS chemical tests
. chemical analysis
. . . chromatography
. . . . **paper chromatography**
RT gas chromatography
liquid chromatography
- papers**
GS documents
. **papers**
RT boards (paper)
conferences
fibers
∞ films
laminates
literature
Presidential reports
privacy
reports
∞ sheets
- webs (sheets)
- papillae**
RT protuberances
- Papua New Guinea**
GS nations
. **Papua New Guinea**
RT Asia
Australia
New Guinea (island)
- para hydrogen**
GS gases
. **para hydrogen**
RT hydrogen
ortho para conversion
- parabolas**
DEF Open curves where all points of which are equidistant from a fixed point called the focus, and a straight line. The limiting case occurs when the point is on the line, in which case the parabola becomes a straight line.
GS geometry
. Euclidean geometry
. . . analytic geometry
. . . . conics
. **parabolas**
- parabolic antennas**
GS antennas
. directional antennas
. . . reflector antennas
. . . . **parabolic antennas**
RT antenna design
Cassegrain antennas
horn antennas
microwave antennas
radar antennas
radar equipment
radar reflectors
- parabolic bodies**
DEF Surfaces of revolution generated by revolving sections of parabolas about their major axis. Used for paraboloids.
UF *paraboloids*
GS symmetrical bodies
. bodies of revolution
. . . **parabolic bodies**
- parabolic differential equations**
GS analysis (mathematics)
. real variables
. . . differential equations
. . . . partial differential equations
. **parabolic differential equations**
RT ∞ equations
- parabolic flight**
RT ascent trajectories
ballistic trajectories
climbing flight
coasting flight
descent trajectories
∞ flight
midcourse trajectories
missile trajectories
suborbital flight
trajectories
weightlessness
weightlessness simulation
- parabolic reflectors**
DEF Reflecting surfaces having the cross section along the axis in the shape of a parabola. Parallel rays striking the reflector are brought to a focus at a point, or if the source of the rays is placed at the focus, the reflected rays are parallel. Used for dishes.
UF *dishes*
GS reflectors
. **parabolic reflectors**
. . . paraboloid mirrors
- microwave antennas
radar reflectors
reflector antennas
Schwarzschild antennas
solar reflectors
- parabolic velocity*
USE **escape velocity**
- paraboloid mirrors**
GS mirrors
. **paraboloid mirrors**
reflectors
. parabolic reflectors
. . . **paraboloid mirrors**
RT reflecting telescopes
solar reflectors
- paraboloids*
USE **parabolic bodies**
- parachute descent**
UF *parachuting*
GS descent
. **parachute descent**
RT bailout
ejection
ejection training
escape (abandonment)
free fall
Mars Pathfinder
parachutes
- parachute fabrics**
GS fabrics
. **parachute fabrics**
RT Fortisan (trademark)
gores
netting (materials/structures)
parachutes
- parachutes**
DEF A device used, or intended to be used to retard the fall of a body or object through the air.
GS **parachutes**
. drag chutes
. parafoils
. recovery parachutes
. ribbon parachutes
. rotochutes
RT aerodynamic brakes
air drop operations
airdrops
ballutes
brakes (for arresting motion)
folding structures
parachute descent
parachute fabrics
paracone
parawings
towed bodies
whirl towers
- parachuting*
USE **parachute descent**
- parachuting injury**
GS injuries
. **parachuting injury**
- paracone**
DEF A system for recovering men and objects from great distances above the Earth's surface and landing them safely onto the Earth.
RT escape capsules
escape systems
parachutes
- paradoxes**
GS knowledge
. philosophy
. . . **paradoxes**
RT ∞ logic

paraffins

relativity

paraffins

- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - alkanes
 - **paraffins**
 - ceresin
- RT hydrocarbon fuels
 - kerosene
 - shale oil

parafoils

(added July 1994)

- GS parachutes
 - . **parafoils**
- RT aerodynamic brakes
 - airdrops
 - bailout
 - free fall
 - paragliders

paragliders

- GS gliders
 - . **paragliders**
 - . . inflatable gliders
- RT folding structures
 - hypersonic gliders
 - parafoils
 - parawings
 - ∞ subsonic aircraft

Paraguay

- GS nations
 - . **Paraguay**
- RT South America

parallax

DEF The difference in the apparent direction or position of an object when viewed from different points expressed as an angle.

- GS **parallax**
 - . solar parallax
 - . stellar parallax
- RT astrometry
 - companion stars
- ∞ optics

parallel computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **parallel computers**
 - massively parallel processors
 - Connection Machine
 - MIMD (computers)
 - SIMD (computers)
- RT hypercube multiprocessors

parallel flow

- GS fluid flow
 - . **parallel flow**
 - . . pipe flow
 - . . three dimensional flow
 - . . . Karman-Bodewadt flow
 - . . . secondary flow
- RT flow geometry
 - flow velocity
 - laminar flow
 - steady flow

parallel plates

- RT capacitors
- ∞ channels
 - flat plates
 - metal plates
- ∞ plates
 - thin plates
 - waveguides

parallel processing (computers)

DEF The concurrent or simultaneous execution of more than one program, or the handling of input for more than one operation at the same time.

- GS data processing
 - . **parallel processing (computers)**
- RT associative processing (computers)
 - computational electromagnetics
 - concurrent processing
 - Connection Machine
 - distributed memory
 - hypercube multiprocessors
 - Illiac 3 computer
 - Illiac 4 computer
 - interprocessor communication
 - massively parallel processors
 - MIMD (computers)
 - response time (computers)
 - SIMD (computers)
 - sorting algorithms
 - supercomputers
 - systolic arrays
 - transputers
 - vector processing (computers)

parallel programming

- GS computer programming
 - . **parallel programming**
- RT multiprocessing (computers)
 - pipelining (computers)

parallel strip lines

- USE **microstrip transmission lines**

parallelepipeds

- GS geometry
 - . Euclidean geometry
 - . . polyhedrons
 - . . . **parallelepipeds**

parallelograms

- GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . tetragons
 - **parallelograms**
 - rhomboids

paralysis

- GS diseases
 - . **paralysis**
 - injuries
- RT disabilities
 - tremors

paramagnetic amplifiers

- USE **masers**

paramagnetic resonance

- GS resonance
 - . magnetic resonance
 - . . **paramagnetic resonance**
 - . . . electron paramagnetic resonance
- RT absorption spectra
 - ferromagnetic resonance
 - nuclear magnetic resonance
 - paramagnetism

paramagnetism

- GS magnetic properties
 - . **paramagnetism**
- RT antiferromagnetism
 - Curie-Weiss law
 - diamagnetism
 - paramagnetic resonance

paramecia

- GS animals
 - . protozoa
 - . . **paramecia**
 - microorganisms
 - . protozoa
 - . . **paramecia**

parameter identification

DEF The estimation of the unknown parameters of models of physical plants or processes from their dynamic response.

- GS estimating

- . **parameter identification**
 - identifying
 - . **parameter identification**
 - parameterization
 - . **parameter identification**
- RT complex systems
 - control systems design
 - dynamic response
 - estimates
 - frequency domain analysis
 - genetic algorithms
 - independent variables
 - least squares method
 - mathematical models
 - maximum likelihood estimates
 - observability (systems)
 - optimal control
 - optimization
 - prediction analysis techniques
 - probability theory
 - sensitivity analysis
 - statistical analysis
 - steepest descent method
 - system identification
 - systems analysis
 - systems engineering
 - Taguchi methods
 - time domain analysis

parameterization

- GS **parameterization**
 - . parameter identification
- RT algorithms
 - ∞ applications of mathematics
 - dependent variables
 - derivation
 - dimensional analysis
 - ∞ estimators
 - formalism
 - formulations
 - mathematical models
 - scale effect
 - semiempirical equations
 - sensitivity analysis
 - system identification
 - units of measurement

parameters

- USE **independent variables**

parametric amplifiers

DEF Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers.

- UF *parametric oscillators*
 - reactance amplifiers*
- GS amplifiers
 - . **parametric amplifiers**
- RT frequency converters
 - LC circuits
 - magnetostatic amplifiers
 - microwave amplifiers
 - negative resistance devices
 - power amplifiers
 - semiconductor devices

parametric diodes

- GS electronic equipment
 - . diodes
 - . . semiconductor diodes
 - . . . **parametric diodes**
 - . . solid state devices
 - . . semiconductor devices
 - . . . **parametric diodes**
- RT varactor diodes

parametric frequency converters

- GS frequency converters
 - . **parametric frequency converters**
- RT ∞ converters
 - phase modulation

- up-converters
- parametric oscillators*
USE **parametric amplifiers**
- parametrons**
RT computer storage devices
magnetic cores
magnetic storage
oscillators
phase lock demodulators
thin films
- paranasal sinuses**
GS anatomy
. respiratory system
. . **paranasal sinuses**
sinuses
. **paranasal sinuses**
RT nose (anatomy)
- paraplasts**
GS plasters
. **paraplasts**
RT resins
- parapsychology*
USE **extrasensory perception**
- parasites**
GS **parasites**
. trypanosome
RT animals
blight
infestation
- parasitic antennas*
USE **parasitic elements (antennas)**
- parasitic diseases**
GS diseases
. infectious diseases
. . **parasitic diseases**
RT airborne infection
amoeba
blight
rust fungi
trypanosome
- parasitic elements (antennas)**
(added July 1993)
UF *parasitic antennas*
parasitic reflectors
passive elements
GS antenna components
. **parasitic elements (antennas)**
. . directors (antenna elements)
antennas
. **parasitic elements (antennas)**
. . directors (antenna elements)
RT antenna design
antenna radiation patterns
dipole antennas
directional antennas
log periodic antennas
radio receivers
reflectors
Yagi antennas
- parasitic reflectors*
USE **parasitic elements (antennas)**
- parathyroid gland**
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **parathyroid gland**
RT calcium metabolism
- parawings**
GS airfoils
. wings
. . flexible wings
. . . **parawings**
RT air drop operations
- folding structures
hang gliders
parachutes
paragliders
- parenteral functions**
RT ∞ functions
- parents**
RT children
human beings
- parity**
DEF A symmetry property of a wave function.
RT BCH codes
coding
conservation
correction
CP violation
equivalence
error detection codes
information theory
nuclear physics
particle spin
quantum numbers
quantum theory
strangeness
vector currents
- ∞ **parking**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT parking orbits
ramps (structures)
- parking orbits**
GS orbits
. spacecraft orbits
. . satellite orbits
. . . **parking orbits**
RT Earth orbits
Earth-Moon trajectories
flight optimization
interplanetary trajectories
low Earth orbits
lunar orbits
lunar trajectories
orbital mechanics
∞ parking
planetary orbits
thrust programming
transfer orbits
- Parkinson disease**
GS diseases
. **Parkinson disease**
RT tremors
- parks**
GS land
. **parks**
. . national parks
. . . Yellowstone National Park (ID-MT-WY)
RT recreation
regional planning
urban development
urban planning
- parotid gland*
USE **salivary glands**
- parsing algorithms**
DEF Computer routines for the syntactic and/or semantic analysis and restructuring of natural language instructions or data for internal processing.
GS mathematical logic
. algorithms
. . **parsing algorithms**
RT compilers
computer techniques
grammars
natural language processing
- semantics
subroutines
syntax
- partial differential equations**
GS analysis (mathematics)
. real variables
. . differential equations
. . . **partial differential equations**
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy-Riemann equations
. . . . elliptic differential equations
. . . . Monge-Ampere equation
. . . . Euler-Cauchy equations
. . . . Fokker-Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . vlasov equations
RT alternating direction implicit methods
Boltzmann-Vlasov equation
∞ equations
Euler-Bernoulli beams
functional integration
kinetic equations
Laplace equation
method of characteristics
Neumann problem
reaction-diffusion equations
Treffitz method
wave equations
- partial pressure**
DEF The pressure exerted by a designated component or components of a gaseous mixture.
GS pressure
. **partial pressure**
. . oxygen tension
. . . hypoxemia
RT Dalton law
gas pressure
Henry law
internal pressure
Raoult law
residual gas
∞ tension
vapor pressure
- particle acceleration**
GS rates (per time)
. acceleration (physics)
. . **particle acceleration**
RT ∞ acceleration
electromagnetic acceleration
magnetic fields
plasma acceleration
racetracks (particle accelerators)
wave-particle interactions
- particle accelerator targets**
GS targets
. **particle accelerator targets**
RT ∞ accelerators
target thickness
- particle accelerators**
DEF Specifically, devices for imparting large kinetic energy to charged particles, such as electrons, protons, deuterons, and helium ions.
GS **particle accelerators**
. cyclic accelerators
. . betatrons
. . . synchroclotrons
. . . synchrotrons
. . . bevatron
. . . storage rings (particle accelerators)
. . . cyclotrons
. . . geocyclotrons
. . . microtrons
. . . Oak Ridge isochronous cyclotron
. . . omegatrons

particle beams

- . . . synchrocyclotrons
- . . . electron accelerators
- . . . betatrons
- . . . ion accelerators
- . . . linear accelerators
- . . . Nimrod accelerator
- . . . superconducting super collider
- . . . synchrophasotrons
- . . . Van de Graaff accelerators
- RT ∞ accelerators
- beam splitters
- electron guns
- elementary particles
- ion sources
- kaon production
- neutron sources
- nuclear particles
- racetracks (particle accelerators)
- railgun accelerators
- SEPAC (payload)

particle beams

- GS beams (radiation)
- . **particle beams**
- . . . atomic beams
- . . . electron beams
- . . . relativistic electron beams
- . . . ion beams
- . . . neutral beams
- . . . molecular beams
- . . . neutron beams
- . . . neutrino beams
- . . . pion beams
- . . . proton beams
- RT beam splitters
- electron acceleration
- electron bombardment
- flux (rate)
- ion stripping
- magnetic sails
- phonon beams

particle charging

- RT charged particles

particle collisions

- GS collisions
- . **particle collisions**
- RT atomic collisions
- atomic excitations
- BGK model
- dense plasmas
- Faddeev equations
- ionic collisions
- kinetics
- mean free path
- molecular collisions
- molecular excitation
- nucleon-nucleon scattering
- scattering

particle counters

- USE **radiation counters**

particle decay

- (added May 1994)
- SN (LIMITED TO THE DECAY OF ELEMENTARY PARTICLES; EXCLUDES NUCLEAR DECAY)
- GS decay
- . **particle decay**
- . . . neutron decay
- RT CP violation
- elementary particle interactions
- fermions
- hadrons
- radioactive decay

particle density (concentration)

- GS density (number/volume)
- . **particle density (concentration)**
- . . . electron density (concentration)
- . . . carrier density (solid state)
- . . . electron density profiles
- . . . ionospheric electron density
- . . . magnetospheric electron density
- . . . electron distribution

- . . . electron density profiles
- . . . ion density (concentration)
- . . . ionospheric ion density
- . . . magnetospheric ion density
- magnetospheric proton density
- . . . proton density (concentration)
- magnetospheric proton density
- . . . plasma density
- RT atmospheric density
- ESRO 4 satellite
- ion stripping
- ionospheric composition
- space density
- spatial distribution

particle detectors

- USE **radiation counters**

particle diffusion

- GS diffusion
- . **particle diffusion**
- . . . electron diffusion
- . . . ionic diffusion
- RT atomic beams
- Boltzmann transport equation
- diffusion coefficient
- diffusion length
- drop size
- flux (rate)
- gaseous self-diffusion
- molecular diffusion
- muon spin rotation
- self diffusion (solid state)
- thermophoresis

particle emission

- GS emission
- . **particle emission**
- . . . electron emission
- . . . field emission
- . . . photoelectric emission
- . . . secondary emission
- . . . ion emission
- . . . neutron emission
- . . . thermionic emission
- RT exhaust emission
- expulsion
- self sustained emission
- stimulated emission

particle energy

- GS **particle energy**
- . . . electron energy
- . . . electron states
- . . . proton energy
- RT ∞ energy
- internal energy
- kinetic energy
- monochromatization
- ∞ particle intensity

particle flux

- USE **flux (rate)**

particle flux density

- SN (LIMITED TO PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
- GS rates (per time)
- . flux density
- . . . radiant flux density
- **particle flux density**
- electron flux density
- neutron flux density
- proton flux density
- RT Helios satellites
- ∞ particle intensity
- radiancy
- radiation counters
- radiation pressure
- solar constant

- solar flux density

- particle image displacement velocimetry*
- USE **particle image velocimetry**

particle image velocimetry

- (added June 1993)
- UF *particle image displacement velocimetry*
- PIDV (velocimetry)*
- PIV (velocimetry)*
- GS mechanical measurement
- . flow measurement
- . . **particle image velocimetry**
- . . . velocity measurement
- . . . **particle image velocimetry**
- RT flow distribution
- flow velocity
- flow visualization
- imaging techniques
- laser doppler velocimeters
- photographic measurement
- photographic recording
- two phase flow

particle in cell technique

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **particle in cell technique**
- RT ∞ cells
- crystal lattices
- flow equations
- ∞ methodology
- vortex in cell technique

∞ particle intensity

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT particle energy
- particle flux density

particle interactions

- GS **particle interactions**
- . elementary particle interactions
- . . electroweak interactions (field theory)
- . . . high energy interactions
- . . . strong interactions (field theory)
- . . . meson-meson interactions
- . . . meson-nucleon interactions
- . . . nuclear capture
- . . . electron capture
- . . . nucleon-nucleon interactions
- . . . weak energy interactions
- . . . weak interactions (field theory)
- . . . proton-antiproton interactions
- . ion atom interactions
- . molecular interactions
- . . molecular collisions
- . nuclear interactions
- . . nuclear capture
- . . . electron capture
- . . . spin-orbit interactions
- . . . electron capture
- . . . weak interactions (field theory)
- . plasma-particle interactions
- . wave-particle interactions
- RT Bragg curve
- charm (particle physics)
- chemical reactions
- collision parameters
- electron phonon interactions
- electron scattering
- Feynman diagrams
- flavor (particle physics)
- ∞ interactions
- neutral currents
- nuclear reactions
- photonuclear reactions
- photophoresis
- quantum chromodynamics

particle laden jets

- DEF Fluid, mainly issuing from a nozzle,

that are turbulent and contain dispersed particles.

- RT fuel flow
- jet flow
- particles
- turbulent flow

particle mass

- GS mass
 - . **particle mass**
 - .. electron mass
- RT gravitinos
- magnetic rigidity
- nuclides

particle motion

- RT diffraction radiation
- electrophoresis
- falling
- lattice vibrations
- magnetic rigidity
- mean free path
- ∞ motion
- neutral sheets
- photophoresis
- recoillings
- relativistic velocity
- settling
- thermophoresis
- transverse momentum

particle precipitation

DEF The precipitation of particles other than electrons and protons.

- GS **particle precipitation**
 - . electron precipitation
 - . proton precipitation
- RT atomic structure
- charged particles
- ∞ precipitation

particle production

- GS **particle production**
 - . kaon production
 - . pair production
 - . photoproduction
- RT comminution
- corpuscular radiation
- high energy interactions
- nuclear radiation
- nuclear reactions
- particles
- radioactivity
- spallation

particle size distribution

- GS size distribution
 - . **particle size distribution**
- RT dimensions
- drop size
- fineness
- finest
- fractions
- grain size
- particles
- particulates
- precipitation particle measurement
- size determination
- size separation
- solids flow
- thermophoresis

particle spin

- GS spin
 - . **particle spin**
 - .. electron spin
 - .. isotopic spin
 - .. nuclear spin
- RT angular momentum
- Ising model
- muon spin rotation
- nuclear magnetic resonance
- nuclear physics
- parity
- quenching (atomic physics)

spin resonance

particle telescopes

- UF *electron telescopes*
- GEP telescopes*
- Goddard experiment package telescope*
- proton telescopes*
- GS measuring instruments
 - . counters
 - . radiation counters
 - .. **particle telescopes**
 - . radiation measuring instruments
 - . radiation counters
 - .. **particle telescopes**
- telescopes
 - . **particle telescopes**
- RT anticoincidence detectors
- Geiger counters
- satellite-borne instruments
- scintillation counters

particle theory

- RT body kinematics
- charm (particle physics)
- collision parameters
- electroweak model
- flavor (particle physics)
- grand unified theory
- Higgs bosons
- ∞ interactions
- many body problem
- plasma-particle interactions
- quark models
- standard model (particle physics)
- string theory
- supergravity
- supersymmetry
- ∞ theories
- unified field theory
- weak energy interactions

particle tracks

- RT chemical analysis
- core sampling
- cosmic rays
- fossils
- geochronology
- lunar rocks
- meteoroids
- nuclear particles
- radiation effects
- stratigraphy
- trace elements
- ∞ tracks

particle trajectories

- GS trajectories
 - . **particle trajectories**
 - .. electron trajectories
- RT bubble chambers
- charged particles
- electron optics
- ionizing radiation
- ∞ motion
- ∞ paths
- racetracks (particle accelerators)
- ∞ tracks

particles

DEF Elementary subatomic particles such as protons, electrons or neutrons. Very small pieces of matter. In celestial mechanics, hypothetical entities which respond to gravitational forces but which exert no appreciable gravitational force on other bodies, thus simplifying orbital computations.

- GS **particles**
 - . aerosols
 - . fog
 - . charged particles
 - . antiprotons
 - . energetic particles
 - .. electrons
 - ... conduction electrons
 - ... free electrons

- ... high energy electrons
- ... relativistic electron beams
- ... hot electrons
- ... N electrons
- ... negatrons
- ... photoelectrons
- ... pi-electrons
- ... polarons
- ... solar electrons
- ... nuclei (nuclear physics)
- ... alpha particles
- ... deuterons
- ... even-even nuclei
- ... heavy nuclei
- ... hypernuclei
- ... odd-even nuclei
- ... odd-odd nuclei
- ... tritons
- ... plasmas (physics)
- ... argon plasma
- ... beta particles
- ... boundary layer plasmas
- ... cold plasmas
- ... collisional plasmas
- ... strongly coupled plasmas
- ... collisionless plasmas
- ... cosmic plasma
- ... cylindrical plasmas
- ... dense plasmas
- ... plasma focus
- ... strongly coupled plasmas
- ... electron plasma
- ... electron-positron plasmas
- ... elliptical plasmas
- ... helium plasma
- ... high temperature plasmas
- ... hydrogen plasma
- ... deuterium plasma
- ... laser plasmas
- ... metallic plasmas
- ... cesium plasma
- ... uranium plasmas
- ... microplasmas
- ... nitrogen plasma
- ... nonequilibrium plasmas
- ... nonuniform plasmas
- ... oxygen plasma
- ... rarefied plasmas
- ... relativistic plasmas
- ... rotating plasmas
- ... semiconductor plasmas
- ... space plasmas
- ... solar wind
- ... stellar winds
- ... dusty plasmas
- ... spherical plasmas
- ... thermal plasmas
- ... toroidal plasmas
- ... ionized gases
- ... Lorentz gas
- ... magnetically trapped particles
- ... radiation belts
- ... artificial radiation belts
- ... inner radiation belt
- ... outer radiation belt
- ... proton belts
- ... partons
- ... plasma clouds
- ... magnetic clouds
- ... plasma jets
- ... radio jets (astronomy)
- ... plasma layers
- ... plasma sheaths
- ... plasma slabs
- ... positrons
- ... protons
- ... recoil protons
- ... solar protons
- ... corpuscular radiation
- ... electron precipitation
- ... electron radiation
- ... beta particles
- ... electron beams
- ... relativistic electron beams
- ... energetic particles
- ... electrons
- ... conduction electrons

particles

- free electrons
- high energy electrons
- relativistic electron beams
- hot electrons
- N electrons
- negatrons
- photoelectrons
- pi-electrons
- polarons
- solar electrons
- . . . nuclei (nuclear physics)
- alpha particles
- deuterons
- even-even nuclei
- heavy nuclei
- hypernuclei
- odd-even nuclei
- odd-odd nuclei
- tritons
- . . . plasmas (physics)
- argon plasma
- beta particles
- boundary layer plasmas
- cold plasmas
- collisional plasmas
- strongly coupled plasmas
- collisionless plasmas
- cosmic plasma
- cylindrical plasmas
- dense plasmas
- plasma focus
- strongly coupled plasmas
- electron plasma
- electron-positron plasmas
- elliptical plasmas
- helium plasma
- high temperature plasmas
- hydrogen plasma
- deuterium plasma
- laser plasmas
- metallic plasmas
- cesium plasma
- uranium plasmas
- microplasmas
- nitrogen plasma
- nonequilibrium plasmas
- nonuniform plasmas
- oxygen plasma
- rarefied plasmas
- relativistic plasmas
- rotating plasmas
- semiconductor plasmas
- space plasmas
- solar wind
- stellar winds
- dusty plasmas
- spherical plasmas
- thermal plasmas
- toroidal plasmas
- . . . primary cosmic rays
- . . . solar cosmic rays
- . . . radiation belts
- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts
- . . . solar corpuscular radiation
- solar electrons
- solar neutrinos
- solar neutrons
- solar protons
- . . . drops (liquids)
- . . . raindrops
- . . . dust
- cosmic dust
- interplanetary dust
- meteoroid dust clouds
- zodiacal dust
- lunar dust
- terrestrial dust belt
- . . . elementary particles
- antiparticles
- antineutrinos
- antinucleons
- antiprotons
- positrons
- beta particles
- . . . bosons
- alpha particles
- Higgs bosons
- mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- . . . photons
- . . . xi hyperons
- . . . deuterons
- . . . electron-positron pairs
- . . . fermions
- . . . baryons
- hyperons
- xi hyperons
- omega-mesons
- rho-mesons
- sigma-mesons
- eta-mesons
- . . . leptons
- antineutrinos
- electrons
- conduction electrons
- free electrons
- high energy electrons
- relativistic electron beams
- hot electrons
- N electrons
- negatrons
- photoelectrons
- pi-electrons
- polarons
- solar electrons
- muons
- neutrinos
- solar neutrinos
- positrons
- . . . meson resonance
- X mesons
- . . . neutrons
- cold neutrons
- fast neutrons
- photoneutrons
- solar neutrons
- thermal neutrons
- . . . protons
- recoil protons
- solar protons
- . . . hadrons
- . . . baryons
- hyperons
- xi hyperons
- omega-mesons
- rho-mesons
- sigma-mesons
- . . . mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- . . . hypothetical particles
- . . . magnetic monopoles
- . . . nucleons
- . . . gluons
- . . . gravitinos
- . . . gravitons
- . . . partons
- . . . quarks
- . . . tachyons
- . . . weakly interacting massive particles
- . flakes
- . metal particles
- . metal powder
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder
- . microparticles
- . mist
- . neutral particles
- . . gravitinos
- . . neutrons
- . . . cold neutrons
- . . . fast neutrons
- . . . photoneutrons
- . . . solar neutrons
- . . . thermal neutrons
- . nuclear particles
- . . antiparticles
- . . . antineutrinos
- . . . antinucleons
- . . . antiprotons
- . . . positrons
- . . beta particles
- . . . bosons
- . . . alpha particles
- . . . Higgs bosons
- . . . mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- . . . photons
- . . . xi hyperons
- . . . nucleons
- . . . photoelectrons
- . particulates
- . . soot
- . pollen
- . powder (particles)
- . . fines
- . . metal powder
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder
- . relativistic particles
- . . relativistic electron beams
- . trapped particles
- . . magnetically trapped particles
- . . . radiation belts
- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts
- . . nanoparticles
- RT air pollution
- chemical clouds
- ∞ clouds
- colloids
- deuteron irradiation
- dirt
- dispersions
- gas atomization
- ∞ grains
- granular materials
- grit
- ion stripping
- ions
- neutral beams
- neutron beams
- nodules
- nonpoint sources
- particle laden jets
- particle production
- particle size distribution
- positron annihilation
- precipitation particle measurement
- proton precipitation

- smoke
- particulate filters*
USE **fluid filters**
- particulate reinforced composites**
(added January 1992)
GS composite materials
 . **particulate reinforced composites**
RT metal matrix composites
 metal particles
 microparticles
 nanocomposites
 particulates
 reinforcing materials
- particulate sampling**
GS sampling
 . **particulate sampling**
RT assaying
 chemical analysis
 concentration (composition)
 identifying
 particulates
- particulates**
GS particles
 . **particulates**
 . . soot
RT aerosols
 air pollution
 air quality
 air sampling
 atmospheric composition
 combustion products
 contaminants
 dispersions
 dust
 exhaust gases
 fly ash
 particle size distribution
 particulate reinforced composites
 particulate sampling
 pollution control
 pollution monitoring
 smog
 smoke
 solid suspensions
- ∞ **partitions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT curtains
 partitions (mathematics)
 partitions (structures)
 septum
- partitions (mathematics)**
GS analysis (mathematics)
 . combinatorial analysis
 . . **partitions (mathematics)**
RT combinations (mathematics)
 equivalence
∞ partitions
 permutations
 Voronoi diagrams
- partitions (structures)**
RT bulkheads
 curtains
∞ partitions
 thin walls
 walls
- partons**
GS particles
 . charged particles
 . . **partons**
 . elementary particles
 . . hypothetical particles
 . . . **partons**
RT hadrons
 leptons
 quark parton model
- quarks
- parts*
USE **components**
- PAS**
UF *perigee-apogee satellites*
GS artificial satellites
 . **PAS**
RT elliptical orbits
 twenty-four hour orbits
- Pascal (programming language)**
DEF High order computer programming language developed by Niklaus Wirth originally as an educational tool to foster structured programming.
GS languages
 . programming languages
 . . **Pascal (programming language)**
RT compilers
 computer programming
- Paschen series**
GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **Paschen series**
RT absorption spectra
 atomic spectra
 electron transitions
 emission spectra
 H lines
 hydrogen
- Pasiphae**
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 23,500,000 kilometers.
GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Pasiphae**
RT Jupiter (planet)
- passageways**
DEF A pass-through between non-adjacent modules or spaces.
GS **passageways**
 . straits
 . . Torres Strait
 . transfer tunnels
RT approach
 cavities
 corridors
 gaps
 notches
 openings
∞ paths
 roads
∞ tunnels
 underground structures
 vestibules
- passenger aircraft**
UF *executive aircraft*
GS **passenger aircraft**
 . BAC 111 aircraft
 . BO-105 helicopter
 . Boeing 707 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 737 aircraft
 . Boeing 747 aircraft
 . Boeing 757 aircraft
 . Boeing 767 aircraft
 . Boeing 777 aircraft
 . Boeing 2707 aircraft
 . Breguet 941 aircraft
 . C-33 aircraft
 . C-35 aircraft
 . C-46 aircraft
 . Cessna 172 aircraft
 . Cessna 205 aircraft
 . Cessna 210 aircraft
 . Cessna 402B aircraft
 . CH-3 helicopter
 . CH-46 helicopter
 . CH-47 helicopter
 . CH-54 helicopter
 . Comet 4 aircraft
 . commuter aircraft
 . . ATR-72 aircraft
 . CV-340 aircraft
 . CV-440 aircraft
 . CV-880 aircraft
 . CV-990 aircraft
 . DC 8 aircraft
 . DC 10 aircraft
 . DH 121 aircraft
 . DH 125 aircraft
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-328 aircraft
 . Electra aircraft
 . European Airbus
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . Boeing 717 aircraft
 . F-27 aircraft
 . F-28 helicopter
 . F-28 transport aircraft
 . G-1 aircraft
 . G-222 aircraft
 . H-19 helicopter
 . H-53 helicopter
 . H-56 helicopter
 . HFB-320 aircraft
 . HS-748 aircraft
 . IL-62 aircraft
 . IL-76 aircraft
 . IL-86 aircraft
 . IL-96 aircraft
 . Jetstream aircraft
 . L-1011 aircraft
 . L-2000 aircraft
 . MD 11 aircraft
 . MD 80 aircraft
 . Mystere 20 aircraft
 . Mystere 50 aircraft
 . OH-5 helicopter
 . P-160 aircraft
 . P-166 aircraft
 . SE-210 aircraft
 . T-39 aircraft
 . TU-104 aircraft
 . TU-124 aircraft
 . TU-134 aircraft
 . TU-144 aircraft
 . TU-204 aircraft
 . U-10 aircraft
 . VC-10 aircraft
 . Viscount aircraft
 . Yak 40 aircraft
 . YS-11 aircraft
RT air transportation
∞ aircraft
 AN-22 aircraft
 AN-24 aircraft
 C-121 aircraft
 cargo aircraft
 civil aviation
 commercial aircraft
 DC 7 aircraft
 E-2 aircraft
 general aviation aircraft
 ground effect machines
 HC-3 helicopter
 jet aircraft
 light aircraft
 light transport aircraft
∞ low wing aircraft
 Mercure aircraft
 MH-262 aircraft
∞ military aircraft
 P-531 helicopter
 PD-808 aircraft
 rotary wing aircraft
 Saab 105 aircraft

passengers

SC-7 aircraft
short haul aircraft
∞ subsonic aircraft
supersonic aircraft
supersonic transports
transport aircraft
TU-154 aircraft
turbofan aircraft
turboprop aircraft
V/STOL aircraft
very large transport aircraft
water takeoff and landing aircraft

passengers

RT airline operations
automated guideway transit vehicles
automated mixed traffic vehicles
automated transit vehicles
payloads
rapid transit systems
riding quality
transportation

passes

USE **gaps (geology)**

passivation

USE **passivity**

passive elements

USE **parasitic elements (antennas)**

passive L-band radiometers

GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . radiometers
. . . . **passive L-band radiometers**
RT microwave frequencies
ultrahigh frequencies

passive nosetip technology

USE **PANT program**

passive satellites

UF *reflector satellites*
GS artificial satellites
. **passive satellites**
. . . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
. . . Echo satellites
. . . Echo 1 satellite
. . . Echo 2 satellite
. . . LAGEOS (satellite)
. . . PAGEOS satellite
RT active satellites
communication satellites
Echo project
geodetic satellites
navigation satellites
satellite laser ranging
synchronous satellites

passivity

UF *passivation*
RT anodizing
chemical attack
chemical properties
coatings
corrosion
corrosion prevention
corrosion resistance
deactivation
electrolysis
∞ inhibition
inhibitors
oxidation
oxidation resistance
rusting
siliconizing

paste (consistency)

DEF Mixtures with characteristic soft or plastic consistencies.

RT mixtures

pastes

DEF Adhesive compositions having a characteristic plastic-type consistency, that is, high order of yield values, such as that of pastes prepared by heating a mixture of starch and water and subsequently cooling the hydrolyzed product.

GS adhesives

. **pastes**

RT glues
plasters

pasteurizing

GS heating
. **pasteurizing**
RT purification
sterilization

patch antennas

(added June 1997)

GS antennas
. **patch antennas**
RT antenna arrays
antenna design
microstrip antennas
microwave antennas

patch tests

SN (CONDITIONS FOR ASSESSING FINITE ELEMENT METHOD CONVERGENCE AND STABILITY PROPERTIES)
RT convergence
finite element method
hydraulic fluids
structural analysis
∞ tests

patent applications

RT copyrights
inventions
licensing
patents
product development
technology utilization

patent policy

GS policies
. **patent policy**
RT intellectual property
inventions
patents
product development
regulations
rules

patents

GS intellectual property
. **patents**
RT claiming
grants
inventions
patent applications
patent policy

path planning

USE **trajectory planning**

Pathfinder nuclear reactor

GS nuclear electric power generation
. nuclear power reactors
. . . **Pathfinder nuclear reactor**
nuclear reactors
. liquid cooled reactors
. . . water cooled reactors
. . . . boiling water reactors
. . . . **Pathfinder nuclear reactor**
. nuclear power reactors
. . . **Pathfinder nuclear reactor**

pathogenesis

RT cholera
diseases

pathogens

pathogens

DEF Disease-producing agents, usually referring to living organisms.

RT bacteria
Clostridium botulinum
pathogenesis

pathological cell death

(added October 2000)

USE **necrosis**

pathological effects

GS **pathological effects**
. necrosis
RT biological effects
carbon monoxide poisoning
cholera
diseases
∞ effects
physiological responses
stress (biology)

pathology

GS medical science
. **pathology**
. . . human pathology
RT autopsies
diagnosis
dissection
hemorrhages
necrosis
radiation therapy
veterinary medicine

∞ paths

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *courses*
lanes
RT critical path method
diffraction paths
duality principle
flight paths
ground tracks
mean free path
meteor trails
multipath transmission
network analysis
operations research
optical paths
orbits
particle trajectories
passageways
PERT
routes
sound transmission
thermodynamics
trajectories

patients

RT human beings
human pathology
therapy

Patriot missile

DEF Surface to air, antiaircraft missile.
GS missiles
. surface to air missiles
. . . **Patriot missile**
RT missile configurations
∞ rockets
weapons

patrols

RT reconnaissance

pattern distribution

USE **distribution (property)**

pattern method (forecasting)

GS management methods
. **pattern method (forecasting)**
predictions

- . forecasting
- . . . technological forecasting
- . . . **pattern method (forecasting)**
- RT Delphi method (forecasting)
- estimating
- ∞ methodology
- operations research
- planning
- probe method (forecasting)
- technology assessment
- pattern recognition**
- DEF The identification of shapes, forms and configurations by automatic means.
- UF *automatic pattern recognition*
- feature extraction*
- GS recognition
- . **pattern recognition**
- . . character recognition
- . . graphology
- RT change detection
- clumps
- cluster analysis
- computer vision
- context
- edge detection
- Feature Identification and Location
- Exper
- gray scale
- image analysis
- image classification
- multisensor applications
- optical relay systems
- principal components analysis
- readers
- repetition
- pattern registration**
- RT comparison
- image contrast
- image correlators
- image motion compensation
- image reconstruction
- image resolution
- imaging techniques
- magnetic signatures
- matching
- ∞ **patterns**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT diffraction patterns
- distribution (property)
- drainage patterns
- kurtosis
- molds
- photomasks
- prototypes
- radiation distribution
- regularity
- resins
- speckle patterns
- synthetic arrays
- templates
- test pattern generators
- Widmanstatten structure
- Patterson map**
- GS charts
- . graphs (charts)
- . . **Patterson map**
- RT crystal lattices
- crystal structure
- lattice parameters
- Pauli exclusion principle**
- GS quantum mechanics
- . **Pauli exclusion principle**
- wave functions
- . **Pauli exclusion principle**
- RT atomic structure
- exclusion
- fermions
- pavements**
- RT asphalt
- coatings
- concretes
- foundations
- highways
- roads
- runways
- streets
- payload assist module**
- DEF Rocket vehicle with a spinning solid-propellant motor to attain injection velocity to place payload into intended orbits from the parking orbits of the STS.
- GS modules
- . **payload assist module**
- rocket vehicles
- . **payload assist module**
- RT instrument packages
- payloads
- Space Shuttle payloads
- space transportation system
- spaceborne experiments
- payload control**
- DEF Execution of events involved in operating the payload and supporting systems.
- RT ∞ control
- payloads
- sounding rockets
- space shuttles
- payload delivery (STS)**
- DEF The transport of payloads via the Space Transportation System including ground to Earth orbit delivery by the Space Shuttle and orbit to orbit delivery via orbit transfer vehicles.
- GS delivery
- . **payload delivery (STS)**
- RT Advanced Launch System (STS)
- electric power supplies
- orbit insertion
- orbit transfer vehicles
- orbital launching
- payloads
- power modules (STS)
- solar arrays
- space transportation system
- payload deployment & retrieval system**
- DEF System of mechanical and control devices, with associated data systems, for payload handling in space.
- RT manipulators
- NASA programs
- orbit transfer vehicles
- payloads
- remote handling
- remote manipulator system
- space shuttles
- Space Station Mobile Servicing System
- ∞ systems
- payload integration**
- RT mission planning
- payload integration plan
- payloads
- Space Shuttle payloads
- payload integration plan**
- DEF Procedures providing for compatibility of spaceborne experiments with the carrier spacecraft (e. g. , shuttle orbiter).
- RT payload integration
- payloads
- ∞ plans
- Space Shuttle orbiters
- Space Shuttle payloads
- space transportation system
- spaceborne experiments
- payload mass ratio**
- GS ratios
- . mass ratios
- . . **payload mass ratio**
- RT multistage rocket vehicles
- piggyback systems
- pressure ratio
- propellant mass ratio
- payload retrieval (STS)**
- GS retrieval
- . **payload retrieval (STS)**
- RT orbit transfer vehicles
- orbital rendezvous
- payload transfer
- remote manipulator system
- space shuttles
- space transportation system
- stationkeeping
- payload stations**
- SN (THE POSITION OR MOUNTING PLACE FOR A PAYLOAD ONBOARD A ROCKET VEHICLE, SPACECRAFT, OR SPACE STATION; EXCLUDES ORBITAL STATIONS AND CREW WORKSTATIONS)
- DEF The locations in the Space Shuttles' flight decks and cargo bay at which payloads are mounted.
- GS stations
- . **payload stations**
- RT payloads
- space transportation
- payload transfer**
- DEF The in-space movement of payloads from point to point.
- RT orbital servicing
- payload retrieval (STS)
- space maintenance
- payloads**
- DEF Originally, the revenue producing portions of an aircraft's load, e. g. , passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight.
- GS **payloads**
- . EXPOS (Spacelab payload)
- . OSTA-2 payload
- . SEPAC (payload)
- . sortie systems
- . Space Shuttle payloads
- . . Advanced Technology Laboratory
- . . Astro missions (STS)
- . . Atmospheric General Circulation Experiment
- . . Earth radiation budget experiment
- . . Earth Viewing Applications Laboratory
- . . electromagnetic environment experiment
- . . Get Away Specials (STS)
- . . Halogen Occultation Experiment
- . . OSS-1 payload
- . . OSTA-1 payload
- . . OSTA-3 payload
- . . Physics and Chemistry Experiment in Space
- . . plasma interaction experiment
- . . Spacelab
- . . X Ray Astrophysics Facility
- . space station payloads
- . Spacelab payloads
- . . AMPS (satellite payload)
- . . Atmospheric Cloud Physics Lab (Spacelab)
- . . Atmospheric General Circulation Experiment
- . . geophysical fluid flow cells
- . . Solar Cell Calibration Facility
- RT aircraft performance
- aircraft specifications
- annular suspension and pointing system
- Apollo Lunar Surface Experiments Package
- asteroid capture
- EASEP
- German Infrared Laboratory
- instrument packages
- LIRTS (telescope)

PCM telemetry

- ∞ loading
 - loads (forces)
 - passengers
 - payload assist module
 - payload control
 - payload delivery (STS)
 - payload deployment & retrieval system
 - payload integration
 - payload integration plan
 - payload stations
 - piggyback systems
 - Space Processing Applications
 - Rocket
 - space transportation
 - space tugs
 - spaceborne experiments
 - warheads
- ∞ weight
 - weight (mass)

PBB
USE **polybrominated biphenyls**

PBRE (reactors)
USE **pebble bed reactors**

PCB
USE **polychlorinated biphenyls**

PCM (materials)
USE **phase change materials**

PCM (modulation)
USE **pulse code modulation**

PCM telemetry
GS telecommunication

- . telemetry
- . . . **PCM telemetry**

transmission

- . signal transmission
- . . . telemetry
- **PCM telemetry**

RT differential pulse code modulation

- pulse code modulation

PD-808 aircraft
UF *Douglas PD-808 aircraft*
Piaggio-Douglas PD-808 aircraft
jet aircraft

- . **PD-808 aircraft**
- light aircraft
 - . **PD-808 aircraft**
- McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **PD-808 aircraft**
- monoplanes
 - . **PD-808 aircraft**
- Piaggio aircraft
 - . **PD-808 aircraft**

RT ∞ aircraft

- passenger aircraft

PDE (engines)
(added March 2001)
USE **pulse detonation engines**

PDM (modulation)
USE **pulse duration modulation**

PDP 7 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 7 computer**

RT PDP 9 computer

PDP 8 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers

- **PDP 8 computer**

PDP 9 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 9 computer**

RT PDP 7 computer

PDP 10 computer
UF *System 10 computer*
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 10 computer**

PDP 11 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11 computer**

PDP 11/20 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11/20 computer**

PDP 11/40 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11/40 computer**

PDP 11/45 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11/45 computer**

PDP 11/50 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11/50 computer**

PDP 11/70 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 11/70 computer**

PDP 12 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP computers
- **PDP 12 computer**

PDP 15 computer
GS data processing equipment

- . computers
- . . . digital computers
- PDP 15 computer

PDP computers
GS data processing equipment

- . computers
- . . . digital computers
- **PDP computers**
- PDP 7 computer
- PDP 8 computer
- PDP 9 computer
- PDP 10 computer
- PDP 11 computer
- PDP 11/20 computer
- PDP 11/40 computer
- PDP 11/45 computer

- PDP 11/50 computer
- PDP 11/70 computer
- PDP 12 computer

PDRE (engines)
(added March 2001)
USE **pulse detonation engines**

PDS (spectroscopy)
(added November 1998)
USE **photothermal deflection spectroscopy**

PDWE (engines)
(added March 2001)
USE **pulse detonation engines**

Peacekeeper missile
USE **MX missile**

peacetime
RT electronic warfare

- histories
- international cooperation
- international law
- warfare

∞ **peaks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT apexes

- extremum values
- maxima
- mountains
- plateaus

peaks (landforms)
UF *pinnacles*
GS landforms

- . **peaks (landforms)**
- . . . Pike's Peak (CO)

RT mountains

- orography
- topography

pearlite
DEF An aggregate in steel of ferrite and cementite.
RT cementite

- ferrites
- iron alloys
- microstructure
- steels

Pearson distributions
GS functions (mathematics)

- . probability density functions
- . . . **Pearson distributions**

statistical analysis

- . probability density functions
- . . . **Pearson distributions**

statistical distributions

- . **Pearson distributions**

peat
DEF Dark brown or black residuum produced from the partial decomposition and disintegration of mosses, hedges, trees, and other plants that grow in marshes and other wet places.
GS carbonaceous materials

- . **peat**
- fuels
 - . chemical fuels
 - . . . hydrocarbon fuels
 - fossil fuels
 - **peat**
- organic materials
 - . **peat**
- resources
 - . Earth resources
 - . . . fossil fuels
 - **peat**

RT coal

- sediments
- pebble bed reactors**
 UF *PBRE (reactors)*
 GS nuclear reactors
 . **pebble bed reactors**
 RT reactor design
 reactor technology
- Peclet number**
 DEF A nondimensional number arising in problems of heat transfer in fluids.
 GS dimensionless numbers
 . **Peclet number**
 ratios
 . **Peclet number**
 RT advection
 heat transfer
 Prandtl number
 Reynolds number
 thermal diffusion
- peculiar galaxies**
(added November 1988)
 GS celestial bodies
 . galaxies
 . . **peculiar galaxies**
 RT elliptical galaxies
 galactic structure
 spiral galaxies
- peculiar stars**
 DEF Stars with spectra that cannot be conveniently fitted into any of the standard spectral classifications. They are denoted by a "p" after their spectral type.
 GS celestial bodies
 . stars
 . . **peculiar stars**
 . . . shell stars
 . . . Sigma Orionis
 . . . symbiotic stars
 RT A stars
 B stars
 hot stars
 magnetic stars
 stellar spectra
 stellar spectrophotometry
 stellar structure
- pedals**
 RT levers
 manual control
- Pedersen currents**
(added December 2001)
 DEF Ionic currents flowing parallel to ionospheric conductive electric fields.
 GS electric current
 . ionospheric currents
 . . **Pedersen currents**
 electricity
 . atmospheric electricity
 . . ionospheric currents
 . . . **Pedersen currents**
 ion currents
 . **Pedersen currents**
 RT auroral zones
 Birkeland currents
 electric fields
 field aligned currents
 Hall effect
- pediments*
 USE **piedmonts**
- pediplains*
 USE **piedmonts**
- pedology*
 USE **soil science**
- PEEK**
 DEF A class of semicrystalline polymers called polyarylene ethers for use as molding compounds and for use as composite matrix materials. Used for polyetheretherketones.
 UF *polyetheretherketones*
 GS plastics
 . synthetic resins
 . . polyether resins
 . . . **PEEK**
 . . thermoplastic resins
 . . . **PEEK**
 resins
 . synthetic resins
 . . polyether resins
 . . . **PEEK**
 . . thermoplastic resins
 . . . **PEEK**
 RT carbon fiber reinforced plastics
 ethers
 ketones
 polymer matrix composites
 resin matrix composites
- peeling**
 RT adhesion
 cutting
 debonding (materials)
 delaminating
 flaking
 mechanical properties
 shedding
 ∞ stripping
- peening**
 GS metal finishing
 . **peening**
 . . shot peening
 RT cold working
 hardening (materials)
 metal working
 work hardening
- Pegasus air-launched booster**
(added May 1990)
 GS launch vehicles
 . **Pegasus air-launched booster**
 rocket vehicles
 . multistage rocket vehicles
 . . **Pegasus air-launched booster**
 RT air launching
 B-52 aircraft
 X-43 vehicle
- Pegasus computer**
 GS data processing equipment
 . computers
 . . **Pegasus computer**
- Pegasus engine*
 USE **Bristol-Siddeley BS 53 engine**
- Pegasus satellites**
 GS artificial satellites
 . **Pegasus satellites**
 RT Saturn project
- pelagic zone**
 GS regions
 . **pelagic zone**
 RT oceanography
- pellets**
 RT briquets
 fuel capsules
 granular materials
 nuclear fuels
 ∞ shot
- pellicle**
 RT thin films
- pelomyxa**
 GS animals
 . protozoa
 . . amoeba
 . . . **pelomyxa**
 microorganisms
 . protozoa
 . . amoeba
- . . . **pelomyxa**
- Peltier effects**
 DEF The effects which result in the production or absorption of heat at the junction of two metals on the passage of an electrical current.
 RT ∞ effects
 Seebeck effect
 temperature effects
 thermocouples
 thermoelectric cooling
 thermoelectricity
 thermophysical properties
- pelvis**
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **pelvis**
 RT girdles
- penalties**
 GS law (jurisprudence)
 . public law
 . . **penalties**
 RT air law
 disciplining
 judgments
 legal liability
 liabilities
 prohibition
 regulations
- penalty function**
 DEF In mathematics, a function used in treating maxima and minima problems subject to restraints.
 GS functions (mathematics)
 . **penalty function**
 RT constraints
 ∞ functions
 maxima
 minima
 optimization
- pencil beams**
 GS beams (radiation)
 . **pencil beams**
 RT antenna design
 antenna radiation patterns
 radar beams
- pendulous gyroscopes*
 USE **gyroscopic pendulums**
- pendulums**
 GS oscillators
 . mechanical oscillators
 . . **pendulums**
 . . . gyroscopic pendulums
 RT accelerometers
 gravitation
 momentum
 oscillations
 timing devices
- penetrants**
 RT ∞ agents
 preservatives
 retardants
- penetrating particles*
 USE **corpuscular radiation**
- penetration**
 DEF The depths to which one material extends into or penetrates another.
 RT diffusion
 drilling
 fragmentation
 hydrodynamic ram effect
 impact
 nuclear vulnerability
 percolation
 perforating
 permeability

penetrometers

permeating
piercing
∞ saturation
seepage
terminal ballistics
terrain following
vulnerability

penetration ballistics

USE **terminal ballistics**

penetrometers

DEF Simple devices for measuring the penetrating power of a beam of x rays or other penetrating radiation by comparing transmission through various absorbers.

GS measuring instruments

. **penetrometers**

RT lunar soil

penicillin

GS drugs

. antibiotics

. . **penicillin**

Peninsular Ranges (CA)

GS landforms

. mountains

. . **Peninsular Ranges (CA)**

RT California

peninsulas

DEF Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' "almost island."

GS landforms

. **peninsulas**

. . Delmarva Peninsula (DE-MD-VA)

RT isthmuses

land

water

Penning discharge

DEF A direct current discharge where electrons are forced to oscillate between two opposed cathodes and are restrained from going to the surrounding anode by the presence of a magnetic field.

GS electric current

. electric discharges

. . **Penning discharge**

RT electrodeless discharges

gas ionization

ion motion

plasma generators

Penning effect

DEF An increase in the effective ionization rate of a gas due to the presence of a small number of foreign metastable atoms.

RT ∞ effects

gas ionization

laser cooling

metastable atoms

Penning gages

GS measuring instruments

. pressure gages

. . vacuum gages

. . . ionization gages

. . . . **Penning gages**

vacuum apparatus

. vacuum gages

. . ionization gages

. . . **Penning gages**

Pennsylvania

GS nations

. United States

. . **Pennsylvania**

RT Allegheny Plateau (US)

Delaware Bay (US)

Delaware River Basin (US)

Ohio River (US)

Susquehanna River Basin
(MD-NY-PA)

∞ pens

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *styluses*

RT enclosures

recording instruments

pentaboranes

GS boron compounds

. boron hydrides

. . boranes

. . . **pentaboranes**

hydrogen compounds

. hydrides

. . boron hydrides

. . . boranes

. . . . **pentaboranes**

pentachlorides

USE **chlorides**

pentaeerythritol tetranitrate

USE **PETN**

pentanes

GS organic compounds

. hydrocarbons

. . aliphatic hydrocarbons

. . . alkanes

. . . . **pentanes**

. neopentane

pentanone

GS ketones

. **pentanone**

organic compounds

. **pentanone**

RT acetone

acetylacetone

pentobarbital

RT drugs

narcotics

sedatives

pentobarbital sodium

GS drugs

. **pentobarbital sodium**

. . reserpine

RT

Nembutal (trademark)

pentodes

RT electron tubes

semiconductor devices

tetrodes

transistors

vacuum tubes

pentolite

GS explosives

. **pentolite**

propellants

. **pentolite**

pentose

GS organic compounds

. carbohydrates

. . sugars

. . . monosaccharides

. . . . **pentose**

. ribose

. xylose

penumbras

GS shadows

. **penumbras**

RT eclipses

umbras

PEOLE satellites

GS artificial satellites

. French satellites

. . **PEOLE satellites**

RT geophysical satellites

Peoples Democratic Republic of Germany

USE **East Germany**

peppers

RT ∞ food

pepsin

GS biopolymers

. proteins

. . enzymes

. . . **pepsin**

organic compounds

. proteins

. . enzymes

. . . **pepsin**

RT

papain

peptides

GS organic compounds

. **peptides**

. . polypeptides

. . . glutathione

. . . hypertension

RT

amino acids

aspartic acid

proteins

percentage

USE **ratios**

perception

GS **perception**

. binaural hearing

. motion perception

. sensory perception

. . auditory perception

. . consciousness

. . extrasensory perception

. . kinesthesia

. . olfactory perception

. . pain

. . pain sensitivity

. . proprioception

. . . autokinesis

. . taste

. . touch

. . . tactile discrimination

. . vertical perception

. . vibration perception

. . visual perception

. . . critical flicker fusion

. . . space perception

. . . . autokinesis

. . . visual discrimination

. sound localization

RT

acuity

adaptation

artificial intelligence

character recognition

cognition

color

contrast

electrocutaneous communication

frequency response

identifying

illusions

images

information processing (biology)

∞ interpretation

knowledge

legibility

monocular vision

perceptual time constant

reading

resolution

retinal adaptation

sensitivity

sensory deprivation

sensory feedback

situational awareness

symbols

thresholds (perception)

visibility

- vision
- perceptrons*
USE **self organizing systems**
- perceptual errors**
DEF Deviations from accuracy in the perception of objects, shapes, colors, weights, etc., through the use of the senses.
RT display devices
visual perception
visual stimuli
- perceptual time constant**
GS constants
. time constant
. . . **perceptual time constant**
RT perception
reaction time
sense organs
sensorimotor performance
velocity
- perchlorates**
GS halogen compounds
. chlorine compounds
. . . **perchlorates**
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
RT chlorates
perchloric acid
- perchloric acid**
GS acids
. **perchloric acid**
RT perchlorates
- perchloryl fluorides**
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . **perchloryl fluorides**
. halides
. . . fluorides
. . . **perchloryl fluorides**
- percolation**
RT beds (process engineering)
concentrating
diffusion
extraction
filtration
interstices
leaching
lysimeters
penetration
permeability
permeating
seepage
∞ separation
voids
- Percus method**
RT flow equations
integral equations
∞ methodology
- percussion**
RT detonation
impact
physical examinations
primers (explosives)
- perfect gas*
USE **ideal gas**
- perfectly matched layers**
(added July 1998)
DEF In the area of computational electro-
- magnetism, an absorbing boundary condition used for terminating infinite domain calculations in the finite-difference time-domain (FDTD) or finite element methods. The approach has also been extended to the analysis of some problems in acoustics.
UF *PML (electromagnetism)*
GS conditions
. boundary conditions
. . . **perfectly matched layers**
RT computational electromagnetics
computational grids
electromagnetic absorption
electromagnetic scattering
finite difference theory
finite element method
Maxwell equation
- perfluoro compounds**
GS **perfluoro compounds**
. perfluoroalkane
. perfluoroguanidine
- perfluoroalkane**
GS halogen compounds
. fluorine compounds
. . . fluoro compounds
. . . difluoro compounds
. . . . **perfluoroalkane**
. . . fluorine organic compounds
. . . . **perfluoroalkane**
organic compounds
. fluorine organic compounds
. . **perfluoroalkane**
perfluoro compounds
. **perfluoroalkane**
- perfluoroguanidine**
GS halogen compounds
. fluorine compounds
. . . fluoro compounds
. . . fluorine organic compounds
. . . . **perfluoroguanidine**
organic compounds
. fluorine organic compounds
. . **perfluoroguanidine**
perfluoro compounds
. **perfluoroguanidine**
RT guanidines
- perforated plates**
GS structural members
. plates (structural members)
. . . **perforated plates**
RT anisotropic plates
cavities
hole geometry (mechanics)
holes (mechanics)
openings
∞ perforation
porous boundary layer control
stress concentration
- perforated shells**
GS shells (structural forms)
. **perforated shells**
RT arches
cavities
enclosures
fairings
hole distribution (mechanics)
hole geometry (mechanics)
holes (mechanics)
housings
hulls (structures)
membrane structures
nacelles
∞ perforation
pressure vessel design
rocket engine cases
shell theory
stress concentration
- perforating**
RT burnthrough (failure)
cutting
- drilling
formations
fracturing
gas injection
injection
metal cutting
metal working
penetration
∞ perforation
piercing
water injection
- ∞ **perforation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cavities
holes (mechanics)
perforated plates
perforated shells
perforating
piercing
- ∞ **performance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft performance
astronaut performance
comfort
complexity
computer systems performance
consistency
efficiency
effort
environments
evaluation
examination
fatigue (biology)
figure of merit
flight characteristics
human factors engineering
human performance
long term effects
mental performance
modulation transfer function
observation
operator performance
optical transfer function
output
performance tests
pilot performance
postflight analysis
propulsion system performance
quality
ratings
reliability
spacecraft performance
standards
task complexity
training evaluation
- performance prediction**
GS predictions
. **performance prediction**
RT evaluation
management
prediction analysis techniques
reliability
reliability analysis
reliability engineering
trend analysis
- performance tests**
SN (APPLY ONLY TO OPERATING EQUIPMENT)
RT accelerated life tests
acceptability
certification
checkout
computer systems performance
field tests
hardware-in-the-loop simulation
inspection
∞ performance
space vehicle checkout program
specifications
standards

periclyse

∞ tests

perfusion

USE **diffusion**

periclyse

GS chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . magnesium oxides
. **periclyse**
magnesium compounds
. magnesium oxides
. . **periclyse**

peridotite

UF *kimberlite*
GS rocks
. igneous rocks
. . **peridotite**
RT chromites
dunite
olivine
regolith
soils

perigee-apogee satellites

USE **PAS**

perigees

DEF Those orbital points nearest the Earth when the Earth is the center of attraction.

GS apsides
. **perigees**
RT apogees
Earth orbits
elliptical orbits
orbits
perilunes

perihelions

DEF Those points in solar orbits which are nearest the sun.

GS apsides
. **perihelions**
RT aphelions
elliptical orbits
orbital elements
orbits
solar orbits

perilunes

GS apsides
. **perilunes**
RT lunar orbits
lunar satellites
perigees

period doubling

DEF The bifurcation of a nonlinear system to two stable periodic cycles on its route to chaotic turbulence.

GS branching (mathematics)
. **period doubling**
RT chaos
periodic functions
transition flow
turbulence
turbulent flow

period equations

USE **periodic functions**

periodic functions

UF *period equations*
GS analysis (mathematics)
. real variables
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . **periodic functions**

. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
RT Floquet theorem
Fourier analysis
period doubling

periodic orbits

USE **orbits**

periodic processes

USE **cycles**

periodic variations

UF *periodicity*
GS variations
. **periodic variations**
. . alternations
. . annual variations
. . diurnal variations
. . intraseasonal variations
. . nocturnal variations
. . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
RT autocorrelation
cataclysmic variables
climatology
cycles
dendrochronology
el Nino
extrapolation
Fourier analysis
long term effects
oscillations
oscillators
polar wandering (geology)
regularity
∞ rhythm
semiregular variable stars
Southern Oscillation
trends
variability
variable stars

periodicals

UF *journals (documents)*
GS documents
. **periodicals**
RT ∞ journals
records

periodicity

USE **periodic variations**

periodicity (biology)

USE **rhythm (biology)**

peripheral circulation

GS circulation
. blood circulation
. . **peripheral circulation**

peripheral equipment (computers)

SN (EXCLUDES COMPUTER-CONTROLLED EQUIPMENT)
DEF Equipment that works in conjunction with a computer but is not part of the computer itself. Card or paper-tape readers or punches, magnetic tape handlers, or line printers are among items of peripheral equipment.
UF *auxiliary equipment (computers)*
GS computer components
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
data processing equipment
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
RT analog to digital converters
computer storage devices
computer systems design
data processing
digital to analog converters

∞ equipment
magnetic disks
magnetic tapes
modems
plotters

peripheral jet flow

GS fluid flow
. jet flow
. . **peripheral jet flow**
RT downwash
ground effect (aerodynamics)
ground effect machines
lift augmentation

peripheral nervous system

GS anatomy
. nervous system
. . **peripheral nervous system**
RT neuromuscular transmission
∞ systems

peripheral vision

GS vision
. **peripheral vision**
RT space perception
visual acuity
visual fields

peripheries

USE **boundaries**

periscopes

DEF Optical instruments which displace the line of sight parallel to itself to permit a view which may otherwise be obstructed.
GS optical equipment
. **periscopes**
RT binoculars
eyepieces
optical measuring instruments
telescopes
viewing

peritoneum

GS anatomy
. **peritoneum**
membranes
. **peritoneum**
RT abdomen
epithelium
tissues (biology)
viscera

permafrost

DEF Any soil, subsoil or other surficial deposit, or even bedrock, occurring in arctic or subarctic regions at a variable depth beneath the Earth's surface in which a temperature below freezing has existed continuously for a long time. Used for frozen soils.

UF *frozen soils*
GS soils
. **permafrost**

RT aufeis (ice)
Earth cryosphere
planetary cryospheres
polar regions

Permalloys (trademark)

GS alloys
. **Permalloys (trademark)**
magnetic materials
. ferromagnetic materials
. . **Permalloys (trademark)**
RT iron alloys
magnets
molybdenum alloys
nickel alloys
permanent magnets

permanent magnets

GS magnets
. **permanent magnets**
RT ferrimagnets
ferromagnetic materials

- magnetic materials
Permalloys (trademark)
- permanganates**
GS manganese compounds
. **permanganates**
RT manganese ions
- permeability**
SN (EXCLUDES MAGNETIC PERMEABILITY)
DEF Of a magnetic material, the ratio of the magnetic induction to the magnetic field intensity in the same region. The ability to permit penetrations or passage. In this sense the term is applied particularly to substances which permit penetration or passage of fluids.
GS **permeability**
. dielectric permeability
RT aquifers
density (mass/volume)
diffusion
diffusivity
drainage
formations
infiltration
interstices
leaching
leakage
mechanical properties
penetration
percolation
permeating
∞ physical properties
porosity
∞ resistance
seepage
surface properties
void ratio
voids
wettability
- permeating**
RT ∞ absorption
desorption
dialysis
diffusion
dispersing
impregnating
osmosis
penetration
percolation
permeability
porosity
reverse osmosis
∞ saturation
sorption
transpiration
- permissivity**
RT compatibility
psychological factors
- permittivity**
UF *dielectric constant*
GS electrical properties
. dielectric properties
. . . **permittivity**
RT dielectric loss
electric fields
field strength
- permutations**
GS analysis (mathematics)
. combinatorial analysis
. . . **permutations**
RT ∞ combination
combinations (mathematics)
partitions (mathematics)
set theory
- perovskites**
DEF Minerals with a close-packed lattice and the general formula ABX₃ where A and B are metals and X is a nonmetal, usually O.
GS calcium compounds
. **perovskites**
- minerals
. **perovskites**
titanium compounds
. titanates
. . . **perovskites**
- peroxides**
GS chalcogenides
. oxides
. . . anhydrides
. . . . **peroxides**
. . . . inorganic peroxides
. hydrogen peroxide
. organic peroxides
. potassium peroxides
. sodium peroxides
RT dioxides
- Perseid meteoroids**
GS celestial bodies
. meteoroid showers
. . . **Perseid meteoroids**
. . . meteoroids
. . . **Perseid meteoroids**
- Pershing missile**
GS missiles
. ballistic missiles
. . . **Pershing missile**
. surface to surface missiles
. . . **Pershing missile**
RT multistage rocket vehicles
solid propellant rocket engines
- Persian Gulf**
GS gulfs
. **Persian Gulf**
RT inlets (topography)
- personal computers**
GS data processing equipment
. computers
. . . digital computers
. . . . microcomputers
. **personal computers**
. IBM personal computers
. Macintosh personal computers
RT computer techniques
VSAT (network)
- personality**
RT depersonalization
personnel selection
- personality tests**
RT intelligence tests
psychological tests
psychometrics
qualifications
∞ tests
- personnel**
GS **personnel**
. air traffic controllers (personnel)
. crews
. . . flight crews
. . . . spacecrews
. enemy personnel
. engineers
. flying personnel
. astronauts
. orbital workers
. cosmonauts
. flight crews
. spacecrews
. pilots (personnel)
. aircraft pilots
. test pilots
. ground crews
. instructors
. medical personnel
. flight nurses
. physicians
. surgeons
. flight surgeons
. navigators
- . operators (personnel)
. . . pilots (personnel)
. . . . aircraft pilots
. test pilots
. police
. programmers
. scientists
RT ∞ complement
consulting
crew experiment stations
crew observation stations
crew workstations
depersonalization
deployment
employee relations
∞ estimators
helmet mounted displays
human resources
incentives
inhabitants
manpower
occupation
organizing
position (title)
qualifications
research management
resources
retirement
retraining
services
unionization
wage surveys
- personnel development**
RT ∞ development
employee relations
human resources
management
resources
training analysis
- personnel management**
GS management
. industrial management
. . . **personnel management**
RT employee relations
human relations
human resources
leadership
management planning
- personnel propulsion systems*
USE **self maneuvering units**
- personnel selection**
GS selection
. **personnel selection**
. . . pilot selection
RT aptitude
employment
intelligence tests
labor
personality
physical examinations
physiological tests
- personnel subsystems**
RT industries
- Perspex (trademark)**
GS plastics
. **Perspex (trademark)**
- perspiration**
UF *sweating*
RT body fluids
body temperature
evaporation
excretion
feces
heat acclimatization
humidity
Palmar sweat index
skin (anatomy)
sweat

transpiration

PERT

UF *program evaluation review technique*
 RT commerce
 contract management
 critical path method
 GERT
 management analysis
 management methods
 management planning
 ∞ paths
 program trend line analysis
 project management

perturbation

DEF Any departure introduced into an assumed steady state of a system, or a small departure from a nominal path such as a desired trajectory. Usually used as equivalent to small perturbation. Specifically, a disturbance in the regular motion of a celestial body, the result of a force additional to that which causes the regular motion, specifically a gravitational force.

GS **perturbation**
 . orbit perturbation
 . . satellite perturbation
 RT ∞ disturbances
 four body problem
 geodesy
 gravitational instability
 long term effects
 many body problem
 nutation
 orbital mechanics
 oscillations
 oscillators
 radiation pressure
 Schach effect
 three body problem
 two body problem
 variations

perturbation theory

UF *disturbance theory*
 GS **perturbation theory**
 . vinti theory
 RT Boussinesq approximation
 celestial mechanics
 disturbing functions
 Hansen lunar theory
 Hartree approximation
 Hill lunar theory
 Hill method
 many body problem
 operators (mathematics)
 orbit perturbation
 orbital elements
 quantum theory
 strange attractors
 Taylor instability
 ∞ theories
 von Zeipel method
 wave functions
 Wentzel-Kramer-Brillouin method
 Yang-Mills fields
 Yang-Mills theory

Peru

GS nations
 . **Peru**
 RT South America

perveance

DEF The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Perveance is the constant G appearing in the Child-Langmuir-Schottky equation.

GS ratios
 . **perveance**
 RT Child-Langmuir law
 space charge
 thermionic diodes
 vacuum tubes

work functions

pesticides

GS poisons
 . **pesticides**
 . . insecticides
 . . . Carbamates (tradenam)
 urethanes
 . . . DDT
 . . . dieldrin
 . . . phenothiazines
 RT crop dusting
 environmental chemistry
 toxicology

petals

RT plants (botany)

petechia

GS hemorrhages
 . **petechia**
 RT skin (anatomy)

PETN

UF *pentaerythritol tetranitrate*
 GS esters
 . organic nitrates
 . . **PETN**
 nitrogen compounds
 . nitrates
 . . organic nitrates
 . . . **PETN**
 RT explosives

Petrel sounding rocket

GS rocket vehicles
 . sounding rockets
 . . **Petrel sounding rocket**
 RT ∞ rockets

Petri nets

DEF Abstract, formal models of the information flow in systems with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers.

GS models
 . mathematical models
 . . **Petri nets**
 networks
 . **Petri nets**
 RT consecutive events
 dynamic models
 graphs (charts)
 information theory
 ∞ nets
 sequencing
 trees (mathematics)

petrogenesis

(added August 1997)

DEF Branch of petrology dealing with the origin and formation of rocks, particularly igneous rocks.

UF *petrogeny*
 GS geology
 . petrology
 . . **petrogenesis**
 RT geochronology
 igneous rocks
 magma
 meteorite parent bodies
 mineralogy
 ∞ origins
 petrography
 volcanology

petrogeny

(added August 1997)

USE **petrogenesis**

petrography

GS geology
 . petrology
 . . **petrography**
 RT inliers (landforms)

petrogenesis
 rocks
 sedimentary rocks
 siderophile elements

petroleum

USE **crude oil**

petroleum products

DEF Materials derived from petroleum, natural gas, and asphalt deposits. Includes gasolines, diesel and heating fuels, lubricants, waxes, greases, petroleum coke, petrochemicals, and sulfur.

GS products
 . **petroleum products**
 . . asphalt
 . . diesel fuels
 . . gasoline
 . . tars
 RT butanes
 crude oil
 greases
 kerogen
 lubricants
 lubricating oils
 methane
 natural gas
 oils
 plastics
 polynuclear organic compounds

petrology

DEF That branch of geology dealing with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.

GS geology
 . **petrology**
 . . lithology
 . . petrogenesis
 . . petrography
 RT cones (volcanoes)
 formations
 geochemistry
 geological surveys
 geophysics
 impact melts
 inliers (landforms)
 Mars volcanoes
 mineralogy
 rocks
 stratigraphy
 volcanoes
 volcanology

Pfaff equation

GS analysis (mathematics)
 . **Pfaff equation**
 RT differential equations
 ∞ equations
 thermodynamics

PFM (modulation)

USE **pulse frequency modulation**

pH

RT acid base equilibrium
 acid rain
 acidity
 acidosis
 alkalinity
 alkalosis
 bases (chemical)
 buffers (chemistry)
 hydrogen ions

pH factor

RT acid base equilibrium
 acidosis
 alkalosis
 hydrogen ions
 ion concentration

soil sampling

Phaethon (hypothetical planet)
(added June 1998)

USE **hypothetical planets**

phantastrons

GS circuits
 . delay circuits
 . . **phantastrons**
 oscillators
 . relaxation oscillators
 . . **phantastrons**
 RT feedback amplifiers

Phantom aircraft

USE **F-4 aircraft**

pharmacology

GS medical science
 . **pharmacology**
 . . psychopharmacology
 RT anesthesiology
 antiradiation drugs
 bioavailability
 bioprocessing
 cyclic AMP
 drugs
 ∞ medicine
 motion sickness drugs
 vasoconstrictor drugs
 veterinary medicine

pharynx

GS anatomy
 . respiratory system
 . . **pharynx**

phase angle

USE **phase shift**

phase change materials

DEF Materials undergoing solid/liquid phase transformations and whose latent heat of fusion properties are used to store and deliver thermal energy, usually solar energy. Used for PCM (materials).

UF *PCM (materials)*
 RT ceresin
 condensing
 fusion (melting)
 heat of fusion
 heat storage
 heat transfer
 liquid-solid interfaces
 ∞ materials
 melting
 organic materials
 phase transformations
 solar energy conversion
 solar heating
 sublimation
 Trombe walls
 waxes
 working fluids

phase coherence

RT ∞ coherence
 coherence coefficient
 coherent light
 four-wave mixing
 wave fronts

phase conjugation

DEF Technique for the removal of phase distortions during propagation of laser beams through the atmosphere.

GS conjugation
 . **phase conjugation**
 . . four-wave mixing

phase contrast

GS contrast
 . **phase contrast**
 RT diffraction patterns
 electron microscopy

microscopy
 optical measurement
 optical paths
 scanning electron microscopy
 transmission electron microscopy

phase control

RT circuit protection
 ∞ control
 phase locked systems
 transformers

phase demodulators

GS demodulators
 . **phase demodulators**
 RT Bragg cells
 modems

phase detectors

DEF Devices that continuously compare the phase of two signals and provide an output proportional to their difference in phase.

GS circuits
 . **phase detectors**
 . . synchrosopes
 RT ∞ detectors
 phase locked systems
 signal detection
 synchronism

phase deviation

DEF The peak difference between the instantaneous phase of the modulated wave and the carrier frequency.

RT amplitudes
 modulated continuous radiation
 signal analysis

phase diagrams

UF *constitutional diagrams*
equilibrium diagrams
eutectic diagrams
 GS diagrams
 . **phase diagrams**
 RT alloys
 binary systems (materials)
 cluster variation method
 critical temperature
 eutectics
 heat of fusion
 heat treatment
 intermetallics
 liquid phases
 liquids
 liquidus
 melting points
 phase separation (materials)
 phase stability (materials)
 solid phases
 solid solutions
 solid suspensions
 solubility
 stoichiometry
 transition points
 transition temperature
 vapor phases

phase error

GS errors
 . **phase error**
 RT anisoplanatism
 circuit protection
 error signals

phase lock demodulators

GS demodulators
 . **phase lock demodulators**
 RT correlation detection
 parametrons

phase locked systems

RT feedback frequency modulation
 optical coupling
 phase control
 phase detectors
 synchronized oscillators

∞ systems
 tracking filters

phase matching

DEF A way of maximizing the coupling between two systems used in second harmonic generation which happens mostly in crystals.

RT crystal optics
 crystals
 frequency multipliers
 harmonic generations
 laser outputs
 lasers

phase modulation

DEF Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation.

GS coding
 . signal encoding
 . . **phase modulation**
 . . . FM/PM (modulation)
 . . . phase shift keying
 binary phase shift keying
 quadrature phase shift keying
 modulation
 . **phase modulation**
 . . FM/PM (modulation)
 . . phase shift keying
 . . . binary phase shift keying
 . . . quadrature phase shift keying
 RT amplitude modulation
 Bragg cells
 deformable mirrors
 demodulation
 demodulators
 frequency modulation
 modems
 modulators
 parametric frequency converters
 pulse modulation
 push-pull amplifiers
 trellis coding

phase response

USE **frequency response**
phase shift

phase rule

GS rules
 . **phase rule**
 RT chemical equilibrium
 degrees of freedom
 ∞ Gibbs equations

phase separation (materials)

(added December 1988)
 RT binary systems (materials)
 liquid phases
 miscibility gap
 phase diagrams
 phase stability (materials)
 phase transformations
 ∞ separation
 solid phases
 solubility

phase shift

DEF The phase difference of two periodically recurring phenomena of the same frequency, expressed in angular measure. The angle between the lines connecting a celestial body and the sun and a celestial body and the Earth. Used for phase angle and phase response.

UF *phase angle*
phase response
 GS **phase shift**
 . Sagnac effect
 RT angles (geometry)
 equalizers (circuits)
 microwave switching

phase shift circuits

∞ phases
∞ shift

phase shift circuits
GS circuits
 . **phase shift circuits**
 . . . circulators (phase shift circuits)
RT delay circuits
duplex operation
gyrators

phase shift keying
DEF The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values.
GS coding
 . signal encoding
 . . . phase modulation
 . . . **phase shift keying**
 binary phase shift keying
 quadrature phase shift keying
 keying
 . **phase shift keying**
 . . . binary phase shift keying
 . . . quadrature phase shift keying
 modulation
 . phase modulation
 . . . **phase shift keying**
 binary phase shift keying
 quadrature phase shift keying
RT cochannel interference
information theory
quadrature amplitude modulation
Rayleigh fading
trellis coding

phase stability (materials)
(added July 1991)
GS stability
 . **phase stability (materials)**
RT crystallization
phase diagrams
phase separation (materials)
phase transformations
∞ phases
 stabilization

phase switching interferometers
GS measuring instruments
 . interferometers
 . . . **phase switching interferometers**
RT radio astronomy
radio telescopes

phase transformations
GS **phase transformations**
 . freezing
 . . . vibrational freezing
 . . . zone melting
 . liquefaction
 . . . coal liquefaction
 . martensitic transformation
 . melting
 . . . arc melting
 . . . fusion (melting)
 . . . levitation melting
 . . . vacuum melting
 . . . zone melting
 . vaporizing
 . . . boiling
 film boiling
 nucleate boiling
 Leidenfrost phenomenon
 . . . evaporation
 evapotranspiration
 . . . propellant evaporation
 . . . transpiration
 . . . flashing (vaporizing)
 . . . prevaporization
 . . . sublimation
RT cluster variation method
cold hardening
condensing
critical temperature
crystallization

directional solidification (crystals)
electron-hole drops
ferroelasticity
heat of fusion
Ising model
Laves phases
martensite
melt spinning
metamorphism (geology)
mushy zones
neel temperature
order-disorder transformations
Ostwald ripening
phase change materials
phase separation (materials)
phase stability (materials)
∞ phases
 shape memory alloys
 solidification
 solids
 syntectic alloys
∞ transformations
∞ transition
 transition pressure
 transition temperature

phase velocity
DEF Of a traveling plane wave at a single frequency, the velocity of an equiphase surface along the wave normal.
GS rates (per time)
 . **phase velocity**
 velocity
 . **phase velocity**
RT electromagnetic radiation
group velocity
Landau damping
propagation velocity
quantum mechanics
traveling waves
wave fronts
wave propagation

phased arrays
GS arrays
 . **phased arrays**
RT antenna arrays
laser arrays
linear arrays
monopulse antennas
seismographs
steerable antennas

∞ phases
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cycles
 liquid phases
 lunar phases
 phase shift
 phase stability (materials)
 phase transformations
 solid phases
 terminator lines
 vapor phases

phase-space integral
GS analysis (mathematics)
 . **phase-space integral**
RT classical mechanics
Euclidean geometry
hyperspaces
state vectors

phenacetin
USE **acetanilide**

phenanthrene
GS organic compounds
 . hydrocarbons
 . . . **phenanthrene**
RT anthracene
dyes

isomers

phenobarbital
RT drugs
narcotics
sedatives

phenol formaldehyde
RT formaldehyde
phenolic resins
resins

phenolic epoxy resins
GS plastics
 . synthetic resins
 . . . thermosetting resins
 . . . epoxy resins
 **phenolic epoxy resins**
 phenolic resins
 **phenolic epoxy resins**
 resins
 . synthetic resins
 . . . thermosetting resins
 . . . epoxy resins
 **phenolic epoxy resins**
 phenolic resins
 **phenolic epoxy resins**
RT adhesives
amines
crosslinking

phenolic resins
GS plastics
 . synthetic resins
 . . . thermosetting resins
 . . . **phenolic resins**
 micarta
 phenolic epoxy resins
 resins
 . synthetic resins
 . . . thermosetting resins
 . . . **phenolic resins**
 micarta
 phenolic epoxy resins
RT carbon-phenolic composites
phenol formaldehyde

phenology
DEF A branch of science dealing with the relations between climate and periodic biological phenomena.
RT activity cycles (biology)
biometeorology
climatology
coastal ecology
ecology
migration
molting
phenomenology
rhythm (biology)
zeitgebers

phenols
GS hydroxyl compounds
 . alcohols
 . . . **phenols**
 . . . bisphenols
 . . . cresols
 . . . phloroglucinol
 . . . thymol
RT thiols

phenomenology
RT case histories
experimentation
medical phenomena
mesoscale phenomena
phenology

phenothiazines
GS organic compounds
 . cyclic compounds
 . . . heterocyclic compounds
 . . . azines
 **phenothiazines**
 poisons

- . pesticides
 - . . insecticides
 - . . . **phenothiazines**
 - pyrazines
 - . azines
 - . . **phenothiazines**
- phenylalanine**
- GS acids
 - . amino acids
 - . . alanine
 - . . . **phenylalanine**
 - . . carboxylic acids
 - . . alanine
 - . . . **phenylalanine**
 - organic compounds
 - . amino acids
 - . . alanine
 - . . . **phenylalanine**
 - . . carboxylic acids
 - . . alanine
 - . . . **phenylalanine**
- phenyls**
- GS **phenyls**
 - . polybrominated biphenyls
 - . polychlorinated biphenyls
 - . polyphenyls
 - . . tetraphenyls
 - . . triphenyls
 - . . terphenyls
 - RT phosphene
 - . propargyl groups
- Philco 2000 computer**
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Philco 2000 computer**
- Philippines**
- GS landforms
 - . islands
 - . . Pacific islands
 - . . . **Philippines**
 - nations
 - . **Philippines**
- Philips ionization gages**
- GS measuring instruments
 - . pressure gages
 - . . vacuum gages
 - . . . ionization gages
 - **Philips ionization gages**
 - vacuum apparatus
 - . vacuum gages
 - . . ionization gages
 - . . . **Philips ionization gages**
 - RT pressure measurement
- philosophy**
- GS knowledge
 - . **philosophy**
 - . . paradoxes
 - RT literature
 - ∞ logic
 - mathematical logic
- phloroglucinol**
- GS hydroxyl compounds
 - . alcohols
 - . . phenols
 - . . . **phloroglucinol**
 - RT chemical indicators
 - . resins
- phobias**
- GS **phobias**
 - . fear
 - . . fear of flying
 - RT anxiety
 - . emotional factors
- Phobos**
- DEF A satellite of Mars orbiting at a mean distance of 9,400 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Mars satellites
 - . . . **Phobos**
 - RT Deimos
 - . Mars (planet)
 - . Nozomi Mars Orbiter
 - . Phobos spacecraft
- Phobos spacecraft**
- (added August 1998)
 - DEF Two Soviet spacecraft (Phobos 1 and 2, both launched in July 1988) designed to study the plasma environment in the Martian vicinity, the surface and atmosphere of Mars, and the surface composition of the Martian satellite Phobos. Other mission objectives included the study of the interplanetary environment and solar observations.
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Phobos spacecraft**
 - . . Soviet spacecraft
 - . . **Phobos spacecraft**
 - . . unmanned spacecraft
 - . . space probes
 - . . . Mars probes
 - **Phobos spacecraft**
 - RT Mars atmosphere
 - . Mars environment
 - . Phobos
- Phoebe**
- DEF A satellite of Saturn orbiting at a mean distance of 12,960,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Phoebe**
 - RT Saturn (planet)
- Phoebus nuclear reactor**
- GS nuclear reactors
 - . **Phoebus nuclear reactor**
 - RT KIWI reactors
 - . nuclear engine for rocket vehicles
 - . nuclear rocket engines
- Phoenix (AZ)**
- GS cities
 - . **Phoenix (AZ)**
 - RT Arizona
- Phoenix quadrangle (AZ)**
- GS landforms
 - . **Phoenix quadrangle (AZ)**
 - RT Arizona
 - . geodetic surveys
 - . mapping
- Phoenix sounding rocket**
- GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Phoenix sounding rocket**
 - . . sounding rockets
 - . . . **Phoenix sounding rocket**
 - RT solid propellant rocket engines
- phonemes**
- GS speech
 - . **phonemes**
 - RT languages
 - . linguistics
 - . phonemics
 - . phonetics
 - . psycholinguistics
 - . speech recognition
 - . words (language)
- phonemics**
- GS linguistics
 - . **phonemics**
 - RT intelligibility
 - . languages
 - . phonemes
 - . phonetics
- phonetics**
- GS linguistics
 - . **phonetics**
 - . speech
 - . **phonetics**
 - RT acoustics
 - . intelligibility
 - . languages
 - . phonemes
 - . phonemics
 - . speech defects
 - . speech recognition
 - . verbal communication
 - . words (language)
- phonoarteriography**
- RT arteries
 - . blood circulation
 - . phonocardiography
- phonocardiograms*
- USE **phonocardiography**
- phonocardiography**
- UF *phonocardiograms*
 - . *vibrocardiography*
 - GS bioengineering
 - . biometrics
 - . . cardiography
 - . . . **phonocardiography**
 - echocardiography
 - RT ballistocardiography
 - . electrocardiography
 - . heart
 - . heart diseases
 - . phonoarteriography
 - . vectorcardiography
- phonon beams**
- GS beams (radiation)
 - . **phonon beams**
 - . elastic waves
 - . phonons
 - . . **phonon beams**
 - . . electromagnetic radiation
 - . . thermal radiation
 - . . **phonon beams**
 - . . elementary excitations
 - . . phonons
 - . . . **phonon beams**
 - . . corpuscular radiation
 - . . particle beams
 - . . photon beams
 - . . Umklapp process
 - RT
- phonons**
- GS elastic waves
 - . **phonons**
 - . . phonon beams
 - . . elementary excitations
 - . . **phonons**
 - . . phonon beams
 - RT crystal structure
 - . lattice vibrations
 - . plasmons
 - . polarons
 - . sound waves
 - . Umklapp process
- phoria**
- GS diseases
 - . eye diseases
 - . . **phoria**
- phosgene**
- GS gases
 - . **phosgene**
 - . halogen compounds
 - . . chlorine compounds
 - . . chlorides

phosphates

- . . . **phosgene**
- . . . halides
- . . . chlorides
- . . . **phosgene**
- poisons
- . **phosgene**
- RT ∞ chemical compounds

phosphates

- GS phosphorus compounds
- . **phosphates**
- . . adenines
- . . adenosine triphosphate
- . . ammonium phosphates
- . . calcium phosphates
- . . cyclic AMP
- . . diphosphates
- . . . adenosine diphosphate
- . . indium phosphates
- . . monazite sands
- . . phosphene
- . . polynucleotides
- . . potassium phosphates
- . . pyridine nucleotides
- . . uridylic acid
- RT keep
- phosphoric acid
- Skydrol (trademark)

phosphazene

- DEF A ring or chain polymer that contains alternating phosphorus and nitrogen atoms, with two substituents on each phosphorus atom.
- GS organic compounds
- . organic phosphorus compounds
- . . **phosphazene**
- phosphorus compounds
- . organic phosphorus compounds
- . . **phosphazene**
- RT nitrogen compounds
- phosphines
- phosphonitriles
- polymer chemistry

phosphene

- GS organic compounds
- . organic phosphorus compounds
- . . **phosphene**
- phosphorus compounds
- . organic phosphorus compounds
- . . **phosphene**
- . phosphates
- . . **phosphene**
- RT luminosity
- phenyls
- retina
- vision

phosphides

- GS phosphorus compounds
- . **phosphides**
- . . boron phosphides
- . . gallium phosphides
- . . indium phosphides
- . . manganese phosphides
- . . schreibersite

phosphines

- GS hydrogen compounds
- . hydrides
- . . **phosphines**
- phosphorus compounds
- . **phosphines**
- RT phosphazene

phosphonitriles

- GS nitriles
- . **phosphonitriles**
- nitrogen compounds
- . **phosphonitriles**
- organic compounds
- . organic phosphorus compounds
- . . **phosphonitriles**
- phosphorus compounds
- . organic phosphorus compounds
- . . **phosphonitriles**

- RT phosphazene

phosphonium compounds

- GS phosphorus compounds
- . **phosphonium compounds**
- RT ∞ chemical compounds

phosphorescence

- DEF Emission of light which continues after the exciting mechanism has ceased.
- GS electromagnetic properties
- . optical properties
- . . **phosphorescence**
- emission
- . light emission
- . . luminescence
- . . . phosphorescence
- **phosphorescence**
- RT afterglows
- bioluminescence
- chemiluminescence
- phosphors
- plasma radiation
- scintillation
- trapping

phosphoric acid

- GS acids
- . **phosphoric acid**
- phosphorus compounds
- . **phosphoric acid**
- RT phosphates

phosphoric acid fuel cells

- DEF Long life fuel cells for the low to medium wattage range which use phosphoric acid as an electrolyte.
- GS electric generators
- . direct power generators
- . . fuel cells
- . . . **phosphoric acid fuel cells**
- electrochemical cells
- . fuel cells
- . . **phosphoric acid fuel cells**
- RT biochemical fuel cells
- electrolytic cells
- energy technology
- hydrogen oxygen fuel cells
- regenerative fuel cells
- total energy systems

phosphors

- DEF Phosphorescent substances such as zinc sulfide, which emit light when excited by radiation, as on the scope of a cathode ray tube.
- GS **phosphors**
- . radiophosphors
- RT fluorescence
- image intensifiers
- laser induced fluorescence
- mercury lamps
- phosphorescence
- photographic film

phosphorus

- GS chemical elements
- . **phosphorus**
- . . phosphorus isotopes
- . . . phosphorus 32

phosphorus 32

- GS chemical elements
- . nuclides
- . . isotopes
- . . . phosphorus isotopes
- **phosphorus 32**
- radioactive isotopes
- **phosphorus 32**
- . phosphorus
- . . phosphorus isotopes
- . . . **phosphorus 32**

phosphorus compounds

- GS **phosphorus compounds**
- . diethyl hydrogen phosphite (DEHP)
- . organic phosphorus compounds

- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- . phosphates
- . . adenines
- . . adenosine triphosphate
- . . ammonium phosphates
- . . calcium phosphates
- . . cyclic AMP
- . . diphosphates
- . . . adenosine diphosphate
- . . indium phosphates
- . . monazite sands
- . . phosphene
- . . polynucleotides
- . . potassium phosphates
- . . pyridine nucleotides
- . . uridylic acid
- . phosphides
- . . boron phosphides
- . . gallium phosphides
- . . indium phosphides
- . . manganese phosphides
- . . schreibersite
- . phosphines
- . phosphonium compounds
- . phosphoric acid
- . phosphorus oxides
- . phosphorus polymers
- RT ∞ chemical compounds
- ∞ Group 5A compounds

phosphorus isotopes

- GS chemical elements
- . nuclides
- . . isotopes
- . . . **phosphorus isotopes**
- phosphorus 32
- . phosphorus
- . . **phosphorus isotopes**
- . . . phosphorus 32

phosphorus metabolism

- GS metabolism
- . **phosphorus metabolism**

phosphorus oxides

- GS chalcogenides
- . oxides
- . . **phosphorus oxides**
- phosphorus compounds
- . **phosphorus oxides**

phosphorus polymers

- GS phosphorus compounds
- . **phosphorus polymers**
- RT ∞ polymers

phosphorylation

- GS chemical reactions
- . **phosphorylation**

photics

- RT light (visible radiation)
- ∞ optics

photo reconnaissance spacecraft

- GS military spacecraft
- . reconnaissance spacecraft
- . . **photo reconnaissance spacecraft**
- RT ∞ spacecraft

photoabsorption

- GS energy absorption
- . radiation absorption
- . . electromagnetic absorption
- . . . **photoabsorption**
- RT ∞ absorption
- photoexcitation

photoacoustic microscopy

- GS microscopy
- . **photoacoustic microscopy**
- RT acoustic microscopes

acousto-optics
ceramics
nondestructive tests
photoacoustic spectroscopy

photoacoustic spectroscopy

DEF An optical technique for investigating solid and semisolid materials, in which the sample is placed in a closed chamber filled with a gas and illuminated with monochromatic radiation of any desired wavelength, and with intensity modulated at some acoustic frequency. Absorption of radiation results in a periodic heat flow from the sample, which generates sound detectable with a sensitive microphone.

GS spectroscopy
. **photoacoustic spectroscopy**
RT absorption spectra
absorptivity
acousto-optics
laser applications
laser spectroscopy
photoacoustic microscopy
photothermal deflection spectroscopy

photocathodes

DEF Electrodes used for obtaining a photoelectric emission when irradiated. Used for photoelectric cathodes.

UF *photoelectric cathodes*
GS electrodes
. cathodes
. . . tube cathodes
. . . **photocathodes**
RT dark current
electrode materials
image converters
image intensifiers
image orthicons
light amplifiers
microchannels
orthicons
photoelectric cells
photoelectric emission
photoelectric materials
photomultiplier tubes

photocells

USE **photoelectric cells**

photochemical oxidants

DEF Any of the chemicals which enter into oxidation reactions in the presence of light or other radiant energy.

GS oxidizers
. **photochemical oxidants**
RT air pollution
atmospheric chemistry
nitrogen oxides
ozone
photooxidation

photochemical reactions

DEF Chemical reactions which involve either the absorption or emission of radiation. Used for photochemistry and photoreduction.

UF *photochemistry*
photoreduction
GS chemical reactions
. **photochemical reactions**
. . . photochromism
. . . photodecomposition
. . . photolysis
. . . photooxidation
. . . photosynthesis
. . . radiolysis
RT association reactions
atmospheric chemistry
charge transfer
cycloaddition
oxetane polymers
sodalite

volatile organic compounds

photochemistry

USE **photochemical reactions**

photochromism

GS chemical reactions
. photochemical reactions
. . **photochromism**
RT color photography
sodalite

photoclinometry

USE **photogrammetry**

photoconductive cells

DEF Photoelectric cells whose electrical resistance varies with the amount of illumination falling upon the sensitive area of the cell.

GS photoelectric cells
. **photoconductive cells**
RT ∞ cells
photovoltaic cells

photoconductivity

DEF The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity.

UF *photoresistivity*
GS electrical properties
. electrical resistivity
. . **photoconductivity**
electromagnetic properties
. optical properties
. . **photoconductivity**
photoelectricity
. photoelectric effect
. . **photoconductivity**
transport properties
. electrical resistivity
. . **photoconductivity**
RT ∞ conductivity
mercury cadmium tellurides
photoconductors
square wells

photoconductors

UF *photoresistors*
GS conductors
. **photoconductors**
semiconductors (materials)
. **photoconductors**
RT mercury cadmium tellurides
photoconductivity
photodiodes
photoelectric cells
photoelectric materials
photometers
phototransistors
resistors
tunnel junctions

photocurrents

USE **electric current**
photoelectric emission

photodecomposition

GS chemical reactions
. photochemical reactions
. . **photodecomposition**
decomposition
. **photodecomposition**
radiation chemistry
. **photodecomposition**
RT electromagnetic absorption
photodetachment
photolysis

photodetachment

RT photodecomposition

photoionization

photodetectors

USE **photometers**

photodiodes

DEF Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power.

GS electronic equipment
. diodes
. . semiconductor diodes
. . . **photodiodes**
. solid state devices
. . semiconductor devices
. . . **photodiodes**
optoelectronic devices
. **photodiodes**
RT dark current
focal plane devices
ion implantation
lasers
mercury cadmium tellurides
MSM (semiconductors)
photoconductors
photoelectric cells
photoelectric materials
phototransistors
phototubes
pushbroom sensor modes
SIS (semiconductors)
solar cells
x ray detectors

photodissociation

DEF The dissociation (splitting) of a molecule by the absorption of a photon. The resulting components may be ionized in the process (photoionization).

GS decomposition
. **photodissociation**
dissociation
. **photodissociation**
radiation chemistry
. **photodissociation**
RT electromagnetic absorption
photoexcitation
photolysis

photoelastic analysis

UF *photoelastic stress measurement*
RT fringe multiplication
Moire effects
 ∞ optics
photographic measurement
 ∞ polarization
polarization (waves)
stress analysis
stress measurement
temperature inversions

photoelastic materials

RT ∞ materials
photoelasticity

photoelastic stress measurement

USE **photoelastic analysis**

photoelasticity

GS electromagnetic properties
. **photoelasticity**
. . photoviscoelasticity
mechanical properties
. elastic properties
. . **photoelasticity**
. . . photoviscoelasticity
RT birefringence
dichroism
photoelastic materials
polarized light
prisms
refraction

photoelectric cells

stress analysis

photoelectric cathodes
USE **photocathodes**

photoelectric cells

DEF Transducers which convert electromagnetic radiation in the infrared, visible, and ultraviolet regions into electrical quantities such as voltage, current, or resistance. Used for photocells.

UF *photocells*

GS **photoelectric cells**

. photoconductive cells
. photovoltaic cells
. . . solar cells
. . . vertical junction solar cells

RT ∞ cells

dark current
direct power generators
∞ electric cells
electrochemical cells
electrode materials
energy absorption films
photocathodes
photoconductors
photodiodes
photometers
photomultiplier tubes
phototransistors
phototubes
solar generators
transducers

photoelectric effect

DEF The emission of an electron from a surface as the surface absorbs a photon of electromagnetic radiation. Electrons so emitted are termed photoelectrons.

GS photoelectricity

. **photoelectric effect**
. . . photoconductivity
. . . photoelectric emission
. . . photoionization
. . . photovoltaic effect

RT ∞ effects

photoelectrons

photoelectric emission

DEF The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity.

UF *photocurrents*
photoemission
photoemissivity

GS

emission
. particle emission
. . . electron emission
. . . **photoelectric emission**
photoelectricity
. photoelectric effect
. . **photoelectric emission**

RT

∞ electrical properties
external surface currents
negative electron affinity
photocathodes
photoexcitation
photoionization
photopeak
photovoltages
photovoltaic effect
stimulated emission
work functions

photoelectric generators

GS electric generators
. direct power generators
. . **photoelectric generators**
. . . photovoltaic cells
. . . . solar cells
. . . . vertical junction solar cells

RT ∞ generators

photoelectrochemical devices
solar energy conversion
solar generators

thermoelectric generators

photoelectric materials

UF *photoemitters*

RT electrode materials

electron emission

∞ materials

photocathodes
photoconductors
photodiodes
photoelectricity
photoelectrons
phototransistors
phototubes
photovoltaic cells

photoelectric photometers

USE **electrophotometers**

photoelectricity

UF *photoelectronics*

photosensors

GS **photoelectricity**

. photoelectric effect
. . photoconductivity
. . photoelectric emission
. . photoionization
. . photovoltaic effect

RT

Compton effect
electrical properties
electricity
optical properties
photoelectric materials
photoelectrons
photovoltages

photoelectrochemical devices

DEF Electrochemical devices powered by light or other incident radiation to produce electricity and/or chemical fuels (e. g. , hydrogen).

RT ∞ devices

electrochemical cells
electrode materials
energy technology
photoelectric generators
photoelectrochemistry
photon beams
solar energy conversion

photoelectrochemistry

DEF The study of the interaction between impinging light energy and the electropotential of the chemical changes in the electrode, electrolytic solution, or a photosensitive membrane.

GS electrochemistry

. **photoelectrochemistry**

RT ∞ chemistry

photoelectrochemical devices

photoelectromagnetic detectors

USE **photoelectromagnetic effects**
radiation measuring instruments

photoelectromagnetic effects

UF *photoelectromagnetic detectors*

RT ∞ effects

excitons
intermetallics

photoelectron spectroscopy

GS spectroscopy

. **photoelectron spectroscopy**

RT electron emission
spectroscopic analysis

photoelectronics

USE **electronics**
photoelectricity

photoelectrons

DEF Electrons which have been ejected from their parent atoms by interaction between those atoms and high energy photons.

GS particles

. charged particles
. . energetic particles

. . . electrons
. . . . **photoelectrons**
. . . corpuscular radiation
. . energetic particles
. . . electrons
. . . . **photoelectrons**
. . elementary particles
. . fermions
. . . leptons
. . . . electrons
. **photoelectrons**
. . nuclear particles
. . **photoelectrons**
RT electron emission
photoelectric effect
photoelectric materials
photoelectricity
photoionization
photomagnetic effects
photoneutrons
photonuclear reactions
photovoltaic effect

photoemission

USE **photoelectric emission**

photoemissivity

USE **emissivity**
photoelectric emission

photoemitters

USE **photoelectric materials**

photoengraving

RT micromachining
photomechanical effect
printing

photoexcitation

(added December 1992)

GS excitation

. **photoexcitation**
potential energy
. electric potential
. . quantum wells
. . . **photoexcitation**

RT

fluorescence
molecular excitation
photoabsorption
photodissociation
photoelectric emission
photoionization
photoluminescence

photogeology

GS geology

. **photogeology**

RT aerial photography
Earth Resources Survey aircraft
geological surveys
geomorphology
ice mapping
natural gas exploration
photogrammetry
photomapping
reconnaissance
thematic mapping

photogoniometers

GS measuring instruments

. goniometers
. . **photogoniometers**
. . optical measuring instruments
. . **photogoniometers**
optical equipment
. optical measuring instruments
. . **photogoniometers**

RT

angles (geometry)
diffractometers
etalons
interferometers
monochromators
spectrometers

photogrammetry

DEF The art or science of obtaining reliable

measurements by means of photography. Used for photoclinometry.

- UF *photoclinometry*
- GS photographic measurement
- . **photogrammetry**
- RT aerial photography
- digital cameras
- mapping
- photogeology
- photoreconnaissance
- projectors
- relief maps
- stereophotography
- surveys
- terrain analysis

photograph interpretation

- USE **photointerpretation**

photographic developers

- UF *developers (photography)*
- RT ∞ development
- photographs
- photography

photographic emulsions

DEF The light-sensitive coatings on photographic film consisting usually of silver halide.

- GS mixtures
- . dispersions
- . . emulsions
- . . . **photographic emulsions**
- nuclear emulsions
- . solutions
- . . **photographic emulsions**
- . . . nuclear emulsions
- RT photography
- photosensitivity

photographic equipment

- GS **photographic equipment**
- . cameras
- . . Baker-Nunn camera
- . . ballistic cameras
- . . CCD cameras
- . . Delft camera
- . . diffraction limited cameras
- . . faint object camera
- . . high speed cameras
- . . . framing cameras
- . . digital cameras
- . . I2S cameras
- . . Lallemand cameras
- . . multispectral band cameras
- . . panoramic cameras
- . . pinhole cameras
- . . Schmidt cameras
- . . streak cameras
- . . television cameras
- . photographic processing equipment
- . photographic rectifiers
- RT ∞ equipment
- lenses
- optical equipment
- optical filters
- photography
- photometers
- projectors

photographic film

- GS **photographic film**
- . microfilms
- RT ∞ films
- magazines (supply chambers)
- optical data storage materials
- optical filters
- phosphors
- photographs
- photography
- polymeric films
- Sabatier reaction

photographic measurement

- GS **photographic measurement**
- . photogrammetry
- RT dosimeters

- ∞ measurement
- optical correction procedure
- optical measurement
- particle image velocimetry
- photoelastic analysis
- photography
- photointerpretation
- photometry
- photoreconnaissance
- spectrometers

photographic plates

- RT glass
- photographic processing
- photographs
- photography
- ∞ plates

photographic processing

- RT darkrooms
- photographic plates
- photographs
- photography
- printing
- ∞ processing

photographic processing equipment

- GS photographic equipment
- . **photographic processing equipment**
- RT darkrooms
- photography
- reproduction (copying)

photographic recording

- GS recording
- . **photographic recording**
- RT data recording
- high speed photography
- hologrammetry
- intermittency hypothesis
- particle image velocimetry
- photographs
- photography
- recording instruments

photographic rectifiers

- GS optical equipment
- . **photographic rectifiers**
- photographic equipment
- . **photographic rectifiers**
- RT ∞ condensers
- photography

photographic tracking

- GS tracking (position)
- . **photographic tracking**
- RT cinetheodolites
- optical tracking
- photography
- satellite tracking
- space detection and tracking system

photographs

- GS **photographs**
- . cloud photographs
- . lunar photographs
- . Mars photographs
- . microphotographs
- . motion pictures
- . photomicrographs
- RT display devices
- images
- mosaics
- optical correction procedure
- photographic developers
- photographic film
- photographic plates
- photographic processing
- photographic processing equipment
- photographic recording
- photography
- pixels
- representations
- spatial filtering
- video tapes
- visual aids

xerography

photography

DEF A process for recording visual images by exposing a light-sensitive substance to radiation such as visible light, infrared radiation, or x-rays.

- GS imagery
- . **photography**
- . . aerial photography
- . . all sky photography
- . . astronomical photography
- . . autoradiography
- . . black and white photography
- . . chronophotography
- . . cinematography
- . . cloud photography
- . . color photography
- . . electron photography
- . . electro-optical photography
- . . fractography
- . . frame photography
- . . high speed photography
- . . holography
- . . . acoustical holography
- . . . microwave holography
- . . . speckle holography
- . . . white light holography
- . . infrared imagery
- . . lunar photography
- . . metric photography
- . . microwave photography
- . . multispectral photography
- . . . infrared photography
- color infrared photography
- . . . radar photography
- . . orthophotography
- . . photomicrography
- . . rocket-borne photography
- . . shadowgraph photography
- . . . Schlieren photography
- . . spaceborne photography
- . . . satellite-borne photography
- . . spectrophotography
- . . stereoscopy
- . . . stereophotography
- . . streak photography
- . . ultraviolet photography
- . . ultraviolet photometry
- . . underwater photography
- . . urography
- RT brightness distribution
- brightness temperature
- cameras
- CCD cameras
- cloud photographs
- darkrooms
- Earth observations (from space)
- Earth resources
- evaporography
- exposure
- graphic arts
- HS-801 aircraft
- ice mapping
- imaging techniques
- lunar photographs
- mapping
- Mars photographs
- microphotographs
- multispectral band cameras
- multispectral band scanners
- panoramic cameras
- photographic developers
- photographic emulsions
- photographic equipment
- photographic film
- photographic measurement
- photographic plates
- photographic processing
- photographic processing equipment
- photographic recording
- photographic rectifiers
- photographic tracking
- photographs
- photointerpretation
- photolithography
- photomapping

photointerpretation

photomaps
photomasks
photomechanical effect
photoreconnaissance
pinhole cameras
pixels
projectors
radiography
rapid ballistics identification
reproduction (copying)
timber inventory
video tapes
wave front reconstruction
xerography

photointerpretation

UF *photograph interpretation*
RT aerial photography
∞ analyzing
change detection
ground truth
∞ interpretation
photographic measurement
photography
photomapping
photoreconnaissance
sea truth
spatial filtering

photoionization

DEF The ionization of an atom or molecule by the collision of a high energy photon with the particle.

GS emission
. **photoionization**
ionization
. **photoionization**
photoelectricity
. photoelectric effect
. . **photoionization**
RT atmospheric ionization
auroral ionization
auroral irradiation
electron emission
gas ionization
laser induced fluorescence
photodetachment
photoelectric emission
photoelectrons
photoexcitation

photolithography

DEF The process of making a printing plate by exposing a design photographically on a sensitized emulsion and removing unwanted portions chemically.

GS printing
. lithography
. . **photolithography**
RT microelectronics
micromodules
photography
photoresists

photoluminescence

DEF Luminescence produced by the absorption of radiant flux, distinguished from ordinary reflection by a time delay and usually, an upward shift in a wavelength.

GS emission
. light emission
. . luminescence
. . . **photoluminescence**
. . . . triboluminescence
. . . . x ray fluorescence
RT blue shift
fluorescence
laser induced fluorescence
photoexcitation
photoluminescent bands
photorefractivity
porous silicon

photoluminescent bands

GS spectra
. spectral bands

. . photoluminescent bands

RT absorption spectra
∞ bands
emission spectra
photoluminescence
triboluminescence

photolysis

GS chemical reactions
. photochemical reactions
. . **photolysis**
decomposition
. **photolysis**
radiation chemistry
. **photolysis**
RT cracking (chemical engineering)
electrolysis
photodecomposition
photodissociation
radiolysis

photomagnetic effects

RT deuterons
∞ effects
gamma rays
photoelectrons
spin decoupling

photomapping

GS mapping
. **photomapping**
RT aerial photography
Coastal Zone Color Scanner
color photography
DMSP satellites
Earth resources
geodesy
geology
gnomonic projection
hologrammetry
ice mapping
maps
ocean color scanner
photogeology
photography
photointerpretation
rocket-borne photography
satellite-borne photography
soil mapping
spaceborne photography
thematic mapping
thermal mapping
topography

photomaps

GS maps
. **photomaps**
RT aerial photography
photography
relief maps
satellite-borne photography
spaceborne photography
thematic mapping

photomasks

DEF In the production of integrated circuit devices, repeated arrays of microphotographs of the circuit patterns on glass substrates used to form successive patterns on single wafers often of submicrometer sizes.

RT arrays
circuit diagrams
integrated circuits
masking
microelectronics
micromachining
microphotographs
∞ patterns
photography
photoresists
printed circuits
solid state devices
substrates

wafers

photomechanical effect

RT ∞ effects
lithography
micromachining
photoengraving
photography
printing

photometers

DEF Instruments for measuring the intensity of light or the relative intensity of a pair of lights. Used for microphotometers and photodetectors.

UF *microphotometers*
photodetectors
GS measuring instruments
. optical measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping
Spectrometer
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping
Spectrometer
. . . ultraviolet spectrophotometers
optical equipment
optical measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping
Spectrometer
. . . ultraviolet spectrophotometers
RT bolometers
densitometers
electrophotometry
ellipsometers
horizon scanners
infrared spectrophotometers
microdensitometers
nephelometers
optical measurement
photoconductors
photoelectric cells
photographic equipment
photometry
phototransistors
polarimeters
pyranometers
radiometers
reflectometers
spectrometers
spectrophotometers
telephotometry
transmissometers
ultraviolet detectors
x ray detectors

photometry

DEF The study of the measurement of the intensity of light.

GS optical measurement
. **photometry**
. . astronomical photometry
. . . stellar spectrophotometry
. . . electrophotometry
. . . infrared photometry
. . . spectrophotometry
. . . . stellar spectrophotometry
. . . telephotometry
. . . ultraviolet photometry
. . . visual photometry
RT chemical analysis
colorimetry
illuminating
∞ illumination
light (visible radiation)
luminance

photographic measurement
 photometers
 polarimetry
 reflectance
 spectroscopy
 transmittance

photomicrographs
 GS photographs
 . **photomicrographs**
 RT photomicrography

photomicrography
 UF *micrography*
 GS imagery
 . photography
 . . **photomicrography**
 RT black and white photography
 electron microscopes
 metallography
 microscopes
 microscopy
 microstructure
 photomicrographs

photomultiplier tubes
 DEF Phototubes with one or more dynodes between its photocathode and output electrode. Used for electron multipliers and multiplier phototubes.
 UF *electron multipliers*
multiplier phototubes
 GS amplifiers
 . current amplifiers
 . . **photomultiplier tubes**
 . . . frequency modulation
 photomultipliers
 electron tubes
 . cold cathode tubes
 . . phototubes
 . . . **photomultiplier tubes**
 frequency modulation
 photomultipliers
 RT cathodes
 channel multipliers
 dynodes
 electrodes
 microchannel plates
 microwave tubes
 multipactor discharges
 multipliers
 photocathodes
 photoelectric cells
 scintillating fibers
 scintillation counters
 secondary emission

photon absorptiometry
 GS density measurement
 . **photon absorptiometry**
 RT absorption spectra
 densitometers
 electromagnetic absorption
 energy absorption
 gamma ray absorptiometry
 gamma ray absorption
 multiphoton absorption
 radiation absorption

photon beams
 GS beams (radiation)
 . **photon beams**
 electromagnetic radiation
 . **photon beams**
 RT beam waveguides
 gamma ray beams
 incident radiation
 laser outputs
 light beams
 optical paths
 optical scanners
 phonon beams
 photoelectrochemical devices
 photonic propulsion
 photons
 reflected waves

refracted waves
 thermal blooming

photon density
 GS rates (per time)
 . flux density
 . . **photon density**
 RT squeezed states (quantum theory)

photon-electron interaction
 RT elastic scattering
 electron scattering
 elementary particle interactions
 ∞ interactions
 Umklapp process

photoneutrons
 GS nuclear radiation
 . **photoneutrons**
 particles
 . elementary particles
 . . fermions
 . . . neutrons
 **photoneutrons**
 . neutral particles
 . . neutrons
 . . . **photoneutrons**
 RT baryons
 nuclear particles
 nuclear reactions
 photoelectrons
 photonuclear reactions
 vector dominance model

photonic propulsion
 GS propulsion
 . low thrust propulsion
 . . **photonic propulsion**
 . . . laser propulsion
 . . . spacecraft propulsion
 . . **photonic propulsion**
 . . . laser propulsion
 RT electromagnetic propulsion
 photon beams

photonic switching
 USE **optical switching**

photonics
 RT electro-optics
 fiber optics
 free-space optical interconnects
 lasers
 light emitting diodes
 optical data processing
 optical interconnects
 optical switching
 optical waveguides
 optoelectronic devices
 photons

photons
 DEF According to the quantum theory of radiation, the elementary quantities of radiant energy. They are regarded as discrete quantities having a momentum equal to $h\nu/c$, where h is the Planck constant, ν is the frequency of the radiation, and c is the speed of light in a vacuum. Photons are never at rest, have no electric charges and no magnetic moments, but they have spin moments. The energy of a photon (the unit quantum of energy) is equal to $h\nu$.
 GS particles
 . elementary particles
 . . bosons
 . . . **photons**
 . nuclear particles
 . . bosons
 . . . **photons**
 RT annihilation reactions
 cosmic rays
 electromagnetic radiation
 gamma rays
 light (visible radiation)
 nuclear radiation
 optical properties

photon beams
 photonics
 photonuclear reactions
 photoproduction
 Planck's constant
 quantum theory
 ∞ radiation
 rotors

photonuclear reactions
 GS nuclear reactions
 . **photonuclear reactions**
 RT electromagnetic interactions
 light (visible radiation)
 particle interactions
 photoelectrons
 photoneutrons
 photons
 photoproduction

photooxidation
 GS chemical reactions
 . oxidation
 . . **photooxidation**
 . photochemical reactions
 . . **photooxidation**
 RT association reactions
 photochemical oxidants

photopeak
 RT amplitude distribution analysis
 photoelectric emission
 pulse amplitude
 scintillation counters

photophilic plants
 GS plants (botany)
 . **photophilic plants**
 RT light (visible radiation)
 photosensitivity

photophoresis
 DEF Production of unidirectional motion in a collection of very fine particles, suspended in a gas or falling in a vacuum, by a powerful beam of light.
 RT aerosols
 light (visible radiation)
 particle interactions
 particle motion
 radiation pressure

photoplasticity
 GS mechanical properties
 . plastic properties
 . . **photoplasticity**

photopolymers
 (added July 1995)
 DEF Polymers created by photochemical processes.
 RT diffractive optics
 display devices
 holography
 photoresists
 ∞ polymers

photoproduction
 GS electromagnetic interactions
 . **photoproduction**
 particle production
 . **photoproduction**
 RT electromagnetic absorption
 pair production
 photons
 photonuclear reactions
 radioactive decay
 vector dominance model

photoreceptors
 GS anatomy
 . sense organs
 . . **photoreceptors**
 receptors (physiology)
 . **photoreceptors**
 RT eye (anatomy)

photoreconnaissance

photosensitivity
retina
sensitometry
visual pigments
Young-Helmholtz theory

photoreconnaissance

GS reconnaissance
. **photoreconnaissance**
RT aerial reconnaissance
Airborne Integrated Reconnaissance System
black and white photography
DMSP satellites
Earth Resources Survey aircraft
ground truth
HS-801 aircraft
photogrammetry
photographic measurement
photography
photointerpretation
spectral reconnaissance

photoreduction

USE **photochemical reactions**

photorefractivity

(added May 1995)
GS electromagnetic properties
. optical properties
. . . refractivity
. . . **photorefractivity**
reactivity
. **photorefractivity**
RT crystal optics
gratings (spectra)
optical waveguides
photoluminescence

photoresistivity

USE **photoconductivity**

photoresistors

USE **photoconductors**

photoresists

(added June 2000)
DEF Photosensitive substances that are either rendered soluble or insoluble to chemical etchants when exposed to light, and are used in transferring circuit patterns in the production of integrated circuits.
RT etching
integrated circuits
microelectronics
photolithography
photomasks
photopolymers
photosensitivity

photosensitivity

DEF The property of a material whereby its chemical makeup is altered by exposure to light.
GS sensitivity
. **photosensitivity**
. . light adaptation
. . phototropism
RT light (visible radiation)
photographic emulsions
photophilic plants
photoreceptors
photoresists
sensitometry
thresholds (perception)
visual pigments

photosensors

USE **photoelectricity**
radiation measuring instruments

photosphere

DEF The intensely bright portion of the sun visible to the unaided eye.
GS **photosphere**
. solar granulation
RT chromosphere

faculae
solar atmosphere
solar physics
spicules
starspots
stellar activity
sun
sunspots

photostresses

GS stresses
. **photostresses**

photosynthesis

DEF A process operating in green plants in which carbohydrates are formed under the influence of light with chlorophyll serving as a catalyst.
GS chemical reactions
. photochemical reactions
. . **photosynthesis**
RT algae
carbohydrates
Chlorella
chlorophylls
chloroplasts
crop growth
photosynthetically active radiation
respiration

photosynthetically active radiation

(added January 2002)
DEF Incident natural or artificial radiation of wavelengths that can be used by plants for photosynthesis.
GS electromagnetic radiation
. **photosynthetically active radiation**
RT crop growth
insolation
irradiance
leaf area index
photosynthesis
∞ radiation
solar radiation
vegetation growth

photothermal conversion

DEF Conversion into thermal energy from optical radiation by a photoabsorptive or photo-selective material.
GS energy conversion
. solar energy conversion
. . **photothermal conversion**
. . . thermophotovoltaic conversion
RT ∞ conversion
energy absorption films
energy conversion efficiency
energy technology
selectivity
solar collectors
solar dynamic power systems
solar energy absorbers
solar reflectors
solar thermal electric power plants
spectral sensitivity
thermal energy
thermodynamics

photothermal deflection spectroscopy

(added November 1998)
UF *PDS (spectroscopy)*
GS spectroscopy
. **photothermal deflection spectroscopy**
RT optical measurement
photoacoustic spectroscopy
thermal diffusivity
thermal lensing

photothermotropism

USE **anisotropy**
phototropism
temperature effects

phototransistors

GS electronic equipment

. solid state devices
. . . semiconductor devices
. . . . transistors
. . . . **phototransistors**
optoelectronic devices
. **phototransistors**
RT junction transistors
photoconductors
photodiodes
photoelectric cells
photoelectric materials
photometers
phototubes

phototropism

UF *photothermotropism*
GS sensitivity
. photosensitivity
. . **phototropism**
RT color
crop vigor
optical properties
plants (botany)

phototubes

GS electron tubes
. cold cathode tubes
. . **phototubes**
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
RT cathodes
dark current
electrodes
flying spot scanners
gas discharge tubes
microwave tubes
photodiodes
photoelectric cells
photoelectric materials
phototransistors

photoviscoelasticity

GS electromagnetic properties
. optical properties
. . **photoviscoelasticity**
. photoelasticity
. . **photoviscoelasticity**
mechanical properties
. elastic properties
. . photoelasticity
. . . **photoviscoelasticity**
. . viscoelasticity
. . . **photoviscoelasticity**

photovoltages

GS potential energy
. electric potential
. . **photovoltages**
RT photoelectric emission
photoelectricity
photovoltaic effect
threshold voltage

photovoltaic cells

DEF Photoelectric detectors capable of directly generating an electric current in response to irradiation.
GS electric generators
. direct power generators
. . photoelectric generators
. . . **photovoltaic cells**
. . . . solar cells
. . . . vertical junction solar cells
electronic equipment
. solid state devices
. . semiconductor devices
. . . **photovoltaic cells**
. . . . solar cells
. . . . vertical junction solar cells
photoelectric cells
. **photovoltaic cells**
. . solar cells
. . . vertical junction solar cells
RT amorphous silicon
∞ cells

electrochemical cells
photoconductive cells
photoelectric materials
short circuit currents
SIS (semiconductors)
solar generators

photovoltaic conversion

GS energy conversion
. solar energy conversion
. . . **photovoltaic conversion**
. . . thermophotovoltaic conversion
RT ∞ conversion
photovoltaic effect
solar arrays
solar cells

photovoltaic effect

DEF The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons.
GS electrical properties
. **photovoltaic effect**
photoelectricity
. photoelectric effect
. . . **photovoltaic effect**
RT ∞ effects
photoelectric emission
photoelectrons
photovoltages
photovoltaic conversion
threshold voltage

phreatophytes

GS plants (botany)
. **phreatophytes**
RT trees (plants)

phthalates

GS esters
. **phthalates**

phthalocyanin

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **phthalocyanin**
RT pigments

phugoid oscillations

USE **oscillations**
pitch (inclination)

phyloquinone

UF *vitamin K*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **phyloquinone**
. lipids
. . **phyloquinone**
vitamins
. **phyloquinone**

physical chemistry

DEF The application of the laws, principles, and techniques of physics to the study of chemical properties, transformations, and reactions.
GS **physical chemistry**
. cryochemistry
. quantum chemistry
RT aerothermochemistry
atmospheric chemistry
chemical analysis
∞ chemistry
computational chemistry
molecular dynamics
nuclear chemistry
∞ physics
thermochemistry

thermodynamics

physical constants testing reactor

USE **nuclear research and test reactors**
water cooled reactors

physical endurance

USE **physical fitness**

physical examinations

RT flight fitness
mobile quarantine facility
percussion
personnel selection

physical exercise

UF *exercise*
gymnastics
GS **physical exercise**
. hyperkinesia
RT angina pectoris
athletes
atrophy
exercise physiology
fatigue (biology)
hypokinesia
physical fitness
running
swimming
treadmills
walking

physical factors

GS physiological factors
. **physical factors**
RT ∞ physics
work

physical fitness

UF *physical endurance*
GS fitness
. **physical fitness**
RT athletes
competition
exercise physiology
flight fitness
physical exercise
physiological tests
posture
sports medicine
swimming
treadmills
work capacity

physical optics

RT crystal optics
fiber optics
geometrical optics
gradient index optics
optical properties
∞ optics
quantum optics
quantum theory
∞ theories

∞ **physical properties**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT acoustic properties
adsorptivity
Bragg angle
buoyancy
chemical properties
color
density (mass/volume)
diffusivity
durability
eddy currents
elastic properties
electrical properties
electromagnetic properties
fusibility
∞ high resistance
hygroscopicity
hysteresis
impedance

internal friction
isotropy
magnetic dipoles
magnetic properties
mechanical properties
optical properties
permeability
polymorphism
propellant properties
∞ properties
surface properties
thermal expansion
thermodynamic properties
thixotropy
transmissivity
transport properties
virtual properties
viscosity

∞ **physical sciences**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT astronomy
∞ chemistry
geology
life sciences
∞ metallurgy
meteorology
mineralogy
oceanography
∞ physics
∞ science

physical work

UF *exertion*
GS work
. **physical work**
RT effort
horsepower
tasks
treadmills
work capacity
workloads (psychophysiology)

physicians

GS personnel
. medical personnel
. . **physicians**
RT stethoscopes

∞ **physics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT astrophysics
atmospheric physics
atomic physics
biophysics
branching (physics)
charm (particle physics)
cloud physics
combustion
combustion physics
condensed matter physics
degenerate matter
electrophysics
field theory (physics)
flavor (particle physics)
geophysics
health physics
Health Physics Research Reactor
kinetics
low temperature physics
magnetomechanics (physics)
matter (physics)
∞ mechanics (physics)
∞ molecular physics
neutron physics
nuclear physics
nuclei (nuclear physics)
physical chemistry
physical factors
∞ physical sciences
plasma physics
plasmas (physics)
polymer physics
psychophysics

quenching (atomic physics)
 radio physics
 reactor physics
 reentry physics
 rigid rotors (plasma physics)
 ∞ science
 selection rules (nuclear physics)
 solar physics
 ∞ solid state physics
 strange attractors
 theoretical physics

Physics and Chemistry Experiment in Space

DEF A group of Space Shuttle payloads consisting of various space experiments. Used for PACE.

UF *PACE*

GS experimentation

. **Physics and Chemistry Experiment in Space**

payloads

. Space Shuttle payloads

. . **Physics and Chemistry Experiment in Space**

spaceborne experiments

. **Physics and Chemistry Experiment in Space**

RT ∞ chemistry

space flight

physiochemistry

GS biochemistry

. **physiochemistry**

RT bioavailability

∞ chemistry

exercise physiology

molecular biology

organic chemistry

physiology

psychotropic drugs

∞ science

physiography

USE **geomorphology**

physiologic availability

(added August 2001)

USE **bioavailability**

physiological acceleration

DEF The acceleration experienced by a human or an animal test subject in an accelerating vehicle.

GS rates (per time)

. **physiological acceleration**

RT ∞ acceleration

acceleration (physics)

acceleration stresses (physiology)

deceleration

gravitational physiology

impact acceleration

physiological defenses

GS **physiological defenses**

. immunity

RT acquired immunodeficiency syndrome

antibodies

antigens

biocompatibility

∞ defense

immune systems

inoculum

interferon

physiological effects

GS **physiological effects**

. physiological responses

. . hemodynamic responses

. apoptosis

RT biological effects

bone demineralization

cholera

comfort

diving (underwater)

∞ effects

electrolyte metabolism

environmental engineering

environments

exercise physiology

geotropism

gonads

gravitational physiology

head down tilt

heat acclimatization

heat stroke

hematopoiesis

hematopoietic system

human reactions

noise pollution

radiation effects

reaction time

relative biological effectiveness (RBE)

shock (physiology)

space adaptation syndrome

sports medicine

physiological factors

GS **physiological factors**

. physical factors

RT astronaut performance

chemical defense

chemical warfare

flight stress (biology)

noise pollution

sex factor

physiological responses

GS physiological effects

. **physiological responses**

. . hemodynamic responses

responses

. **physiological responses**

. . hemodynamic responses

RT baroreflexes

desynchronization (biology)

evoked response (psychophysiology)

gravitational physiology

head up tilt

pathological effects

zeitgebers

physiological telemetry

USE **biotelemetry**

physiological tests

GS **physiological tests**

. body sway test

. carboxyhemoglobin test

. ear pressure test

. electronystagmography

. vestibular tests

. Weber test

RT cardiac output

cardiography

certification

environmental index

environmental tests

mobile quarantine facility

personnel selection

physical fitness

pilot selection

psychomotor performance

sensorimotor performance

stroke volume

Taylor manifest anxiety scale

∞ tests

treadmills

urinalysis

physiology

DEF The science that treats of the functions of living organisms or their parts, as distinguished from morphology or anatomy.

GS **physiology**

. electrophysiology

. exercise physiology

. gravitational physiology

. neurophysiology

. psychophysiology

. respiratory physiology

. underwater physiology

RT aging (biology)

blood circulation

bone demineralization

catabolism

cytogenesis

differentiation (biology)

digesting

heart function

hemodynamics

homeostasis

menstruation

metabolism

mitosis

narcosis

physiochemistry

regeneration (physiology)

regularity

respiration

∞ science

shock (physiology)

stress (physiology)

thermoregulation

tolerances (physiology)

phytoplankton

DEF The aggregate of passively floating or drifting plant organisms in aquatic ecosystems.

GS plankton

. **phytoplankton**

plants (botany)

. aquatic plants

. . **phytoplankton**

RT algae

dissolved organic matter

marine biology

Sea-viewing Wide Field-of-view

Sensor

water pollution

zooplankton

phytotrons

DEF Apparatus for the growth of plants under a variety of controlled environmental conditions. Used for germinators and growth chambers.

UF *germinators*

growth chambers

RT germination

greenhouses

growth

plants (botany)

Piaggio aircraft

GS **Piaggio aircraft**

. P-166 aircraft

. PD-808 aircraft

RT ∞ aircraft

Piaggio P-166 aircraft

USE **P-166 aircraft**

Piaggio-Douglas PD-808 aircraft

USE **PD-808 aircraft**

Piasecki aircraft

GS **Piasecki aircraft**

. VZ-8 aircraft

RT ∞ aircraft

pickling (metallurgy)

DEF Preferential removal of oxide or mill scale from the surface of a metal by immersion usually in an acidic or alkaline solution.

GS cleaning

. chemical cleaning

. . **pickling (metallurgy)**

RT descaling

metal films

metal finishing

- scale (corrosion)
- pickoffs*
USE **sensors**
- pickups*
USE **sensors**
- picosecond pulses**
GS pulses
 . **picosecond pulses**
RT amplitudes
 electromagnetic missiles
 electromagnetic pulses
 laser outputs
 pulse rate
 pulsed radiation
 time signals
- picrates**
GS nitrogen compounds
 . nitro compounds
 . . **picrates**
 . . . ammonium picrates
- picture elements*
USE **pixels**
- picture tubes**
UF *kinescopes*
GS electron tubes
 . vacuum tubes
 . . cathode ray tubes
 . . . **picture tubes**
 video equipment
 . **picture tubes**
RT display devices
 flying spot scanners
 raster scanning
 television equipment
- PIDV (velocimetry)*
USE **particle image velocimetry**
- pediments**
UF *pediments*
 pediplains
GS landforms
 . terraces (landforms)
 . . plateaus
 . . . **pediments**
 Central Piedmont (US)
RT coastal plains
 mountains
- pi-electrons**
GS particles
 . charged particles
 . . energetic particles
 . . . electrons
 **pi-electrons**
 corpuscular radiation
 energetic particles
 electrons
 **pi-electrons**
 elementary particles
 fermions
 leptons
 electrons
 **pi-electrons**
RT molecular electronics
 nuclear particles
- piercing**
UF *puncturing*
RT cutting
 drilling
 extruding
 forging
 metal working
 penetration
 perforating
∞ perforation
 spark machining
- vulnerability
- piers*
USE **wharves**
- piezoactuators*
(added January 2001)
USE **piezoelectric actuators**
- piezoelectric actuators**
(added January 2001)
DEF Any actuator that uses the piezoelectric effect as a basis for its function.
UF *piezoactuators*
GS actuators
 . **piezoelectric actuators**
 electromechanical devices
 . **piezoelectric actuators**
RT active control
 microelectromechanical systems
 piezoelectric motors
 piezoelectric transducers
 smart materials
 smart structures
 ultrasonic wave transducers
 vibration damping
- piezoelectric ceramics**
DEF Ceramic material with piezoelectric properties similar to those of some natural crystals.
GS ceramics
 . **piezoelectric ceramics**
 lead zirconate titanates
 smart materials
- piezoelectric crystals**
GS crystals
 . crystal oscillators
 . . **piezoelectric crystals**
 oscillators
 . crystal oscillators
 . . **piezoelectric crystals**
RT microsionics
 piezoresistive transducers
 quartz transducers
 single crystals
- piezoelectric gages**
GS measuring instruments
 . pressure gages
 . . **piezoelectric gages**
 transducers
 . . piezoelectric transducers
 . . **piezoelectric gages**
 . piezoresistive transducers
 . . **piezoelectric gages**
RT pressure sensors
 strain gages
- piezoelectric motors**
(added January 2001)
DEF Any motor that uses the piezoelectric effect to produce its mechanical output.
UF *piezomotors*
GS electromechanical devices
 . electric motors
 . . **piezoelectric motors**
 motors
 . electric motors
 . . **piezoelectric motors**
RT microelectromechanical systems
 micromotors
 piezoelectric actuators
 piezoelectric transducers
 ultrasonic wave transducers
- piezoelectric transducers**
DEF Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties.
GS transducers
 . **piezoelectric transducers**
- . . piezoelectric gages
RT interdigital transducers
 piezoelectric actuators
 piezoelectric motors
 praeterersonic devices
 ultrasonic cleaning
- piezoelectricity**
DEF The property exhibited by some asymmetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain.
GS electrical properties
 . **piezoelectricity**
 mechanical properties
 . **piezoelectricity**
RT crystal oscillators
 elastic properties
 electricity
 electrostriction
 piezoresistive transducers
 pyroelectricity
- piezometers**
GS measuring instruments
 . pressure gages
 . . **piezometers**
RT seepage
- piezomotors*
(added January 2001)
USE **piezoelectric motors**
- piezoresistive transducers**
GS transducers
 . **piezoresistive transducers**
 . . piezoelectric gages
RT piezoelectric crystals
 piezoelectricity
- pigeons**
GS animals
 . vertebrates
 . . birds
 . . . **pigeons**
- piggyback systems**
RT air launching
 multistage rocket vehicles
 payload mass ratio
 payloads
 Saenger space transportation system
∞ systems
- pigments**
GS **pigments**
 . carotene
 . chlorophylls
 . cytochromes
 . melanin
 . visual pigments
RT additives
 albinism
 anatase
 chromophores
 dopa
 fillers
 inks
 myoglobin
 paints
 phthalocyanin
 rutile
 skin (anatomy)
- pigs (swine)*
USE **swine**
- Pike's Peak (CO)**
GS landforms
 . peaks (landforms)
 . . **Pike's Peak (CO)**
RT Colorado
 mountains
- pile foundations**
GS foundations

. **pile foundations**
 RT ∞ piles

∞ **piles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT nuclear reactors
 pile foundations

pilocarpine
 GS bases (chemical)
 . alkaloids
 . . **pilocarpine**
 nitrogen compounds
 . alkaloids
 . . **pilocarpine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **pilocarpine**

pilot error
 UF *flight technical error*
 GS errors
 . **pilot error**
 RT aircraft accidents
 collisions
 crash landing
 crashes
 human factors engineering
 human performance
 midair collisions
 pilot induced oscillation

pilot induced oscillation
 DEF Oscillations of a flying aircraft caused by transients and system changeovers, by pilot overreaction upon such transients, or by misleading pilot cues or excessive pilot gain in modern high-gain, high order aircraft control systems.
 RT aerodynamic stability
 aircraft control
 aircraft stability
 control stability
 high gain
 longitudinal control
 man machine systems
 nonstabilized oscillation
 pilot error
 pilot performance
 self induced vibration
 stable oscillations
 transient oscillations

pilot landing aid television system
 USE **PLAT system**

pilot opinion ratings
 (added August 1999)
 USE **pilot ratings**

pilot performance
 GS human performance
 . **pilot performance**
 . . blackout prevention
 RT aircraft performance
 astronaut performance
 flight fatigue
 intravehicular activity
 man operated propulsion systems
 operator performance
 ∞ performance
 pilot induced oscillation
 psychomotor performance
 sensorimotor performance
 situational awareness

pilot plants
 RT industrial plants
 models
 product development

prototypes

pilot ratings
 (added August 1999)
 DEF Subjective assessment of the handling and stability characteristics of an aircraft or other flight vehicle.
 UF *pilot opinion ratings*
 GS flight characteristics
 . **pilot ratings**
 . . Cooper-Harper ratings
 ratings
 . **pilot ratings**
 . . Cooper-Harper ratings
 RT aircraft performance
 assessments
 controllability
 helicopter performance

pilot selection
 GS selection
 . personnel selection
 . . **pilot selection**
 RT physiological tests
 psychological tests

pilot support systems
 (added October 1997)
 SN (LIMITED TO ADVANCED FLIGHT VEHICLE SYSTEMS FOR INTEGRATING, INTERPRETING, AND PRESENTING FLIGHT OR MISSION RELATED INFORMATION)
 UF *cockpit assistant systems*
Pilot's Associate
 GS information systems
 . **pilot support systems**
 support systems
 . **pilot support systems**
 RT artificial intelligence
 automatic pilots
 avionics
 cockpits
 decision support systems
 expert systems
 flight management systems
 human-computer interface
 knowledge based systems
 man machine systems
 situational awareness

pilot training
 GS education
 . flight training
 . . **pilot training**
 RT astronaut training
 aviation psychology
 ejection injuries
 ejection training
 flight simulators
 space flight training
 training simulators

piloted centrifuges
 USE **human centrifuges**

pilotless aircraft
 SN (AIR VEHICLES USING REMOTE OR AUTONOMOUS CONTROL)
 UF *Darkstar unmanned aerial vehicle*
unmanned aerial vehicles
 GS **pilotless aircraft**
 . drone aircraft
 . . target drone aircraft
 . . . Firebee 2 target drone aircraft
 . . . Jindivik target aircraft
 . X-45 aircraft
 RT ∞ aircraft
 balloons
 drone vehicles
 light aircraft
 ∞ military aircraft
 oblique wings
 reconnaissance aircraft

remotely piloted vehicles

∞ **pilots**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT aircraft pilots
 automatic pilots
 pilots (personnel)
 test pilots

pilots (personnel)
 GS personnel
 . flying personnel
 . . **pilots (personnel)**
 . . . aircraft pilots
 test pilots
 . operators (personnel)
 . . **pilots (personnel)**
 . . . aircraft pilots
 test pilots
 RT astronauts
 cosmonauts
 crews
 flight crews
 ∞ pilots

Pilot's Associate
 (added October 1997)
 USE **pilot support systems**

p-i-n diodes
 USE **diodes**
p-i-n junctions

p-i-n junctions
 UF *p-i-n diodes*
 GS semiconductor junctions
 . **p-i-n junctions**
 RT diodes
 ∞ junctions
 solar cells

pinch effect
 DEF The result of an electromechanical force that constricts, and sometimes momentarily ruptures, a molten conductor carrying current at a high density. The self contradiction of a plasma column carrying large currents due to the interaction of this current with its own magnetic field.
 GS **pinch effect**
 . plasma pinch
 . . screw pinch
 . . theta pinch
 . . zeta pinch
 . reverse field pinch
 RT cylindrical plasmas
 ∞ effects
 magnetic fields
 magnetohydrodynamics
 plasma compression
 plasma control
 relativistic plasmas
 stellarators
 thermonuclear power generation
 thermonuclear reactions
 zeta thermonuclear reactor

pineal gland
 GS anatomy
 . glands (anatomy)
 . . endocrine glands
 . . . **pineal gland**
 . nervous system
 . . central nervous system
 . . . brain
 diencephalon
 **pineal gland**

pinhole cameras
 DEF Cameras which have no lenses, but consist essentially of a darkened box with a small hole in one side, so that an inverted image of outside objects is projected on the opposite side where it is recorded on photographic film.
 GS optical equipment

unsteady flow
water flow
water hammer
water pressure

pipe nozzles

RT exhaust systems
inlet nozzles
intake systems
nozzle geometry
∞ nozzles
openings
outlets
tanks (containers)

pipelines

GS **pipelines**
. sewers
RT crossings
∞ lines
materials handling
pipes (tubes)
pumps
siphons
steam flow
∞ storage
storage tanks
transportation
waste disposal
water hammer

pipelining (computers)

DEF Processing techniques for improving the capability of computer systems by modeling, sequencing control, resource allocation, etc.

GS data processing
. **pipelining (computers)**
RT associative processing (computers)
data processing equipment
multiprocessing (computers)
multiprogramming
parallel programming
RISC processors
time sharing
vector processing (computers)

Piper aircraft

GS light aircraft
. **Piper aircraft**
. . . PA-34 Seneca aircraft
RT ∞ aircraft
general aviation aircraft

piperidine

GS bases (chemical)
. **piperidine**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **piperidine**
RT pyridines

pipes (tubes)

UF *tubing*
GS **pipes (tubes)**
. gas pipes
. U bends
RT ∞ casing
circular tubes
ducts
fluid flow
∞ headers
hoses
∞ hydraulics
internal flow
manifolds
pipe flow
pipelines
risers
siphons
syringes
∞ tubes

pipettes

RT burettes

glassware
laboratory equipment

Pirani gages

GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Pirani gages**
vacuum apparatus
. vacuum gages
. . **Pirani gages**
RT hot-wire flowmeters
ionization gages
Knudsen gages
McLeod gages
pressure measurement

piston engines

DEF Engines, especially internal combustion engines, in which a piston or pistons moving back and forth work upon a crankshaft or other device to create rotational movement. Used for reciprocating engines.

UF *reciprocating engines*
GS engines
. **piston engines**
. . diesel engines
. . free-piston engines
. . Stirling engines
RT aircraft engines
automobile engines
external combustion engines
fuel injection
internal combustion engines
pistons
reciprocation
rotary engines
Wankel engines

piston theory

RT compressing
fluid dynamics
pistons
∞ theories

pistons

GS **pistons**
. magnetic pistons
RT combustion chambers
engine parts
free-piston engines
internal combustion engines
piston engines
piston theory
plungers
reciprocation

PIT (rocket engines)
(added April 2001)

USE **pulsed inductive thrusters**

∞ **pitch**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *tone*
RT frequencies
pitch (inclination)
pitch (material)

pitch (inclination)

DEF Of a vehicle, an angular displacement about an axis parallel to the lateral axis of the vehicle. Used for damping in pitch, phugoid oscillations, and pitch angles.

UF *damping in pitch*
phugoid oscillations
pitch angles
GS attitude (inclination)
. **pitch (inclination)**
RT angles (geometry)
heaving
longitudinal control
longitudinal stability
∞ motion
∞ pitch
roll

rotation
slopes
stability augmentation
variable pitch propellers
yaw

pitch (material)

DEF The residues from the destructive distillation of tars.
RT asphalt
oils
∞ pitch
tars

pitch angles

USE **pitch (inclination)**

pitch attitude control

USE **longitudinal control**

pitching moments

GS moments
. stability derivatives
. . **pitching moments**
RT aerodynamic coefficients
longitudinal stability
moments of inertia
rolling moments
torque
yawing moments

pitot tubes

DEF Open ended tubes or tube arrangements which, when pointed upstream, may be used to measure the stagnation pressure of the fluid for subsonic flow; or the stagnation pressure behind the tube's normal shock wave for supersonic flow. (Pronounced pee-toe. After Henri Pitot, 1695-1771, French scientist.) Used for Preston tubes.

UF *Preston tubes*
RT flow measurement
flowmeters
pressure measurement
protuberances
speed indicators
static pressure
∞ tubes
velocity measurement
Venturi tubes

∞ **pits**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT pits (excavations)
pitting

pits (excavations)

RT boreholes
excavation
mines (excavations)
∞ pits
sumps

pitting

RT chemical attack
chipping
corrosion
corrosion resistance
corrosion tests
degradation
erosion
erosive burning
etching
hot corrosion
metal-water reactions
∞ pits
scoring

pituitary gland

UF *hypophysis*
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **pituitary gland**

pituitary hormones

RT brain
hypothalamus

pituitary hormones

GS secretions
. endocrine secretions
. . hormones
. . . **pituitary hormones**
. . . . adrenocorticotropin (ACTH)

PIV (velocimetry)

USE **particle image velocimetry**

pivoted wing aircraft

USE **tilt wing aircraft**

pivots

DEF The paths followed by a point in a diameter of a circle as the circle rolls along in a straight line. Used for trochoids.

UF *trochoids*
RT bearings
gimbals
hinges
pintles
shafts (machine elements)
supports
swivels

PIX

USE **plasma interaction experiment**

pixels

DEF Shortened term for 'picture elements.' They are image resolution elements in vidicon-type detectors. Used for picture elements.

UF *picture elements*
RT aerial photography
electrophotometry
imaging techniques
photographs
photography
remote sensing
satellite imagery
spectral mixture analysis
vidicons

PL/1

GS languages
. programming languages
. . **PL/1**
RT Cobol
compilers
computer programming
FORTRAN
machine oriented languages

plages (faculae)

USE **faculae**

plains

DEF Any flat areas, large or small, at a low elevation; specifically, extensive regions of comparatively smooth and level or gently undulating land, having few or no prominent surface irregularities. Plains sometime have a considerable slope, and usually at a low elevation with reference to surrounding areas. Plains may be either forested or bare of trees, and may be formed by deposition or by erosion.

GS land
. **plains**
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra
landforms
. **plains**
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra

RT farmlands
flats (landforms)
geography
grasslands
Great Plains Corridor (North America)
plateaus
steppes
topography
wilderness

plan position indicators

DEF Display devices on which target blips are shown in plan position, thus forming a map-like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators).

UF *PPI (position indicators)*
GS display devices
. position indicators
. . **plan position indicators**
. . radarscopes
. . . **plan position indicators**
measuring instruments
. indicating instruments
. . position indicators
. . . **plan position indicators**
radar equipment
. radarscopes
. . **plan position indicators**

planar structures

RT flat layers
flat plates
flat surfaces
flatness
∞ structures
surface properties

Plancks constant

GS constants
. **Plancks constant**
RT black body radiation
de Broglie wavelengths
electromagnetic radiation
nuclear magnetic resonance
photons
quantum theory
thermal radiation
Wentzel-Kramer-Brillouin method

plane strain

DEF A deformation of a body in which the displacement of all points in the body are parallel to a given plane, and the displacement values are not dependent on the distance perpendicular to the plane.

RT crack propagation
elastic deformation
fracture mechanics
plane stress
plastic deformation
stress intensity factors
stress-strain relationships

plane stress

GS stresses
. **plane stress**
RT loads (forces)
plane strain
stress concentration

plane waves

GS longitudinal waves
. **plane waves**
RT beams (radiation)
cylindrical waves
elastic waves
evanescent waves
normal shock waves
∞ radiation
shock waves
solitary waves
sound waves
spatial filtering
spherical waves

transverse waves
traveling waves
∞ waves

planet detection

(added January 2003)

DEF Detection of extrasolar planets using any of a number of direct and indirect observation techniques including astrometry, transit photometry, Doppler spectroscopy, and ground and space-based interferometry.

UF *exoplanet detection*
extrasolar planet detection
GS detection
. **planet detection**
RT astrometry
astronomical interferometry
astronomical photometry
extrasolar planets
planetary systems

planet ephemerides

GS ephemerides
. **planet ephemerides**
RT geocentric coordinates
planets

planet origins

USE **planetary evolution**

planet X

(added June 1998)

USE **hypothetical planets**

planetariums

RT astronomical models
display devices

planetary atmospheres

SN (EXCLUDES EARTH ATMOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . **planetary atmospheres**
. . . . helium hydrogen atmospheres
. . . . Jupiter atmosphere
. . . . Mars atmosphere
. . . . Mercury atmosphere
. . . . Neptune atmosphere
. . . . planetary ionospheres
. . . . Pluto atmosphere
. . . . Saturn atmosphere
. . . . Uranus atmosphere
. . . . Venus atmosphere
. Venus clouds
RT ∞ absorption
∞ atmospheres
atmospheric attenuation
atmospheric composition
atmospheric density
atmospheric energy sources
atmospheric temperature
Earth atmosphere
ionopause
lunar atmosphere
nongray atmospheres
Nozomi Mars Orbiter
organic solids
planetary meteorology
planetary rings
primitive Earth atmosphere
radiative transfer
radio occultation
satellite atmospheres
Saturn rings
solar planetary interactions
terraforming

planetary bases

GS space bases
. **planetary bases**
. . Mars bases
RT extraterrestrial resources
in situ resource utilization
space exploration

- stations
- planetary boundary layer**
 DEF The layer of the atmosphere from the Earth's surface to the geostrophic wind level, including the surface boundary layer and the Ekman layer.
 GS boundary layers
 . **planetary boundary layer**
 RT atmospheric boundary layer
 core-mantle boundary
- planetary composition**
 GS composition (property)
 . **planetary composition**
 RT Earth planetary structure
 gas giant planets
 Jupiter rings
 Saturn rings
 siderophile elements
 space exploration
 structural properties (geology)
- planetary cores**
 DEF The centers of planets.
 GS cores
 . **planetary cores**
 . . Earth core
 RT core-mantle boundary
 lunar core
 planets
 stellar cores
- planetary craters**
 DEF Collective term for craters on any of the planetary surfaces.
 GS craters
 . **planetary craters**
 . . Mars craters
 RT Earth (planet)
 impact damage
 Mars (planet)
 Mars surface
 Mercury (planet)
 Mercury surface
 meteorite craters
 planetary geology
 planets
 Venus (planet)
 Venus surface
- planetary crusts**
 DEF The outermost layers of planets. The planetary crusts are on top of the mantle and are modified by various processes of weathering, sedimentation, metamorphosis, volcanism, and bombardment by meteorites.
 GS crusts
 . **planetary crusts**
 . . Earth crust
 RT lunar crust
 planetary geology
 planetary mantles
- planetary cryospheres**
(added June 1996)
 RT ∞ cryospheres
 ice environments
 Mars (planet)
 permafrost
 planetary meteorology
 polar caps
- planetary entry*
 USE **atmospheric entry**
- planetary environments**
 SN (EXCLUDES EARTH)
 GS environments
 . extraterrestrial environments
 . . **planetary environments**
 . . . Mars environment
 . . . Mars atmosphere
 . . . planetary atmospheres
 helium hydrogen atmospheres
 Jupiter atmosphere
- . . . Mars atmosphere
 . . . Mercury atmosphere
 . . . Neptune atmosphere
 . . . planetary ionospheres
 . . . Pluto atmosphere
 . . . Saturn atmosphere
 . . . Uranus atmosphere
 . . . Venus atmosphere
 Venus clouds
 . . planetary magnetospheres
 planetary magnetotails
- RT aerospace environments
 bioastronautics
 ∞ cryospheres
 exobiology
 life support systems
 long duration space flight
 lunar environment
 planets
 protoplanets
 terraforming
 terrestrial planets
 thermal environments
- planetary evolution**
 UF *planet origins*
 GS evolution (development)
 . **planetary evolution**
 RT cosmology
 planetary geology
 protoplanetary disks
 protoplanets
 solar nebula
 solar system evolution
 stellar evolution
- planetary exploration*
 USE **space exploration**
- planetary explorer*
 USE **outer planets explorers**
- planetary geology**
 DEF Study of science of a planet, its history, and its life as recorded in the rocks. Includes the study of the surface features, the geometry of rock formations, weathering and erosion, and sedimentation.
 GS geology
 . **planetary geology**
 . . Mars volcanoes
 RT lunar geology
 Mars Express
 Mars Pathfinder
 planetary craters
 planetary crusts
 planetary evolution
 planetary structure
 planetary surfaces
 planetology
 planets
 remote sensing
 solar system
 space exploration
- planetary gravitation**
 GS gravitation
 . **planetary gravitation**
 RT escape velocity
 lunar gravitation
- planetary ionospheres**
 SN (EXCLUDES EARTH IONOSPHERE)
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary atmospheres
 **planetary ionospheres**
 RT ∞ atmospheres
 ∞ ionospheres
 ∞ Jupiter atmosphere
 magnetosphere-ionosphere coupling
 Mars atmosphere
 Neptune atmosphere
 Saturn atmosphere
 Uranus atmosphere
- Venus atmosphere
- planetary landing**
 SN (EXCLUDES LANDING ON THE PLANET EARTH)
 GS landing
 . spacecraft landing
 . . **planetary landing**
 . . . Mars landing
 RT crash landing
 glide landings
 hard landing
 horizontal spacecraft landing
 interplanetary flight
 lunar landing
 orbital mechanics
 roving vehicles
 soft landing
 water landing
- planetary limb**
 DEF In astronomy, the circular outer edge of a planet.
 GS **planetary limb**
 . Earth limb
 RT ∞ limbs
 lunar limb
 solar limb
- planetary magnetic fields**
 GS magnetic fields
 . **planetary magnetic fields**
 RT geomagnetic tail
 geomagnetism
 planetary magnetospheres
 planetary magnetotails
 polar cusps
 solar planetary interactions
- planetary magnetospheres**
 SN (EXCLUDES EARTH MAGNETOSPHERE)
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . **planetary magnetospheres**
 planetary magnetotails
 RT Earth magnetosphere
 ∞ magnetospheres
 planetary magnetic fields
 solar planetary interactions
- planetary magnetotails**
(added March 1990)
 SN (EXCLUDES EARTH'S MAGNETOTAIL; FOR EARTH USE 'GEOMAGNETIC TAIL')
 DEF The portion of the magnetosphere extending from a planet in the direction away from the sun for a variable distance of the order of 1,000 planet radii.
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary magnetospheres
 **planetary magnetotails**
 RT exosphere
 geomagnetic tail
 magnetopause
 ∞ magnetotails
 planetary magnetic fields
 solar planetary interactions
 solar wind
- planetary mantles**
 GS **planetary mantles**
 . Earth mantle
 RT core-mantle boundary
 crusts
 lithosphere
 lunar mantle
 planetary crusts
- planetary mapping**
 GS mapping
 . **planetary mapping**
 RT astrophysics
 ground penetrating radar
 Heat Capacity Mapping Mission

planetary mass

thermal mapping

planetary mass

GS mass
. **planetary mass**
RT protoplanets

planetary meteorology

GS meteorology
. **planetary meteorology**
RT atmospheric circulation
atmospheric physics
Jupiter atmosphere
Mars atmosphere
Mercury atmosphere
planetary atmospheres
planetary cryospheres
planetology
planets
Venus atmosphere

planetary motion

USE **solar orbits**

planetary nebulae

GS celestial bodies
. nebulae
. . **planetary nebulae**
RT Orion nebula

planetary oceans

(added June 2001)
USE **extraterrestrial oceans**

planetary orbits

GS orbits
. **planetary orbits**
RT Amor asteroid
Apollo asteroids
Charon
circular orbits
Earth orbits
elliptical orbits
equatorial orbits
hypothetical planets
interplanetary trajectories
orbital resonances (celestial mechanics)
parking orbits
polar orbits
retrograde orbits
satellite orbits
spacecraft orbits
swingby technique
transfer orbits
twenty-four hour orbits
Viking orbiter spacecraft

planetary protection

(added August 2001)
DEF Technological and legal measures taken to prevent biological cross-contamination between Earth and other planets as a result of solar system exploration missions. Also includes safeguards imposed on the handling, distribution, and analysis of material samples returned to Earth.

GS protection
. **planetary protection**
. . planetary quarantine
RT contamination
decontamination
environment protection
exobiology
extraterrestrial life
Mars sample return missions
space law
spacecraft sterilization

planetary quakes

RT earthquakes
geodynamics
moonquakes
seismic waves

shock waves

planetary quarantine

GS protection
. planetary protection
. . **planetary quarantine**
RT spacecraft sterilization

planetary radiation

SN (EXCLUDES TERRESTRIAL RADIATION)
GS electromagnetic radiation
. **planetary radiation**
extraterrestrial radiation
. **planetary radiation**
RT albedo
decimeter waves
infrared radiation
light (visible radiation)
∞ radiation
radio waves
Saturn atmosphere
terrestrial radiation
thermal radiation
VLF emission recorders

planetary rings

GS celestial bodies
. **planetary rings**
. . Jupiter rings
. . Saturn rings
. . Uranus rings
RT dusty plasmas
moonlets
planetary atmospheres
planets
∞ rings

planetary rotation

GS gyration
. rotation
. . **planetary rotation**
RT astrophysics
planetology
rotating bodies
stellar rotation

planetary satellites

USE **natural satellites**

planetary space flight

USE **interplanetary flight**

planetary spacecraft

USE **interplanetary spacecraft**

planetary structure

RT asthenosphere
chemical composition
Earth planetary structure
Jupiter rings
lunar mantle
planetary geology
planetology
Uranus rings

planetary surfaces

GS **planetary surfaces**
. Mars surface
. Mercury surface
. Venus surface
RT Earth surface
extraterrestrial oceans
Jupiter red spot
Mars roving vehicles
Marsokhod Mars roving vehicles
planetary geology
roving vehicles
Saturn rings
surface properties
∞ surfaces
topography

planetary systems

DEF Systems consisting of a star and the planets and other objects in orbit around it.
GS **planetary systems**

. solar system
extrasolar planets
orbital resonances (celestial mechanics)
planet detection
solar system evolution
∞ systems

planetary temperature

GS temperature
. **planetary temperature**
RT atmospheric temperature
Saturn rings

planetary waves

DEF Waves on uniform currents in two-dimensional nondivergent fluid systems rotating with varying angular speeds about the local vertical (beta plane). These waves represent a special case of barotropic disturbance, conserving absolute vorticity. As applied to atmospheric flow, the planetary waves takes into account the variability of the Coriolis parameter while assuming the motion to be two-dimensional. Used for long waves (meteorology) and Rossby waves.

UF *long waves (meteorology)*
Rossby waves

GS barotropism
. **planetary waves**
internal waves
. **planetary waves**
tropospheric waves
. **planetary waves**
RT atmospheric circulation
barotropic flow
Coriolis effect
fluid flow
gravity waves
Kelvin waves
Rossby regimes
rotating fluids
rotating liquids
vortices
∞ waves
zonal flow (meteorology)

Planet-B spacecraft

(added August 1998)
USE **Nozomi Mars Orbiter**

planetesimals

USE **protoplanets**

planetocentric coordinates

GS coordinates
. **planetocentric coordinates**
. . geocentric coordinates
RT astronomical coordinates
celestial reference systems
spherical coordinates

planetology

RT Jupiter rings
planetary geology
planetary meteorology
planetary rotation
planetary structure
Saturn rings
terrestrial planets

planets

DEF Celestial bodies of the solar system, revolving around the sun in nearly circular orbits, or similar bodies revolving around stars. The larger of such bodies are sometimes called principal planets to distinguish them from asteroids, planetoids, or minor planets, which are comparatively small. The larger planets are accompanied by satellites such as the moon. Inferior planets have orbits smaller than that of the Earth; superior planets have orbits larger than that of the Earth. The four planets nearest the sun are called inner planets; the others, outer planets. The four largest planets are called major planets. The four planets commonly used for celestial observations are called navigational

planets. The word planet is of Greek origin, meaning, literally, wanderer, applied because the planets appear to move relative to the stars.

- GS celestial bodies
 - . **planets**
 - . . . extrasolar planets
 - . . . gas giant planets
 - Jupiter (planet)
 - Neptune (planet)
 - Saturn (planet)
 - Uranus (planet)
 - Pluto (planet)
 - . . . terrestrial planets
 - Earth (planet)
 - Mars (planet)
 - Mercury (planet)
 - Venus (planet)
 - . . . hypothetical planets
- RT celestial mechanics
 - Chiron
 - ecliptic
 - Jupiter red spot
 - natural satellites
 - planet ephemerides
 - planetary cores
 - planetary craters
 - planetary environments
 - planetary geology
 - planetary meteorology
 - planetary rings
 - protoplanetary disks
 - protoplanets
 - Saturn rings
 - solar system
 - solar system evolution
 - sun

planforms

- GS **planforms**
 - . caret wings
 - . rectangular planforms
 - . . . rectangular panels
 - . . . rectangular plates
 - . . . rectangular wings
 - . sweptback tail surfaces
 - . trapezoidal tail surfaces
 - . wing planforms
 - . . . channel wings
 - . . . infinite span wings
 - . . . swept forward wings
 - . . . trapezoidal wings
 - . . . sweptback wings
 - arrow wings
 - delta wings
 - trapezoidal wings
 - . . . variable sweep wings
- RT ∞ bodies
 - ∞ cross sections
 - geometry
 - ∞ profiles
 - shapes
 - ∞ surface geometry

planigraphy

USE **tomography**

planing

- SN (EXCLUDES MOTION INVOLVING DYNAMIC SUPPORTING FORCES)
- GS cutting
 - . **planing**
- RT grinding (material removal)
 - machining
 - metal cutting
 - milling (machining)
 - slicing
 - smoothing

planispheres

- GS maps
 - . astronomical maps
 - . . **planispheres**
- RT astronomical coordinates
 - celestial sphere
 - constellations

polar coordinates

plankton

DEF The aggregate of passively floating or drifting plant and animal organisms which provide the major source of sustenance for animal life in the aquatic ecosystem. Used for plankton bloom.

- UF *plankton bloom*
- GS **plankton**
 - . phytoplankton
 - . zooplankton
- RT algae
 - animals
 - plants (botany)
 - red tide
 - thermal pollution

plankton bloom

USE **plankton**

planning

- GS **planning**
 - . airport planning
 - . management planning
 - . . production planning
 - . . . project planning
 - . . . mission planning
 - . . . regional planning
 - . . . urban planning
 - . . . task planning (robotics)
 - . . . trajectory planning
- RT budgeting
 - critical path method
 - Delphi method (forecasting)
- ∞ design
 - forecasting
- ∞ missions
 - optimization
 - pattern method (forecasting)
 - probe method (forecasting)
 - production engineering
 - profile method (forecasting)
 - progress
 - sequencing
 - slicing
 - Starsite program
 - training analysis
 - urban development

planotrons

- UF *amplitrons (trademark)*
- GS amplifiers
 - . microwave amplifiers
 - . . **planotrons**
 - electron tubes
 - . vacuum tubes
 - . . microwave tubes
 - . . . **planotrons**
 - microwave equipment
 - . microwave amplifiers
 - . . **planotrons**
 - . . microwave tubes
 - . . . **planotrons**
- RT camera tubes
 - electric arcs
 - magnetrons

∞ plans

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT drawings
 - flight plans
 - layouts
 - mission planning
 - payload integration plan
 - urban development

plant design

- SN (EXCLUDES BIOLOGICAL PLANTS)
- DEF Encompasses all design consideration of physical plants, i. e. , airports, industrial plants, test facilities, etc. Structural is just one aspect of this design. SN (excludes biological plants)
- RT architecture

∞ design
structural design

plant diseases

- UF *diseased vegetation*
- GS **plant diseases**
 - . blight
- RT agriculture
 - crop growth
 - crop identification
 - crop vigor
 - diseases
 - fungi
 - plant stress
 - plants (botany)
 - rust fungi

plant roots

- RT bulbs
 - plants (botany)
- ∞ roots
 - vegetation growth

plant stress

- DEF Stimulus or a series of stimuli of such magnitude as to disrupt the growth and/or survival of plants.
- GS stress (biology)
 - . **plant stress**
- RT aerial photography
 - agriculture
 - crop growth
 - crop vigor
 - Earth Resources Program
 - plant diseases
 - remote sensing
 - soil moisture
 - spectral reflectance
 - vegetation growth

plantar tissues

- GS tissues (biology)
 - . **plantar tissues**

planting

- RT agriculture
 - ∞ crops
 - cultivation
 - farm crops
 - farmlands
 - fertilizers
 - plants (botany)
 - plowing
 - plows
 - seeds
 - silviculture
 - soils
 - tractors
 - vegetables

plants (botany)

- UF *flora*
- GS **plants (botany)**
 - . alfalfa
 - . algae
 - . . blue green algae
 - . . . anabaena
 - . . . Microcystis
 - . . . Nostoc
 - . . Chlorella
 - . . Dunaliella
 - . . porphyra
 - . . scenedesmus
 - . . aquatic plants
 - . . phytoplankton
 - . barley
 - . brush (botany)
 - . . chaparral
 - . Bryophytes
 - . corn
 - . cotton
 - . fungi
 - . . Aspergillus
 - . . Coccomyces
 - . . gibberellins
 - . . neurospora

plasma acceleration

- . . rhizopus
- . . rust fungi
- . . saccharomyces
- . . yeast
- . grasses
- . . hay
- . . reeds (plants)
- . . sea grasses
- . . sorghum
- . guayule
- . leguminous plants
- . . soybeans
- . lichens
- . millet
- . oats
- . photophilic plants
- . phreatophytes
- . potatoes
- . rice
- . saprophytes
- . spinach
- . sugar beets
- . sugar cane
- . sunflowers
- . thermophilic plants
- . . blue green algae
- . . . anabaena
- . . . Microcystis
- . . . Nostoc
- . tobacco
- . tradescantia
- . tragacanth
- . trees (plants)
- . . citrus trees
- . . conifers
- . . deciduous trees
- RT agriculture
- angiosperms
- animals
- biochemical oxygen demand
- biogeochemistry
- biomass
- blight
- botany
- canopies (vegetation)
- carbon cycle
- chlorophylls
- cortexes (botany)
- crop growth
- crop vigor
- defoliant
- defoliation
- Earth resources
- environments
- farm crops
- foliage
- food chain
- forests
- frost damage
- geobotany
- geotropism
- gravitropism
- greenhouses
- halophiles
- herbicides
- heterotrophs
- hydroponics
- infestation
- lacunas
- leaves
- microorganisms
- microspores
- mitra
- orchards
- organisms
- petals
- phototropism
- phytotrons
- plankton
- plant diseases
- plant roots
- planting
- plowing
- pollen
- rain forests
- seeds
- spores
- stems
- utricles
- vegetation
- viability
- vineyards
- wood
- plants (industries)*
- USE **industrial plants**
- plasma acceleration**
- UF *magnetohydrodynamic acceleration*
- GS rates (per time)
- . acceleration (physics)
- . . **plasma acceleration**
- RT ∞ acceleration
- magnetic nozzles
- particle acceleration
- plasmas (physics)
- wave propagation
- wave-particle interactions
- plasma accelerators**
- GS **plasma accelerators**
- . alpha plasma devices
- . coaxial plasma accelerators
- . Cyclops plasma accelerator
- RT ∞ accelerators
- electromagnetic acceleration
- ion injection
- magnetic annular arc
- magnetohydrodynamic generators
- magnetoplasma dynamic thrusters
- plasmas (physics)
- plasma antennas**
- DEF An air plasma made by ionizing the atmosphere which acts as the conducting element of an RF antenna.
- GS antennas
- . **plasma antennas**
- RT antenna design
- antenna radiation patterns
- plasma cylinders
- satellite communication
- spacecraft communication
- plasma arc cutting**
- DEF Use of plasma torches for cutting hard materials at extremely high temperatures.
- RT metal cutting
- metal working
- plasma arc welding
- plasma torches
- plasmas (physics)
- plasma arc spraying*
- USE **arc spraying**
- plasma arc welding**
- GS welding
- . fusion welding
- . . electric welding
- . . . arc welding
- **plasma arc welding**
- RT plasma arc cutting
- plasma torches
- plasmas (physics)
- plasma arcs*
- USE **plasma jets**
- plasma bubbles**
- DEF Pockets of very low electron density in the equatorial F region of the ionosphere in which the plasma density is lower than the ambient density.
- RT F region
- plasma density
- plasma chemistry**
- RT ∞ chemistry
- nuclear chemistry
- plasmas (physics)
- plasma chromatography*
- USE **ion mobility spectroscopy**
- plasma clouds**
- DEF Specifically, a mass of ionized gas flowing out of the sun.
- GS particles
- . charged particles
- . . **plasma clouds**
- . . . magnetic clouds
- RT chemical clouds
- ∞ clouds
- cosmic plasma
- dusty plasmas
- Earth magnetosphere
- geomagnetic hollow
- hydrogen clouds
- interplanetary medium
- ion sheaths
- plasmopause
- plasmas (physics)
- plasma composition**
- GS composition (property)
- . **plasma composition**
- RT atom concentration
- dusty plasmas
- gas composition
- ion motion
- ionospheric composition
- nonequilibrium plasmas
- nonuniform plasmas
- plasmas (physics)
- Thomas-Fermi model
- uranium plasmas
- plasma compression**
- DEF Decrease in volume and consequent increase in density of a plasma usually by the application of an intense magnetic field.
- GS compressing
- . **plasma compression**
- RT controlled fusion
- dense plasmas
- inertial fusion (reactor)
- magnetic effects
- magnetic field configurations
- pinch effect
- plasma focus
- plasma pressure
- plasmas (physics)
- strongly coupled plasmas
- theta pinch
- tokamak devices
- zeta pinch
- plasma conductivity**
- GS electrical properties
- . electrical resistivity
- . . **plasma conductivity**
- transport properties
- . electrical resistivity
- . . **plasma conductivity**
- RT collisional plasmas
- ∞ conductivity
- ionospheric conductivity
- magnetohydrodynamic stability
- plasmas (physics)
- strongly coupled plasmas
- plasma confinement*
- USE **plasma control**
- plasma control**
- UF *plasma confinement*
- RT ballooning modes
- beta factor
- bumpy toruses
- confinement
- ∞ control
- crossed field guns
- crossed fields
- divertors (fusion reactors)
- electron-ion recombination

- elliptical plasmas
 - helical inducers
 - helical windings
 - heliotrons
 - limiters (fusion reactors)
 - magnetic annular arc
 - magnetic compression
 - magnetic field configurations
 - magnetic mirrors
 - magnetically trapped particles
 - mirror fusion
 - pinch effect
 - plasmas (physics)
 - reverse field pinch
 - rigid rotors (plasma physics)
 - screw pinch
 - spheromaks
 - stellarators
 - tandem mirrors
 - thermal barriers (plasma control)
 - tokamak devices
 - toroidal plasmas
 - transformers
 - TRAP program
 - trapped magnetic fields
 - zeta pinch
- plasma cooling**
- DEF Temperature control of plasmas in controlled fusion operations.
 - GS cooling
 - . **plasma cooling**
 - RT controlled fusion
 - magnetohydrodynamic stability
 - plasmas (physics)
 - temperature control
- plasma core reactors**
- DEF Nuclear reactors utilizing fissionable plasmas (such as uranium fluoride) for the fuel.
 - GS nuclear reactors
 - . **plasma core reactors**
 - RT critical mass
 - nuclear power plants
 - nuclear research
 - plasmas (physics)
 - radioactive wastes
 - reactor cores
 - ∞ reactors
 - reflectors
 - waste disposal
- plasma currents**
- DEF Electric currents induced in plasmas by injection of fast ion beams or some other means.
 - GS electric current
 - . **plasma currents**
 - RT beam currents
 - controlled fusion
 - eddy currents
 - electric discharges
 - electrical resistivity
 - field aligned currents
 - high current
 - ionospheric currents
 - line current
 - low currents
 - magnetohydrodynamics
 - plasma-particle interactions
 - plasmas (physics)
 - ring currents
 - spheromaks
 - toroidal plasmas
- plasma cylinders**
- GS **plasma cylinders**
 - . cylindrical plasmas
 - RT ∞ cylinders
 - cylindrical bodies
 - cylindrical shells
 - plasma antennas
 - plasmaguides
- plasmas (physics)
- plasma decay**
- GS decay
 - RT . **plasma decay**
 - afterglows
 - electromagnetic wave transmission
 - helium afterglow
 - magnetohydrodynamic stability
 - plasmas (physics)
- plasma density**
- GS density (number/volume)
 - . particle density (concentration)
 - . . **plasma density**
 - RT atmospheric density
 - atom concentration
 - cavitons
 - collisional plasmas
 - electron density (concentration)
 - electron-hole drops
 - ion density (concentration)
 - magnetoplasma dynamics
 - magnetospheric electron density
 - magnetospheric ion density
 - magnetospheric proton density
 - plasma bubbles
 - plasma drift
 - plasma pressure
 - plasmas (physics)
 - proton density (concentration)
 - space density
 - space plasmas
 - strongly coupled plasmas
- plasma diagnostics**
- RT Fabry-Perot interferometers
 - laser-induced breakdown spectroscopy
 - microwave interferometers
 - OPEN Project
 - plasmas (physics)
 - resonance probes
 - space plasmas
- plasma diffusion**
- UF *plasma dispersion*
 - GS diffusion
 - . **plasma diffusion**
 - RT ambipolar diffusion
 - colloidal generators
 - diffusion waves
 - electron diffusion
 - gaseous self-diffusion
 - ion motion
 - ionic diffusion
 - plasmas (physics)
- plasma diodes**
- GS electronic equipment
 - . diodes
 - . . **plasma diodes**
 - RT cesium diodes
 - plasmas (physics)
- plasma discharges*
- USE **plasma jets**
- plasma dispersion*
- USE **plasma diffusion**
- plasma display devices**
- DEF Digital matrix flat panel devices in which small gas discharge plasma cells are used as light emitting sources.
 - GS display devices
 - . **plasma display devices**
 - RT ∞ devices
 - gas ionization
 - glow discharges
 - light sources
 - plasmas (physics)
- plasma drift**
- DEF Movement in the ionosphere of ion and plasma concentration by electric field variations
- in the upper atmosphere.
- RT magnetohydrodynamic stability
 - plasma density
 - plasma waves
 - plasmas (physics)
- plasma dynamics**
- UF *snowplow effect*
 - RT ∞ dynamics
 - hydrodynamic equations
 - Langmuir turbulence
 - magnetohydrodynamics
 - plasmas (physics)
- plasma electrodes**
- GS electrodes
 - . **plasma electrodes**
 - RT hot-wire flowmeters
 - plasmaguides
 - plasmatrons
 - zeta pinch
- plasma engines**
- DEF Reaction engines using magnetically accelerated plasma as a propellant. Plasma engines are types of electrical engines.
 - UF *electromagnetic rocket engines*
 - GS engines
 - . rocket engines
 - . . electric rocket engines
 - . . . **plasma engines**
 - magnetoplasma dynamic thrusters
 - pulsed inductive thrusters
 - pulsed plasma thrusters
 - two stage plasma engines
 - VASIMR (propulsion system)
 - RT arc jet engines
 - coaxial plasma accelerators
 - electrothermal engines
 - Hall thrusters
 - high temperature propellants
 - ion engines
 - magnetic nozzles
 - mercury ion engines
 - plasma power sources
 - plasmas (physics)
 - pulsed jet engines
 - resistojet engines
 - RIT engines
- plasma equilibrium**
- DEF Condition of plasma in which the constituent particles or fluid elements are unaccelerated or collectively at rest in steady flow.
 - RT ballooning modes
 - beta factor
 - confinement
 - electron-hole drops
 - ∞ equilibrium
 - equilibrium flow
 - magnetic mirrors
 - magnetohydrodynamic stability
 - plasmas (physics)
 - strongly coupled plasmas
- plasma etching**
- DEF Removal of material by use of a focused plasma beam.
 - GS etching
 - . **plasma etching**
 - RT plasmas (physics)
 - sputtering
- plasma flow*
- USE **magnetohydrodynamic flow**
- plasma flux measurement**
- RT interferometry
 - magnetohydrodynamic flow
 - microwave plasma probes
 - plasmas (physics)
 - rotating plasmas

plasma focus

- speckle interferometry
 - plasma focus**
 - DEF A highly compressed plasma.
 - GS
 - . **plasma focus**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - dense plasmas
 - **plasma focus**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - dense plasmas
 - **plasma focus**
 - RT nuclear fusion
 - plasma compression
 - strongly coupled plasmas
 - zeta pinch
 - plasma frequencies**
 - GS frequencies
 - . **plasma frequencies**
 - RT electron density (concentration)
 - electrostatic probes
 - free electrons
 - plasmas (physics)
 - plasmons
 - plasma generation*
 - USE **plasma generators**
 - plasma generators**
 - SN (EXCLUDES MAGNETOHYDRODYNAMIC OR THERMONUCLEAR GENERATORS OF ELECTRIC POWER)
 - DEF Machines, such as electric arc chambers, that will generate very high heat fluxes to convert neutral gases into plasmas. Devices which use the interaction of plasmas and electrical field to generate currents. Used for plasma generation.
 - UF *plasma generation*
 - GS **plasma generators**
 - . plasma guns
 - . plasmatrons
 - . . duoplasmatrons
 - . Scylla
 - . tokamak devices
 - . . Joint European Torus
 - RT arc chambers
 - arc generators
 - closed cycles
 - colloidal generators
 - electric arcs
 - exploding wires
 - ∞ generators
 - Hall generators
 - high temperature research
 - ion injection
 - ion sources
 - magnetohydrodynamic generators
 - Penning discharge
 - plasmas (physics)
 - pulse generators
 - thermal plasmas
 - thermonuclear power generation
 - wind tunnel drives
 - plasma guns**
 - GS plasma generators
 - . **plasma guns**
 - RT coaxial plasma accelerators
 - crossed field guns
 - electron guns
 - ∞ guns
 - magnetic lenses
 - plasmas (physics)
 - plasmatrons
 - plasma heating**
 - GS heating
 - . **plasma heating**
 - . . electron cyclotron heating
 - RT arc heating
 - beam injection
 - beta factor
 - bumpy toruses
 - electron cyclotron resonance
 - energy transfer
 - gas heating
 - induction heating
 - ionospheric heating
 - kinetic heating
 - Langmuir turbulence
 - magnetic pumping
 - magnetohydrodynamic shear heating
 - plasma temperature
 - plasmas (physics)
 - radio frequency heating
 - relativistic electron beams
 - shock heating
 - VASIMR (propulsion system)
- plasma instability*
 - USE **magnetohydrodynamic stability**
- plasma interaction experiment**
 - DEF A NASA Lewis experiment, the first of which was launched piggyback with Landsat 3 in 1978 to study the charged particle space plasma environment and its effect on spacecraft surfaces operating at high voltages. The experiment lasted several hours as planned. The second was launched piggyback with Iras in 1983. Used for PIX.
 - UF *PIX*
 - GS payloads
 - . Space Shuttle payloads
 - . . **plasma interaction experiment**
 - spaceborne experiments
 - . **plasma interaction experiment**
 - RT ∞ interactions
 - Landsat 3
 - plasmas (physics)
 - space density
 - SPHINX
- plasma interactions**
 - GS **plasma interactions**
 - . plasma-electromagnetic interaction
 - . . laser plasma interactions
 - . . plasma-particle interactions
 - RT ∞ interactions
 - plasmas (physics)
 - solar planetary interactions
 - space plasmas
 - wave interaction
 - wave-particle interactions
 - Weibel instability
- plasma jet synthesis**
 - RT chemical reactions
 - plasmas (physics)
 - ∞ synthesis
- plasma jet wind tunnels**
 - UF *hydrodynamic tunnels*
 - GS test facilities
 - . wind tunnels
 - . . hypersonic wind tunnels
 - . . . **plasma jet wind tunnels**
 - . . hypervelocity wind tunnels
 - . . . **plasma jet wind tunnels**
 - RT plasmas (physics)
- plasma jets**
 - UF *plasma arcs*
 - plasma discharges*
 - GS particles
 - . charged particles
 - . . **plasma jets**
 - . . . radio jets (astronomy)
 - RT ∞ arcs
 - crossed field guns
 - drop transfer
 - electron beams
 - electron bombardment
 - fluid jets
 - ion injection
 - ∞ jets
- low density wind tunnels
- magnetic lenses
- plasma torches
- plasmas (physics)
- plasmatrons
- pulse diffraction
- relativistic electron beams
- relativistic plasmas
- toroidal discharge
- vapor jets
- plasma layers**
 - GS particles
 - . charged particles
 - . . **plasma layers**
 - . . . plasma sheaths
 - RT atmospheric stratification
 - ∞ layers
 - plasmas (physics)
 - space plasmas
 - ∞ transition layers
- plasma lifetime**
 - GS life (durability)
 - . **plasma lifetime**
 - RT magnetohydrodynamic stability
 - plasmas (physics)
- plasma loss**
 - RT limiters (fusion reactors)
 - losses
 - magnetohydrodynamic stability
 - plasmas (physics)
- plasma oscillations**
 - UF *ion oscillation*
 - plasma perturbation*
 - GS oscillations
 - . **plasma oscillations**
 - RT electron oscillations
 - ion acoustic waves
 - Langmuir turbulence
 - nonuniform plasmas
 - plasmopause
 - plasmas (physics)
 - plasmons
- plasma perturbation*
 - USE **plasma oscillations**
- plasma physics**
 - DEF The study of the nature and properties of highly ionized gases (comprised of ions and free electrons).
 - UF *plasma theory*
 - GS rigid rotors (plasma physics)
 - . **plasma physics**
 - RT alpha plasma devices
 - BBGKY hierarchy
 - beta factor
 - boundary layer plasmas
 - cavitons
 - controlled fusion
 - electron runaway (plasma physics)
 - grand unified theory
 - Hall accelerators
 - instantons
 - Larmor radius
 - Liouville equations
 - magnetic field configurations
 - magnetohydrodynamics
 - magnetohydrostatics
 - negative ions
 - neutral sheets
 - OPEN Project
 - ∞ physics
 - plasmopause
 - plasmas (physics)
 - radiation trapping
 - ∞ science
 - semiconductor plasmas
 - space plasmas
 - theoretical physics
 - thermodynamics
 - tokamak devices
 - unified field theory

uranium plasmas

plasma pinch
 GS pinch effect
 . **plasma pinch**
 . . screw pinch
 . . theta pinch
 . . zeta pinch
 RT magnetohydrodynamic stability
 plasmas (physics)
 Q devices

plasma potentials
 GS potential energy
 . **plasma potentials**
 RT Debye-Huckel theory
 magnetohydrodynamic stability
 nonequilibrium plasmas
 plasmas (physics)
 ∞ potential

plasma power sources
 RT electric propulsion
 ∞ energy sources
 plasma engines
 plasmas (physics)
 ∞ power supplies
 thermionic converters

plasma pressure
 GS pressure
 . **plasma pressure**
 RT plasma compression
 plasma density
 plasmas (physics)

plasma probes
 GS measuring instruments
 . **plasma probes**
 . . electrostatic probes
 RT ion sheaths
 plasmaguides
 plasmas (physics)
 radio frequency impedance probes

plasma propulsion
 GS propulsion
 . electric propulsion
 . . **plasma propulsion**
 . . low thrust propulsion
 . . **plasma propulsion**
 . spacecraft propulsion
 . . **plasma propulsion**
 RT duoplasmatrons
 electromagnetic propulsion
 electrostatic propulsion
 fusion propulsion
 gaseous fission reactors
 ion propulsion
 magnetic annular arc
 magnetic nozzles
 magnetic sails
 magnetohydrodynamics
 magnetoplasmadynamic thrusters
 magnetoplasmadynamics
 nuclear electric propulsion
 plasmas (physics)
 plasmatrons
 pulsed inductive thrusters
 pulsed plasma thrusters
 VASIMR (propulsion system)

plasma pumping
 DEF Application of radiation of appropriate frequencies to plasma, to increase the population of atoms or molecules in the higher energy states.
 RT gas injection
 molecular pumps
 plasmas (physics)
 ∞ pumping

plasma radiation
 RT electron radiation
 fluorescence
 glow discharges

ion cyclotron radiation
 laser induced fluorescence
 luminescence
 nonequilibrium plasmas
 optical resonance
 phosphorescence
 plasmas (physics)
 polarized radiation
 ∞ radiation
 relativistic plasmas

plasma renin activity
 USE **immunoassay**

plasma resonance
 GS resonance
 . **plasma resonance**
 RT cavitons
 cyclotron resonance
 electromagnetic interactions
 electron cyclotron resonance
 plasmas (physics)
 resonance lines
 resonance probes

plasma rings
 USE **toroidal plasmas**

plasma sheaths
 DEF The boundary layers of charged particles between plasmas and their surrounding walls, electrodes, or other plasmas. Envelopes of ionized gases that surround bodies moving through an atmosphere at hypersonic velocities.
 GS particles
 . charged particles
 . . plasma layers
 . . . **plasma sheaths**
 sheaths
 RT **plasma sheaths**
 blackout (propagation)
 boundary layer plasmas
 ion sheaths
 magnetohydrodynamic shear heating
 magnetosheath
 metallic plasmas
 missiles
 nonequilibrium plasmas
 plasmas (physics)
 reentry communication
 reentry effects
 reentry physics
 system generated electromagnetic pulses
 uncontrolled reentry (spacecraft)

plasma slabs
 GS particles
 . charged particles
 . . **plasma slabs**
 RT magnetohydrodynamic stability
 plasmas (physics)

plasma sound waves
 USE **magnetohydrodynamic waves**
plasma waves

plasma spectra
 GS spectra
 . **plasma spectra**
 RT emission spectra
 energy spectra
 optical resonance
 plasmas (physics)
 radiation spectra

plasma spraying
 GS spraying
 . **plasma spraying**
 RT coating
 coatings
 flame spraying
 HVOF thermal spraying
 metal matrix composites
 plasmas (physics)

sprayed coatings

plasma stability
 USE **magnetohydrodynamic stability**

plasma temperature
 GS temperature
 . **plasma temperature**
 RT ion temperature
 magnetohydrodynamic stability
 plasma heating
 plasmas (physics)
 thermal plasmas

plasma theory
 USE **plasma physics**

plasma torches
 DEF Burners which attain 50,000 degrees C temperatures by the use of plasma gas injected into an electric arc. Plasma torches are used for welding, spraying molten metal, and cutting hard rock or hard metals.
 GS torches
 . **plasma torches**
 RT plasma arc cutting
 plasma arc welding
 plasma jets
 plasmas (physics)

plasma turbulence
 GS turbulence
 . magnetohydrodynamic turbulence
 . . **plasma turbulence**
 . . . Langmuir turbulence
 RT magnetohydrodynamic flow
 magnetohydrodynamic stability
 plasmas (physics)

plasma waves
 UF *plasma sound waves*
 GS elastic waves
 . magnetohydrodynamic waves
 . . **plasma waves**
 . . . electrostatic waves
 RT collisional plasmas
 diffusion waves
 electroacoustic waves
 electron plasma
 ion acoustic waves
 ion cyclotron radiation
 ionic waves
 Landau damping
 Langmuir turbulence
 magnetoacoustic waves
 magnetoelastic waves
 nonuniform plasmas
 plasma drift
 plasmas (physics)
 Polar/GGS spacecraft
 shock waves
 space plasmas
 wave packets
 wave-particle interactions

plasmadynamic lasers
 DEF Stimulated emission devices in which the lasing gas flow has been replaced with a lasing plasma flow of atoms or ions.
 GS stimulated emission devices
 . lasers
 . . **plasmadynamic lasers**
 RT coherent light
 gasdynamic lasers
 laser applications
 plasmas (physics)

plasma-electromagnetic interaction
 GS electromagnetic interactions
 . **plasma-electromagnetic interaction**
 . . laser plasma interactions
 plasma interactions
 . **plasma-electromagnetic interaction**
 . . laser plasma interactions

plasmaguides

- RT electromagnetic coupling
- ∞ interactions
 - plasmas (physics)
 - space plasmas
 - wave-particle interactions
- plasmaguides**
 - GS waveguides
 - . **plasmaguides**
 - RT beam waveguides
 - Earth-ionosphere waveguide
 - electromagnetic wave transmission
 - microwave plasma probes
 - plasma cylinders
 - plasma electrodes
 - plasma probes
 - plasmas (physics)
 - wave propagation
- plasma-particle interactions**
 - GS particle interactions
 - . **plasma-particle interactions**
 - plasma interactions
 - . **plasma-particle interactions**
 - RT beam injection
 - beam plasma amplifiers
 - charge exchange
 - dusty plasmas
 - electron phonon interactions
 - electron plasma
 - ∞ interactions
 - particle theory
 - plasma currents
 - plasmas (physics)
 - relativistic electron beams
 - relativistic plasmas
 - SPHINX
 - wave-particle interactions
- plasmopause**
 - SN (LIMITED TO EARTH'S ATMOSPHERE)
 - RT cosmic plasma
 - Earth magnetosphere
 - ionopause
 - plasma clouds
 - plasma oscillations
 - plasma physics
 - plasmas (physics)
 - solar wind
- plasmas (physics)**
 - SN (LIMITED TO COMPLETELY IONIZED MATTER; FOR PARTIALLY IONIZED GASES SEE IONIZED GASES)
 - DEF Electrically conductive gases comprised of neutral particles, ionized particles, and free electrons but which, taken as a whole, are electrically neutral. Plasmas are further characterized by relatively large intermolecular distances, large amounts of energy stored in the internal energy levels of the particles, and the presence of plasma sheaths at all boundaries of the plasma. Plasmas are sometimes referred to as a fourth state of matter. Used for electrostatic plasma, ionized plasma, magnetoionic plasma, magnetoplasmas, and plasmoids.
 - UF *electrostatic plasma*
 - ionized plasmas*
 - magnetoionic plasma*
 - magnetoplasmas*
 - plasmoids*
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . **plasmas (physics)**
 - argon plasma
 - beta particles
 - boundary layer plasmas
 - cold plasmas
 - collisional plasmas
 - strongly coupled plasmas
 - collisionless plasmas
 - cosmic plasma
 - cylindrical plasmas
 - dense plasmas
 - plasma focus
 - strongly coupled plasmas
 - electron plasma
 - electron-positron plasmas
 - elliptical plasmas
 - helium plasma
 - high temperature plasmas
 - hydrogen plasma
 - deuterium plasma
 - laser plasmas
 - metallic plasmas
 - cesium plasma
 - uranium plasmas
 - microplasmas
 - nitrogen plasma
 - nonequilibrium plasmas
 - nonuniform plasmas
 - oxygen plasma
 - rarefied plasmas
 - relativistic plasmas
 - rotating plasmas
 - semiconductor plasmas
 - space plasmas
 - solar wind
 - stellar winds
 - dusty plasmas
 - spherical plasmas
 - thermal plasmas
 - toroidal plasmas
 - corpuscular radiation
 - energetic particles
 - **plasmas (physics)**
 - argon plasma
 - beta particles
 - boundary layer plasmas
 - cold plasmas
 - collisional plasmas
 - strongly coupled plasmas
 - collisionless plasmas
 - cosmic plasma
 - cylindrical plasmas
 - dense plasmas
 - plasma focus
 - strongly coupled plasmas
 - electron plasma
 - electron-positron plasmas
 - elliptical plasmas
 - helium plasma
 - high temperature plasmas
 - hydrogen plasma
 - deuterium plasma
 - laser plasmas
 - metallic plasmas
 - cesium plasma
 - uranium plasmas
 - microplasmas
 - nitrogen plasma
 - nonequilibrium plasmas
 - nonuniform plasmas
 - oxygen plasma
 - rarefied plasmas
 - relativistic plasmas
 - rotating plasmas
 - semiconductor plasmas
 - space plasmas
 - solar wind
 - stellar winds
 - dusty plasmas
 - spherical plasmas
 - thermal plasmas
 - toroidal plasmas
 - alpha plasma devices
 - beam plasma amplifiers
 - blackout (propagation)
 - chemical elements
 - combustion physics
 - core flow
 - Cyclops plasma accelerator
 - Debye length
 - deuteron irradiation
 - deuterons
 - duoplasmatrons
 - electric arcs
 - electron energy
 - gases
 - high temperature fluids
 - ionized gases
 - ions
 - Kelvin-Helmholtz instability
 - Landau factor
 - laser fusion
 - laser plasma interactions
 - light ions
 - Liouville equations
 - low density research
 - magnetic compression
 - magnetohydrodynamic flow
 - magnetohydrodynamic stability
 - magnetohydrodynamics
 - magnetoionics
 - microwave plasma probes
 - neutral gases
 - Onsager phenomenological coefficient
 - ∞ physics
 - plasma acceleration
 - plasma accelerators
 - plasma arc cutting
 - plasma arc welding
 - plasma chemistry
 - plasma clouds
 - plasma composition
 - plasma compression
 - plasma conductivity
 - plasma control
 - plasma cooling
 - plasma core reactors
 - plasma currents
 - plasma cylinders
 - plasma decay
 - plasma density
 - plasma diagnostics
 - plasma diffusion
 - plasma diodes
 - plasma display devices
 - plasma drift
 - plasma dynamics
 - plasma engines
 - plasma equilibrium
 - plasma etching
 - plasma flux measurement
 - plasma frequencies
 - plasma generators
 - plasma guns
 - plasma heating
 - plasma interaction experiment
 - plasma interactions
 - plasma jet synthesis
 - plasma jet wind tunnels
 - plasma jets
 - plasma layers
 - plasma lifetime
 - plasma loss
 - plasma oscillations
 - plasma physics
 - plasma pinch
 - plasma potentials
 - plasma power sources
 - plasma pressure
 - plasma probes
 - plasma propulsion
 - plasma pumping
 - plasma radiation
 - plasma resonance
 - plasma sheaths
 - plasma slabs
 - plasma spectra
 - plasma spraying
 - plasma temperature
 - plasma torches
 - plasma turbulence
 - plasma waves
 - plasmadynamic lasers
 - plasma-electromagnetic interaction
 - plasmaguides
 - plasma-particle interactions
 - plasmopause
 - plasmosphere
 - plasmatrions
 - radiation belts
 - rarefied gas dynamics
 - Scylla
 - solar physics
 - space charge
 - SPHINX
 - stellar magnetic fields
 - tearing modes (plasmas)

thermal dissociation
thermodynamics
thermonuclear reactions
two stage plasma engines

plasmas-in-space payload

USE **AMPS (satellite payload)**

plasmisphere

DEF Envelope of highly ionized gases surrounding the Earth or another planet.

RT atmospheric ionization
chemosphere
Earth atmosphere
Earth magnetosphere
IMAGE satellite
OPEN Project
plasmas (physics)
upper atmosphere

plasmotrons

GS ion sources
. **plasmotrons**
. . duoplasmotrons
plasma generators
. **plasmotrons**
. . duoplasmotrons
RT plasma electrodes
plasma guns
plasma jets
plasma propulsion
plasmas (physics)

plasmids

(added February 2002)

DEF Self-replicating circular molecules of DNA that are found in a variety of bacterial, archaeal, fungal, algal and plant species.

RT cloning (biology)
deoxyribonucleic acid
gene therapy
genetic engineering

plasmoids

USE **plasmas (physics)**

plasmolysis

RT cells (biology)
cytology
dehydration

plasmons

SN (EXCLUDES ORGANIC CYTOPLASMIC CONDITIONS)
GS electromagnetic radiation
. **plasmons**
elementary excitations
. **plasmons**
polaritons
. **plasmons**
RT electron gas
excitons
magnetohydrodynamic stability
magnons
phonons
plasma frequencies
plasma oscillations
polarons

plasters

GS **plasters**
. gypsum
. paraplaster
RT casts
gROUT
molding materials
mortars (material)
pastes

plastic aircraft structures

GS aircraft structures
. **plastic aircraft structures**
RT aircraft construction materials
aircraft survivability
boron-epoxy composites
glass fiber reinforced plastics

plastics

plastic anisotropy

GS anisotropy
. **plastic anisotropy**
. . elastic anisotropy
RT viscoplasticity

plastic bodies

RT beams (supports)
∞ bodies
cylindrical bodies
elastic bodies
elastic plates
elastoplasticity
plastic properties
plastic shells
rigid structures

plastic coatings

GS coatings
. **plastic coatings**
RT antiradar coatings
encapsulating
polymeric films
protective coatings
sprayed coatings

plastic deformation

UF *Luder bands*
plastic yielding
strain softening
GS deformation
. **plastic deformation**
RT ∞ bands
bending
Bordoni peaks
creep properties
creep tests
ductile-brittle transition
elastic deformation
elongation
friction stir welding
J integral
kink bands
plane strain
Saint Venant principle
shear creep
∞ slip
strain distribution
stress propagation
stress relaxation
stress-strain relationships
stretching
structural strain
superplastic forming
superplasticity
temperature inversions
tensile creep
tensile deformation
thermomechanical treatment
warping
work softening
yield strength

plastic fibers

(added June 1995)
GS fibers
. **plastic fibers**
RT fiber optics
glass fibers
optical fibers
plastic properties
plastics
waveguides

plastic films

USE **polymeric films**

plastic flow

GS fluid flow
. **plastic flow**
. . Tresca flow
RT creep properties
∞ flow
internal friction

rheology
shear flow
steady state creep
stress relaxation
superplasticity
viscoelasticity
viscoplasticity

plastic memory

RT shape memory alloys
stress relaxation

plastic plates

SN (STRUCTURAL PLATES EXHIBITING PLASTIC PROPERTIES)
GS structural members
. plates (structural members)
. . **plastic plates**
RT elastic plates
elastoplasticity
reinforced plates

plastic propellants

GS propellants
. solid propellants
. . **plastic propellants**
RT chemical fuels
composite propellants
explosives
gelled propellants
HTPB propellants
monopropellants
plasticizers
polybutadiene tetranitramine
pyrotechnics

plastic properties

DEF The tendency of a loaded body to assume a deformed state other than its original state when the load is removed. Used for plasticity.

UF *plasticity*
GS mechanical properties
. **plastic properties**
. . elastoplasticity
. . photoplasticity
. . superplasticity
. . thermoplasticity
. . viscoplasticity
. . yield point
RT cohesion
cold flow tests
ductility
elastic properties
fatigue (materials)
flexibility
hardness
influence coefficient
method of characteristics
plastic bodies
plastic fibers
∞ properties
rheology
semisolids
stress relaxation
stress tensors
structural stability

plastic shells

GS shells (structural forms)
. **plastic shells**
RT cylindrical shells
elastic shells
elastoplasticity
plastic bodies
reinforced shells
shell stability

plastic tapes

RT adhesives
magnetic tapes

plasticizers

∞ tapes

plastic yielding

USE **plastic deformation**

plasticity

USE **plastic properties**

plasticizers

UF *casting solvents*

elasticizers

GS additives

. **plasticizers**

RT case bonded propellants

coatings

Domino propellants

esters

plastic propellants

propellant additives

Skydrol (trademark)

solid propellants

solid rocket binders

surfactants

triacetin

plastics

DEF Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow.

GS **plastics**

. Delrin (trademark)

. Perspex (trademark)

. polybutadiene

. polyethylenes

. . polyethylene terephthalate

. polyisobutylene

. polypropylene

. polystyrene

. . styrofoam (trademark)

. polytetrafluoroethylene

. . teflon (trademark)

. polyvinyl alcohol

. polyvinyl chloride

. polyvinyl fluoride

. reinforced plastics

. . carbon fiber reinforced plastics

. . carbon-phenolic composites

. . glass fiber reinforced plastics

. . micarta

. synthetic resins

. . addition resins

. . . acrylic resins

. . . vinyl copolymers

. . polyester resins

. . polyether resins

. . PEEK

. . . polymethyl methacrylate

. . thermoplastic resins

. . PEEK

. . . quinoxalines

. . . thermoplastic films

. . thermosetting resins

. . . epoxy resins

. . . . phenolic epoxy resins

. . furan resins

. . . . polyamide resins

. . . . Kevlar (trademark)

. . . . Nylon (trademark)

. . . phenolic resins

. . . micarta

. . . phenolic epoxy resins

RT acrylonitriles

aramid fibers

boron reinforced materials

∞ construction materials

elastomers

fluoropolymers

furans

injection molding

ion exchange resins

Kapton (trademark)

∞ materials science

molding materials

organic materials

petroleum products

plastic aircraft structures

plastic fibers

∞ polymers

sheet molding compounds

tetrahydrofuran

thioplastics

punches

rams (presses)

rollers

tools

∞ **plates**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT corrugating

disks (shapes)

flat plates

metal coatings

metal plates

microchannel plates

panels

parallel plates

photographic plates

patens

plates (structural members)

plating

rectangular plates

scatter plates (optics)

thick plates

thin plates

trays

plates (structural members)

GS structural members

. **plates (structural members)**

. . anisotropic plates

. . annular plates

. . cantilever plates

. . circular plates

. . corrugated plates

. . elastic plates

. . end plates

. . flat plates

. . girder webs

. . metal plates

. . . boiler plate

. . Mindlin plates

. . orthotropic plates

. . perforated plates

. . plastic plates

. . porous plates

. . rectangular plates

. . reinforced plates

. . thick plates

. . thin plates

RT clamped structures

girders

metal sheets

orthotropism

∞ plates

Reissner theory

slabs

plates (tectonics)

DEF Rigid divisions of the outer surface of the Earth (lithosphere) which moves over a weaker layer (asthenosphere). The plates are about 100 km thick, and the continents, which are 40 km thick, rest on the plates and moves with them.

RT Earth crust

Earth mantle

Earth planetary structure

earthquakes

geological faults

geophysics

lithosphere

neotectonics

sea floor spreading

structural properties (geology)

subduction (geology)

tectonics

∞ **platforms**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Automatic Universal Orbiting Stations

data collection platforms

flight mechanics

floors

flying platforms

guidance (motion)

plastisols

DEF A suspension of a finely divided polymer in a plasticizer.

GS mixtures

. dispersions

. . **plastisols**

. . . smoke

RT colloids

composite propellants

double base propellants

resins

PLAT system

UF *pilot landing aid television system*

GS communication equipment

. **PLAT system**

telecommunication

. **PLAT system**

television systems

. **PLAT system**

RT landing aids

∞ systems

plate (metal)

USE **metal plates**

plate theory

RT flat plates

Mindlin plates

structural analysis

∞ theories

Trefftz method

plateaus

DEF Broadly, and comparatively flat areas of great extent and elevation; specifically, extensive land regions considerably elevated (more than 150-300 meters in altitude) above the adjacent country or above sea level. They are commonly limited on at least one side by an abrupt descent, have a flat or nearly smooth surface but are often dissected by deep valleys and surmounted by high hills or high mountains, and have a large part of their total surface at or near the summit level. Plateaus are usually higher and have more noticeable relief than plains (they often represent elevated plains), and are usually higher and more extensive than mesas. They may be tectonic, residual, or volcanic in origin.

GS landforms

. terraces (landforms)

. . **plateaus**

. . . Allegheny Plateau (US)

. . . Colorado Plateau (US)

. . . Great Basin (US)

. . . mesas

. . . buttes

. . . piedmonts

. . . Central Piedmont (US)

RT

apexes

erosion

highlands

∞ peaks

plains

stratigraphy

platelets

RT blood coagulation

blood groups

histology

thromboplastin

platens

RT ∞ plates

presses

∞ pressing

- inertial platforms
 - landforms
 - launching pads
 - offshore platforms
 - slabs
 - solettas
 - space platforms
 - space stations
 - stabilized platforms
 - supports
 - synchronous platforms
- plating**
- GS **plating**
 - . electroplating
 - . flame plating
 - . ion plating
 - . nickel plate
 - RT anodic stripping
 - cathodic coatings
 - cladding
 - deposition
 - deposits
 - electrodeposition
 - electroless deposition
 - finishes
 - laminates
 - metal coatings
 - metal finishing
 - metallizing
 - ∞ plates
 - protective coatings
 - substrates
 - thin films
- platinum**
- GS chemical elements
 - . **platinum**
 - . . platinum isotopes
 - metals
 - . transition metals
 - . . **platinum**
 - . . . platinum isotopes
 - RT platinum black
- platinum alloys**
- GS alloys
 - . **platinum alloys**
 - RT iridium alloys
 - rhodium alloys
- platinum black**
- GS particles
 - . metal particles
 - . . metal powder
 - . . . **platinum black**
 - . powder (particles)
 - . . metal powder
 - . . . **platinum black**
 - RT catalysts
 - platinum
- platinum compounds**
- GS **platinum compounds**
 - . platinum oxides
 - RT ∞ chemical compounds
 - ∞ Group 8 compounds
 - ∞ metal compounds
- platinum isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **platinum isotopes**
 - . platinum
 - . . **platinum isotopes**
 - metals
 - . transition metals
 - . . platinum
 - . . . **platinum isotopes**
- platinum oxides**
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **platinum oxides**
- platinum compounds
 - . **platinum oxides**
- playas**
- GS land
 - . plains
 - . . **playas**
 - landforms
 - . plains
 - . . **playas**
 - RT deserts
 - lakes
- playbacks**
- RT magnetic tapes
 - ∞ recorders
 - recording
 - records
 - ∞ tapes
 - video disks
- PLC effect*
(added August 1997)
USE **Portevin-le Chatelier effect**
- Pleiades cluster**
- GS celestial bodies
 - . star clusters
 - . . open clusters
 - . . . **Pleiades cluster**
 - RT ∞ clusters
 - Taurus constellation
- Pleistocene epoch**
(added May 2001)
DEF Geologic epoch of the Quaternary period extending from about two million years ago to about 10,000 years ago and covering the last ice age.
- GS Cenozoic Era
 - . Quaternary period
 - . . **Pleistocene epoch**
 - RT geochronology
 - Holocene epoch
- plenum chambers**
- RT air intakes
 - ∞ chambers
 - ducts
 - exhaust systems
 - fuel systems
 - intake systems
 - manifolds
 - ∞ water intakes
- plethysmography**
- GS bioengineering
 - . biometrics
 - . . **plethysmography**
 - . . . electroplethysmography
- pleurae**
- GS anatomy
 - . **pleurae**
 - membranes
 - . **pleurae**
 - RT lungs
 - respiratory system
- pleurotin**
- GS drugs
 - . antibiotics
 - . . **pleurotin**
 - RT staphylococcus
- plexiglass (trademark)*
USE **polymethyl methacrylate**
- plies*
USE **layers**
- ∞ **plots**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT charts
- display devices
 - plotters
 - plotting
 - sites
- plotters**
- UF *plotting instruments*
 - GS recording instruments
 - . **plotters**
 - . . x-y plotters
 - RT computer graphics
 - digital to analog converters
 - display devices
 - navigation aids
 - peripheral equipment (computers)
 - ∞ plots
 - plotting
 - position indicators
 - printers
 - remote consoles
- plotting**
- RT analog to digital converters
 - display devices
 - navigation
 - ∞ plots
 - plotters
 - printing
 - recording
- plotting instruments*
USE **plotters**
- plowed fields*
USE **farmlands**
- plowing**
- GS cultivation
 - . **plowing**
 - RT agriculture
 - farm crops
 - farmlands
 - grasslands
 - planting
 - plants (botany)
 - plows
 - sod
 - tractors
- plows**
- RT agriculture
 - mixers
 - planting
 - plowing
- PLSS*
USE **portable life support systems**
- plug nozzles**
- GS exhaust nozzles
 - . **plug nozzles**
 - RT aerospike engines
 - annular nozzles
 - conical nozzles
 - nozzle geometry
 - ∞ nozzles
 - rocket nozzles
 - spike nozzles
- plugging**
- UF *clogging*
 - RT agglomeration
 - blocking
 - caulking
 - closing
 - closures
 - constrictions
 - fouling
 - plugs
 - sealing
 - seals (stoppers)
- plugs**
- SN (EXCLUDES SPARKPLUGS OR ELECTRICAL CONNECTORS)
 - GS seals (stoppers)

Plum Brook Reactor

- . **plugs**
- RT blocking closures labyrinth seals outlets plugging stopping
- Plum Brook Reactor**
- GS nuclear reactors
 - . liquid cooled reactors
 - . . . water cooled reactors
 - . . . **Plum Brook Reactor**
 - . nuclear research and test reactors
 - . . **Plum Brook Reactor**

plumage

- RT birds

plumbane

- USE **lead compounds**
metal hydrides

plumes

- GS **plumes**
 - . rocket exhaust
- RT chimneys condensates pollution transport shock waves

plungers

- RT mixers pistons rams (presses) rams (pumps)

Pluto (planet)

- GS celestial bodies
 - . planets
 - . . **Pluto (planet)**
- RT Charon Pluto atmosphere

Pluto atmosphere

- GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - **Pluto atmosphere**
- RT Pluto (planet)

Pluto reactors

- GS nuclear reactors
 - . **Pluto reactors**
- RT nuclear ramjet engines nuclear rocket engines supersonic low altitude missile

Pluto satellites

- (added July 1995)
- GS celestial bodies
 - . natural satellites
 - . . **Pluto satellites**
 - . . . Charon

plutonium

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . **plutonium**
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - **plutonium**
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244

- plutonium 241
- plutonium 244
- metals
 - . actinide series
 - . . transuranium elements
 - . . . **plutonium**
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
- RT fissionable materials nuclear fuels

plutonium 238

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 238**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - plutonium
 - plutonium isotopes
 - **plutonium 238**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 238**

plutonium 239

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 239**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - plutonium
 - plutonium isotopes
 - **plutonium 239**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 239**

plutonium 240

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 240**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - plutonium
 - plutonium isotopes
 - **plutonium 240**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 240**

plutonium 241

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 241**
 - . nuclides

- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- plutonium
- plutonium isotopes
- **plutonium 241**
- metals
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 241**

plutonium 244

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 244**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - plutonium
 - plutonium isotopes
 - **plutonium 244**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - plutonium isotopes
 - **plutonium 244**

plutonium alloys

- GS alloys
 - . **plutonium alloys**
- RT nuclear fuel elements nuclear fuels

plutonium carbides

- USE **plutonium compounds**

plutonium compounds

- UF *plutonium carbides*
- GS actinide series compounds
 - . **plutonium compounds**
 - . . plutonium oxides
 - . . . plutonium oxides
- RT ceramic nuclear fuels
- ∞ chemical compounds
- ∞ metal compounds nuclear fuels

plutonium fluorides

- GS actinide series compounds
 - . plutonium compounds
 - . . **plutonium fluorides**
 - . . . halogen compounds
 - fluorine compounds
 - fluorides
 - metal fluorides
 - **plutonium fluorides**
 - halides
 - fluorides
 - metal fluorides
 - **plutonium fluorides**
 - metal halides
 - metal fluorides
 - **plutonium fluorides**

plutonium isotopes

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . plutonium
 - **plutonium isotopes**
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements

- plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - metals
 - actinide series
 - transuranium elements
 - plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
- plutonium oxides
 - GS actinide series compounds
 - plutonium compounds
 - plutonium oxides
 - chalcogenides
 - oxides
 - metal oxides
 - plutonium oxides
 - RT ceramic nuclear fuels
 - mixed oxides
- plutonium recycle test reactor
 - UF *PRTR (reactor)*
 - GS nuclear electric power generation
 - nuclear power reactors
 - plutonium recycle test reactor
 - nuclear reactors
 - liquid cooled reactors
 - water cooled reactors
 - heavy water reactors
 - plutonium recycle test reactor
 - nuclear power reactors
 - plutonium recycle test reactor
 - nuclear research and test reactors
 - plutonium recycle test reactor
 - water moderated reactors
 - plutonium recycle test reactor
- pluviographs
 - USE rain gages
 - recording instruments
- ply orientation
 - DEF The arrangement of bonded layers comprising laminated materials to obtain optimal strength or other characteristics.
 - RT alignment
 - composite materials
 - interlayers
 - laminates
 - ∞ layers
 - multilayer insulation
 - ∞ orientation
 - plywood
 - positioning
 - sandwich structures
 - stacking sequence (composite materials)
 - substrates
- plywood
 - GS composite materials
 - plywood
 - composite structures
 - laminates
 - plywood
 - wood
 - plywood
 - RT ply orientation
 - trees (plants)
 - wooden structures
- PML (*electromagnetism*)
 - (added July 1998)
 - USE perfectly matched layers
- p-n junctions
 - UF *n-p junctions*
- GS semiconductor junctions
 - p-n junctions
- RT ∞ junctions
 - SIS (semiconductors)
- pneumatic circuits
 - GS circuits
 - pneumatic circuits
 - pneumatic equipment
 - pneumatic circuits
 - RT fluidics
 - valves
- pneumatic control
 - UF *pneumatic reset*
 - RT automatic control
 - automatic control valves
 - compressed gas
 - ∞ control
 - control equipment
 - control valves
 - controllers
 - electronic control
 - engine control
 - fluid power
 - fluidics
 - hydraulic control
 - remote control
- pneumatic equipment
 - GS pneumatic equipment
 - gas valves
 - pneumatic circuits
 - pneumatic probes
 - RT air bag restraint devices
 - compressed air
 - cushions
 - ∞ equipment
 - fluid amplifiers
 - fluid power
 - fluid switching elements
 - fluidics
 - gas generators
 - Golay detector cells
 - inflatable structures
 - servocontrol
 - servomechanisms
 - shock absorbers
 - ∞ systems
 - valves
- pneumatic probes
 - GS measuring instruments
 - temperature measuring instruments
 - pneumatic probes
 - pneumatic equipment
 - pneumatic probes
 - RT flow measurement
 - high temperature gases
 - mass flow rate
 - nozzle flow
 - pressure measurement
- pneumatic reset
 - USE pneumatic control
- pneumatics
 - DEF The branch of physics dealing with the mechanical properties of gases with particular emphasis on gas statics in closed systems.
 - GS fluid mechanics
 - pneumatics
 - RT flow theory
 - fluid power
 - fluidics
 - gases
 - ∞ hydraulics
- pneumographs
 - USE pneumography
- pneumography
 - UF *pneumographs*
 - RT biotelemetry
 - lungs
 - ∞ measurement
- radiography
- pneumonia
 - GS diseases
 - respiratory diseases
 - pneumonia
 - RT acquired immunodeficiency syndrome
 - bacterial diseases
 - congestion
 - viral diseases
- pneumothorax
 - RT diseases
 - lungs
 - medical science
- pnictides
 - USE Group 5A compounds
- p-n-p junctions
 - GS semiconductor junctions
 - p-n-p junctions
 - RT ∞ junctions
- p-n-p-n junctions
 - GS semiconductor junctions
 - p-n-p-n junctions
 - RT ∞ junctions
 - latch-up
 - thyristors
- Pockels effect
 - USE birefringence
- pocket mice
 - GS animals
 - vertebrates
 - mammals
 - rodents
 - mice
 - pocket mice
 - RT rats
- pods (external stores)
 - GS external stores
 - pods (external stores)
 - RT cowlings
 - external store separation
 - fuel tanks
 - nacelles
 - wing-fuselage stores
- POGO
 - UF *Polar Orbit Geophysical Observatory*
 - GS artificial satellites
 - geophysical satellites
 - OGO
 - POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - observatories
 - geophysical observatories
 - OGO
 - POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - RT Agena B rocket vehicle
 - EGO
- POGO effects
 - GS vibration
 - POGO effects
 - vibration effects
 - POGO effects
 - RT ∞ effects
 - longitudinal stability
- Pohlhausen method
 - UF *Pohlhausen solution*
 - GS analysis (mathematics)
 - numerical analysis
 - approximation
 - Pohlhausen method
 - RT laminar boundary layer

poikilothermia

∞ methodology
velocity distribution
viscous flow

Pohlhausen solution

USE **Pohlhausen method**

poikilothermia

UF *cold blooded animals*
GS animals
. **poikilothermia**
RT amphibia
body temperature
fishes
invertebrates
reptiles

Poincare problem

RT ∞ problems

Poincare spheres

GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **Poincare spheres**
RT geometry

point defects

GS defects
. crystal defects
. . **point defects**
. . . vacancies (crystal defects)
. . . Frenkel defects
. . . antisite defects
RT crystal dislocations
impurities
surface defects

point impact

GS impact
. **point impact**
RT electron impact
hypervelocity impact
ion impact
proton impact

point matching method (mathematics)

USE **boundary value problems**

point sources

GS radiation sources
. **point sources**
RT diffuse radiation
∞ energy sources
Huygens principle
light sources
spherical waves

point spread functions

DEF Mathematical functions involved in image processing.

GS functions (mathematics)
. **point spread functions**
RT image processing

point to point communication

GS communicating
. **point to point communication**
. . NASCOM network
RT radio communication
telecommunication
Westar satellites
wideband communication

pointers

USE **dials**

pointing control systems

GS **pointing control systems**
. annular suspension and pointing system
RT ∞ control
entry guidance (STS)
flight control
guidance (motion)

space flight
spacecraft control
∞ systems

∞ **points**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT nonpoint sources
points (mathematics)
position (location)

points (mathematics)

GS geometry
. Euclidean geometry
. . **points (mathematics)**
. . . fixed points (mathematics)
. . . inflection points
RT foci
loci
naked singularities
∞ points
reciprocal theorems
singularity (mathematics)

Poiseuille flow

USE **laminar flow**

∞ **poisoning**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT benzene poisoning
beryllium poisoning
carbon monoxide poisoning
carbon tetrachloride poisoning
curare
hydrocarbon poisoning
intoxication
lead poisoning
narcosis
poisoning (reaction inhibition)
toxic diseases
toxic hazards

poisoning (reaction inhibition)

RT control rods
neutron absorbers
nuclear reactions
∞ poisoning
radioactive wastes

poisoning (toxicology)

USE **toxic diseases**

poisons

GS **poisons**
. curare
. endotoxins
. pesticides
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
. phosgene
. strychnine
RT environment effects
environment pollution
environmental surveys
hazardous materials
nonpoint sources
pollution
toxicity

Poisson density functions

UF *poisson process*
GS functions (mathematics)
. **Poisson density functions**
statistical analysis
. **Poisson density functions**
RT continuity (mathematics)
discrete functions
exponential functions

sorting algorithms

Poisson equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Poisson equation**
RT classical mechanics
electrostatics
∞ equations
isentropic
Laplace equation
vortex in cell technique

poisson process

USE **Poisson density functions**
stochastic processes

Poisson ratio

GS mechanical properties
. **Poisson ratio**
ratios
. **Poisson ratio**
RT Airy function
compressive strength
elastic properties
fiber strength
modulus of elasticity
nu factor
stress-strain diagrams
tensile strength

Polaire satellite

USE **D-2 satellites**

Poland

GS nations
. **Poland**
RT Central Europe
Europe

polar auroras

USE **auroras**

polar cap absorption

GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **polar cap absorption**
. thermal absorption
. . **polar cap absorption**
RT ∞ absorption

polar caps

RT Antarctic regions
Arctic regions
∞ caps
Earth (planet)
Earth cryosphere
ice
Mars (planet)
planetary cryospheres

polar coordinates

DEF In a plane, a system of curvilinear coordinates in which a point is located by its distance r from the origin (or pole) and by the angle theta which a line (radius vector) joining the given point and the origin makes a fixed reference line, called the polar axis. In three dimensions, short for space polar coordinates.

GS coordinates
. **polar coordinates**
RT astronomical coordinates
planispheres
Smith chart
spherical coordinates

polar cusps

RT aeronomy
∞ cusps
Earth magnetosphere
geomagnetic latitude
geomagnetic tail
geomagnetism

geophysics
interplanetary space
lines of force
magnetic field configurations
magnetic fields
magnetopause
planetary magnetic fields
polar regions
Polar/GGS spacecraft
space plasmas

polar gases

GS gases
. molecular gases
. . **polar gases**
RT carbon dioxide lasers
gas composition
gas discharges
gas dynamics
gas lasers
gas masers
polarization (charge separation)

polar ionosphere beacon

USE **Beacon satellites**

polar meteorology

GS meteorology
. **polar meteorology**
RT aerology
climatology
hydrology
ice reporting

polar navigation

GS navigation
. **polar navigation**
RT air navigation
celestial navigation
dead reckoning
digital navigation
inertial navigation
loran

Polar Orbit Geophysical Observatory

USE **POGO**

polar orbits

GS orbits
. **polar orbits**
RT circular orbits
Earth orbits
elliptical orbits
equatorial orbits
low Earth orbits
lunar orbits
lunar satellites
planetary orbits
space station polar platforms
TIROS satellites
twenty-four hour orbits

Polar Plasma Laboratory

(added January 2001)

USE **Polar/GGS spacecraft**

polar platforms (space stations)

USE **space station polar platforms**

polar radio blackout

GS electromagnetic interference
. radio frequency interference
. . blackout (propagation)
. . . **polar radio blackout**
RT auroral zones
ionospheric propagation

polar regions

UF *high latitudes*
GS regions
. **polar regions**
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions

RT auroral zones
climatology
geography
permafrost
polar cusps
polynyas
temperate regions
timberline

polar substorms

GS magnetic disturbances
. magnetic storms
. . **polar substorms**
storms
. magnetic storms
. . **polar substorms**

polar wandering (geology)

DEF Migration during geologic time of the Earth's poles of rotation and magnetic poles. Also known as polar migration. Used for Chandler motion.

UF *Chandler motion*

RT Chandler wobble

Earth axis

∞ Earth motion

Earth orientation

geodesy

nutaton

periodic variations

precession

Polar/GGS spacecraft

(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. Polar (Polar Plasma Laboratory) measures solar wind entry, ionospheric output, and the depositions of energy into the neutral atmosphere at high latitudes. Imaging instruments make possible the measurement of visible, ultraviolet, and X-ray spectra of the polar caps. The spacecraft was launched in February 1996.

UF *Polar Plasma Laboratory*

GS artificial satellites

. geophysical satellites

. . **Polar/GGS spacecraft**

. scientific satellites

. . **Polar/GGS spacecraft**

RT auroras

Earth ionosphere

Earth magnetosphere

geomagnetism

plasma waves

polar cusps

solar terrestrial interactions

solar wind

space plasmas

space weather

Wind/GGS spacecraft

polarimeters

DEF Instruments for determining the degree of polarization of electromagnetic radiation, specifically the polarization of light. Used for spectropolarimeters.

UF *spectropolarimeters*

GS measuring instruments

. optical measuring instruments

. . **polarimeters**

optical equipment

. optical measuring instruments

. . **polarimeters**

RT astronomical polarimetry

chemical analysis

ellipsometers

optical measurement

photometers

polarimetry

polariscopes

polarizers

polarography

Solar Maximum Mission

polarimetry

GS optical measurement
. **polarimetry**
. . astronomical polarimetry
RT optical activity
optical measuring instruments
photometry
polarimeters
polarization (waves)

Polaris A1 missile

GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . **Polaris A1 missile**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Polaris A1 missile**
. . . intermediate range ballistic missiles
. . . . polaris missiles
. . . . **Polaris A1 missile**

Polaris A2 missile

GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . **Polaris A2 missile**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Polaris A2 missile**
. . . intermediate range ballistic missiles
. . . . polaris missiles
. . . . **Polaris A2 missile**

Polaris A3 missile

GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . **Polaris A3 missile**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Polaris A3 missile**
. . . intermediate range ballistic missiles
. . . . polaris missiles
. . . . **Polaris A3 missile**

polaris missiles

GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . **polaris missiles**
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. surface to surface missiles
. . intermediate range ballistic missiles
. . . **polaris missiles**
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
RT multistage rocket vehicles
solid propellant rocket engines
XM-33 engine

Polaris submarines

USE **guided missile submarines**

polariscopes

DEF Instruments for detecting polarized radiation and investigating its properties.

GS measuring instruments

. **polariscopes**

. . Senarmont polariscopes

optical equipment

. **polariscopes**

. . Senarmont polariscopes

RT optical measuring instruments

polarimeters

polarization (waves)

polaritons

polarizers

polaritons

GS **polaritons**
. plasmons

polarity

DEF The sign of the electric discharge associated with a given object, as an electrode or an ion.

RT ∞ dipoles
electric charge
electric fields
magnetic fields
magnetic poles
polarization (charge separation)
polarization (spin alignment)
quadrupoles

∞ polarization

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF The state of electromagnetic radiation when transverse vibrations take place in some regular manner, e. g. , all in one plane, in a circle, in an ellipse, or in some other definite curve. With respect to particles in an electric field, the displacement of the charge centers within a particle in response to the electric force acting thereon. The response of the molecules of a paramagnetic medium (such as iron) when subjected to a magnetic field.

RT antiferroelectricity
bipolarity
linear polarization
magnetization
optical polarization
Overhauser effect
photoelastic analysis
polarization (charge separation)
polarization (spin alignment)
polarization (waves)
polarized radiation

polarization (charge separation)

UF *charge separation*

GS **polarization (charge separation)**
. dielectric polarization
. electrolytic polarization

RT charge distribution
charge transfer
deactivation
depolarization
electrets
electric charge
electric moments
electrode film barriers
electromigration
Hall effect
ionospheric drift
magnetization
overvoltage
polar gases
polarity
∞ polarization
pyroelectricity
∞ separation
Tafel law

polarization (spin alignment)

RT alignment
anisotropy
deactivation
magnetic properties
magnetization
∞ orientation
polarity
∞ polarization
rotation
spin tests

polarization (waves)

UF *polarization charts*
GS **polarization (waves)**
. circular polarization
. cross polarization

. elliptical polarization
. linear polarization
RT anisotropic media
anisotropy
beamforming
birefringence
BL Lacertae objects
collimation
electromagnetic properties
Faraday effect
Kerr electrooptical effect
Kerr magneto-optical effect
magneto-optics
monochromatization
optical coupling
optical properties
∞ orientation
photoelastic analysis
polarimetry
polariscopes
∞ polarization
polarization modulation
polarized electromagnetic radiation
polarizers
polarons
refractivity
rotation

polarization characteristics

GS magnetic properties
. **polarization characteristics**
RT Brewster angle
∞ characteristics
polarized radiation
zwitterions

polarization charts

USE **graphs (charts)**
polarization (waves)

polarization modulation

(added March 1995)

GS modulation
. **polarization modulation**
RT light modulation
optical communication
optical polarization
polarization (waves)
polarized electromagnetic radiation

polarized elastic waves

GS elastic waves
. **polarized elastic waves**
polarized radiation
. **polarized elastic waves**
RT S waves
seismic waves
sound waves

polarized electromagnetic radiation

GS electromagnetic radiation
. **polarized electromagnetic radiation**
. . . polarized light
. . . synchrotron radiation
polarized radiation
. **polarized electromagnetic radiation**
. . . polarized light
. . . synchrotron radiation
RT cross polarization
extraterrestrial radiation
Faraday effect
infrared radiation
Kerr cells
light (visible radiation)
linear polarization
Lyman alpha radiation
Lyman beta radiation
magneto-optics
monochromatic radiation
polarization (waves)
polarization modulation
polarizers
∞ radiation
radiative transfer

radio waves
stellar radiation
ultraviolet radiation

polarized light

GS electromagnetic radiation
. light (visible radiation)
. . . **polarized light**
. . . polarized electromagnetic radiation
. . . **polarized light**
polarized radiation
. polarized electromagnetic radiation
. . . **polarized light**
RT ellipsometry
gegenschein
Kerr magneto-optical effect
monochromatic radiation
optical activity
optical depolarization
optical polarization
photoelasticity
zodiacal light

polarized radiation

GS **polarized radiation**
. polarized elastic waves
. polarized electromagnetic radiation
. . . polarized light
. . . synchrotron radiation
RT caustics (optics)
elastic waves
electromagnetic radiation
extraterrestrial radiation
linear polarization
plasma radiation
∞ polarization
polarization characteristics
∞ radiation
∞ rays

polarizers

DEF Devices for polarizing radiant energy.
RT Kerr cells
light (visible radiation)
optical polarization
polarimeters
polariscopes
polarization (waves)
polarized electromagnetic radiation

polarographs

USE **polarography**

polarography

UF *polarographs*
GS electrical measurement
. **polarography**
RT chemical analysis
optical polarization
polarimeters
quantitative analysis

polarons

GS elementary excitations
. **polarons**
particles
. charged particles
. . . energetic particles
. . . . electrons
. . . . **polarons**
. corpuscular radiation
. . . energetic particles
. . . electrons
. . . . **polarons**
. elementary particles
. . . fermions
. . . leptons
. . . . electrons
. . . . **polarons**
RT conduction bands
cross polarization
electron phonon interactions
ionic crystals
phonons
plasmons

polarization (waves)

warfare

water sampling

∞ **poles**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ dipoles
 - magnetic dipoles
 - magnetic poles
 - monopoles
 - poles (supports)
 - Regge poles

poles (supports)

- RT electric power transmission
- ∞ poles

police

- GS personnel
 - . **police**
- RT communities
 - crime
 - regulations
 - security
 - social factors
 - violence

policies

- GS **policies**
 - . energy policy
 - . foreign policy
 - . . . international relations
 - . . . international cooperation
 - . . . outer space treaty
 - . patent policy
 - . procurement policy
- RT copyrights
 - governments
 - licensing
 - prohibition
 - regulations
 - rules

poliomyelitis

- GS diseases
 - . infectious diseases
 - . . . viral diseases
 - . . . **poliomyelitis**

Polish TS-11 aircraft

USE **TS-11 aircraft**

polished metals

USE **metal polishing**

polishing

- GS **polishing**
 - . metal polishing
 - . . . electropolishing
 - . . . vibratory polishing
- RT abrasion
 - cleaning
 - finishes
 - grinding (material removal)
 - metallography
 - smoothing
 - surface finishing
 - ultrasonic cleaning

politics

- RT air law
 - communities
 - culture (social sciences)
 - governments
 - international cooperation
 - international law
 - law (jurisprudence)
 - nations
 - regimes
 - sociology
 - sovereignty
 - United Nations
 - voting

pollen

- GS particles
 - . **pollen**
- RT aerobiology
 - air pollution
 - dust
 - plants (botany)

pollutants

USE **contaminants**

pollution

- GS **pollution**
 - . environment pollution
 - . . air pollution
 - . . . global air pollution
 - . . . indoor air pollution
 - . . soil pollution
 - . . water pollution
 - . . . oil pollution
 - . . . noise pollution
 - . . . thermal pollution
- RT clean fuels
 - contaminants
 - contamination
 - debris
 - decontamination
 - dissipation
 - elimination
 - endangered species
 - energy policy
 - environment effects
 - environment protection
 - environmental quality
 - environmental surveys
 - human wastes
 - metabolic wastes
 - Microcystis
 - microorganisms
 - nonpoint sources
 - oil slicks
 - poisons
 - prevention
 - public health
 - purity
 - quality
 - radioactive wastes
 - smoke abatement
 - solid wastes
 - toxicology
 - waste disposal
 - wastes
 - water
 - water reclamation
 - water treatment

pollution control

- GS environmental control
 - . **pollution control**
- RT air quality
 - biochemical oxygen demand
 - ∞ control
 - dewatering
 - environmental cleanup
 - environmental surveys
 - flue gases
 - fly ash
 - particulates

pollution monitoring

- RT air pollution
 - air quality
 - ambience
 - environment pollution
 - global air pollution
 - ground stations
 - in situ measurement
 - monitors
 - particulates
 - soil pollution
 - warning systems
 - water pollution

pollution transport

- DEF Dispersing or diffusion of atmospheric or water pollutants. Used for atmospheric loading.
- UF *atmospheric loading*
- RT aerosols
 - air pollution
 - atmospheric circulation
 - atmospheric diffusion
 - combustion products
 - dispersing
 - environment pollution
 - exhaust emission
 - exhaust gases
 - gas transport
 - gaseous diffusion
 - global air pollution
 - plumes
 - thermal pollution
 - trace contaminants
 - transport properties
 - transport theory
 - water circulation
 - water pollution

poloidal flux

- DEF Plasma confinement concept with multipole magnetic fields.
- RT magnetic field configurations
 - tokamak devices
 - toroidal plasmas

polonium

- GS chemical elements
 - . metalloids
 - . . **polonium**
 - . . . polonium isotopes
 - polonium 208
 - polonium 209
 - polonium 210
- RT metals

polonium 208

- GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 208**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 208**
 - radioactive isotopes
 - **polonium 208**
- RT metals

polonium 209

- GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 209**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 209**
 - radioactive isotopes
 - **polonium 209**
- RT metals

polonium 210

- GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 210**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 210**
 - radioactive isotopes
 - **polonium 210**

polonium compounds

RT metals

polonium compounds

RT ∞ chemical compounds
∞ Group 6A compounds

polonium isotopes

GS chemical elements
. metalloids
. . . polonium
. . . . **polonium isotopes**
. polonium 208
. polonium 209
. polonium 210
. nuclides
. . isotopes
. . . **polonium isotopes**
. polonium 208
. polonium 209
. polonium 210

RT metals

polyacetylene

DEF An aliphatic organic polymer that has high semiconductor properties which can be enhanced by doping.
RT conducting polymers
semiconductors (materials)

polyacrylates

USE **acrylic resins**

polyacrylonitrile

(added January 1990)
UF *PAN* (polyacrylonitrile)
GS nitriles
. acrylonitriles
. . **polyacrylonitrile**
nitrogen compounds
. nitrogen polymers
. . **polyacrylonitrile**

RT acrylic resins
carbon fibers
∞ polymers
synthetic fibers

polyamide resins

UF *nylon resins*
GS plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . **polyamide resins**
. Kevlar (trademark)
. Nylon (trademark)
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . **polyamide resins**
. Kevlar (trademark)
. Nylon (trademark)

RT aramid fiber composites
aramid fibers

polyatomic gases

GS gases
. molecular gases
. . **polyatomic gases**
. . . diatomic gases

polyatomic molecules

GS molecules
. **polyatomic molecules**
. . diatomic molecules
. . triatomic molecules

RT atoms
buckminsterfullerene
chemical bonds
∞ chemical compounds
fullerenes
ions
molecular structure
molecular weight

positive ions

polybenzimidazole

GS nitrogen compounds
. nitrogen polymers
. . **polybenzimidazole**

RT synthetic fibers

polyblends

USE **polymer blends**

polybrominated biphenyls

DEF A group of 209 chemicals whose toxicity varies and includes principally one fire retardant called firemaster. Used for PBB.
UF *PBB*
GS phenyls
. **polybrominated biphenyls**
toxins and antitoxins
. **polybrominated biphenyls**

RT bromine compounds
flame retardants
polychlorinated biphenyls

polybutadiene

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . **polybutadiene**
plastics
. **polybutadiene**

RT addition resins
block copolymers
butadiene
HTPB propellants
synthetic rubbers

polybutadiene tetranitramine

GS nitrogen compounds
. nitro compounds
. . **polybutadiene tetranitramine**
. nitrogen polymers
. . **polybutadiene tetranitramine**

RT plastic propellants

polycarbonates

GS carbon compounds
. carbonates
. . **polycarbonates**
. . . Lexan (trademark)
esters
. **polycarbonates**
. . Lexan (trademark)

RT polycarbosilanes
∞ polymers

polycarbosilanes

(added July 1991)
GS silicon polymers
. polysilanes
. . **polycarbosilanes**

RT ceramic fibers
organometallic polymers
polycarbonates
silanes
silicon carbides

polychlorinated biphenyls

UF *PCB*
GS phenyls
. **polychlorinated biphenyls**

RT polybrominated biphenyls

polycrystals

GS crystals
. **polycrystals**

RT bicrystals
crystal structure
single crystals

polycyclic aromatic hydrocarbons

(added November 1994)
UF *PAH*
GS organic compounds
. cyclic compounds

. . cyclic hydrocarbons
. . . **polycyclic aromatic hydrocarbons**
hydrocarbons
. cyclic hydrocarbons
. . . **polycyclic aromatic hydrocarbons**

RT ∞ aromatic compounds
combustion products
cosmic dust
diffuse interstellar bands
interstellar matter

polycythemia

RT hemoglobin
hemolysis
hemorrhages
spleen

polyester resins

GS plastics
. synthetic resins
. . **polyester resins**
resins
. synthetic resins
. . **polyester resins**

RT Dacron (trademark)
thermosetting resins

polyesters

DEF Polymers in which the repeated structural unit in the chain is of the ester type.
GS esters
. **polyesters**

RT ∞ polymers
synthetic fibers

polyether resins

GS plastics
. synthetic resins
. . **polyether resins**
. . . PEEK
. . . polymethyl methacrylate
resins
. synthetic resins
. . **polyether resins**
. . . PEEK
. . . polymethyl methacrylate

RT vulcanized elastomers

polyetheretherketones

USE **PEEK**

polyethylene terephthalate

GS esters
. **polyethylene terephthalate**
plastics
. polyethylenes
. . **polyethylene terephthalate**
terephthalate
. **polyethylene terephthalate**

RT addition resins
Mylar (trademark)
∞ polymers

polyethylenes

GS plastics
. **polyethylenes**
. . polyethylene terephthalate

RT addition resins
ethylene
synthetic resins
thermoplastic resins

polygonization

RT crystal defects
crystal growth
recrystallization

polygons

GS geometry
. Euclidean geometry
. . **polygons**
. . . hexagons
. . . tetragons
. . . parallelograms

. . . . rhomboids
 rectangles
 squares (mathematics)
 trapezoids
 . . . triangles
 RT polytopes

polyhedrons

GS geometry
 . Euclidean geometry
 . . **polyhedrons**
 . . . cubes (mathematics)
 . . . icosahedrons
 . . . octahedrons
 . . . parallelepipeds
 . . . pyramids
 . . . rhombohedrons
 . . . tetrahedrons
 RT buckminsterfullerene
 fullerenes
 polytopes

polyimide resins

GS resins
 . **polyimide resins**
 RT bismaleimide
 polyimides
 resin matrix composites

polyimides

GS nitrogen compounds
 . amides
 . . **polyimides**
 . . . bismaleimide
 . . . Kapton (trademark)
 RT polyimide resins

polyisobutylene

GS plastics
 . **polyisobutylene**
 RT addition resins
 synthetic rubbers

polyisoprenes

RT ∞ polymers
 rubber
 synthetic rubbers

polymer alloys

USE **polymer blends**

polymer blends

(added November 1992)
 UF *polyblends*
polymer alloys
 GS mixtures
 . **polymer blends**
 RT copolymers
 polymer physics
 ∞ polymers
 thermoplastic resins

polymer chemistry

RT biopolymer denaturation
 ∞ chemistry
 glass transition temperature
 oligomers
 phosphazene
 polymer physics
 ∞ polymers
 polywater

polymer matrix composites

DEF Materials consisting of reinforcing fibers, filaments, and/or whiskers embedded in polymeric bonding matrices for increased mechanical and physical properties.

GS composite materials
 . **polymer matrix composites**
 . . epoxy matrix composites
 . . . boron-epoxy composites
 . . . graphite-epoxy composites
 . . graphite-polyimide composites
 . . reinforced plastics
 . . . carbon fiber reinforced plastics
 . . . carbon-phenolic composites

. . . glass fiber reinforced plastics
 . . . micarta
 RT aramid fiber composites
 bismaleimide
 boron fibers
 ∞ construction materials
 fiber composites
 hybrid composites
 laminates
 ∞ materials
 ∞ matrices
 matrix materials
 nanocomposites
 PEEK
 ∞ polymers
 pultrusion
 resin film infusion
 resin matrix composites
 resin transfer molding
 sheet molding compounds

polymer physics

RT glass transition temperature
 ∞ physics
 polymer blends
 polymer chemistry
 ∞ polymers
 polywater
 ∞ science

polymeric films

UF *plastic films*
 GS **polymeric films**
 . Kapton (trademark)
 . Mylar (trademark)
 RT casting
 conducting polymers
 fibers
 ∞ films
 Langmuir-Blodgett films
 Nylon (trademark)
 photographic film
 plastic coatings
 polypyrroles
 ∞ sheets

polymerization

DEF A chemical reaction in which the molecules of monomers are linked together to form polymers.

GS synthesis (chemistry)
 . **polymerization**
 . . copolymerization
 . . dimerization
 RT chemical reactions
 coupled modes
 cycloaddition
 depolymerization
 electrochemical synthesis
 oligomers
 quinoxalines
 refining
 ∞ setting
 Ziegler catalyst
 zwitterions

∞ **polymers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT biopolymers
 block copolymers
 cellophane
 conducting polymers
 coordination polymers
 copolymerization
 copolymers
 dendrimers
 elastomers
 electroactive polymers
 ferroelectric materials
 fluoropolymers
 formica
 glycidyl azide polymer
 high polymers
 Kapton (trademark)
 KEL-F

Lexan (trademark)
 lignin
 macromolecules
 methyl polysiloxanes
 micarta
 monomers
 Mylar (trademark)
 nitrogen polymers
 Nylon (trademark)
 oligomers
 organic materials
 organometallic polymers
 oxetane polymers
 phosphorus polymers
 photopolymers
 plastics
 polyacrylonitrile
 polycarbonates
 polyesters
 polyethylene terephthalate
 polyisoprenes
 polymer blends
 polymer chemistry
 polymer matrix composites
 polymer physics
 polyquinoxalines
 polysilanes
 polysiloxanes
 polytetrafluoroethylene
 polyurethane foam
 polyvinyl fluoride
 prepolymers
 Pyrrones (trademark)
 silicon polymers
 silicones
 siloxanes
 solithanes
 styrofoam (trademark)
 synthetic resins
 teflon (trademark)
 vinyl copolymers
 vinyl polymers

polymethyl methacrylate

UF *lucite (trademark)*
plexiglass (trademark)
 GS plastics
 . synthetic resins
 . . polyether resins
 . . . **polymethyl methacrylate**
 resins
 . synthetic resins
 . . polyether resins
 . . . **polymethyl methacrylate**
 vinyl polymers
 . **polymethyl methacrylate**

polymorphism

GS morphology
 . **polymorphism**
 RT allotropy
 crystal lattices
 crystal structure
 ∞ physical properties

polynomials

GS algebra
 . **polynomials**
 . . binomials
 . . dyadics
 . . Hermitian polynomial
 RT coefficients
 cubic equations
 eigenvalues
 eigenvectors
 ∞ equations
 linear equations
 nonlinear equations
 quadratic equations
 roots of equations
 shape functions

polynuclear organic compounds

DEF Hydrocarbon molecules with two or more nuclei and with or without oxygen, nitrogen, or other elements.

polynucleotides

GS organic compounds
. **polynuclear organic compounds**

RT air pollution
∞ chemical compounds
petroleum products
purification

polynucleotides
DEF Linear sequences of esters of nucleotides and phosphoric acid.
GS organic compounds
. nucleotides
. . **polynucleotides**
phosphorus compounds
. phosphates
. . **polynucleotides**

RT biopolymers
proteins
ribonucleic acids

polynyas
(added July 2001)
DEF Large areas of open water surrounded by sea ice.
UF *ice clearings*
GS clearings (openings)
. **polynyas**

RT air sea ice interactions
Antarctic regions
Arctic Ocean
ocean surface
polar regions
sea ice
surface water

polyorganosiloxanes
USE **polysiloxanes**

Polyot satellites
GS artificial satellites
. **Polyot satellites**

polypeptides
DEF In organic chemistry, chains of amino acids linked by peptide bonds but with lower molecular weights than proteins; obtained by synthesis or by partial hydrolysis of proteins.
GS organic compounds
. peptides
. . **polypeptides**
. . . glutathione
. . . hypertensin

RT amino acids
biopolymers
proteins

polyphenyl ether
GS ethers
. **polyphenyl ether**

polyphenyls
GS phenyls
. **polyphenyls**
. . tetraphenyls
. . triphenyls

polypropylene
GS plastics
. **polypropylene**

RT addition resins
synthetic resins

polypyrroles
(added August 1994)
UF *PPY*
RT conducting polymers
electrode materials
polymeric films
pyrroles

polyquinoxalines
RT ∞ chemical compounds
∞ polymers

polysaccharides
GS biopolymers

. **polysaccharides**
. . cellulose
. . . Fortisan (trademark)
. . chitin
. . dextrans
. . glycogens
. . starches
organic compounds
. carbohydrates
. . **polysaccharides**
. . . cellulose
. . . . Fortisan (trademark)
. . . chitin
. . . dextrans
. . . glycogens
. . . starches

RT gums (substances)

polysilanes
(added July 1991)
UF *oxosilanes*
GS silicon polymers
. **polysilanes**
. . polycarbosilanes

RT organometallic polymers
∞ polymers
silanes

polysiloxanes
(added July 1991)
UF *polyorganosiloxanes*
GS silicon polymers
. silicones
. . **polysiloxanes**
. . . methyl polysiloxanes

RT ∞ polymers
silicon compounds
siloxanes

polyslips
RT ∞ slip

polystation doppler tracking system
GS networks
. tracking networks
. . **polystation doppler tracking system**
stations
. ground stations
. . **polystation doppler tracking system**
. tracking stations
. . **polystation doppler tracking system**
tracking (position)
. **polystation doppler tracking system**

RT Doppler radar
missile tracking
pulse radar
radar networks
satellite doppler positioning
space detection and tracking system
spacecraft tracking
∞ systems

polystyrene
GS plastics
. **polystyrene**
. . styrofoam (trademark)
styrenes
. **polystyrene**
. . styrofoam (trademark)
vinyl polymers
. **polystyrene**
. . styrofoam (trademark)

RT addition resins
block copolymers
Santowax (trademark)
synthetic resins
thermoplastic resins

polysulfides
GS chalcogenides
. sulfides
. . inorganic sulfides

. . . **polysulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **polysulfides**

RT composite propellants

polytetrafluoroethylene
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . **polytetrafluoroethylene**
. . . . teflon (trademark)
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. **polytetrafluoroethylene**
. teflon (trademark)
. fluoropolymers
. **polytetrafluoroethylene**
. teflon (trademark)
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . **polytetrafluoroethylene**
. . . . teflon (trademark)
. . . fluoropolymers
. . . . **polytetrafluoroethylene**
. . . . teflon (trademark)
. . hydrocarbons
. . fluorohydrocarbons
. . . **polytetrafluoroethylene**
. . . . teflon (trademark)
plastics
. **polytetrafluoroethylene**
. . teflon (trademark)

RT ∞ polymers
synthetic resins

polytopes
RT analytic geometry
Euclidean geometry
hyperplanes
polygons
polyhedrons

polytropic processes
RT adiabatic conditions
∞ isobars
thermodynamics

polyurethane foam
RT foams
low density materials
∞ polymers
soils
sponges (materials)

polyurethane resins
GS resins
. **polyurethane resins**

RT composite propellants

polyvinyl alcohol
GS hydroxyl compounds
. alcohols
. . **polyvinyl alcohol**
plastics
. **polyvinyl alcohol**
vinyl polymers
. **polyvinyl alcohol**

RT addition resins
synthetic resins

polyvinyl chloride
UF *Geon (trademark)*
GS plastics
. **polyvinyl chloride**
vinyl polymers
. **polyvinyl chloride**

RT addition resins
chlorides
synthetic resins

- tetrahydrofuran
- polyvinyl fluoride**
 DEF DuPont's Tedlar, unplasticized PVF films with outstanding resistance to ultraviolet radiation. Used for Tedlar (trademark).
 UF *Tedlar* (trademark)
 GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **polyvinyl fluoride**
 . . fluoro compounds
 . . . fluorine organic compounds
 fluoropolymers
 **polyvinyl fluoride**
 . halides
 . . fluorides
 . . . **polyvinyl fluoride**
 organic compounds
 . fluorine organic compounds
 . . fluoropolymers
 . . . **polyvinyl fluoride**
 plastics
 . **polyvinyl fluoride**
 vinyl polymers
 . **polyvinyl fluoride**
 RT ∞ polymers
- polyvinylidene*
 (added December 1997)
 USE **vinylidene**
- polywater**
 GS water
 . **polywater**
 RT atomic structure
 chemical bonds
 molecular structure
 polymer chemistry
 polymer physics
- Pomeranchuk theorem**
 GS theorems
 . **Pomeranchuk theorem**
 RT antiparticles
 deuterons
 diffraction patterns
 eikonal equation
 elastic scattering
 electrons
 elementary particles
 field theory (physics)
 Fredholm equations
 Glauber theory
 high energy interactions
 kaons
 mesons
 nucleon-nucleon scattering
 pomerons
 Regge poles
 scattering cross sections
- pomerons**
 RT nuclear reactions
 Pomeranchuk theorem
 proton-proton reactions
 Regge poles
 scattering
 scattering cross sections
- ponderomotive forces**
 GS electromotive forces
 . **ponderomotive forces**
 RT electrodynamics
 ∞ force
 Lorentz force
 relativistic plasmas
 relativity
- ponds**
 DEF Natural bodies of standing fresh water occupying small surface depressions, usually smaller than lakes and larger than pools.
 RT aquifers
 Great Salt Lake (UT)
 irrigation
- lagoons
 lakes
 limnology
 liquid wastes
 reservoirs
 solar ponds (heat storage)
 surface water
 waste disposal
 water resources
 watersheds
 windpowered pumps
- Pontiac (MI)**
 GS cities
 . **Pontiac (MI)**
 RT Michigan
- pontryagin principle**
 RT calculus of variations
 maximum principle
 optimization
 reaction time
- Population I stars**
 (added May 2002)
 DEF Young stars formed from matter of previous generations of stars (Population II stars), and having significant amounts of heavier elements. They are particularly concentrated in the interstellar dust of the arms of spiral galaxies.
 GS celestial bodies
 . stars
 . . **Population I stars**
 RT B stars
 interstellar matter
 irregular galaxies
 O stars
 open clusters
 Population II stars
- Population II stars**
 (added May 2002)
 DEF Old, low-metallicity stars up to 15 billion years in age found in globular clusters, elliptical galaxies, and the bulges and halos of spiral galaxies.
 GS celestial bodies
 . stars
 . . **Population II stars**
 RT elliptical galaxies
 galactic halos
 globular clusters
 horizontal branch stars
 Population I stars
- Population III stars**
 (added July 1999)
 UF *primordial stars*
 GS celestial bodies
 . stars
 . . **Population III stars**
 RT cosmology
 dark matter
 relic radiation
 stellar evolution
 supermassive stars
- population inversion**
 GS inversions
 . **population inversion**
 RT electron pumping
 energy levels
 molecular relaxation
 nitrogen lasers
 nuclear pumping
 populations
 stimulated emission
- population theory**
 RT populations
 probability theory
 ∞ theories
- populations**
 RT biomass
- discriminant analysis (statistics)
 geographic distribution
 population inversion
 population theory
 predators
 ∞ statistics
- porcelain**
 GS ceramics
 . **porcelain**
 refractory materials
 . **porcelain**
 RT ceramic coatings
 enamels
 glass
 glazes
 silicon dioxide
 vitreous materials
 vitrification
- pores*
 USE **porosity**
- porosity**
 DEF The volume fraction of voids contained in a solid, often expressed as a percent.
 UF *pores*
 GS **porosity**
 . microporosity
 RT aquifers
 buoyancy
 compressibility
 defects
 ∞ density
 density (mass/volume)
 formations
 gas injection
 hole distribution (mechanics)
 hygral properties
 impregnating
 infiltration
 interstices
 leakage
 moisture resistance
 permeability
 permeating
 pinholes
 porous boundary layer control
 porous materials
 porous plates
 porous silicon
 ∞ properties
 sintering
 textures
 void ratio
 voids
 wettability
- porous airfoils*
 USE **porous boundary layer control**
- porous boundary layer control**
 UF *porous airfoils*
 GS boundary layer control
 . **porous boundary layer control**
 RT ∞ control
 convective flow
 Ekman layer
 free convection
 holes (mechanics)
 mass transfer
 perforated plates
 porosity
 wings
- porous materials**
 GS **porous materials**
 . porous silicon
 RT aerogels
 brittle materials
 ∞ cells
 honeycomb structures
 interstices
 low density materials
 ∞ materials
 metal powder

porous plates

porosity
powder metallurgy
sands
soils
sponges (materials)
xerogels

porous plates

GS structural members
. plates (structural members)
. . . **porous plates**
RT low density materials
porosity

porous silicon

(added September 1995)
GS chemical elements
. metalloids
. . . silicon
. . . **porous silicon**
porous materials
. **porous silicon**
RT cathodoluminescence
conduction bands
electroluminescence
light sources
photoluminescence
porosity

porous walls

GS walls
. **porous walls**
RT ∞ diffusers

porphines

GS organometallic compounds
. **porphines**
RT chlorophylls
hemoglobin

porphyra

GS plants (botany)
. algae
. . . **porphyra**

porphyrins

GS **porphyrins**
. chlorophylls
RT hemoglobin

porpoises

GS animals
. vertebrates
. . . mammals
. . . . marine mammals
. . . . **porpoises**

portable equipment

RT ∞ equipment
lixiscopes
logistics
mobility
stowage (onboard equipment)

portable life support systems

UF *PLSS*
GS support systems
. life support systems
. . . **portable life support systems**
. . . AEPS
. . . IMLSS
RT argon-oxygen atmospheres
biopaks
breathing apparatus
emergency life sustaining systems
helium-oxygen atmospheres
oxygen masks
pressure suits
∞ systems

Portevin-le Chatelier effect

(added August 1997)
DEF A discontinuous yielding in crystalline solids characterized by a serrated or step-like deformation curve.
UF *PLC effect*

RT crystal dislocations
deformation
∞ effects
strain rate
stress-strain diagrams
stress-strain relationships

∞ ports

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT airports
deepwater terminals
drydocks
harbors
ports (openings)
shipyards
wharves

ports (openings)

GS openings
. **ports (openings)**
RT apertures
cavities
ducts
exhaust systems
orifices
outlets
∞ ports
vents
∞ windows
windows (apertures)

Portugal

GS nations
. **Portugal**
. . Azores
RT Europe
Portuguese space program

Portuguese space program

(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Portuguese space program**
RT Portugal

Poseidon missiles

GS missiles
. ballistic missiles
. . **Poseidon missiles**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Poseidon missiles**
RT ballistic missile submarines
guided missile submarines
sea launching

Poseidon satellite

GS artificial satellites
. French satellites
. . **Poseidon satellite**
RT TOPEX

∞ position

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
position (location)
position (title)

position (location)

UF *localization*
location
GS **position (location)**
. solar position
RT altitude
astrolabes
azimuth
bearing (direction)
collating
collocation
coordinates
detection
distance

ephemerides
exposure
∞ fixing
geometry
latitude
longitude
misalignment
navigation
orbital position estimation
∞ orientation
∞ points
∞ position
position errors
position sensing
positioning
radar beacons
sites
sound ranging
spatial distribution
spherical coordinates
stations
surveys
tracking (position)

position (title)

RT employee relations
evaluation
∞ grade
personnel
∞ position
ratings

position errors

GS errors
. **position errors**
. . boresight error
RT astrolabes
error signals
navigation
optical correction procedure
orbit determination
orbital position estimation
position (location)
positioning
velocity errors

position indicators

GS display devices
. **position indicators**
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
measuring instruments
. indicating instruments
. . **position indicators**
. . . plan position indicators
. . . radio direction finders
. . . spacecraft position indicators
RT aircraft instruments
altimeters
beacons
distance measuring equipment
flight instruments
Global Positioning System
head-up displays
navigation aids
navigation instruments
plotters
position sensing
range finders
rocket-borne instruments
sextants
solar compasses
sound localization

position sensing

RT computer vision
electro-optics
position (location)
position indicators
robotics

positioning

GS **positioning**
. formation flying
. satellite doppler positioning

potassium 40

- . . potassium
- . . . potassium isotopes
- **potassium 39**
- . nuclides
- . . isotopes
- . . . potassium isotopes
- **potassium 39**
- metals
- . alkali metals
- . . potassium
- . . . potassium isotopes
- **potassium 39**

potassium 40

- GS chemical elements
- . alkali metals
- . . potassium
- . . . potassium isotopes
- **potassium 40**
- . nuclides
- . . isotopes
- . . . potassium isotopes
- **potassium 40**
- . . . radioactive isotopes
- **potassium 40**
- metals
- . alkali metals
- . . potassium
- . . . potassium isotopes
- **potassium 40**

potassium alloys

- GS alloys
- . **potassium alloys**

potassium bromides

- GS halogen compounds
- . bromine compounds
- . . bromides
- . . . **potassium bromides**
- . halides
- . . bromides
- . . . **potassium bromides**
- . . metal halides
- . . . **potassium bromides**
- potassium compounds
- . **potassium bromides**

potassium channels (biology)

(added August 2002)
USE **ion channels (biology)**

potassium chlorides

- GS halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **potassium chlorides**
- . halides
- . . chlorides
- . . . **potassium chlorides**
- . . metal halides
- . . . **potassium chlorides**
- potassium compounds
- . **potassium chlorides**

potassium chromates

- GS chromium compounds
- . chromates
- . . **potassium chromates**
- potassium compounds
- . **potassium chromates**

potassium compounds

- GS **potassium compounds**
- . alum
- . nepheline
- . potassium bromides
- . potassium chlorides
- . potassium chromates
- . potassium hydrides
- . potassium hydroxides
- . potassium iodides
- . potassium nitrates
- . potassium oxides
- . potassium perchlorates
- . potassium peroxides

- . potassium phosphates
- . . potassium silicates
- RT ∞ alkali metal compounds
- ∞ chemical compounds
- ∞ metal compounds

potassium hydrides

- GS hydrogen compounds
- . hydrides
- . . metal hydrides
- . . . **potassium hydrides**
- potassium compounds
- . **potassium hydrides**

potassium hydroxides

- GS bases (chemical)
- . alkalis
- . . **potassium hydroxides**
- hydroxides
- . **potassium hydroxides**
- potassium compounds
- . **potassium hydroxides**

potassium iodides

- GS halogen compounds
- . halides
- . . metal halides
- . . . alkali halides
- **potassium iodides**
- . iodine compounds
- . . iodides
- . . . **potassium iodides**
- potassium compounds
- . **potassium iodides**

potassium isotopes

- GS chemical elements
- . alkali metals
- . . potassium
- . . . **potassium isotopes**
- potassium 38
- potassium 39
- potassium 40
- . nuclides
- . . isotopes
- . . . **potassium isotopes**
- potassium 38
- potassium 39
- potassium 40
- metals
- . alkali metals
- . . potassium
- . . . **potassium isotopes**
- potassium 38
- potassium 39
- potassium 40

potassium nitrates

- GS nitrogen compounds
- . nitrates
- . . inorganic nitrates
- . . . **potassium nitrates**
- potassium compounds
- . **potassium nitrates**

potassium oxides

- GS chalcogenides
- . oxides
- . . metal oxides
- . . . **potassium oxides**
- potassium compounds
- . **potassium oxides**

potassium perchlorates

- GS halogen compounds
- . chlorine compounds
- . . perchlorates
- . . . **potassium perchlorates**
- potassium compounds
- . **potassium perchlorates**
- RT explosives
- solid rocket propellants

potassium peroxides

- GS chalcogenides
- . oxides

- . . anhydrides
- . . . peroxides
- **potassium peroxides**
- potassium compounds
- . **potassium peroxides**

potassium phosphates

- GS phosphorus compounds
- . phosphates
- . . **potassium phosphates**
- potassium compounds
- . **potassium phosphates**

potassium silicates

- GS potassium compounds
- . **potassium silicates**
- silicon compounds
- . . silicates
- . . . **potassium silicates**
- RT minerals

potatoes

- GS farm crops
- . **potatoes**
- plants (botany)
- . **potatoes**
- vegetables
- . **potatoes**
- RT ∞ food

∞ potential

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Coulomb potential
- electric potential
- geopotential
- ionization potentials
- Klein-Dunham potential
- myoelectric potentials
- nucleon potential
- open circuit voltage
- plasma potentials
- potential energy
- potential fields
- potential theory
- Yukawa potential

potential energy

DEF Energy possessed by a body by virtue of its position in a gravity field in contrast with kinetic energy, that possessed by virtue of its motion.

- GS **potential energy**
- . electric potential
- . . bioelectric potential
- . . contact potentials
- . . Coulomb potential
- . . high voltages
- . . Lienard potential
- . . low voltage
- . . open circuit voltage
- . . photovoltages
- . . quantum wells
- . . . photoexcitation
- . . spike potentials
- . . threshold voltage
- . geopotential height
- . ionization potentials
- . nuclear potential
- . plasma potentials
- RT chemical energy
- electric energy storage
- embedded atom method
- ∞ energy
- energy storage
- Froude number
- geopotential
- internal energy
- kinetic energy
- Lagrangian function
- Morse potential
- ∞ potential

potential fields

- RT field theory (physics)

- ∞ potential
- potential flow**
 UF *irrotational flow*
 GS fluid flow
 . **potential flow**
 . . equipotentials
 RT Cartan space
 heat transmission
 inviscid flow
 vorticity
- potential gradients**
 DEF In general, the local space rate of change of any potential, as the gravitational potential gradient or the velocity potential gradient.
 GS gradients
 . **potential gradients**
 RT pressure gradients
 spark gaps
 temperature gradients
- potential theory**
 RT differential equations
 Jacobi integral
 Lennard-Jones potential
 ∞ potential
 stream functions (fluids)
 ∞ theories
- ∞ **potentiometers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Instruments for measuring differences in electric potential by balancing the unknown voltage against a variable known voltage. If the balancing is accomplished automatically, the instrument is called a self-balancing potentiometer. A variable electric resistor.
 RT potentiometers (instruments)
 potentiometers (resistors)
- potentiometers (instruments)**
 GS measuring instruments
 . **potentiometers (instruments)**
 RT bolometers
 electric potential
 electrical measurement
 electrometers
 ∞ potentiometers
 thermocouple pyrometers
 thermocouples
 voltmeters
- potentiometers (resistors)**
 GS attenuators
 . resistors
 . . **potentiometers (resistors)**
 RT ∞ potentiometers
- potentiometric analysis**
 UF *potentiometry*
 GS chemical tests
 . chemical analysis
 . . **potentiometric analysis**
- potentiometry*
 USE **potentiometric analysis**
- Potez aircraft**
 RT ∞ aircraft
- Potomac River Valley (MD-VA-WV)**
 GS valleys
 . **Potomac River Valley (MD-VA-WV)**
 RT District of Columbia
 Maryland
 Virginia
 West Virginia
- potting compounds**
 RT ∞ compounds
 encapsulating
- insulation
- pouring**
 RT casting
 castings
- powder (particles)**
 DEF An aggregate of discrete particles that are usually within the size range 1 to 1,000 mm.
 GS particles
 . **powder (particles)**
 . . fines
 . . metal powder
 . . . platinum black
 . . . powdered aluminum
 sintered aluminum powder
 RT compressibility
 crop dusting
 dust
 explosives
 flakes
 flour (food)
 granular materials
 obsidian
 pumice
 size separation
- powder metallurgy**
 DEF The art of producing metal powders and of the utilization of metal powders for the production of massive materials and shaped objects.
 RT alloying
 alloys
 autoclaving
 cermets
 combustion synthesis
 comminution
 compacting
 composite materials
 electrodeposition
 liquid phase sintering
 low density materials
 metal matrix composites
 metal particles
 metal powder
 ∞ metallurgy
 mixed crystals
 porous materials
 preforms
 reaction bonding
 sintered aluminum powder
 sintering
 vacuum melting
- powdered aluminum**
 GS particles
 . metal particles
 . . metal powder
 . . . **powdered aluminum**
 sintered aluminum powder
 . powder (particles)
 . . metal powder
 . . . **powdered aluminum**
 sintered aluminum powder
 RT aluminum
 lithium aluminum hydrides
- powdered metals*
 USE **metal powder**
- ∞ **power**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT electric generators
 fluid power
 flux (rate)
 flux density
 horsepower
 resolution
 thrust
- power amplifiers**
 GS amplifiers
 . **power amplifiers**
 RT amplidynes
- cyclotron resonance devices
 feedback amplifiers
 magnetic amplifiers
 parametric amplifiers
 push-pull amplifiers
 transistor amplifiers
 traveling wave amplifiers
- power beaming**
(added November 1989)
 UF *beamed power*
 GS **power beaming**
 . laser power beaming
 . microwave power beaming
 . satellite power transmission
 RT energy conversion
 laser propulsion
 microwave transmission
 ∞ power transmission
 solar power satellites
 spacecraft power supplies
- power conditioning**
 UF *power processing systems*
 RT ∞ conditioning
 electric current
 electric generators
 electric potential
 energy conversion
 energy conversion efficiency
 output
 satellite solar energy conversion
 satellite solar power stations
- power converters**
 RT ∞ converters
 torque converters
- power density (electromagnetic)*
 USE **radiant flux density**
- power efficiency**
 GS efficiency
 . **power efficiency**
 RT combustion efficiency
 compressor efficiency
 exergy
 horsepower
 nozzle efficiency
 power factor controllers
 ∞ power loss
 propeller efficiency
 propulsion system performance
 propulsive efficiency
 thermodynamic efficiency
 transmission efficiency
- power factor controllers**
 DEF A solid state electronic device that reduces excess energy waste in AC induction motors by providing only the amount of voltage required to satisfy a given load.
 GS controllers
 . **power factor controllers**
 RT current regulators
 electric motors
 energy conservation
 energy conversion efficiency
 induction motors
 power efficiency
 voltage regulators
- power gain**
 DEF The ratio of the power that a transducer delivers to a specified load, under specified operating conditions, to the power absorbed by its input circuit. Of an antenna, in a given direction, 4 pi times the ratio of the radiation intensity in that direction to the total power delivered to the antenna.
 GS amplification
 . **power gain**
 RT CATT devices
 high gain

power law bodies

open circuit voltage

power generators

USE **electric generators**

power law bodies

(added May 1995)

GS symmetrical bodies
. axisymmetric bodies
. . . **power law bodies**
. bodies of revolution
. . . **power law bodies**

RT blunt bodies
slender bodies

power limited spacecraft

RT ∞ spacecraft

power limiters

RT attenuators
clamping circuits
clipper circuits
limiter circuits

power lines

GS transmission lines
. **power lines**

RT bus conductors

∞ cables
coaxial cables
electric power transmission
electric wire
submarine cables
superconducting power transmission
underground transmission lines

∞ power loss

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT energy dissipation
power efficiency

power modules (STS)

DEF Modules for providing power for payloads for STS and mission dependent equipment.

GS modules
. **power modules (STS)**

RT orbital maneuvering vehicles
payload delivery (STS)
solar arrays
space transportation system
spacecraft power supplies

∞ power plants

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cogeneration
electric power plants
engines
Enrico Fermi atomic power plant
geothermal energy utilization
Hallam Nuclear Power Facility
hydroelectric power stations
hydroelectricity
ML-1 nuclear power plant
solar sea power plants
solar thermal electric power plants

power processing systems

USE **power conditioning**

power reactors

RT nuclear power reactors

∞ reactors
saturable reactors

power series

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **power series**
. . . . Taylor series
. . . . Maclaurin series
. real variables

. . series (mathematics)

. . . **power series**
. . . . Taylor series
. . . . Maclaurin series

RT analytic functions
Bessel functions

power spectra

GS spectra
. **power spectra**
. . cepstra

RT acoustics
cepstral analysis
energy spectra
flux density
loudness
maximum entropy method

∞ power supplies

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aircraft engines
aircraft power supplies
auxiliary power sources
electric batteries
electric generators
electric power supplies
electron sources
energy requirements
heat sources
lead acid batteries
line current
lithium sulfur batteries
nuclear auxiliary power units
plasma power sources
propellants
rectifiers
solar generators
spacecraft power supplies
voltage converters (AC to AC)
voltage converters (DC to DC)

power supply circuits

GS circuits
. **power supply circuits**

RT current regulators
rectifiers
transformers
voltage converters (DC to DC)
voltage regulators

∞ power transmission

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bus conductors
electric outlets
electric power transmission
electrical engineering
electrification
hydroelectric power stations
mechanical drives
power beaming
windmills (windpowered machines)

power transmission (lasers)

USE **laser power beaming**

power transmission (microwave)

USE **microwave power beaming**

powered lift aircraft

RT ∞ aircraft
externally blown flaps
short takeoff aircraft
STOVL aircraft
vertical takeoff aircraft

powered models

SN (LIMITED TO TEST FACILITIES)

DEF Models that can be tested in complete force equilibrium, including propulsion.

GS models
. wind tunnel models
. . **powered models**

RT aircraft models

dynamic models

Poynting theorem

GS theorems
. **Poynting theorem**

RT ∞ electric power
electromagnetic radiation
energy transfer
Maxwell equation
vector analysis

Poynting-Robertson effect

DEF The gradual decrease in orbital velocity of a small particle such as a micrometeorite in orbit about the sun due to the absorption and remission of radiant energy by the particle.

RT ∞ effects
micrometeoroids
orbital mechanics
radiation effects
zodiacal dust
zodiacal light

PPI (position indicators)

USE **plan position indicators**

PPM (modulation)

USE **pulse position modulation**

PPT (rocket engines)

(added April 2001)

USE **pulsed plasma thrusters**

PPY

USE **polypyrroles**

practices

USE **procedures**

Praesepe star clusters

GS celestial bodies
. star clusters
. . open clusters
. . . **Praesepe star clusters**
. stars
. . **Praesepe star clusters**

RT ∞ clusters

praeter sonic devices

RT microwave frequencies
piezoelectric transducers
thin films
ultrahigh frequencies

prairies

USE **grasslands**

Prandtl number

DEF A dimensionless number representing the ratio of momentum transport to heat transport in a flow. (After Ludwig Prandtl, 1875-1953, German scientist).

GS dimensionless numbers
. **Prandtl number**
ratios
. **Prandtl number**

RT forced convection
Grashof number
heat transfer
inviscid flow
momentum transfer
Nusselt number
Peclet number
Reynolds number
Schmidt number
thermodynamic properties
viscous flow

Prandtl-Meyer expansion

GS expansion
. **Prandtl-Meyer expansion**

RT Blasius equation
Falkner-Skan equation
flow deflection
laminar flow

method of characteristics
 Newton pressure law
 supersonic flow
 two dimensional flow

praseodymium

GS chemical elements
 . rare earth elements
 . . **praseodymium**
 . . . praseodymium isotopes
 metals
 . rare earth elements
 . . **praseodymium**
 . . . praseodymium isotopes
 RT didymium
 praseodymium compounds

praseodymium 144

USE **praseodymium isotopes**

praseodymium compounds

(added August 1990)

GS rare earth compounds
 . **praseodymium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds
 praseodymium

praseodymium isotopes

UF *praseodymium 144*
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **praseodymium isotopes**
 . rare earth elements
 . . praseodymium
 . . . **praseodymium isotopes**
 metals
 . rare earth elements
 . . praseodymium
 . . . **praseodymium isotopes**

preamplifiers

DEF Amplifiers, the primary function of which is to raise the output of a low level source to an intermediate level so that the signal may be further processed without appreciable degradation in the signal-to-noise ratio. In radar amplifiers separated from the remainder of the receiver and located so as to provide the shortest possible input circuit path from the antenna so as to avoid deterioration of the signal-to-noise ratio. Used for preselectors.

UF *preselectors*
 GS amplifiers
 . **preamplifiers**
 RT intermediate frequency amplifiers
 low noise
 mixing circuits
 postamplifiers
 signal detection
 signal detectors
 signal reception
 transistor amplifiers
 voltage amplifiers

preburners

GS pressure vessels
 . **preburners**
 RT pumps
 turbine pumps

Precambrian period

RT Baltic Shield (Europe)
 Cambrian Period
 Canadian Shield
 geology
 paleontology
 Paleozoic Era

precautions

USE **accident prevention**

precession

DEF Change in the direction of the axis of rotation of a spinning body, as a gyro, when

acted upon by a torque.

GS gyration
 . **precession**
 . . Larmor precession
 . . proton precession
 . . quenching (atomic physics)
 RT coning motion
 Earth orientation
 gyroscopes
 gyroscopic stability
 Larmor radius
 libration
 muon spin rotation
 nutation
 polar wandering (geology)
 retrograde orbits
 rotation
 vortex precession

precious metals

USE **noble metals**

precipitates

SN (EXCLUDES METEOROLOGICAL PRECIPITATES)
 RT alloys
 grain boundaries
 microstructure
 precipitation (chemistry)
 precipitation hardening
 reaction products

∞ **precipitation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERM LISTED BELOW)
 RT drop size
 electron precipitation
 falling
 hydrometallurgy
 materials recovery
 particle precipitation
 precipitation (chemistry)
 precipitation (meteorology)
 proton precipitation

precipitation (chemistry)

DEF The separation of a new phase from solid or liquid solution, usually with changing conditions of temperature or pressure or both.

RT agglomeration
 cementation
 ∞ chemistry
 coagulation
 colloiding
 concentrating
 crystallization
 deposition
 dissolving
 filtration
 flocculating
 hydrometallurgy
 materials recovery
 Ostwald ripening
 precipitates
 ∞ precipitation
 precipitators
 ∞ saturation
 saturation (chemistry)
 ∞ separation
 settling
 solubility
 supersaturation
 unsaturation (chemistry)

precipitation (meteorology)

DEF The precipitation of water from the atmosphere in the form of hail, mist, rain, sleet, and snow. Deposits of dew, fog, and frost are excluded.

GS **precipitation (meteorology)**
 . graupel
 . hail
 . rain
 . . acid rain
 . snow
 . snow cover

RT Alpine meteorology
 anvil clouds
 atmospheric moisture
 cap clouds
 cirrocumulus clouds
 cirrostratus clouds
 climatology
 cloud physics
 cloud seeding
 clouds (meteorology)
 cumulonimbus clouds
 cyclones
 dew
 drainage patterns
 drought
 flood damage
 flood predictions
 floods
 fog
 fog dispersal
 hailstorms
 humidity
 hydrological cycle
 hydrology
 hydrology models
 hydrometeorology
 hydrometeors
 International Hydrological Decade
 meteorological parameters
 meteorology
 mist
 monsoons
 nephanalysis
 nimbostratus clouds
 ∞ precipitation
 precipitation measurement
 rainmaking
 rainstorms
 ∞ saturation
 snowstorms
 storm damage
 storm enhancement
 storm suppression
 storms
 storms (meteorology)
 water
 water resources
 watersheds
 weather
 weather forecasting

precipitation hardening

UF *age hardening*
dispersion precipitation hardening
strain aging
 GS hardening (materials)
 . **precipitation hardening**
 . . maraging
 RT cold hardening
 eutectic composites
 heat treatment
 precipitates
 solid solutions
 strain hardening
 supersaturation
 time temperature parameter

precipitation measurement

(added June 2003)

DEF Techniques and processes used to measure the amount and type of precipitation.

RT ∞ measurement
 meteorological instruments
 meteorological radar
 meteorological satellites
 precipitation (meteorology)
 rain
 rain gages
 snow

precipitation particle measurement

GS size determination
 . **precipitation particle measurement**
 RT drop size
 meteorological radar
 particle size distribution

precipitators

particles

precipitators

- GS separators
 - . **precipitators**
 - . . electrostatic precipitators
- RT air filters
- concentrators
- dust collectors
- precipitation (chemistry)
- thickeners (equipment)

precision

DEF The quality of being exactly or sharply defined or stated. A measure of the precision of a representation is the number of distinguishable alternatives from which it was selected, which is sometimes indicated by the number of significant digits it contains. Used for exactness.

- UF *exactness*
- RT accuracy
- allowances
- confidence limits
- consistency
- definition
- dynamic characteristics
- errors
- geometric dilution of precision
- high resolution
- hysteresis
- quality
- quality control
- reliability
- resolution
- schedules
- sensitivity
- ∞ sharpness
- tolerances (mechanics)
- truncation errors
- validity

precision guided projectiles

DEF Missiles guided by precise laser radiation.

- GS missiles
 - . **precision guided projectiles**
 - projectiles
 - . **precision guided projectiles**
 - weapons
 - . guns (ordnance)
 - . . artillery
 - . . . **precision guided projectiles**
 - . warheads
 - . . **precision guided projectiles**
- RT ∞ bombs
- terminal ballistics

preconditioning

- GS preparation
 - . **preconditioning**
- RT ∞ conditioning

precooling

- GS cooling
 - . **precooling**
- RT regenerative cooling

predators

- RT animals
- ecology
- ecosystems
- populations

predicate calculus

- (added September 1993)
- GS mathematical logic
 - . **predicate calculus**
 - RT artificial intelligence
 - ∞ logic
 - theorem proving

predicate logic

- (added September 1993)
- RT artificial intelligence
 - linguistics
 - ∞ logic

programming languages
semantics

prediction analysis techniques

- GS scheduling
 - . **prediction analysis techniques**
- RT ∞ analyzing
- parameter identification
- performance prediction
- system identification
- trend analysis

prediction recording

- GS recording
 - . **prediction recording**
- RT predictions

predictions

- UF *predictors*
- GS **predictions**
 - . flood predictions
 - . impact prediction
 - . linear prediction
 - . noise prediction
 - . . noise prediction (aircraft)
 - . forecasting
 - . performance prediction
 - . Roshko prediction
 - . . technological forecasting
 - . . . Delphi method (forecasting)
 - . . . pattern method (forecasting)
 - . . . probe method (forecasting)
 - . . . profile method (forecasting)
 - . . weather forecasting
 - . . . long range weather forecasting
 - . . . nowcasting
 - . . . numerical weather forecasting
 - . . . statistical weather forecasting
 - . hindcasting
- RT catastrophe theory
- confidence limits
- contingency
- estimates
- maximum likelihood estimates
- mission planning
- prediction recording
- ∞ projection
- risk
- schedules

predictor-corrector methods

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **predictor-corrector methods**
 - . . iteration
 - . . . **predictor-corrector methods**
- RT differential equations
- iterative solution

predictors

USE **predictions**

preempting

- RT claiming
- prevention

prefiring tests

- GS engine tests
 - . **prefiring tests**
- RT captive tests
- checkout
- ground tests
- preflight analysis
- prelaunch tests
- rocket engine design
- space vehicle checkout program
- static tests
- test firing
- test stands
- ∞ tests

preflight analysis

- RT ∞ analyzing
- prefiring tests
- systems analysis

∞ tests
trajectory analysis
weight analysis

preflight operations

- GS **preflight operations**
 - . aircraft runup
 - . countdown
- RT crew procedures (preflight)
- flight operations
- ground tests
- ∞ operations
- prelaunch tests
- refueling

prefocusing

- GS focusing
 - . **prefocusing**
- RT ∞ optics

preforms

- RT blanks
- composite materials
- molds
- powder metallurgy
- resin film infusion
- resin transfer molding

pregnancy

- RT birth

preheaters

USE **heating equipment**

preheating

USE **heating**

pre-Imbrian period

DEF One of four stratigraphic classifications adopted for displaying (on maps) the geological ages of major features on the moon.

- RT lunar composition
- lunar craters
- lunar evolution
- lunar geology
- lunar rocks

preimpregnation

- RT filament winding
- pultrusion

prejudices

- RT economics
- irrationality
- management
- ∞ properties
- psychology

prelaunch problems

- RT countdown
- ∞ problems
- reliability
- spacecraft reliability

prelaunch summaries

DEF Summaries prior to launch of the preparations and parameters of the mission.

- GS summaries
 - . **prelaunch summaries**
- RT mission planning
- postlaunch reports
- spacecraft launching

prelaunch tests

- GS ground tests
 - . **prelaunch tests**
 - . . static firing
- RT captive tests
- cold flow tests
- countdown
- crew procedures (preflight)
- engine tests
- launching
- missile tests
- prefiring tests

preflight operations
spacecraft maintenance
static tests
test firing
test stands
∞ tests

preloading

USE **prestressing**

pre-main sequence stars

DEF Stars in which nuclear reactions that take place in its core have not yet occurred.

GS celestial bodies
. stars
. . . protostars
. . . **pre-main sequence stars**
. . . T Tauri stars
RT main sequence stars
star formation
stellar evolution

premature operation

RT ∞ operations
preparation

premixed flames

GS flames
. **premixed flames**
RT carburetors
flame propagation
gas mixtures
mixing
premixing
reacting flow
turbulent combustion
turbulent flames

premixing

DEF The mixing of ingredients prior to a specified action (mixing of fuel and air prior to ignition in combustion, for example).

GS mixing
. **premixing**
RT fuel-air ratio
fuels
gas mixtures
homogenizing
ignition
jet mixing flow
premixed flames
spraying

preparation

GS **preparation**
. preconditioning
. pretreatment
. . . prestressing
. prewhirling
. prewhitening
RT assembling
premature operation
∞ priming

prepolymers

DEF Polymers of degrees of polymerization between that of the monomer or monomers, and the final polymer.

GS **prepolymers**
. dimers
. trimers
RT monomers
∞ polymers

prepregs

DEF The reinforcing materials containing or combined with the full complement or resin before molding operations in the production of composite materials.

RT composite materials
epoxy resins
functionally gradient materials
laminates

resin matrix composites

preprocessing

RT data processing
data reduction
image processing

presbyopia

RT vision

preselectors

USE **preamplifiers**

presentation

RT information

preservatives

RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
penetrants
preserving
retardants
stabilizers (agents)

preserving

GS food processing
. **preserving**
RT biopaks
∞ containers
corrosion prevention
coverings
curing
degradation
dehydrated food
∞ food
freeze drying
freezing
frozen foods
impregnating
irradiation
packaging
preservatives
radiation effects
refrigerating
∞ storage
weatherproofing

Presidential reports

DEF Formal reports originated by the President or his office.

GS documents
. **Presidential reports**
reports
. **Presidential reports**
RT congressional reports
papers
records

presintering

USE **sintering**

presses

GS **presses**
. rams (presses)
RT compacting
hammers
machine tools
platens
∞ pressing
pressing (forming)
punches
tools

∞ **pressing**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cold pressing
compacting
compressing
hot isostatic pressing
hot pressing
platens

presses
pressing (forming)

pressing (forming)

GS forming techniques
. **pressing (forming)**
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
RT cold pressing
compacting
extruding
forging
metal working
molds
presses
∞ pressing
pultrusion
sizing (shaping)
upsetting

pressoreceptor reflexes

(added March 2001)

USE **baroreflexes**

pressoreceptors

(added March 2001)

USE **baroreceptors**

pressors

USE **vasoconstrictor drugs**

pressure

DEF Force or load per unit area. Used for surface pressure.

UF *surface pressure*

GS **pressure**
. atmospheric pressure
. base pressure
. blood pressure
. . diastolic pressure
. . hypertension
. . hypotension
. . lower body negative pressure
. . systolic pressure
. critical pressure
. densification
. differential pressure
. dynamic pressure
. fluid pressure
. . water pressure
. gas pressure
. geopressure
. high pressure
. inlet pressure
. internal pressure
. intracranial pressure
. intraocular pressure
. isostatic pressure
. low pressure
. . high altitude pressure
. middle ear pressure
. overpressure
. partial pressure
. . oxygen tension
. . . hypoxemia
. plasma pressure
. radiation pressure
. . electron pressure
. . lumens
. . luminous intensity
. . . illuminance
. . . luminance
. . sound pressure
. stagnation pressure
. static pressure
. . hydrostatic pressure
. supercritical pressures
. thrust chamber pressure
. transient pressures
. transition pressure
. vacuum
. . high vacuum
. . low vacuum

pressure breathing

- . . ultrahigh vacuum
- . vapor pressure
- . wall pressure
- . wind pressure
- RT baroreceptors
- blast loads
- center of pressure
- compressing
- ear pressure test
- elastic waves
- environments
- ∞ force
- fuel tank pressurization
- Gibbs-Helmholtz equations
- head (fluid mechanics)
- high pressure oxygen
- impact
- isobars (pressure)
- loads (forces)
- Newton pressure law
- osmosis
- pressure breathing
- pressure broadening
- pressure chambers
- pressure distribution
- pressure drag
- ∞ pressure drop
- pressure effects
- pressure gages
- pressure gradients
- pressure heads
- pressure ice
- pressure measurement
- pressure modulator radiometers
- pressure oscillations
- pressure pulses
- pressure ratio
- pressure recorders
- pressure recovery
- pressure reduction
- pressure sensors
- pressure suits
- pressure vessel design
- pressure vessels
- pressure welding
- pressurized cabins
- pressurized water reactors
- pressurizing
- temperature inversions
- vacuum chambers
- weight (mass)

pressure breathing

DEF The breathing of oxygen or a suitable mixture of gases at a pressure higher than the surrounding pressure.

- GS respiration
- . **pressure breathing**
- RT emergency breathing techniques
- liquid breathing
- pressure
- stress (physiology)

pressure broadening

- RT line spectra
- pressure
- spectroscopy

pressure cabins

- USE **pressurized cabins**

pressure chambers

- GS compartments
- . test chambers
- . . **pressure chambers**
- . . . hyperbaric chambers
- . . . vacuum chambers
- RT air locks
- ∞ chambers
- enclosures
- pressure
- pressurized cabins

wind tunnel drives

wind effects

pressure dependence

- DEF Study of how a rate constant changes with pressure.
- RT burning rate
- hydrostatic pressure
- reaction kinetics

pressure distribution

- UF *pressure fields*
- GS distribution (property)
- . **pressure distribution**
- RT aerodynamic coefficients
- aerodynamic loads
- aerodynamic stability
- center of pressure
- differential pressure
- ∞ distribution
- field theory (physics)
- influence coefficient
- internal pressure
- isobars (pressure)
- lift
- loading moments
- loads (forces)
- manometers
- mass distribution
- moment distribution
- Newton pressure law
- pressure
- ∞ pressure drop
- shock wave profiles
- spanwise blowing
- static loads
- structural design criteria
- Theodorsen transformation
- thrust distribution
- velocity distribution
- vertical distribution
- wall pressure

pressure drag

- GS dynamic characteristics
- . drag
- . . **pressure drag**
- . . . supersonic drag
- . . . wave drag
- interference drag
- RT aerodynamic drag
- friction drag
- pressure

∞ pressure drop

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fluid power
- friction
- gas flow
- head flow
- inlet flow
- pressure
- pressure distribution
- pressure gradients
- pressure oscillations
- pressure reduction
- two phase flow

pressure effects

- RT beta factor
- compressibility effects
- ∞ effects
- jet blast effects
- loads (forces)
- nonisothermal processes
- pressure
- suction
- temperature effects
- temperature inversions
- transition pressure
- vacuum effects

pressure fields

- USE **pressure distribution**

pressure gages

- UF *bombs (pressure gages)*
- GS measuring instruments
- . **pressure gages**
- . . barometers
- . . manometers
- . . osmometers
- . . piezoelectric gages
- . . piezometers
- . . vacuum gages
- . . . ionization gages
- alphatrons
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- . . . Knudsen gages
- . . . McLeod gages
- . . . Pirani gages
- RT ∞ bombs
- Bourdon tubes
- flowmeters
- hypsonometers
- pressure
- shock measuring instruments
- strain gage accelerometers
- strain gage balances
- strain gages
- weight indicators

pressure gradients

- GS gradients
- . **pressure gradients**
- RT atmospheric pressure
- bathymographs
- boundary layer thickness
- critical flow
- differential pressure
- fluid boundaries
- fluid flow
- friction factor
- geopressure
- hydrodynamics
- hydrostatics
- inlet pressure
- isobars (pressure)
- Knudsen flow
- liquid flow
- liquid-liquid interfaces
- liquid-vapor interfaces
- multiphase flow
- orifice flow
- pipe flow
- potential gradients
- pressure
- ∞ pressure drop
- Rankine-Hugoniot relation
- steady flow
- steam flow
- subcritical flow
- suction
- supercritical flow
- uniform flow
- unsteady flow
- Venturi tubes

pressure heads

- UF *head (pressure)*
- GS fluid flow
- . head (fluid mechanics)
- . . **pressure heads**
- RT center of pressure
- elevation
- ∞ hydraulics
- hydrodynamics
- hydrostatic pressure
- hydrostatics
- liquid flow
- pressure

pressure ice

- UF *pressure ridges*

- GS ice
 . sea ice
 . . **pressure ice**
- RT cold weather
 freezing
 ice formation
 low temperature
 ocean currents
 pressure
 tides
 wind (meteorology)
 winter
- pressure measurement**
 UF *tonometry*
 GS mechanical measurement
 . **pressure measurement**
- RT barometers
 Bourdon tubes
 differential pressure
 flow measurement
 flowmeters
 ionization gages
 Knudsen gages
 manometers
 Mcleod gages
 ∞ measurement
 noise meters
 Philips ionization gages
 Pirani gages
 pitot tubes
 pneumatic probes
 pressure
 pressure sensitive paints
 vacuum
 vacuum gages
 velocity
 velocity measurement
 Venturi tubes
 weight indicators
 wind tunnel calibration
 wind tunnel tests
- pressure modulator radiometers**
 DEF A cell containing a known quantity of a gas is placed in the single optical path of the radiometer and subjected to cyclical pressure changes which alter the absorption lines in the infrared spectrum of the gas. A narrow band signal results from the different voltages at the detector at high and low cell pressures. A wide-band signal is generated by physically chopping a percentage of the input beam with a rotating chopper blade.
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 **pressure modulator radiometers**
- RT infrared radiometers
 pressure
- pressure oscillations**
 GS oscillations
 . **pressure oscillations**
- RT acoustic frequencies
 combustion stability
 flame propagation
 pressure
 ∞ pressure drop
 Southern Oscillation
 turbulent flow
- pressure probes*
 USE **pressure sensors**
- pressure pulses**
 GS pulses
 . **pressure pulses**
- RT blast loads
 flame propagation
 pressure
- shock waves
- pressure ratio**
 DEF The relationship of a force to the deformation of a system whose deformation varies in some proportion to the force.
 GS ratios
 . **pressure ratio**
- RT fuel-air ratio
 lift drag ratio
 mass ratios
 payload mass ratio
 pressure
 propellant mass ratio
 stress ratio
 thrust-weight ratio
- pressure recorders**
 GS recording instruments
 . **pressure recorders**
- RT pressure
- pressure recovery**
 RT ∞ diffusers
 explosive decompression
 fluid amplifiers
 inlet pressure
 pressure
 ∞ recovery
- pressure reduction**
 UF *bleed-off*
decompression
deflating
depressurization
- GS **pressure reduction**
 . explosive decompression
- RT ∞ bleeding
 compressing
 gas expansion
 inflating
 pressure
 ∞ pressure drop
 ∞ reduction
- pressure regulators**
 GS control equipment
 . regulators
 . . automatic control valves
 . . . **pressure regulators**
 valves
 . automatic control valves
 . . **pressure regulators**
- RT controllers
 flow regulators
 fuel tank pressurization
 oxygen regulators
 pressurizing
 relief valves
- pressure ridges*
 USE **pressure ice**
- pressure sensitive paints**
 (added March 2001)
 DEF Luminescent paints used for the non-intrusive optical measurement of static and transient pressure fields. These paints are typically organic luminophores or dyes dispersed in an oxygen permeable polymeric binder. The luminescence is induced by the excitation of the dye with an appropriate wavelength light. The emitted intensity or brightness of the paint is inversely proportional to the partial pressure of oxygen because the luminescence is quenched by oxygen.
 UF *PSP (paints)*
 GS coatings
 . paints
 . . **pressure sensitive paints**
- RT flow measurement
 flow visualization
 nonintrusive measurement
 optical measurement
- pressure measurement
- pressure sensors**
 UF *pressure probes*
pressure transducers
- GS transducers
 . **pressure sensors**
 . . Bourdon tubes
- RT electroacoustic waves
 piezoelectric gages
 pressure
 quartz transducers
 ∞ rakes
 shock wave generators
 transient pressures
 transient response
 ultrasonic wave transducers
- pressure suits**
 DEF Garments designed to provide pressure upon the body so that the respiratory and circulatory functions may continue normally, or nearly so, under low pressure conditions, such as occur at high altitudes or in space without benefit of pressurized cabins.
 GS clothing
 . protective clothing
 . . **pressure suits**
 . . . space suits
 extravehicular mobility units
 . suits
 . . **pressure suits**
 . . . space suits
 extravehicular mobility units
- RT flight clothing
 helmets
 inflatable structures
 life support systems
 portable life support systems
 pressure
 safety devices
- pressure switches**
 GS control equipment
 . **pressure switches**
 switches
 . **pressure switches**
- RT electric switches
- pressure transducers*
 USE **pressure sensors**
- pressure vessel design**
 GS structural design
 . **pressure vessel design**
- RT ∞ design
 perforated shells
 pressure
 shells (structural forms)
- pressure vessels**
 GS **pressure vessels**
 . preburners
- RT accumulators
 autoclaves
 bells
 boilers
 bulbs
 burst tests
 ∞ containers
 domes (structural forms)
 fuel tank pressurization
 fuel tanks
 hemisphere cylinder bodies
 isotensoid structures
 pressure
 propellant tanks
 reactor materials
 shallow shell equations
 spherical tanks
 storage tanks
 tanks (containers)
 ∞ vessels
 wall pressure

pressure welding

- wind tunnel walls
- pressure waves*
 - USE **elastic waves**
- pressure welding**
 - GS welding
 - . **pressure welding**
 - . . cold welding
 - . . diffusion welding
 - . . explosive welding
 - . . friction welding
 - . . . friction stir welding
 - . . ultrasonic welding
 - RT arc welding
 - electric welding
 - flash welding
 - fusion welding
 - gas welding
 - pressure
 - spot welds
- pressurized cabins**
 - UF *pressure cabins*
 - GS compartments
 - . **pressurized cabins**
 - RT aircraft compartments
 - cabin atmospheres
 - ∞ cabins
 - cockpits
 - emergency life sustaining systems
 - environmental control
 - escape capsules
 - explosive decompression
 - life support systems
 - oxygen supply equipment
 - pressure
 - pressure chambers
 - spacecraft cabin atmospheres
 - spacecraft cabins
- pressurized water reactors**
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **pressurized water reactors**
 - spectral shift control reactor
 - RT nuclear power reactors
 - pressure
- pressurizing**
 - GS **pressurizing**
 - . fuel tank pressurization
 - RT accumulators
 - densification
 - expulsion
 - expulsion bladders
 - gas generators
 - gas injection
 - inflating
 - pressure
 - pressure regulators
 - stimulation
- Preston tubes*
 - USE **pitot tubes**
 - speed indicators**
- prestraining*
 - USE **prestressing**
- prestressing**
 - UF *preloading*
 - prestraining*
 - pretwisting*
 - GS preparation
 - . pretreatment
 - . . **prestressing**
 - RT elastic deformation
 - isotensoid structures
 - stresses
 - structural strain
- tensegrity structures
- pretests*
 - USE **tests**
- pretreatment**
 - GS preparation
 - . **pretreatment**
 - . . prestressing
 - RT prevention
 - ∞ priming
- pretwisting*
 - USE **prestressing**
 - twisting**
- prevaporization**
 - DEF The phase transformations of liquids to gases prior to some physical or chemical reaction.
 - GS phase transformations
 - . vaporizing
 - . . **prevaporization**
 - RT flashing (vaporizing)
 - gases
 - vapor phases
 - vapors
 - volatility
- prevention**
 - GS **prevention**
 - . accident prevention
 - . corrosion prevention
 - . fire prevention
 - . ice prevention
 - . preventive maintenance
 - RT blocking
 - etiology
 - ∞ inhibition
 - pollution
 - preempting
 - pretreatment
 - protection
 - ∞ reduction
 - ∞ resistance
 - retarding
 - sabotage
 - safety
 - stopping
- preventive maintenance**
 - (added June 2000)
 - GS maintenance
 - . **preventive maintenance**
 - prevention
 - . **preventive maintenance**
 - RT aircraft maintenance
 - failure analysis
 - inspection
 - nondestructive tests
 - reliability analysis
- prewhirling**
 - GS preparation
 - . **prewhirling**
- prewhitening**
 - GS preparation
 - . **prewhitening**
 - RT color
 - ∞ treatment
- Pribram meteorite**
 - GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Pribram meteorite**
 - RT bolides
 - meteor trails
- primary batteries**
 - SN (NON-RECHARGEABLE BATTERIES)
 - GS electric generators
 - . direct power generators
 - . . **primary batteries**
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
 - nickel zinc batteries
 - . . . metal air batteries
 - zinc-oxygen batteries
 - . . sodium sulfur batteries
 - . . thermal batteries
 - electrochemical cells
 - electric batteries
 - . . **primary batteries**
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
 - nickel zinc batteries
 - . . . metal air batteries
 - zinc-oxygen batteries
 - . . sodium sulfur batteries
 - . . thermal batteries
 - RT charge efficiency
 - electrolytes
 - nonaqueous electrolytes
 - storage batteries
 - wet cells
- primary cosmic rays**
 - UF *heavy cosmic ray primaries*
 - GS extraterrestrial radiation
 - . **primary cosmic rays**
 - . . solar cosmic rays
 - ionizing radiation
 - . cosmic rays
 - . . **primary cosmic rays**
 - . . . solar cosmic rays
 - particles
 - . corpuscular radiation
 - . . **primary cosmic rays**
 - . . . solar cosmic rays
 - RT cosmic ray albedo
 - heavy nuclei
 - secondary cosmic rays
- primates**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . **primates**
 - apes
 - chimpanzees
 - baboons
 - human beings
 - monkeys
- ∞ **primers**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT engine primers
 - primers (coatings)
 - primers (explosives)
- primers (coatings)**
 - DEF Coatings designed to enhance adhesion.
 - GS coatings
 - . protective coatings
 - . . **primers (coatings)**
 - RT dopes
 - fillers
 - finishes
 - lacquers
 - metal coatings
 - paints
 - ∞ primers
 - sprayed coatings
 - substrates
 - varnishes
- primers (explosives)**
 - GS explosive devices
 - . initiators (explosives)
 - . . **primers (explosives)**
 - igniters
 - . initiators (explosives)
 - . . **primers (explosives)**
 - RT caps (explosives)
 - detonation

- detonators
- exploding wires
- percussion
- ∞ primers
- squibs
- ∞ **priming**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT coating
 - coatings
 - initiation
 - preparation
 - pretreatment
 - starting
- primitive Earth atmosphere**
 - GS Earth atmosphere
 - . **primitive Earth atmosphere**
 - RT ∞ atmospheres
 - atmospheric composition
 - atmospheric electricity
 - atmospheric models
 - Earth planetary structure
 - free atmosphere
 - paleoclimatology
 - planetary atmospheres
- primitive equations**
 - DEF Eulerian equations of fluid motion in which the primary dependent variables are the fluid's velocity components. The equations govern a wide variety of fluid motions and form the basis of most hydrodynamical analysis.
 - RT atmospheric boundary layer
 - climatology
 - ∞ equations
 - Euler equations of motion
 - fluid dynamics
 - ∞ mathematics
- primordial galaxies*
(added May 2002)
- USE **protogalaxies**
- primordial stars*
(added July 1999)
- USE **Population III stars**
- Prince Edward Island**
 - GS landforms
 - . islands
 - . . **Prince Edward Island**
 - nations
 - . Canada
 - . . **Prince Edward Island**
- Prince William Sound (AK)**
 - GS sounds (topographic features)
 - . **Prince William Sound (AK)**
 - RT Alaska
- Princeton sailwings*
- USE **sailwings**
- principal components analysis**
 - RT image processing
 - imaging techniques
 - Karhunen-Loeve expansion
 - pattern recognition
 - spectral mixture analysis
- ∞ **principles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT duality principle
 - ∞ logic
 - ∞ mathematics
- printed circuits**
 - GS circuits
 - . **printed circuits**
 - RT breadboard models
 - circuit boards
 - electronic packaging
- hybrid circuits
- integrated circuits
- large scale integration
- medium scale integration
- miniature electronic equipment
- miniaturization
- photomasks
- subminiaturization
- thick films
- transistor circuits
- printed resistors**
 - GS attenuators
 - . resistors
 - . . **printed resistors**
 - RT miniaturization
- printers**
 - GS **printers**
 - . printers (data processing)
 - . teleprinters
 - RT cathode ray tubes
 - data processing equipment
 - plotters
 - printing
 - projectors
 - typewriters
- printers (data processing)**
 - GS computer components
 - . peripheral equipment (computers)
 - . . **printers (data processing)**
 - data processing equipment
 - . peripheral equipment (computers)
 - . . **printers (data processing)**
 - printers
 - . **printers (data processing)**
 - RT automatic typewriters
 - computers
 - ∞ data
 - display devices
 - printouts
 - readout
 - teleprinters
- printing**
 - GS **printing**
 - . lithography
 - . . photolithography
 - RT binding
 - contrast
 - document markup languages
 - electronic publishing
 - electronography
 - engraving
 - inks
 - legibility
 - photoengraving
 - photographic processing
 - photomechanical effect
 - plotting
 - printers
 - reading
 - reproduction (copying)
 - stencil processes
- printouts**
 - RT format
 - lists
 - output
 - printers (data processing)
 - readout
 - tables (data)
- priorities**
 - RT engineering management
 - project planning
 - research management
 - resource allocation
 - sequencing
- Priroda module**
(added August 1995)
- GS modules
- . space station modules
- . . **Priroda module**
- RT Mir space station
- radar imagery
- remote sensing
- space station structures
- prismatic bars**
 - GS bars
 - . **prismatic bars**
 - RT prisms
- prisms**
 - DEF Transparent bodies with at least two polished plane faces inclined with respect to each other, from which light is reflected or through which light is refracted. When light is refracted by a prism whose refractive index exceeds that of the surrounding medium, it is deviated or bent toward the thicker part of the prism.
 - GS optical equipment
 - . **prisms**
 - RT photoelasticity
 - prismatic bars
 - refraction
- privacy**
 - DEF Freedom from observation and/or intrusion. Applies to such things as communications, personal records, photographs.
 - RT computer information security
 - information
 - information dissemination
 - integrity
 - papers
 - recording
 - records
 - security
- private aircraft*
- USE **general aviation aircraft**
- probability*
- USE **probability theory**
- probability density functions**
 - GS functions (mathematics)
 - . **probability density functions**
 - . . normal density functions
 - . . Pearson distributions
 - . . Rayleigh distribution
 - . . Weibull density functions
 - statistical analysis
 - . **probability density functions**
 - . . normal density functions
 - . . Pearson distributions
 - . . Rayleigh distribution
 - . . Weibull density functions
 - RT binomial theorem
 - censored data (mathematics)
 - continuity (mathematics)
 - discrete functions
 - events
 - expectancy hypothesis
 - exponential functions
 - failure analysis
 - gas density
 - Mills ratio
 - quartiles
- probability distribution functions**
 - GS functions (mathematics)
 - . distribution functions
 - . . **probability distribution functions**
 - statistical analysis
 - . **probability distribution functions**
 - statistical distributions
 - . **probability distribution functions**
 - RT discrete functions
 - goodness of fit
- probability theory**
 - UF *probability*
 - statistical probability*
 - RT ∞ applications of mathematics
 - belief networks
 - binomial theorem

probe method (forecasting)

- Borel sets
- combinatorial analysis
- confidence
- ∞ conjunction
- consecutive events
- continuums
- correlation
- decision theory
- distribution functions
- Duffing differential equation
- Einstein equations
- ergodic process
- error analysis
- events
- extremum values
- forecasting
- fuzzy systems
- game theory
- goodness of fit
- ∞ indication
- infinity
- information theory
- iteration
- Kolmogorov-Smirnov test
- likelihood ratio
- martingales
- ∞ mathematics
- Maxwell-Boltzmann density function
- Minkowski space
- Monte Carlo method
- operations research
- outliers (statistics)
- parameter identification
- population theory
- quality control
- random errors
- random noise
- reliability
- sampling
- statistical analysis
- statistical distributions
- ∞ statistics
- Stieltjes integral
- stochastic processes
- subgroups
- system identification
- ∞ theories
- transition probabilities
- traveling salesman problem
- uncertain systems
- uniqueness theorem

probe method (forecasting)

- GS management methods
 - . **probe method (forecasting)**
 - predictions
 - . forecasting
 - . . . technological forecasting
 - . . . **probe method (forecasting)**
- RT Delphi method (forecasting)
- estimating
- ∞ methodology
- operations research
- pattern method (forecasting)
- planning
- profile method (forecasting)
- technology assessment

∞ probes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Galileo probe
- gas detectors
- measuring instruments
- Pioneer 8 space probe
- Pioneer 9 space probe
- Pioneer 10 space probe
- Pioneer 11 space probe
- Pioneer Venus 1 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 spacecraft
- Pioneer Venus 2 transporter bus
- Pioneer Venus spacecraft
- radio probing
- remote sensors

- sondes
- space probes
- transducers

problem solving

- GS **problem solving**
 - . alternating direction implicit methods
 - . asymptotic methods
 - . iterative solution
 - . theorem proving
- RT approximation
- backward differencing
- computational grids
- Crank-Nicholson method
- decision making
- decision support systems
- Dining Philosophers Problem
- existence theorems
- group dynamics
- homotropy
- Householder transformations
- ill-conditioned problems (mathematics)
- ill-posed problems (mathematics)
- iteration
- learning theory
- management
- maze learning
- ∞ methodology
- Newton methods
- simplex method
- ∞ solution

∞ problems

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bolza problems
- boundary value problems
- Cauchy problem
- Chapman-Ferraro problem
- Dirichlet problem
- four body problem
- isoperimetric problem
- many body problem
- Mayer problem
- Neumann problem
- operational problems
- Poincare problem
- prelaunch problems
- three body problem
- tracking problem
- traveling salesman problem
- two body problem

procedures

- DEF Detailed instructions for the performance of a process or function.
- UF *methods*
- practices*
- GS **procedures**
 - . boundary integral method
 - . crew procedures (inflight)
 - . crew procedures (preflight)
 - . finite element method
 - . finite volume method
 - . . . Godunov method
 - . Glimm method
 - . optical correction procedure
 - . panel method (fluid dynamics)
- RT procurement policy
- systems analysis

proceedings

- USE **conferences**
- congressional reports**

process control (industry)

- DEF The ways and means by which continuous manufacturing and other industrial processes are monitored and maintained to create products of planned, uniform dimension and quality.
- RT component reliability
- ∞ control
- group technology (manufacturing)
- product development

- quality control
- sampling
- specifications

process heat

- DEF Increase in enthalpy accompanying chemical reactions or phase transformations at constant pressure (heat of crystallization and heat of sublimation are examples).
- GS heat
- . **process heat**
- RT heat generation

∞ processes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT autoregressive processes
- isentropic processes
- jet membrane process
- Kraft process (woodpulp)
- nonisentropicity
- nonisothermal processes
- Ornstein-Uhlenbeck process
- product development
- quality control
- sol-gel processes
- space industrialization
- Umklapp process

∞ processing

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT associative processing (computers)
- batch processing
- data processing
- food processing
- image processing
- manufacturing
- materials recovery
- message processing
- nuclear fuel reprocessing
- optical data processing
- photographic processing
- production engineering
- recycling
- refining
- retort processing
- settling
- signal processing
- ultrasonic processing
- wet spinning

processors (computers)

- USE **central processing units**

procurement

- GS **procurement**
 - . government procurement
 - . leasing
- RT contracts
- equipment specifications
- government/industry relations
- ∞ receiving
- services
- specifications
- subcontracts

procurement management

- GS management
- . **procurement management**
- RT allocations
- budgeting
- ∞ budgets
- commercial off-the-shelf products
- commodities
- federal budgets
- financial management
- inventory management
- products
- services

procurement policy

- GS policies
- . **procurement policy**
- RT decisions

intellectual property
management
procedures
regulations
rules

product development

UF *engineering development*

GS **product development**
. weapons development

RT aircraft design
aircraft production
amplifier design
antenna design
breadboard models
commerce
commercial off-the-shelf products
commercialization
computer design
concurrent engineering
consumers
∞ design
∞ development
engine design
functional design specifications
helicopter design
inventions
lens design
management
market research
marketing
patent applications
patent policy
pilot plants
process control (industry)
∞ processes
∞ production
production engineering
quality
quality control
rapid prototyping
reactor design
reliability
satellite design
solvent refined coal
space industrialization
spacecraft design
standardization
structural design

∞ **production**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aircraft production
food production (in space)
fuel production
output
product development
production engineering
production planning
reserves
tools

production costs

DEF The process of fabrication, from raw materials through the finished products, including packaging and other prorated costs.

GS costs
. **production costs**
. . aircraft production costs

RT cost analysis
cost estimates
design to cost
life cycle costs
operating costs

production engineering

UF *production methods*

GS **production engineering**
. group technology (manufacturing)
. production planning

RT aircraft production
aircraft production costs
∞ capacity
∞ engineering
human factors engineering

laser applications

management

numerical control

∞ operations

planning

∞ processing

product development

∞ production

productivity

products

scheduling

standardization

production management

GS management

. **production management**

RT aircraft production costs
employee relations
estimates
fabrication
group technology (manufacturing)
industrial management
manufacturing
quality control
reliability
resources
safety management
total quality management

production methods

USE **production engineering**

production planning

GS planning

. management planning

. . **production planning**

production engineering

. **production planning**

RT ∞ production

schedules

productivity

RT aircraft production costs

allowances

efficiency

matrix management

morale

production engineering

reliability

software reuse

workstations

products

GS **products**

. fission products

. gross national product

. petroleum products

. . asphalt

. . diesel fuels

. . gasoline

. . tars

. reaction products

. . combustion products

. commercial off-the-shelf products

RT by-products

commodities

manufacturing

output

procurement management

production engineering

quality control

resource allocation

services

space industrialization

proficiency

USE **abilities**

profile method (forecasting)

GS management methods

. **profile method (forecasting)**

predictions

. forecasting

. . technological forecasting

. . . **profile method (forecasting)**

RT Delphi method (forecasting)

estimating

∞ methodology

operations research

planning

probe method (forecasting)

technology assessment

∞ **profiles**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT airfoil profiles

angles (geometry)

curvature

delineation

distribution (property)

geometry

gradients

line shape

planforms

profilometers

search profiles

shapes

shock wave profiles

slopes

streamlining

topography

wind profiles

profilometers

GS measuring instruments

. **profilometers**

RT ∞ profiles

roughness

shapes

surface properties

surface roughness

progeny

RT children

reproduction (biology)

prognosis

RT diagnosis

Prognoz satellites

GS artificial satellites

. Soviet satellites

. . **Prognoz satellites**

program evaluation review technique

USE **PERT**

program management

USE **project management**

program reliability (computers)

USE **software reliability**

program trend line analysis

RT critical path method

management planning

PERT

programs

project management

program verification (computers)

RT checkout

computer programming

file maintenance (computers)

proving

software development tools

software reliability

systems analysis

∞ tests

programmable logic devices

(added September 1992)

GS reconfigurable hardware

. **programmable logic devices**

. . field-programmable gate arrays

RT architecture (computers)

computer systems design

controllers

logic circuits

programmed instruction

- logic design
 - programmed cell death*
(added October 2000)
 - USE **apoptosis**
 - programmed instruction**
 - GS education
 - . **programmed instruction**
 - .. computer assisted instruction
 - RT compilers
 - computer programming
 - computer programs
 - programmers**
 - GS personnel
 - . **programmers**
 - RT coders
 - computer programming
 - file maintenance (computers)
 - ∞ **programming**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computer programming
 - dynamic programming
 - file maintenance (computers)
 - linear programming
 - mathematical programming
 - microprogramming
 - multiprogramming
 - nonlinear programming
 - programming (scheduling)
 - quadratic programming
 - structured programming
 - programming (scheduling)**
 - GS scheduling
 - . **programming (scheduling)**
 - .. thrust programming
 - RT critical path method
 - ∞ programming
 - ∞ steps
 - programming environments**
(added January 1993)
 - UF *SEE (software engineering environments)*
software engineering environments
 - RT computer programming
 - computer programs
 - environments
 - software development tools
 - software engineering
- programming languages**
 - GS languages
 - . **programming languages**
 - .. ALGOL
 - .. APL (programming language)
 - .. Assembly language
 - .. autocoders
 - .. COMPASS (programming language)
 - .. MAP (programming language)
 - .. BASIC (programming language)
 - .. Cobol
 - .. COGO (programming language)
 - .. context free languages
 - .. Forth (programming language)
 - .. FORTRAN
 - .. HAL/S (language)
 - .. high level languages
 - .. Ada (programming language)
 - .. C (programming language)
 - .. C++ (programming language)
 - .. Java (programming language)
 - .. LISP (programming language)
 - .. machine oriented languages
 - .. natural language (computers)
 - .. Pascal (programming language)
 - .. PL/1
 - .. Prolog (programming language)
 - RT computer programming
 - formalism
 - predicate logic
 - structured programming
 - programs**
 - GS **programs**
 - . Army-Navy instrumentation program
 - . Comsat program
 - . defense program
 - . Downrange Antimissile Measurement Program
 - . Global Atmospheric Research Program
 - .. GARP Atlantic Tropical Experiment
 - . International Geosphere-Biosphere program
 - . lunar programs
 - .. Apollo project
 - .. Surveyor project
 - .. NASA programs
 - .. ACEE program
 - .. Assess program
 - .. ATLIT project
 - .. DAST program
 - .. NASA space programs
 - .. Apollo applications program
 - .. Apollo project
 - .. Bioastronautical Orbital Space System
 - .. Centaur project
 - .. Earth & Ocean Physics Applications Program
 - .. Earth Resources Program
 - .. Earth Resources Survey Program
 - .. SEASAT program
 - .. Echo project
 - .. Galileo project
 - .. Gemini project
 - .. Helios Project
 - .. Jupiter project
 - .. Magellan project (NASA)
 - .. Mariner program
 - .. Mariner Venus-Mercury 1973
 - .. Mariner-Mercury 1973
 - .. Mars 69 project
 - .. Mars 71 project
 - .. Mercury project
 - .. National Launch Vehicle Program
 - .. NEW MOONS project
 - .. Nimbus project
 - .. OPEN Project
 - .. Pioneer project
 - .. Project SETI
 - .. Ranger project
 - .. Agena B Ranger Program
 - .. Mars Surveyor 98 Program
 - .. Rover project
 - .. SAIL project
 - .. Saturn project
 - .. Scout project
 - .. Skylab program
 - .. Starprobe mission
 - .. Surveyor project
 - .. Synchronous Communications Satellite Proj
 - .. Tektite project
 - .. TIROS project
 - .. Titan project
 - .. Vanguard project
 - .. Viking Mars program
 - .. Voyager project
 - .. Mission to Planet Earth
 - .. National Aerospace Plane Program
 - .. quiet engine program
 - .. supersonic cruise aircraft research
 - .. TACT program
 - .. Terminal Configured Vehicle Program
 - .. Tilt Rotor Research Aircraft Program
 - .. PANT program
 - .. projects
 - .. Advent Project
 - .. AgRISTARS project
 - .. Alouette project
 - .. Apollo project
 - .. Apollo Soyuz test project
 - .. Argus project
 - .. ASSET project
 - .. ATLIT project
 - .. BIOS project
 - .. Bumblebee project
 - .. Centaur project
 - .. Defender project
 - .. Earth & Ocean Physics Applications Program
 - .. Echo project
 - .. eclipse project
 - .. Experimental Reflector Orbital Shot Proj
 - .. FIRE (climatology)
 - .. Galileo project
 - .. Gemini project
 - .. Geosari project
 - .. Harvard Radio Meteor Project
 - .. Helios Project
 - .. ISCCP Project
 - .. Jupiter project
 - .. Magellan project (NASA)
 - .. Mars 69 project
 - .. Mars 71 project
 - .. Mercury project
 - .. NEW MOONS project
 - .. Nike project
 - .. Nimbus project
 - .. OPEN Project
 - .. Pioneer project
 - .. Project SETI
 - .. Radio Attenuation Measurement project
 - .. rand project
 - .. Ranger project
 - .. Agena B Ranger Program
 - .. Next Generation Space Telescope project
 - .. Rover project
 - .. SAIL project
 - .. Saturn project
 - .. Scanner project
 - .. Scout project
 - .. Seafarer project
 - .. SQUID project
 - .. Submarine Integrated Control project
 - .. Success project
 - .. Surveyor project
 - .. Synchronous Communications Satellite Proj
 - .. Telstar project
 - .. Themis project
 - .. TIROS project
 - .. Titan project
 - .. Vanguard project
 - .. Voyager project
 - .. West Ford project
 - .. radar target scatter site program
 - .. space programs
 - .. Argentine space program
 - .. Australian space program
 - .. Brazilian space program
 - .. Canadian space program
 - .. Alouette project
 - .. Chinese space program
 - .. European space programs
 - .. Austrian space program
 - .. Belgian space program
 - .. Czechoslovakian space program
 - .. Danish space program
 - .. Finnish space program
 - .. French space program
 - .. German space program
 - .. Greek space program
 - .. Hungarian space program
 - .. Icelandic space program
 - .. Italian space program
 - .. Luxembourg space program
 - .. Netherlands space program
 - .. Norwegian space program
 - .. Portuguese space program
 - .. Spanish space program
 - .. Swedish space program
 - .. Swiss space program
 - .. Turkish space program
 - .. UK space program
 - .. geographic applications program

- . . Indian space program
- . . Indonesian space program
- . . Israeli space program
- . . Japanese space program
- . . Mexican space program
- . . NASA space programs
- . . . Apollo applications program
- . . . Apollo project
- . . . Bioastronautical Orbital Space System
- . . . Centaur project
- . . . Earth & Ocean Physics Applications Program
- . . . Earth Resources Program
- Earth Resources Survey Program
- SEASAT program
- . . . Echo project
- . . . Galileo project
- . . . Gemini project
- . . . Helios Project
- . . . Jupiter project
- . . . Magellan project (NASA)
- . . . Mariner program
- Mariner Venus-Mercury 1973
- Mariner-Mercury 1973
- . . . Mars 69 project
- . . . Mars 71 project
- . . . Mercury project
- . . . National Launch Vehicle Program
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- . . . Tektite project
- . . . TIROS project
- . . . Titan project
- . . . Vanguard project
- . . . Viking Mars program
- . . . Voyager project
- . . New Zealand space program
- . . Pakistan space program
- . . Russian Space Program
- . . Saudi Arabian space program
- . . U. S. S. R. space program
- . . Ukrainian space program
- . Starsite program
- . TRAP program
- . university program
- RT bureaus (organizations)
- Committee on Space Research
- computer program integrity
- computer programs
- Earth Resources Information System
- investigation
- mission planning
- ∞ missions
- ∞ operations
- program trend line analysis
- research and development
- ∞ research projects
- SEASAT 1
- SEASAT satellites
- SEASAT-B satellite
- Solar Maximum Mission
- Synchronous Earth Observatory satellite
- user manuals (computer programs)

progress

- RT economics
- management
- planning

- ∞ properties

progressions

- GS analysis (mathematics)
- . calculus
- . . series (mathematics)
- . . . **progressions**
- . real variables
- . . series (mathematics)
- . . . **progressions**

prohibition

- RT legal liability
- penalties
- policies
- regulations

project management

- UF *program management*
- GS management
- . **project management**
- RT commerce
- contract management
- critical path method
- GERT
- interfaces
- management planning
- management systems
- mission planning
- multidisciplinary research
- PERT
- program trend line analysis
- projects
- research and development
- ∞ research projects
- weapon system management

project planning

- GS planning
- . management planning
- . . **project planning**
- RT allocations
- budgeting
- decisions
- estimates
- forecasting
- goals
- management
- matrix management
- ∞ missions
- NASA Interactive Planning System
- operations research
- priorities
- projects

Project SETI

DEF A program to search for extraterrestrial intelligence by means of radio communication. Used for Search for Extraterrestrial Intelligence and SETI.

- UF *Search for Extraterrestrial Intelligence SETI*
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Project SETI**
- . projects
- . . **Project SETI**
- . space programs
- . . NASA space programs
- . . . **Project SETI**
- RT extraterrestrial intelligence
- radio communication
- radio signals

projectile cratering

- UF *hypervelocity cratering*
- GS cratering
- . **projectile cratering**
- RT ejecta
- hypervelocity impact
- hypervelocity projectiles
- meteorite craters
- meteoritic damage

- meteoroid hazards

projectile penetration

- USE **terminal ballistics**

projectiles

DEF Objects, especially missiles, fired, thrown, launched, or otherwise projected in any manner, such as bullets, guided rocket missiles, sounding rockets, or pilotless airplanes. Originally, objects, such as bullets or artillery shells, projected by applied external forces.

- GS **projectiles**
- . hypervelocity projectiles
- . precision guided projectiles
- . Sabot projectiles
- RT ammunition
- ballistics
- bombs (ordnance)
- cartridges
- finned bodies
- gunfire
- guns (ordnance)
- incendiary ammunition
- nuclear weapons
- pyrotechnics
- shaped charges
- shrapnel
- terminal ballistics
- terradyamics
- warheads
- weapons

∞ **projection**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bonne projection
- descriptive geometry
- drawings
- forecasting
- gnomonic projection
- graphic arts
- illuminating
- magnification
- predictions
- projectors
- trends

projective geometry

- GS geometry
- . Euclidean geometry
- . . **projective geometry**
- . . . Mercator projection
- RT analytic geometry
- descriptive geometry
- gnomonic projection
- reciprocal theorems

projectors

- SN (LIGHT AND IMAGE)
- RT beacons
- illuminating
- luminaires
- motion pictures
- photogrammetry
- photographic equipment
- photography
- printers
- ∞ projection
- searchlights

projects

- GS programs
- . **projects**
- . . Advent Project
- . . AgRISTARS project
- . . Alouette project
- . . Apollo project
- . . Apollo Soyuz test project
- . . Argus project
- . . ASSET project
- . . ATLIT project
- . . BIOS project
- . . Bumblebee project
- . . Centaur project
- . . Defender project

prokaryotes

.. Earth & Ocean Physics Applications Program
 .. Echo project
 .. eclipse project
 .. Experimental Reflector Orbital Shot Proj
 .. FIRE (climatology)
 .. Galileo project
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 .. Surveyor project
 .. Synchronous Communications Satellite Proj
 .. Telstar project
 .. Themis project
 .. TIROS project
 .. Titan project
 .. Vanguard project
 .. Voyager project
 .. West Ford project
 RT bureaus (organizations)
 contracts
 estimating
 ∞ missions
 ∞ operations
 project management
 project planning
 ∞ research projects
 tasks
 teams

prokaryotes

GS cells (biology)
 . **prokaryotes**
 RT bacteria
 biological evolution
 cytology
 eukaryotes
 molecular biology

prolate spheroids

DEF Ellipsoids of revolutions, the longer axis of which is the axis of revolution.

GS geometry
 . Euclidean geometry
 .. analytic geometry
 ... spheroids
 **prolate spheroids**
 RT oblate spheroids

prolateness

RT shapes

Prolog (programming language)

GS languages

.. programming languages
 . **Prolog (programming language)**
 RT artificial intelligence
 computer programming
 expert systems

prolongation

GS extensions
 . **prolongation**
 RT time

promethazine

GS amines
 . **promethazine**
 drugs
 . antihistaminics
 . **promethazine**
 organic compounds
 . cyclic compounds
 . heterocyclic compounds
 . . . **promethazine**

Prometheus

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 139,350 kilometers.

GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Prometheus**
 RT Saturn (planet)

promethium

GS chemical elements
 . rare earth elements
 . . **promethium**
 . . . promethium isotopes
 metals
 . rare earth elements
 . . **promethium**
 . . . promethium isotopes

promethium 146

USE **promethium isotopes**

promethium isotopes

UF *promethium 146*
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **promethium isotopes**
 . rare earth elements
 . . promethium
 . . . **promethium isotopes**
 metals
 . rare earth elements
 . . promethium
 . . . **promethium isotopes**

prominences

GS **prominences**
 . solar prominences
 RT solar activity

promotion

RT display devices
 increasing
 public relations
 upgrading

prone position

RT rest
 sitting position
 supine position

Prony series

GS analysis (mathematics)
 . calculus
 . . series (mathematics)
 . . . **Prony series**
 . real variables
 . . series (mathematics)

... Prony series

proofs
 USE **proving**

∞ propagation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The spreading abroad or sending forward, as of radiant energy. Used for propagators.
 UF *propagators*
 RT acoustic propagation
 attenuation
 crack propagation
 diffraction propagation
 diffusion
 electromagnetic radiation
 flame propagation
 propagation (extension)
 self propagation
 stress propagation
 transequatorial propagation
 transmission
 wave propagation

propagation (extension)

GS **propagation (extension)**
 . crack propagation
 . flame propagation
 RT ∞ propagation

propagation modes

GS modes
 . **propagation modes**
 . . whispering gallery modes
 RT antipodes
 circular waveguides
 electromagnetic surface waves
 evanescent waves
 field mode theory
 mode transformers
 multimode resonators
 propagation velocity
 shock wave interaction
 wave interaction
 wave propagation
 waveguides

propagation velocity

GS rates (per time)
 . **propagation velocity**
 velocity
 . **propagation velocity**
 RT electromagnetic radiation
 group velocity
 phase velocity
 propagation modes
 wave propagation

propagators

USE **propagation**

propane

GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkanes
 **propane**
 RT cyclopropane
 hydrocarbon fuels
 nitropropane

propargyl groups

DEF Crosslinking agents for certain aromatic polyamides used as matrix resins in fiber composites.

GS organic compounds
 . **propargyl groups**
 RT ethers
 getters

- phenyls
- solid propellant combustion
- storage propellants
- ∞ **propellant actuated devices**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT ejection seats
 - explosive devices
 - propellant actuated instruments
 - rocket engines
- propellant actuated instruments**
 - RT actuators
 - controllers
 - ∞ instruments
 - measuring instruments
 - ∞ propellant actuated devices
- propellant additives**
 - GS additives
 - . **propellant additives**
 - . . propellant binders
 - . . . solid rocket binders
 - RT antiicing additives
 - antioxidants
 - catalysts
 - composite propellants
 - corrosion prevention
 - gelled propellants
 - inhibitors
 - plasticizers
 - storage propellants
- propellant binders**
 - GS additives
 - . propellant additives
 - . . **propellant binders**
 - . . . solid rocket binders
 - binders (materials)
 - . **propellant binders**
 - . . solid rocket binders
 - RT composite propellants
 - glycidyl azide polymer
 - rocket propellants
 - solid propellants
- propellant casting**
 - GS castings
 - . **propellant casting**
 - forming techniques
 - . casting
 - . . **propellant casting**
- propellant chemistry**
 - RT ∞ chemistry
 - solid propellant combustion
 - thermochemistry
- propellant combustion**
 - GS combustion
 - . **propellant combustion**
 - . . solid propellant combustion
 - . . . solid propellant ignition
 - RT axial modes
 - combustion efficiency
 - combustion stability
 - erosive burning
 - fuel combustion
 - hydrocarbon combustion
 - ignition
 - metal combustion
 - reacting flow
 - turbulent combustion
 - velocity coupling
- propellant consumption**
 - (added June 1995)
 - GS consumption
 - . **propellant consumption**
 - RT burning rate
 - combustion efficiency
 - fuel consumption
 - propellant tanks
 - rocket propellants
- propellant decomposition**
 - GS decomposition
 - . **propellant decomposition**
 - RT endothermic fuels
 - fuel corrosion
 - inhibitors
 - monopropellants
 - storage propellants
- propellant evaporation**
 - GS phase transformations
 - . vaporizing
 - . . evaporation
 - . . . **propellant evaporation**
 - RT evaporative cooling
 - storage propellants
- propellant explosions**
 - DEF Detonations of propellants as a result of motor malfunction.
 - GS explosions
 - . chemical explosions
 - . . **propellant explosions**
 - RT detonation
 - implosions
 - rocket engines
- propellant grains**
 - RT burning rate
 - ∞ grains
 - solid propellants
 - solid rocket propellants
- propellant mass ratio**
 - GS ratios
 - . mass ratios
 - . . **propellant mass ratio**
 - RT payload mass ratio
 - pressure ratio
 - propulsion system performance
 - propulsive efficiency
 - specific impulse
 - stage separation
- propellant oxidizers*
- USE **rocket oxidizers**
- propellant properties**
 - GS **propellant properties**
 - . propellant sensitivity
 - . propellant storability
 - RT chemical properties
 - elastic properties
 - mechanical properties
 - ∞ physical properties
 - ∞ properties
 - thermodynamic properties
- propellant sensitivity**
 - GS propellant properties
 - . **propellant sensitivity**
 - sensitivity
 - RT ignition temperature
 - impact resistance
 - shock resistance
 - spontaneous combustion
 - storage propellants
- propellant sprays**
 - RT fuel injection
 - fuel sprays
 - liquid injection
 - liquid rocket propellants
 - sprayers
- propellant storability**
 - GS propellant properties
 - . **propellant storability**
 - RT fuel corrosion
 - inhibitors
- propellant storage**
 - RT consumables (spacecraft)
 - expulsion bladders
 - fuel tank pressurization
 - fuel tanks
 - ground support equipment
 - handling equipment
 - missile storage
 - rocket propellants
 - space storage
 - storage propellants
 - ∞ storage
 - underground storage
- propellant tanks**
 - UF *rocket propellant tanks*
 - Shuttle Superlightweight Tank*
 - SLWT (propellant tank)*
 - GS tanks (containers)
 - . **propellant tanks**
 - RT cylindrical tanks
 - expulsion bladders
 - external tanks
 - fluid filled shells
 - fuel tank pressurization
 - fuel tanks
 - liquid filled shells
 - liquid propellant rocket engines
 - liquid sloshing
 - pressure vessels
 - propellant consumption
 - spherical tanks
 - storage tanks
 - tank geometry
 - ullage
- propellant tests**
 - RT chemical compatibility
 - cold flow tests
 - corrosion tests
 - engine tests
 - fuel tests
 - interior ballistics
 - ∞ materials tests
 - missile tests
 - propulsive efficiency
 - stability tests
 - ∞ tests
- propellant transfer**
 - GS fluid flow
 - . fuel flow
 - . . **propellant transfer**
 - materials handling
 - . **propellant transfer**
 - RT fuel control
 - fuel systems
 - liquid sloshing
 - refueling
- propellants**
 - DEF Any agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts, or any compounds or mixture of these; specifically, fuels, oxidants, or a combination or mixture of fuels and oxidants used in propelling rockets. Propellants are commonly in either liquid or solid form.
 - GS **propellants**
 - . colloidal propellants
 - . double base propellants
 - . . double base rocket propellants
 - . gelled propellants
 - . . gelled rocket propellants
 - . gun propellants
 - . high energy propellants
 - . . Domino propellants
 - . high temperature propellants
 - . hybrid propellants
 - . hydrazine nitroform
 - . hydrogen azides
 - . nitrasol explosives
 - . pentolite

propeller blades

- . RDX
- . rocket propellants
- . . . gaseous rocket propellants
- . . . liquid rocket propellants
- cryogenic rocket propellants
- gelled rocket propellants
- hypergolic rocket propellants
- monopropellants
- RP-1 rocket propellants
- slurry propellants
- slush hydrogen
- aerazine
- . . . nitramine propellants
- . . . solid rocket propellants
- double base rocket propellants
- HMX
- HTPB propellants
- metal propellants
- . . . TAGN
- . . . TATB
- . . . solid propellants
- . . . case bonded propellants
- . . . composite propellants
- . . . nitramine propellants
- . . . plastic propellants
- . . . solid rocket propellants
- double base rocket propellants
- HMX
- HTPB propellants
- metal propellants
- . . . storable propellants
- . tetryl
- RT ammunition
- ascent propulsion systems
- auxiliary propulsion
- ballistics
- burning rate
- cartridges
- chemical fuels
- ∞ energy sources
- explosives
- fuel tanks
- fuels
- fulminates
- guns (ordnance)
- incendiary ammunition
- oxetane polymers
- ∞ power supplies
- propulsion
- spacecraft power supplies
- spacecraft propulsion
- specific impulse
- torpedoes

propeller blades

- GS airfoils
- . **propeller blades**
- RT blade tips
- ∞ blades
- fan blades
- feathering
- propellers
- prop-fan technology
- rotary wings
- synchrophasing

propeller drive

- GS mechanical drives
- . **propeller drive**
- . . . helicopter propeller drive
- RT contrarotating propellers
- marine propulsion
- propellers
- underwater propulsion

propeller efficiency

- GS efficiency
- . propulsive efficiency
- . . **propeller efficiency**
- RT contrarotating propellers
- power efficiency
- propellers
- prop-fan technology

propeller fans

- GS propellers

- . **propeller fans**
- RT ducted fans
- ∞ fans
- lift fans
- prop-fan technology

propeller noise

- (added July 1989)
- GS elastic waves
- . sound waves
- . . noise (sound)
- . . . aircraft noise
- **propeller noise**
- flow noise
- aerodynamic noise
- **propeller noise**
- RT acoustic retrofitting
- aeroacoustics
- blade slap noise
- engine noise
- mufflers
- noise intensity
- noise measurement
- noise prediction (aircraft)
- noise reduction
- sound fields
- sound transmission

propeller slipstreams

- GS wakes
- . aircraft wakes
- . . slipstreams
- . . . **propeller slipstreams**
- turbulent wakes
- slipstreams
- **propeller slipstreams**
- RT interference drag

propellers

- GS **propellers**
- . contrarotating propellers
- . propeller fans
- . shrouded propellers
- . tilted propellers
- . variable pitch propellers
- RT actuator disks
- feathering
- propeller blades
- propeller drive
- propeller efficiency
- ships

∞ properties

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *attributes*
- RT acoustic properties
- biodegradability
- chemical properties
- creep properties
- dielectric properties
- dynamic characteristics
- elastic properties
- electrical properties
- electromagnetic properties
- hydrophobicity
- hygral properties
- macroscopic equations
- magnetic properties
- ∞ materials science
- mechanical properties
- optical properties
- ∞ physical properties
- plastic properties
- porosity
- prejudices
- progress
- propellant properties
- proximity
- recoverability
- regularity
- shear properties
- structural properties (geology)
- surface properties
- tensile properties
- thermochemical properties

- thermodynamic properties
- thermophysical properties
- transport properties
- turbidity
- virtual properties

propfan technology

- USE **prop-fan technology**

prop-fan technology

- DEF Technology of a small diameter, highly loaded, many-bladed variable pitch advanced turboprop.
- UF *propfan technology*
- RT propeller blades
- propeller efficiency
- propeller fans
- turboprop engines

prophylaxis

- RT diseases
- immunology

propionic acid

- GS acids
- . carboxylic acids
- . . fatty acids
- . . . **propionic acid**
- organic compounds
- . carboxylic acids
- . . fatty acids
- . . . **propionic acid**

proportion

- RT distributing
- ratios

proportional control

- DEF Control of an aircraft, rocket or spacecraft in which the control surface deflection is proportional to the movement of the remote controls.
- GS automatic control
- . **proportional control**
- RT ∞ control
- control equipment
- feedback control
- off-on control
- proportional navigation
- servocontrol

proportional counters

- GS ionization chambers
- . **proportional counters**
- measuring instruments
- . counters
- . . radiation counters
- . . . **proportional counters**
- . radiation measuring instruments
- . . radiation counters
- . . . **proportional counters**
- RT anticoincidence detectors
- dosimeters
- Geiger counters
- neutron counters

proportional limit

- UF *elastic strength*
- GS mechanical properties
- . elastic properties
- . . **proportional limit**
- range (extremes)
- . **proportional limit**
- RT critical loading
- modulus of elasticity
- stress-strain diagrams

proportional navigation

- (added July 1998)
- GS navigation
- . **proportional navigation**
- RT homing
- interception
- line of sight
- missile control
- proportional control

rendezvous guidance
terminal guidance

proposals

(added February 1992)
GS documents
 . **proposals**
RT contracts
 cost analysis
 reports
 research and development

proprioception

UF *kinesthesia*
GS perception
 . sensory perception
 . . **proprioception**
 . . . autokinesia
RT kinesthesia

proprioceptors

GS anatomy
 . sense organs
 . . **proprioceptors**
 receptors (physiology)
 . **proprioceptors**
RT baroreceptors
 nervous system
 sensitometry

propulsion

GS **propulsion**
 . ascent propulsion systems
 . auxiliary propulsion
 . chemical propulsion
 . . hybrid propulsion
 . descent propulsion systems
 . electric propulsion
 . . electromagnetic propulsion
 . . . magnetic sails
 . . electrostatic propulsion
 . . . ion propulsion
 . . laser propulsion
 . . plasma propulsion
 . . solar electric propulsion
 . jet propulsion
 . low thrust propulsion
 . . electromagnetic propulsion
 . . . magnetic sails
 . . electrostatic propulsion
 . . . ion propulsion
 . . man operated propulsion systems
 . . photonic propulsion
 . . . laser propulsion
 . . plasma propulsion
 . . solar propulsion
 . . . solar electric propulsion
 . . . solar thermal propulsion
 . marine propulsion
 . . underwater propulsion
 . . . submarine propulsion
 . nuclear propulsion
 . . fusion propulsion
 . . nuclear electric propulsion
 . space station propulsion
 . spacecraft propulsion
 . . electromagnetic propulsion
 . . . magnetic sails
 . . electrostatic propulsion
 . . . ion propulsion
 . . matter-antimatter propulsion
 . . negative matter propulsion
 . . photonic propulsion
 . . laser propulsion
 . . plasma propulsion
 . . solar propulsion
 . . . solar electric propulsion
 . . . solar thermal propulsion
RT aeronautical engineering
 ∞ aircraft
 ∞ astronautics
 ∞ drives
 engines
 exhaust gases
 fuel tank pressurization
 fuel tanks

high impulse
locomotion
mass drivers
missiles
post boost propulsion system
propellants
propulsive efficiency
pulling
pushing
rocket propellants
solar sails
space flight
Space Shuttle Main Engine
space tugs
thrust

propulsion system configurations

GS **propulsion system configurations**
 . ascent propulsion systems
 . descent propulsion systems
RT aerodynamic configurations
 aerospike engines
 aircraft configurations
 auxiliary propulsion
 ∞ configurations
 convertible fan-shaft engines
 laser propulsion
 launch vehicle configurations
 missile configurations
 post boost propulsion system
 space station propulsion
 spacecraft configurations
 ∞ systems
 topping cycle engines

propulsion system performance

RT cold flow tests
 combustion efficiency
 ∞ performance
 power efficiency
 propellant mass ratio
 propulsive efficiency
 rocket thrust
 solar thermal propulsion
 specific impulse
 ∞ systems
 systems health monitoring
 thermodynamic efficiency
 total impulse

propulsive efficiency

DEF The efficiency with which energy available for propulsion is converted into thrust by a rocket engine.
GS efficiency
 . **propulsive efficiency**
 . . propeller efficiency
RT combustion efficiency
 engine tests
 laser propulsion
 multistage rocket vehicles
 nozzle efficiency
 power efficiency
 propellant mass ratio
 propellant tests
 propulsion
 propulsion system performance
 specific impulse
 thermodynamic efficiency
 thrust programming
 total impulse

propyl compounds

RT ∞ chemical compounds

propyl nitrate

GS alkyl compounds
 . **propyl nitrate**
 esters
 . nitrate esters
 . . **propyl nitrate**
 nitrogen compounds
 . nitrate esters

. . **propyl nitrate**

propylene

GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkenes
 **propylene**

propylene oxide

GS epoxy compounds
 . **propylene oxide**

prospecting

USE **exploration**

prostaglandins

GS organic compounds
 . lipids
 . . steroids
 . . . **prostaglandins**
 secretions
 . endocrine secretions
 . . hormones
 . . . **prostaglandins**
RT biosynthesis
 prostate gland

prostate gland

GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . sex glands
 **prostate gland**
 . glands (anatomy)
 . . sex glands
 . . . **prostate gland**
RT bladder
 prostaglandins

prosthetic devices

GS medical equipment
 . **prosthetic devices**
 . . artificial ears
RT walking machines

protactinium

GS chemical elements
 . **protactinium**
 . . protactinium isotopes
 metals
 . **protactinium**
 . . protactinium isotopes

protactinium 234

USE **protactinium isotopes**

protactinium compounds

GS **protactinium compounds**
 . protactinium fluorides
RT ∞ chemical compounds
 ∞ metal compounds

protactinium fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **protactinium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **protactinium fluorides**
 . . metal halides
 . . . metal fluorides
 **protactinium fluorides**
 protactinium compounds
 . **protactinium fluorides**

protactinium isotopes

UF *protactinium 234*
GS chemical elements
 . nuclides
 . . isotopes
 . . . **protactinium isotopes**
 . protactinium

protease

- . . . **protactinium isotopes**
- metals
- . . . protactinium
- . . . **protactinium isotopes**

protease

- GS biopolymers
- . . . proteins
- . . . enzymes
- **protease**
- organic compounds
- . . . proteins
- . . . enzymes
- **protease**

protection

- GS **protection**
- . . . acceleration protection
- . . . circuit protection
- . . . corrosion prevention
- . . . environment protection
- . . . eye protection
- . . . meteoroid protection
- . . . radiation protection
- . . . radiation shielding
- solar radiation shielding
- . . . planetary protection
- . . . thermal protection
- . . . planetary quarantine
- RT accident prevention
- airport security
- civil defense
- coatings
- countermeasures
- flying ejection seats
- hazards
- housings
- insulation
- prevention
- protectors
- ∞ resistance
- safety
- safety devices
- shielding
- warning
- warning systems

protective clothing

- GS clothing
- . . . **protective clothing**
- . . . helmets
- . . . pressure suits
- space suits
- extravehicular mobility units
- . . . vapor barrier clothing
- RT armor
- chemical defense
- coveralls
- emergency life sustaining systems
- flight clothing
- gloves
- goggles
- masks
- safety devices
- shoes

protective coatings

- UF *ceramal protective coatings*
- sprayed protective coatings*
- GS coatings
- . . . **protective coatings**
- . . . anodic coatings
- . . . ceramic coatings
- . . . primers (coatings)
- . . . refractory coatings
- RT alkyd resins
- aluminides
- anodizing
- carbon nitrides
- cladding
- ∞ construction materials
- corrosion
- desensitizing
- electroplating
- encapsulating
- finishes

- glass coatings
- glazes
- gold coatings
- HVOF thermal spraying
- inorganic coatings
- lacquers
- metal coatings
- nickel coatings
- paints
- plastic coatings
- plating
- rubber coatings
- sprayed coatings
- surface finishing
- transgranular corrosion
- varnishes
- waterproofing
- zinc coatings

protectors

- GS **protectors**
- . . . ear protectors
- RT bumpers
- ∞ containers
- enclosures
- fairings
- housings
- protection
- safety devices
- ∞ screens
- sheaths
- shielding

protein crystal growth

- (added March 1989)*
- GS growth
- . . . crystal growth
- **protein crystal growth**
- RT protein synthesis
- proteins
- space processing

protein denaturation

- USE **biopolymer denaturation**

protein metabolism

- GS metabolism
- . . . **protein metabolism**
- . . . lipid metabolism
- RT glucocorticoids
- protein synthesis
- synthetic food

protein synthesis

- DEF Process by which protein molecules are formed.
- RT biological evolution
- chemical evolution
- protein crystal growth
- protein metabolism

proteinoids

- GS biopolymers
- . . . proteins
- **proteinoids**
- organic compounds
- . . . proteins
- **proteinoids**

proteins

- GS biopolymers
- . . . **proteins**
- . . . albumins
- . . . aspartates
- . . . calmodulin
- . . . elastin
- . . . enzymes
- aldolase
- amidase
- carbonic anhydrase
- catalase
- cholinesterase
- cytochromes
- hexokinase
- lysozyme
- nuclease

- oxidase
- papain
- pepsin
- protease
- thrombin
- trypsin
- . . . fibrin
- . . . globulins
- fibrinogen
- gamma globulin
- hemoglobin
- carboxyhemoglobin
- oxyhemoglobin
- . . . keratins
- . . . lipoproteins
- . . . melanin
- . . . myoglobin
- . . . proteinoids
- . . . prothrombin
- . . . protoproteins
- organic compounds

- . . . **proteins**
- . . . albumins
- . . . aspartates
- . . . calmodulin
- . . . elastin
- . . . enzymes
- aldolase
- amidase
- carbonic anhydrase
- catalase
- cholinesterase
- cytochromes
- hexokinase
- lysozyme
- nuclease
- oxidase
- papain
- pepsin
- protease
- thrombin
- trypsin
- . . . fibrin
- . . . globulins
- fibrinogen
- gamma globulin
- hemoglobin
- carboxyhemoglobin
- oxyhemoglobin
- . . . keratins
- . . . lipoproteins
- . . . melanin
- . . . myoglobin
- . . . proteinoids
- . . . prothrombin
- . . . protoproteins

RT adrenocorticotropin (ACTH)

- alanine
- biopolymer denaturation
- collagens
- cysteamine
- cysteine
- ∞ food
- macromolecules
- nucleic acids
- nucleotides
- ∞ nutrients
- peptides
- polynucleotides
- polypeptides
- protein crystal growth
- proteome
- protoplasm
- serums
- synthetic food

proteome

- (added September 2001)*
- DEF An organism's protein complement as coded for by its genome.
- RT genome
- molecular biology
- proteins

Proteus

- (added July 1995)*
- DEF A natural satellite of Neptune, orbiting

at a mean distance of 117,600 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Proteus**
- RT Neptune (planet)

prothrombin

- GS biopolymers
 - . proteins
 - . . **prothrombin**
- organic compounds
 - . proteins
 - . . **prothrombin**
- RT thrombin

protium

USE **light water**

protobiology

- RT abiogenesis
 - biological diversity
 - biological evolution
- ∞ biology
 - chemical evolution
 - paleontology
 - viruses

protocol (computers)

- GS **protocol (computers)**
 - . carrier sense multiple access
 - . Ethernet
- RT channels (data transmission)
 - communication networks
 - computer networks
 - computer security
 - data links
 - data processing
 - data transmission
 - interoperability
 - local area networks
 - networks
 - packet switching
 - World Wide Web

protogalaxies

- (added May 2002)
- DEF Clouds of hydrogen gas and dark matter hypothesized to give rise to galaxies.
- UF *primordial galaxies*
- GS celestial bodies
 - . galaxies
 - . . **protogalaxies**
- RT galactic clusters
 - galactic evolution
 - gravitational collapse
 - star formation

Proton 1 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 1 satellite**

Proton 2 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 2 satellite**

Proton 3 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 3 satellite**

Proton 4 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 4 satellite**

proton beams

- GS beams (radiation)
 - . particle beams
 - . . **proton beams**

RT neutron beams

proton belts

- GS particles
 - . charged particles
 - . . magnetically trapped particles
 - . . . radiation belts
 - **proton belts**
- . corpuscular radiation
- . . radiation belts
- . . . **proton belts**
- . . trapped particles
- . . magnetically trapped particles
- . . . radiation belts
- **proton belts**
- RT ∞ belts
 - inner radiation belt
 - outer radiation belt

proton damage

- GS damage
 - . **proton damage**

proton density (concentration)

- GS density (number/volume)
 - . particle density (concentration)
 - . . ion density (concentration)
 - . . . **proton density (concentration)**
 - magnetospheric proton density
- RT atmospheric density
 - atom concentration
 - plasma density
 - space density

proton energy

- GS particle energy
 - . **proton energy**
- RT activation energy
 - electron energy
- ∞ energy
 - kinetic energy
 - surface energy

proton flux density

- SN (LIMITED TO PROTON EMISSION OR DETECTION RATE PER UNIT AREA)
- GS rates (per time)
 - . flux density
 - . . radiant flux density
 - . . . particle flux density
 - **proton flux density**
- RT irradiance
 - radiance
 - radiation counters
 - solar flux density

proton impact

- GS impact
 - . **proton impact**
- RT electron impact
 - point impact

proton irradiation

- GS irradiation
 - . ion irradiation
 - . . **proton irradiation**
- RT deuteron irradiation
 - electron radiation

Proton launch vehicle

- (added April 1995)
- GS launch vehicles
 - . heavy lift launch vehicles
 - . . **Proton launch vehicle**
- RT international cooperation
 - Russian Space Program
 - space commercialization

proton magnetic resonance

- GS resonance
 - . magnetic resonance
 - . . nuclear magnetic resonance
 - . . . **proton magnetic resonance**

proton masers

- GS stimulated emission devices

- . masers
- . . **proton masers**
- RT magnetometers

proton precession

- GS gyration
 - . precession
 - . . **proton precession**
- RT free vibration

proton precipitation

- GS particle precipitation
 - . **proton precipitation**
- RT auroras
 - electron precipitation
 - particles
- ∞ precipitation
 - radiation belts
 - trapped particles
 - upper atmosphere

proton protuberances

- GS protuberances
 - . **proton protuberances**

proton resonance

- GS resonance
 - . magnetic resonance
 - . . nuclear magnetic resonance
 - . . . **proton resonance**
- RT nuclear particles

Proton satellites

- GS artificial satellites
 - . Soviet satellites
 - . . **Proton satellites**
 - . . . Proton 1 satellite
 - . . . Proton 2 satellite
 - . . . Proton 3 satellite
 - . . . Proton 4 satellite
- RT U. S. S. R. space program

proton scattering

- GS nuclear reactions
 - . **proton scattering**
- scattering
 - . **proton scattering**
- RT ion scattering

proton telescopes

USE **particle telescopes**

proton-antiproton interactions

- (added June 1999)
- GS particle interactions
 - . elementary particle interactions
 - . . **proton-antiproton interactions**
- RT annihilation reactions
 - antiprotons
 - high energy interactions
 - matter-antimatter propulsion

proton-proton reactions

DEF Thermonuclear reactions in which two protons collide at very high velocities and combine to form deuterons. The resultant deuterons may capture other protons to form tritium and the latter may undergo proton capture to form helium. The proton-proton reactions are now believed to be the principal sources of energy within the sun and other stars of its class. A temperature of 5 million degrees Kelvin and high hydrogen (proton) concentrations are required for these reactions to proceed at rates compatible with energy emission by such stars.

- GS nuclear reactions
 - . **proton-proton reactions**
- RT annihilation reactions
 - ∞ interactions
 - pomerons
 - thermonuclear reactions

protons

DEF Positively charged subatomic particles having a mass of 1. 67252 times 10 to the minus 24 gram, slightly less than that of an electron.

protoplanetary disks

GS particles
 . charged particles
 . . **protons**
 . . . recoil protons
 . . . solar protons
 . elementary particles
 . . fermions
 . . . **protons**
 recoil protons
 solar protons

RT alpha particles
antiprotons
baryons
cosmic rays
deuterons
flux density
hydrogen ions
ions
nuclear particles
nuclei (nuclear physics)
nucleon potential
nucleons
positive ions
radiation belts
radiation shielding
tritons

protoplanetary disks

(added March 2001)
DEF Circumstellar disks from which planetary systems are created during star formation.
RT accretion disks
planetary evolution
planets
protoplanets
solar system evolution
stellar envelopes
stellar evolution

protoplanets

DEF Transition objects formed during primordial cloud condensation into stellar systems (stars, planets, etc.) which form the nucleus of planetary accretion. Used for planetesimals.
UF *planetesimals*
GS celestial bodies
 . **protoplanets**

RT cosmology
planetary environments
planetary evolution
planetary mass
planets
protoplanetary disks
solar nebula
solar orbits
solar system
stellar evolution

protoplasm

RT proteins

protoplasts

GS cells (biology)
 . **protoplasts**

protoproteins

GS biopolymers
 . proteins
 . . **protoproteins**
 . organic compounds
 . proteins
 . . **protoproteins**

RT amino acids

protosolar nebula

(added June 2001)
USE **solar nebula**

protostars

GS celestial bodies
 . stars
 . . **protostars**
 . . . pre-main sequence stars
 T Tauri stars

RT brown dwarf stars
solar nebula

star formation
stellar evolution
stellar mass accretion

prototypes

DEF Preliminary type, form, or instance of systems that serve as models for later stages or for the final, completed version of the systems.
RT breadboard models
∞ patterns
pilot plants
rapid prototyping

protozoa

GS animals
 . **protozoa**
 . . amoeba
 . . . pelomyxa
 . . Flagellata
 . . . Euglena
 . . . trypanosome
 . . paramecia
microorganisms
 . **protozoa**
 . . amoeba
 . . . pelomyxa
 . . Flagellata
 . . . Euglena
 . . . trypanosome
 . . paramecia

RT microspores
spores

protractors

GS measuring instruments
 . **protractors**

RT angles (geometry)

protuberances

SN (COMPONENTS MOUNTED EXTERNAL TO THE STRUCTURE)

GS **protuberances**
 . proton protuberances

RT aerodynamic configurations
aerodynamic interference
aircraft antennas
aircraft parts
airframes
∞ blisters
cowlings
domes (structural forms)
external store separation
external stores
fairings
fuel tanks
housings
nacelles
papillae
pitot tubes
radomes
∞ ridges
shells (structural forms)
vortex alleviation
wing-fuselage stores
winglets

proustite

GS arsenic compounds
 . arsenides
 . . **proustite**
 . minerals
 . **proustite**

Provider aircraft

USE **C-123 aircraft**

proving

UF *confirmation*
demonstration
proofs
validation
verification (proving)

GS **proving**
 . theorem proving

RT acceptability
error detection codes

evaluation
examination
mathematical logic
∞ measurement
program verification (computers)
∞ tests

provisioning

RT consumables (spacecrew supplies)
∞ food
life support systems
space rations
stowage (onboard equipment)

proximity

RT distance
∞ properties
tightness

proximity effect (electricity)

DEF Redistribution of current in a conductor caused by the presence of another conductor.
GS electrical properties
 . inductance
 . . **proximity effect (electricity)**
 . electromagnetic properties
 . inductance
 . . **proximity effect (electricity)**

RT ∞ effects
electricity
superconductors (materials)
volt-ampere characteristics

PRTR (reactor)

USE **plutonium recycle test reactor**

prussic acid

USE **hydrocyanic acid**

pseudomonas

GS microorganisms
 . bacteria
 . . **pseudomonas**

pseudonoise

RT random noise

pseudopotentials

DEF Factors in an approximate method for calculation of energy bands in solids by the use of approximation which includes the many body effect.
RT impurities
melting
semiconductors (materials)

pseudorandom sequences

RT random numbers
∞ signals

PSP (paints)

(added March 2001)
USE **pressure sensitive paints**

psychiatry

GS medical science
 . **psychiatry**
 . . neuropsychiatry
 . . . social psychiatry

RT brain
military psychology
psychology
psychotherapy

psychoacoustics

GS acoustics
 . **psychoacoustics**
 . psychology
 . psychophysics
 . . **psychoacoustics**

RT auditory perception
auditory signals
bells
bioacoustics
noise intensity

psychological effects
psychological factors

psycholinguistics

DEF Study of linguistic behavior such as conditioning by psychological factors including the speaker's and listener's culturally determined categories of expression and comprehension.

GS linguistics
. **psycholinguistics**
RT intelligibility
phonemes
phonemics
robots
semantics
syllables
syntax

psychological effects

GS **psychological effects**
. desynchronization (biology)
. illusions
. . . hallucinations
. . . moon illusion
. . . oculogravic illusions
. . . optical illusion
. . . elevator illusion
. jet lag
RT afterimages
aviation psychology
biological effects
boredom
comfort
confidence
disorientation
∞ effects
emotions
environmental engineering
environments
frustration
human factors engineering
human reactions
humidity
military psychology
moods
psychoacoustics
reaction time
space adaptation syndrome
space psychology
stress (biology)
stress (psychology)
Taylor manifest anxiety scale

psychological factors

RT astronaut performance
aviation psychology
emotional factors
flight stress (biology)
habits
moods
permissivity
psychoacoustics
psychosomatics
reward (psychology)
sex factor
space psychology
∞ stimuli
stress (psychology)

psychological indexes

USE **psychological tests**

psychological sets

GS psychology
. **psychological sets**

psychological tests

UF *psychological indexes*
GS **psychological tests**
. Rorschach tests
RT certification
environmental tests
intelligence tests
limen
military psychology

personality tests
pilot selection
psychometrics
ratios
Skinner boxes
Taylor manifest anxiety scale
∞ tests

psychology

DEF The science which studies the functions of the mind, such as sensation, perception, memory, thought, and, more broadly the behavior of an organism in relation to its environment.

GS **psychology**
. aviation psychology
. cognitive psychology
. military psychology
. psychological sets
. psychophysics
. . . psychoacoustics
. . . space psychology
RT biofeedback
boredom
brain
cybernetics
detachment
diagnosis
disorders
disorientation
emotional factors
emotions
extroversion
frustration
inspiration
intellect
introversion
morale
prejudices
psychiatry
psychometrics
psychotherapy
Rorschach tests
stress (psychology)
subliminal stimuli

psychometrics

RT diagnosis
education
military psychology
norms
personality tests
psychological tests
psychology
psychomotor performance
psychophysics
psychosomatics
Skinner boxes

psychomotor performance

DEF Of or pertaining to muscular action ensuing directly from a mental process, as in the coordinated manipulation of aircraft or spacecraft controls.

GS sensorimotor performance
. **psychomotor performance**
. . . psychosomatics
RT abilities
biocontrol systems
human performance
human reactions
mental performance
operator performance
physiological tests
pilot performance
psychometrics
reaction time
workloads (psychophysiology)

psychopharmacology

DEF The science that deals with the action of drugs on mental function.

GS medical science
. pharmacology
. . . **psychopharmacology**
RT central nervous system
central nervous system depressants

central nervous system stimulants
drugs
life sciences
medical science
∞ medicine
nervous system
psychotropic drugs

psychophysics

GS psychology
. **psychophysics**
. . . psychoacoustics
RT ∞ physics
psychometrics
∞ science

psychophysiology

GS physiology
. **psychophysiology**
RT evoked response (psychophysiology)
information processing (biology)
∞ science
workloads (psychophysiology)

psychoses

GS **psychoses**
. psychotic depression
. schizophrenia
RT detachment
disorders
fear
irrationality
neuroses

psychosomatics

GS sensorimotor performance
. psychomotor performance
. . . **psychosomatics**
RT psychological factors
psychometrics

psychotherapy

GS therapy
. **psychotherapy**
RT convulsions
Gestalt theory
health
mental health
neuropsychiatry
psychiatry
psychology
psychotropic drugs

psychotic depression

GS psychoses
. **psychotic depression**
RT ∞ depression
neurotic depression

psychotropic drugs

GS drugs
. **psychotropic drugs**
. . . marijuana
RT central nervous system
narcotics
neurophysiology
physiochemistry
psycho pharmacology
psychotherapy
sedatives

psychrometers

DEF Instruments for measuring humidity through the use of wet and dry bulb thermometers.

GS measuring instruments
. moisture meters
. . . hygrometers
. . . **psychrometers**
RT atmospheric moisture
chemical analysis
humidity
humidity measurement

psychrophiles

meteorological instruments

psychrophiles

RT mesophiles
microorganisms
thermophiles

PTM (modulation)

USE **pulse time modulation**

Ptolemaeus Crater

GS craters
. lunar craters
. . **Ptolemaeus Crater**
RT meteorite craters

p-type semiconductors

GS semiconductors (materials)
. **p-type semiconductors**
RT holes (electron deficiencies)
indium aluminum arsenides
semiconductor junctions

public address systems

RT ∞ systems
warning systems

public health

GS biophysics
. health physics
. . **public health**
health
. health physics
. . **public health**
RT hazardous material disposal (in
space)
hygiene
medical services
nonpoint sources
occupational diseases
oral hygiene
pollution
sanitation
urban planning

public law

GS law (jurisprudence)
. **public law**
. . liabilities
. . . legal liability
. . . penalties
RT air law
insurance (contracts)

public relations

RT ∞ cooperation
improvement
promotion
upgrading

public speaking

UF *oratory*
RT lectures
speech

publications

USE **documents**

Puck

(added July 1995)

DEF A natural satellite of Uranus, orbiting at a mean distance of 86,010 kilometers.

GS celestial bodies
. natural satellites
. . Uranus satellites
. . . **Puck**
RT Uranus (planet)

Puerto Rico

GS landforms
. islands
. . West Indies
. . . **Puerto Rico**
nations
. United States

. . **Puerto Rico**

pulleys

RT ∞ belts
blocks
idlers
rollers
wheels
winches

pulling

RT ∞ drawing
 ∞ force
propulsion
traction

pulling (frequency stability)

USE **frequency pulling**

pulmonary circulation

GS circulation
. blood circulation
. . **pulmonary circulation**
RT alveoli
artificial cardiac pacemaker
blood pumps
heart implantation
lungs
respiratory system

pulmonary functions

RT alveoli
 ∞ functions
lungs

pulmonary lesions

GS diseases
. **pulmonary lesions**
injuries
. lesions
. . **pulmonary lesions**
RT lung morphology
lungs
occupational diseases
respiratory diseases

pulsar magnetospheres

(added July 1988)

GS stellar magnetospheres
. **pulsar magnetospheres**
RT magnetic fields
 ∞ magnetospheres
pulsars
stellar atmospheres
stellar magnetic fields

pulsars

GS celestial bodies
. radio sources (astronomy)
. . radio stars
. . . **pulsars**
. stars
. . neutron stars
. . . **pulsars**
. . radio stars
. . . **pulsars**
RT degenerate matter
gamma ray sources (astronomy)
magnetars
pulsar magnetospheres
quasars
radiation sources
radio astronomy
radio bursts
starquakes
supernova remnants

pulsating flow

USE **unsteady flow**

pulse (cardiovascular)

USE **heart rate**

pulse amplitude

DEF A general term indicating the magnitude of a pulse. Used for pulse height.

UF *pulse height*

GS amplitudes
. **pulse amplitude**
waveforms
. . **pulse amplitude**
RT amplitude distribution analysis
electric pulses
photopeak
pulsed radiation
sawtooth waveforms
square waves

pulse amplitude modulation

UF *PAM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . **pulse amplitude modulation**
modulation
. pulse modulation
. . **pulse amplitude modulation**
RT modems
P. A. C. M. telemetry

pulse charging

DEF Rapid and efficient method for charging electric batteries.
RT battery chargers
electric batteries
electric charge
storage batteries

pulse code modulation

DEF Any modulation which involves a pulse code. Used for PCM (modulation).

UF *PCM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . **pulse code modulation**
. . . . delta modulation
. . . . differential pulse code
modulation
modulation
. pulse modulation
. . **pulse code modulation**
. . . delta modulation
. . . differential pulse code modulation
RT bitternary code
decommutators
P. A. C. M. telemetry
PCM telemetry
unified S band

pulse communication

UF *digital communication*
GS telecommunication
. **pulse communication**
. . digital spacecraft television
RT bit error rate
communication networks
data transmission
delta modulation
differential pulse code modulation
digital television
electromagnetic missiles
electromagnetic pulses
frequency division multiplexing
modems
multiple access
multiplexing
orthogonal multiplexing theory
radio communication
radio transmission
satellite transmission
signal transmission
space communication
telegraph systems
telemetry
time division multiple access

pulse compression

DEF The coding and processing of a signal pulse of long time duration to one of short time duration and high range resolution, while maintaining the benefits of high pulse energy.

RT coding
compressing
radar

pulse detonation engines

(added March 2001)

DEF Rocket engines that operate by injecting fuel and oxidizer into long chambers and igniting the mixture with a spark plug or similar device. Quasi-steady thrust levels can be achieved by repeating this cycle at relatively high frequency and/or using more than one combustion chamber operating out of phase.

UF *PDE (engines)*
PDRE (engines)
PDWE (engines)
pulse detonation wave engines

GS engines
. rocket engines
. liquid propellant rocket engines
. . . **pulse detonation engines**

RT air breathing engines
detonation

pulse detonation wave engines

(added March 2001)

USE **pulse detonation engines**

pulse diffraction

GS diffraction
. **pulse diffraction**

RT holographic optical elements
plasma jets
pulsed radiation
wave propagation

pulse Doppler radar

DEF A pulse radar system which utilizes the Doppler effect for obtaining information about the target (not including simple resolution from fixed targets).

GS radar
. Doppler radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar
. pulse radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar

RT cancellation circuits
coherent radar

pulse duration

DEF The time interval between the first and last instances at which the instantaneous amplitude reaches a stated fraction of the peak pulse amplitude. Used for light duration and pulse width.

UF *light duration*
pulse width

GS waveforms
. **pulse duration**

RT electric pulses
laser outputs
maser outputs
pulse repetition rate
pulsed radiation
sawtooth waveforms
square waves
time signals
ultrashort pulsed lasers

pulse duration modulation

DEF A form of pulse time modulation in which the duration of a pulse is varied. Used for PDM (modulation), pulse width modulation, and PWM (modulation).

UF *PDM (modulation)*
pulse width modulation
PWM (modulation)

GS coding
. signal encoding
. . . pulse modulation
. . . pulse time modulation
. . . . **pulse duration modulation**

modulation
. pulse modulation
. . pulse time modulation
. . . **pulse duration modulation**

RT modems

pulse frequency modulation

DEF A form of pulse time modulation in which the pulse repetition rate is the characteristic varied. Used for PFM (modulation).

UF *PFM (modulation)*

GS coding
. signal encoding
. . frequency modulation
. . . **pulse frequency modulation**
. . pulse modulation
. . . **pulse frequency modulation**
modulation
. frequency modulation
. . **pulse frequency modulation**
. pulse modulation
. . **pulse frequency modulation**

RT communication equipment
differential pulse code modulation
modems

pulse frequency modulation telemetry

GS telecommunication
. radio communication
. . radio telemetry
. . . **pulse frequency modulation**
telemetry
. telemetry
. . radio telemetry
. . . **pulse frequency modulation**
telemetry
transmission
. signal transmission
. . telemetry
. . . radio telemetry
. . . . **pulse frequency modulation**
telemetry

RT communication equipment
frequency modulation
modulation
pulse modulation
radio transmission
signal encoding

pulse generators

RT compulsators
electric pulses
function generators
 ∞ generators
Hartmann-Sprenger tubes
impulse generators
laser cavities
lasers
plasma generators
pulse repetition rate
pulsed radiation
shock wave generators

pulse heating

GS hardening (materials)
. **pulse heating**
heat treatment
. annealing
. . **pulse heating**
heating
. transient heating
. . **pulse heating**

RT laser heating
simulated annealing

pulse height

USE **pulse amplitude**

pulse modulation

DEF Modulation of a carrier by a pulse train. Modulation of one or more characteristics of a pulse carrier.

GS coding
. signal encoding
. . **pulse modulation**
. . . pulse amplitude modulation

. . . pulse code modulation
. . . delta modulation
. . . differential pulse code
modulation
. . . pulse frequency modulation
. . . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation
modulation
. **pulse modulation**
. . pulse amplitude modulation
. . pulse code modulation
. . delta modulation
. . . differential pulse code modulation
. . pulse frequency modulation
. . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation

RT amplitude modulation
demodulation
demodulators
electric pulses
electromagnetic missiles
electromagnetic pulses
frequency modulation
light modulation
modems
modulators
phase modulation
pulse frequency modulation telemetry
pulsed radiation
radio telemetry
time division multiplexing
trigatrons

pulse position modulation

DEF A form of pulse time modulation in which the position in time of a pulse is varied. Also called pulse phase modulation. Used for PPM (modulation).

UF *PPM (modulation)*

GS coding
. signal encoding
. . pulse modulation
. . . pulse time modulation
. . . . **pulse position modulation**
modulation
. pulse modulation
. . pulse time modulation
. . . **pulse position modulation**

RT modems

pulse radar

DEF A type of radar, designed to facilitate range measurement, in which the transmitted energy is emitted in periodic short pulses.

GS radar
. **pulse radar**
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar

RT coherent radar
continuous wave radar
Doppler radar
echo suppressors
electromagnetic pulses
meteorological radar
multistatic radar
polystation doppler tracking system
search radar
surveillance radar
synchronizers
tracking radar

pulse rate

SN (FOR CARDIOVASCULAR PULSE, USE HEART RATE)

UF *chronotrons*

GS rates (per time)
. **pulse rate**
. . pulse repetition rate

RT electric pulses
picosecond pulses

pulse repetition rate

pulsed radiation

pulse recorders

USE **counters**

pulse repetition rate

GS rates (per time)
 . pulse rate
 . . **pulse repetition rate**
RT frequency response
optical pumping
pulse duration
pulse generators
pulsed lasers

pulse time modulation

DEF Modulation in which the values of instantaneous samples of the modulating wave are caused to modulate the time of occurrence of some characteristic of a pulse carrier. Used for PTM (modulation).

UF *PTM (modulation)*
GS coding
 . signal encoding
 . . pulse modulation
 . . . **pulse time modulation**
 pulse duration modulation
 pulse position modulation
 modulation
 . pulse modulation
 . . **pulse time modulation**
 . . . pulse duration modulation
 . . . pulse position modulation

pulse width

USE **pulse duration**

pulse width amplitude converters

RT ∞ converters
frequency converters

pulse width modulation

USE **pulse duration modulation**

pulsed arcjet engines

(added March 2001)

USE **pulsed jet engines**

pulsed inductive thrusters

(added April 2001)

DEF Electromagnetic propulsion devices that accelerate a plasma propellant by the JxB Lorentz force, and in which the driving current in the plasma is induced, rather than being introduced through electrodes.

UF *PIT (rocket engines)*
GS engines
 . rocket engines
 . . electric rocket engines
 . . . plasma engines
 **pulsed inductive thrusters**
RT electromagnetic propulsion
plasma propulsion
spacecraft propulsion
 ∞ thrusters

pulsed jet engines

DEF Arcjet engines that produce thrust by ejecting a pulsed, high velocity plasma out of a conventional supersonic nozzle. The pulsed arcjet geometry consists of a narrow cylindrical chamber or capillary upstream of the nozzle convergent section. A power supply is used to charge the capacitors of a pulse-forming-network. The power supply ramps up the voltage on the capacitors until the breakdown voltage of the propellant between the electrodes is reached, at which point an arc discharge initiates in the capillary between the electrodes.

UF *pulsed arcjet engines*
GS engines
 . rocket engines
 . . electric rocket engines
 . . . electrothermal engines
 arc jet engines
 **pulsed jet engines**

RT plasma engines
resistojet engines

pulsed laser deposition

(added December 1992)

GS deposition
 . laser deposition
 . . **pulsed laser deposition**
 utilization
 . laser applications
 . . laser deposition
 . . . **pulsed laser deposition**
RT crystal growth
epitaxy
excimer lasers
laser heating
pulsed lasers
superconducting films
vapor deposition

pulsed lasers

GS stimulated emission devices
 . lasers
 . . **pulsed lasers**
 . . . Q switched lasers
 . . . ultrashort pulsed lasers
 . . . ultraviolet lasers
RT argon lasers
carbon dioxide lasers
gas lasers
glass lasers
inertial fusion (reactor)
laser heating
laser target interactions
laser welding
nitrogen lasers
pulse repetition rate
pulsed laser deposition
ruby lasers
semiconductor lasers
TEA lasers
tube lasers
waveguide lasers

pulsed plasma thrusters

(added April 2001)

DEF Electromagnetic propulsion devices in which electrical power is used to ablate, ionize, and electromagnetically accelerate atoms and molecules from a block of solid propellant material.

UF *PPT (rocket engines)*
GS engines
 . rocket engines
 . . electric rocket engines
 . . . plasma engines
 **pulsed plasma thrusters**
RT electromagnetic propulsion
plasma propulsion
spacecraft propulsion
 ∞ thrusters

pulsed radiation

GS **pulsed radiation**
 . electromagnetic pulses
 . . system generated electromagnetic pulses
RT continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
gamma ray lasers
laser damage
lasers
picosecond pulses
pulse amplitude
pulse diffraction
pulse duration
pulse generators
pulse modulation
pulse rate
 ∞ radiation
 ∞ rays

pulsejet engines

DEF Compressorless jet engines in which

combustion takes place intermittently producing thrust by a series of explosions, commonly occurring at the approximate resonance frequency of the engine.

GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
RT detonation
firing (igniting)
V-1 missile

pulses

DEF Short-wave trains of mechanical vibration.

GS **pulses**
 . electric pulses
 . electromagnetic pulses
 . . system generated electromagnetic pulses
 . geomagnetic pulsations
 . . geomagnetic micropulsations
 . micropulsations
 . . geomagnetic micropulsations
 . picosecond pulses
 . pressure pulses
RT amplitudes
intermittency
solitary waves

pultrusion

DEF Process of pulling continuous lengths of resin impregnated fiber through a shaped, heated die to produce lengths of reinforced plastic.

GS forming techniques
 . extruding
 . . **pultrusion**
RT casting
composite structures
dies
epoxy matrix composites
fiber composites
glass fiber reinforced plastics
hot working
polymer matrix composites
preimpregnation
pressing (forming)
resin matrix composites

pulverizing

USE **grinding (comminution)**

pumice

DEF A light-colored, vesicular, glassy rock commonly having the composition of a rhyolite.

GS rocks
 . igneous rocks
 . . **pumice**
RT abrasives
obsidian
powder (particles)
soils

pump impellers

GS rotating bodies
 . rotors
 . . impellers
 . . . **pump impellers**
RT centrifugal compressors
centrifugal pumps

pump seals

GS seals (stoppers)

. pump seals
 RT gaskets
 ∞ glands
 glands (seals)
 hermetic seals
 labyrinth seals
 molecular pumps

∞ **pumping**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT blowing
 compressed air
 compressing
 cryopumping
 drainage
 electron pumping
 jet pumps
 laser pumping
 magnetic pumping
 maser pumping
 materials handling
 nuclear pumping
 optical pumping
 plasma pumping
 pumps
 purging
 windmills (windpowered machines)
 windpowered pumps

pumps
 SN (LIMITED TO PUMPS FOR MATERIALS--EXCLUDES HEAT PUMPS)
 UF *hydraulic pumps*
 GS **pumps**
 . axial flow pumps
 . . turbine pumps
 . blood pumps
 . centrifugal pumps
 . diffusion pumps
 . electromagnetic pumps
 . fuel pumps
 . jet pumps
 . rams (pumps)
 . vacuum pumps
 . . condensation pumps
 . . ion pumps
 . . molecular pumps
 . viscopumps
 . windpowered pumps
 RT bellows
 centrifugal compressors
 ejectors
 feed systems
 heat pumps
 hydraulic equipment
 impellers
 injectors
 lubrication systems
 materials handling
 packings (seals)
 pipelines
 preburners
 ∞ pumping
 siphons
 stators
 turbomachinery
 vaneless diffusers

punched cards
 DEF Cards on which a pattern of holes or cuts is used to represent data.
 GS cards
 . **punched cards**
 RT computer storage devices
 data recorders
 data recording
 data storage
 readers

punched tapes
 DEF Tapes on which a pattern of holes or cuts is used to represent data.
 RT automatic typewriters
 computer storage devices
 data recording

magnetic tapes
 readers
 ∞ tapes

punches
 RT dies
 machine tools
 molds
 platens
 presses
 stamping

puncturing
 USE **piercing**

pupa
 RT insects
 larvae

pupil size
 RT pupillometry

pupillometry
 RT biometrics
 dark adaptation
 light adaptation
 ∞ measurement
 pupil size

pupils
 GS anatomy
 . sense organs
 . . eye (anatomy)
 . . . **pupils**
 RT vision

purging
 RT circulation
 clearing
 decontamination
 degassing
 distillation
 evacuating (vacuum)
 flushing
 outgassing
 ∞ pumping
 purification
 relieving
 ∞ separation
 venting

purification
 UF *purifiers*
 GS **purification**
 . air purification
 RT aeration
 antiseptics
 beneficiation
 chemical sterilization
 cleaning
 crystallization
 decontamination
 deminerlizing
 desalinization
 dissipation
 distillation
 elimination
 elution
 enrichment
 flushing
 getters
 pasteurizing
 polynuclear organic compounds
 potable water
 purging
 purity
 rectification
 ∞ reduction
 reduction (chemistry)
 refining
 scavenging
 ∞ separation
 sewage treatment
 solvent extraction
 spacecraft sterilization
 sterilization

sublimation
 ultrapure metals
 upgrading
 washing
 water treatment
 zone melting

purifiers
 USE **purification**

purines
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **purines**
 adenines
 xanthenes
 caffeine
 guanines
 uric acid

purity
 RT clarity
 concentration (composition)
 contaminants
 contamination
 decontamination
 dilution
 fineness
 pollution
 potable liquids
 purification
 quality
 trace contaminants
 ultrapure metals
 water pollution

purposes
 RT goals

pursuit tracking
 GS tracking (position)
 . **pursuit tracking**
 RT infrared tracking
 pursuit-evasion games
 radar tracking
 satellite interceptors

pursuit-evasion games
 (added October 1998)
 GS games
 . **pursuit-evasion games**
 RT differential games
 evasive actions
 interception
 optimal control
 pursuit tracking
 trajectory optimization
 zero sum games

pushbroom sensor modes
 DEF Spacecraft instrument arrangements in which large numbers of detectors comprising linear arrays are swept by the forward motion of the spacecraft to attain increased fidelity and high sensitivity in the data captured.
 GS modes
 . **pushbroom sensor modes**
 RT arrays
 electro-optics
 image processing
 linear arrays
 photodiodes

pushing
 RT ∞ force
 propulsion

push-pull amplifiers
 DEF Amplifiers in which there are two identical signal branch circuits so as to operate in phase opposition and with input and output connections each balanced to ground. Used for balanced amplifiers.
 UF *balanced amplifiers*
 GS amplifiers

pycnometers

- . **push-pull amplifiers**
- RT phase modulation
power amplifiers
- PWM (modulation)
- USE **pulse duration modulation**

pycnometers

- RT density (mass/volume)

pylon mounting

- RT aerodynamic configurations
aircraft structures
columns (supports)
rigid mounting
structural members
supports
wind tunnel models

pylons

- GS supports
 - . **pylons**
- RT columns (supports)
structural members
struts
towers

Pyramid Lake (NV)

- GS lakes
 - . **Pyramid Lake (NV)**
- RT Nevada
water management
water resources

pyramidal bodies

- RT ∞ bodies
pyramids
reentry vehicles

pyramids

- GS geometry
 - . Euclidean geometry
 - . . polyhedrons
 - . . . **pyramids**
- RT frustums
pyramidal bodies

pyranometers

- DEF Actinometers which measure the combined intensity of incoming direct solar radiation and diffuse sky radiation. The pyranometers consist of a recorder and a radiation sensing element which is mounted so that it views the entire sky. Sometimes called solarimeters.
- GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . **pyranometers**
- RT photometers
radiometers
sky radiation

pyrazines

- DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 4 positions.
- GS **pyrazines**
 - . azines
 - . . cyanurates
 - . . cyanuric acid
 - . . meclizine
 - . . methylene blue
 - . . phenothiazines

Pyrenees Mountains (Europe)

- GS landforms
 - . mountains
 - . . **Pyrenees Mountains (Europe)**
- RT Andorra
France
Spain

pyrenes

- GS organic compounds
 - . hydrocarbons

. . pyrenes

- Pyrex (trademark)
- USE **borosilicate glass**

pyridine nucleotides

- GS organic compounds
 - . nucleotides
 - . . **pyridine nucleotides**
- phosphorus compounds
 - . phosphates
 - . . **pyridine nucleotides**

pyridines

- DEF Compounds that contain a six-membered heterocyclic ring containing one nitrogen atom.
- GS bases (chemical)
 - . **pyridines**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **pyridines**
- RT Karl Fischer reagent
piperidine
quinoline

pyridoxine

- UF *vitamin B 6*
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **pyridoxine**
- vitamins
 - . **pyridoxine**

pyrimidines

- DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 3 positions.
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **pyrimidines**
 - alloxan
 - thymidine
 - thymine
 - uracil

pyrites

- GS chalcogenides
 - . sulfides
 - . . **pyrites**
- iron compounds
 - . **pyrites**
- minerals
 - . **pyrites**
- sulfur compounds
 - . sulfides
 - . . **pyrites**

Pyroceram (trademark)

- GS ceramics
 - . **Pyroceram (trademark)**
- glass
 - . **Pyroceram (trademark)**

pyroelectricity

- GS electrical properties
 - . **pyroelectricity**
- thermodynamic properties
 - . thermophysical properties
 - . . **pyroelectricity**
- RT piezoelectricity
polarization (charge separation)

pyrogen

- GS gases
 - . flammable gases
 - . . **pyrogen**

RT torches

pyrographalloy

- USE **composite materials**
pyrolytic graphite
refractory materials

pyroheliometers

- DEF Actinometers which measure the intensity of direct solar radiation, consisting of a radiation sensing element enclosed in a casing which is closed except for a small aperture, through which the direct solar rays enter, and a recorder unit. Used for heliometry.
- UF *heliometry*
- GS measuring instruments
 - . heliometers
 - . . **pyroheliometers**
- optical equipment
 - . heliometers
 - . . **pyroheliometers**
- telescopes
 - . heliometers
 - . . **pyroheliometers**

pyrohydrolysis

- DEF Decomposition by the action of heat and water vapor.
- GS chemical reactions
 - . **pyrohydrolysis**
- RT pyrolysis

pyrolysis

- DEF Chemical decomposition by the action of heat.
- GS chemical reactions
 - . cracking (chemical engineering)
 - . . **pyrolysis**
 - . . thermal decomposition
 - . . . **pyrolysis**
 - . . . decomposition
 - . . . cracking (chemical engineering)
 - . . . **pyrolysis**
 - . . . thermal decomposition
 - . . . **pyrolysis**
- RT ablation
 - endothermic reactions
 - exothermic reactions
 - pyrohydrolysis
 - thermal absorption
 - thermal degradation
 - thermal instability
 - thermogravimetry

pyrolytic graphite

- UF *pyrographalloy*
- GS carbonaceous materials
 - . graphite
 - . . **pyrolytic graphite**
- minerals
 - . graphite
 - . . **pyrolytic graphite**
- pyrolytic materials
 - . **pyrolytic graphite**
- RT heat shielding

pyrolytic materials

- GS **pyrolytic materials**
 - . pyrolytic graphite
- RT ablative materials
 - ceramics
 - ∞ materials
 - refractory coatings
 - refractory materials

pyrometallurgy

- RT aerothermochemistry
 - alloying
 - chlorination
- ∞ converters
 - heat balance
 - metal working
- ∞ metallurgy
 - refining
 - sintering
 - sublimation

thermochemistry

pyrometers

DEF Instruments that measure high temperature, e. g. , of molten lavas, by electrical or optical means.

- GS measuring instruments
 - . temperature measuring instruments
 - . . **pyrometers**
 - . . . radiation pyrometers
 - . . . thermocouple pyrometers
- RT temperature measurement

pyrometry

USE **temperature measurement**

pyrophoric materials

- RT explosives
 - flammability
 - hypergolic rocket propellants
 - igniters
 - ignition temperature
- ∞ materials
 - metal combustion
 - solid propellant ignition
 - spontaneous combustion

pyrophyllite

DEF A white, greenish, gray, or brown phyllosilicate mineral that resembles talc.

- GS aluminum compounds
 - . aluminum silicates
 - . . **pyrophyllite**
- minerals
 - . **pyrophyllite**
 - . silicon compounds
 - . silicates
 - . . aluminum silicates
 - . . . **pyrophyllite**
- RT aluminum oxides

pyrotechnics

- UF *fireworks*
- GS **pyrotechnics**

- . HMX
- RT ammunition
 - bombs (ordnance)
 - chemical fuels
 - double base propellants
 - explosives
- ∞ flares
 - grenades
 - illuminating
 - incendiary ammunition
 - initiators (explosives)
 - ordnance
 - plastic propellants
 - projectiles
 - RDX
- ∞ rockets
- ∞ signals
- thermites

pyroxenes

DEF A group of dark, rock-forming silicate minerals.

- GS chalcogenides
 - . oxides
 - . . **pyroxenes**
 - . . . enstatite
- minerals
 - . **pyroxenes**
 - . . enstatite
- silicon compounds
 - . silicates
 - . . **pyroxenes**
 - . . . enstatite
- RT eclogite
 - igneous rocks
 - regolith
 - rocks
 - soils

pyroxylin

USE **cellulose nitrate**

pyrrhotite

DEF A common reddish-brown to bronze hexagonal mineral.

- GS chalcogenides
 - . sulfides
 - . . **pyrrhotite**
 - . . . troilite
- iron compounds
 - . **pyrrhotite**
 - . . troilite
- minerals
 - . **pyrrhotite**
 - . . troilite
- sulfur compounds
 - . sulfides
 - . . **pyrrhotite**
 - . . . troilite

pyrroles

DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen atom.

- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . azoles
 - **pyrroles**
 - carbazoles
 - indoles
 - tryptophan
- RT methoxy systems
 - polypyrroles
 - thiophenes

Pyrrones (trademark)

- GS nitrogen compounds
 - . nitrogen polymers
 - . . **Pyrrones (trademark)**
- RT ∞ polymers

pyruvates

- RT organic liquids

Q

Q devices

- RT magnetic mirrors
- plasma pinch
- zeta pinch

Q factors

- UF *high Q*
- quality factors*
- RT figure of merit
- resonant vibration
- spectral resolution
- tuning

Q switched lasers

- DEF A device for producing very short (about 30 ns) intense laser pulses by enhancing the storage and dumping of electronic energy in and out of the lasing medium.
- GS stimulated emission devices
 - . lasers
 - . . pulsed lasers
 - . . . **Q switched lasers**
- RT argon lasers
- carbon dioxide lasers
- chemical lasers
- gas lasers
- ruby lasers
- semiconductor lasers
- solid state lasers

Q values (nuclear physics)

- GS value
- . **Q values (nuclear physics)**
- RT fusion reactors
- storage rings (particle accelerators)
- thermonuclear reactions
- tokamak devices

QAM (modulation)

- USE **quadrature amplitude modulation**

Qatar

- (added February 1989)
- GS nations
- . **Qatar**
- RT Asia

QBO (climatology)

- (added May 2001)
- USE **quasi-biennial oscillation**

QCD

- USE **quantum chromodynamics**

QH-50 helicopter

- UF *Dash helicopter*
- DSN helicopter*
- Gyrodyne DSN-3 helicopter*
- Gyrodyne military aircraft*
- GS Gyrodyne aircraft
- . **QH-50 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . military helicopters
- **QH-50 helicopter**

QHE (electronics)

- (added July 2000)
- USE **quantum Hall effect**

QPSK

- USE **quadrature phase shift keying**

QSO (radio sources)

- USE **quasars**

Quadrantid meteoroids

- GS celestial bodies
- . meteoroid showers

- . . **Quadrantid meteoroids**
- . meteoroids
- . . **Quadrantid meteoroids**

quadrants

- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . **quadrants**

quadrature phase shift keying

- USE **quadrature phase shift keying**

quadratic equations

- GS algebra
- . nonlinear equations
- . . **quadratic equations**
- analysis (mathematics)
- . real variables
- . . nonlinear equations
- . . . **quadratic equations**
- field theory (algebra)
- . **quadratic equations**
- RT ∞ equations
- polynomials

quadratic programming

- GS optimization
- . mathematical programming
- . . **quadratic programming**
- research
- . **quadratic programming**
- RT ∞ programming

quadrature amplitude modulation

- (added August 1991)
- DEF Amplitude modulation in which the signal is 90 degrees out of phase with the carrier which it modulates.
- UF *QAM (modulation)*
- GS coding
- . signal encoding
- . . amplitude modulation
- . . . **quadrature amplitude modulation**
- modulation
- . amplitude modulation
- . . **quadrature amplitude modulation**
- RT phase shift keying
- quadrature phase shift keying

quadrature approximation

- USE **quadratures**

quadrature phase shift keying

- (added May 1991)
- UF *QPSK*
- quadrature phase shift keying*
- GS coding
- . signal encoding
- . . phase modulation
- . . . phase shift keying
- **quadrature phase shift keying**
- keying
- . phase shift keying
- . . **quadrature phase shift keying**
- modulation
- . phase modulation
- . . phase shift keying
- . . . **quadrature phase shift keying**
- RT binary phase shift keying
- quadrature amplitude modulation
- satellite transmission

quadratures

- DEF Elongations of 90 deg. , usually specified as east or west in accordance with the direction of the body from the sun. The moon is a quadrature at first and last quarters. The

- situation of two periodic quantities differing by a quarter of a cycle. Used for quadrature approximation.

- UF *quadrature approximation*
- RT circular orbits
- orbit calculation
- orbital mechanics
- orbits
- space mechanics

quadrupole lenses

- USE **magnetic lenses**

quadrupole networks

- GS networks
- . **quadrupole networks**

quadrupoles

- DEF A linear accelerator having four longitudinal vanes in its resonating cavity, which are shaped to create RF electric fields that simultaneously accelerate, bunch, and focus the charged particle beam.
- RT ∞ dipoles
- nuclear quadrupole resonance
- polarity

quail missile

- GS decoys
- . **quail missile**
- missiles
- . air to surface missiles
- . . **quail missile**
- RT countermeasures
- turbojet engines

qualifications

- RT certification
- contractors
- education
- experience
- fitness
- personality tests
- personnel
- ∞ tests

qualitative analysis

- DEF An analysis in which some or all of the components of a sample are identified.
- GS chemical tests
- . chemical analysis
- . . **qualitative analysis**
- RT analytical chemistry
- electrophotometry
- flame spectroscopy
- gas analysis
- inductively coupled plasma mass spectrometry
- mass spectrometers
- microanalysis
- neutron activation analysis
- quantitative analysis
- spectroscopic analysis

quality

- GS **quality**
- . environmental quality
- . . air quality
- . . . water quality
- . riding quality
- RT accuracy
- adequacy
- appearance
- computer systems performance
- concentration (composition)
- consistency
- contaminants
- controllability
- durability
- evaluation

figure of merit
 fineness
 flight characteristics
 ∞ grade
 ∞ impurities
 ∞ materials tests
 ∞ performance
 pollution
 precision
 product development
 purity
 reliability
 ∞ resistance
 specifications
 stability
 ∞ tests
 total quality management
 upgrading
 validity
 variability

quality control

DEF An aggregate of functions designed to insure adequate quality in manufactured products by initial critical study of engineering design, materials, processes, equipment, and workmanship followed by periodic inspection and analysis. Used for reliability control.

UF *reliability control*

GS **quality control**
 . Taguchi methods
 . total quality management

RT
 accelerated life tests
 acceptability
 aircraft reliability
 assurance
 average
 Bayes theorem
 burn-in
 certification
 chemical tests
 circuit reliability
 component reliability
 confidence
 confidence limits
 construction
 ∞ control
 correlation
 correlation coefficients
 covariance
 data sampling
 degrees of freedom
 electrical properties
 electronic equipment tests
 error detection codes
 errors
 estimates
 estimating
 experiment design
 extrapolation
 hypotheses
 infrared inspection
 inspection
 least squares method
 linear prediction
 low temperature tests
 Mann-Whitney-Wilcoxon U test
 ∞ materials tests
 mean
 median (statistics)
 mode (statistics)
 nondestructive tests
 normalizing (statistics)
 operations research
 optimization
 orthogonal functions
 orthogonality
 precision
 probability theory
 process control (industry)
 ∞ processes
 product development
 production management
 products
 random errors
 random sampling
 range (extremes)

regression analysis
 regression coefficients
 reliability
 reliability engineering
 sampling
 scheduling
 sequential analysis
 spacecraft reliability
 specifications
 standard deviation
 standardization
 standards
 static tests
 statistical analysis
 statistical correlation
 statistical distributions
 statistical tests
 structural reliability
 ∞ systems
 task complexity
 tasks
 ∞ tests
 tolerances (mechanics)
 ultrasonic flaw detection
 value engineering
 variability
 variance (statistics)
 wear tests

quality factors

USE **Q factors**

quantiles

DEF The values that mark frequency distribution interval boundaries that are determined by arranging a set of N observations in order of magnitude and marking off equal parts (N/P) of the total population P.

GS statistical analysis

. **quantiles**

RT mathematical models
 statistical distributions

∞ statistics
 symmetry

quantitative analysis

GS chemical tests
 . chemical analysis
 . . **quantitative analysis**
 . . . Kjeldahl method
 . . . Van Slyke method

RT analytical chemistry
 chromatography
 electrophotometry
 gas analysis
 gravimetry
 iodimetry
 Karl Fischer reagent
 microanalysis
 neutron activation analysis
 polarography
 qualitative analysis
 radiochemical separation
 spectroscopic analysis
 volumetric analysis

quantity

USE **amount**

quantization

USE **measurement**

quantizer

USE **counters**

quantum amplifiers

GS amplifiers
 . **quantum amplifiers**
 RT lasers
 light amplifiers
 two-wavelength lasers
 ultrashort pulsed lasers
 ultraviolet lasers

quantum cascade lasers

(added February 2003)

DEF Semiconductor injection lasers in which light is generated by electrons making optical transitions between subbands within one band of a semiconductor heterostructure; these subbands result from the quantization of this motion in coupled quantum wells.

GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . semiconductor lasers
 **quantum cascade lasers**
 . . . solid state lasers
 . . . **quantum cascade lasers**
 stimulated emission devices
 . lasers
 . . injection lasers
 . . . **quantum cascade lasers**
 . . semiconductor lasers
 . . . **quantum cascade lasers**
 . . solid state lasers
 . . . **quantum cascade lasers**

RT heterojunctions
 infrared lasers
 quantum well lasers
 quantum wells

quantum chemistry

GS physical chemistry
 . **quantum chemistry**
 RT ∞ chemistry
 molecular orbitals
 nuclear chemistry
 quantum mechanics

quantum chromodynamics

DEF A gauge theory describing the interaction between quarks and gluons. Used for color (particle physics) and QCD.

UF *color (particle physics)*
QCD

GS field theory (physics)
 . gauge theory
 . . **quantum chromodynamics**

RT ∞ dynamics
 gluons
 instantons
 leptons
 particle interactions
 quantum mechanics
 quark models
 quarks
 standard model (particle physics)
 string theory
 strong interactions (field theory)
 ∞ theories

quantum communication

(added March 2000)

DEF Any form of communication that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to transmit, protect or authenticate information, or to perform distributed computational tasks.

GS telecommunication
 . communication
 . . **quantum communication**

RT communication theory
 optical communication
 quantum computation

quantum computation

(added March 2000)

DEF Any form of information processing that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to perform computational tasks.

UF *quantum computing*
 GS computation

. **quantum computation**
 RT quantum communication
 quantum computers
 quantum cryptography
 quantum mechanics

Turing machines

quantum computers

(added March 2000)

DEF Devices capable of performing quantum computations. There are many proposals for the physical basis of quantum computers. The 0 and 1 of a quantum bit (i. e. , qubit) could be the ground and excited states of an atom in a linear ion trap; the polarizations of photons interacting in an optical cavity; or the excess of one nuclear spin state over another in a liquid sample in an NMR machine.

- GS data processing equipment
 - . computers
 - . . **quantum computers**
- RT quantum computation

quantum computing

(added March 2000)

USE **quantum computation**

quantum counters

- GS measuring instruments
 - . counters
 - . . radiation counters
 - . . . **quantum counters**
 - . radiation measuring instruments
 - . . radiation counters
 - . . . **quantum counters**
- RT squid (detectors)

quantum cryptography

(added March 2000)

DEF Any form of cryptography that depends for its security on coherent quantum-mechanical effects (quantum interference or quantum entanglement).

- GS cryptography
 - . **quantum cryptography**
- RT computer information security
 - quantum computation

quantum dots

(added October 1997)

DEF Small (30 nm to 1 micron) metal or semiconductor structures that hold a discrete number of electrons; the number of electrons can be altered by modifying the electrostatic environment of the dot.

- GS nanostructures (devices)
 - . **quantum dots**
- RT electron tunneling
 - nanotechnology
 - nonlinear optics
 - quantum electronics
 - quantum wells
 - quantum wires
 - semiconductor devices
 - semiconductor lasers

quantum efficiency

DEF A measure of the efficiency of conversion or utilization of light or some other form of energy.

- RT energy conversion efficiency
 - energy technology
 - heterojunction devices
 - laser outputs
 - solar cells
 - volt-ampere characteristics

quantum electrodynamics

- GS electrodynamics
 - . **quantum electrodynamics**
 - quantum mechanics
 - . **quantum electrodynamics**
- RT electromagnetic fields
 - Feynman diagrams
 - field theory (physics)
 - Landau-Ginzburg equations
 - resonance fluorescence
 - self consistent fields

quantum electronics

DEF The branch of electronics that essen-

tially deals with lasers and laser devices which require quantum theory for their exact description.

- RT ∞ electronics
 - lasers
 - nanofabrication
 - nanostructures (devices)
 - nanotechnology
 - quantum dots
 - quantum Hall effect
 - quantum mechanics
 - quantum theory
 - quantum wires
 - resonant tunneling
 - tunnel junctions

quantum generators

USE **stimulated emission devices**

quantum Hall effect

(added July 2000)

DEF Phenomenon where the Hall resistance of a two-dimensional electron system at low temperature and high magnetic fields, becomes quantized as $h/(e\text{-squared})$, where h is Planck's constant, e is the electronic charge, and j is either an integer or a rational fraction.

- UF **QHE (electronics)**
- GS galvanomagnetic effects
 - . Hall effect
 - . . **quantum Hall effect**
- RT electron gas
 - Hall resistance
 - magnetic effects
 - quantum electronics
 - semiconductor devices
 - superlattices

quantum mechanics

- GS **quantum mechanics**
 - . Pauli exclusion principle
 - . quantum electrodynamics
- RT atomic interactions
 - Bethe-Salpeter equation
 - Born approximation
 - Dyson theory
 - electromagnetic interactions
 - energy distribution
 - Fermi-Dirac statistics
 - function space
 - group velocity
 - Hylleraas coordinates
 - light-cone expansion
 - ∞ mechanics (physics)
 - Orr-Sommerfeld equations
 - phase velocity
 - quantum chemistry
 - quantum chromodynamics
 - quantum computation
 - quantum electronics
 - quantum optics
 - Racah coefficient
 - relativity
 - squeezed states (quantum theory)
 - statistical mechanics
 - strangeness
 - U spin space
 - wave packets

quantum numbers

DEF A number assigned to one of the various values of a quantized quantity in its discrete range. The quantum numbers arise from the mathematics of the wave equations. When the quantity has a quantum, the quantum number is the number of such quanta. A state may be described by giving a sufficient set of compatible numbers. In the customary formulations, each quantum number is either an integer (which may be positive, negative, or zero) or an odd half-integer.

- RT angular momentum
 - electrons
 - energy levels
 - nuclear spin
- ∞ numbers

parity
selection rules (nuclear physics)

quantum optics

- RT atom optics
 - nonlinear optics
- ∞ optics
 - physical optics
 - quantum mechanics
 - quantum theory

quantum statistics

- UF **Bose-Einstein statistics**
- RT bosons
 - Fermi-Dirac statistics
 - fermions
 - many body problem
- ∞ statistics
 - superfluidity
 - Thomas-Fermi model

quantum theory

DEF The theory first stated by Max Planck (before the Physical Society of Berlin on December 14, 1900) that all electromagnetic radiation is emitted and absorbed in quanta, each of magnitude $h\nu$, h being the Planck constant and ν the frequency of the radiation. Used for Wightman theory.

- UF **Wightman theory**
- GS theoretical physics
 - . **quantum theory**
 - . . Bohr theory
- RT angular momentum
 - atomic theory
 - charm (particle physics)
 - de Broglie wavelengths
 - Dirac equation
 - electroweak model
 - elementary particles
 - emission
 - energy levels
 - field theory (physics)
 - flavor (particle physics)
 - forbidden transitions
 - ground state
 - Hamiltonian functions
 - Klein-Dunham potential
 - magnetic monopoles
 - Mandelstam representation
 - nuclear physics
 - nuclear spin
 - parity
 - perturbation theory
 - photons
 - physical optics
 - Planck's constant
 - quantum electronics
 - quantum optics
 - ∞ radiation
 - radiation laws
 - Schumann-Runge bands
 - squeezed states (quantum theory)
 - standard model (particle physics)
 - statistical distributions
 - statistical mechanics
 - string theory
 - supergravity
 - supersymmetry
 - ∞ theories
 - wave equations

quantum well lasers

(added September 1993)

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **quantum well lasers**
 - . . solid state lasers
 - . . . **quantum well lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **quantum well lasers**
 - . . solid state lasers

- ... **quantum well lasers**
 - RT energy gaps (solid state)
 - heterojunction devices
 - indium gallium arsenides
 - indium phosphides
 - laser materials
 - quantum cascade lasers
 - quantum wells
 - waveguide lasers
- quantum wells**
- DEF Effective potential wells created by a minimum in the conduction band or a maximum in the valence band that arises when a smaller band-gap semiconductor is sandwiched between a larger band-gap semiconductor.
 - GS potential energy
 - . electric potential
 - ... **quantum wells**
 - ... photoexcitation
 - RT band structure of solids
 - binding energy
 - blue shift
 - conduction bands
 - conduction electrons
 - energy bands
 - energy gaps (solid state)
 - gaps
 - heterojunction devices
 - heterojunctions
 - quantum cascade lasers
 - quantum dots
 - quantum well lasers
 - quantum wires
 - resonant tunneling
 - valence
- quantum wires**
- (added October 1997)
 - GS nanostructures (devices)
 - . **quantum wires**
 - RT nanotechnology
 - nonlinear optics
 - quantum dots
 - quantum electronics
 - quantum wells
 - semiconductor devices
 - semiconductor lasers
- Quaoar**
- (added October 2002)
 - DEF Kuiper Belt object about 1,250 km in diameter and about 43 Astronomical Units from the Sun.
 - GS celestial bodies
 - . asteroids
 - ... **Quaoar**
 - RT asteroid belts
 - Kuiper belt
 - solar system
- quark models**
- GS models
 - . **quark models**
 - ... quark parton model
 - RT flavor (particle physics)
 - particle theory
 - quantum chromodynamics
 - quarks
 - standard model (particle physics)
- quark parton model**
- DEF A theoretical model which summarizes our understanding of how protons and neutrons are made up of the fundamental subparticles called quarks.
 - GS models
 - . quark models
 - ... **quark parton model**
 - RT hadrons
 - inelastic scattering
 - leptons
 - nuclear models
 - partons
- quarks
- quarks**
- GS particles
 - . elementary particles
 - ... hypothetical particles
 - ... **quarks**
 - RT flavor (particle physics)
 - gluons
 - instantons
 - partons
 - quantum chromodynamics
 - quark models
 - quark parton model
- quarries*
- USE **mines (excavations)**
- quartic equations**
- GS algebra
 - . nonlinear equations
 - ... **quartic equations**
 - analysis (mathematics)
 - . real variables
 - ... nonlinear equations
 - ... **quartic equations**
 - RT ∞ equations
- quartiles**
- RT probability density functions
 - statistical analysis
 - statistical distributions
- quartz**
- DEF Crystalline silica, an important rock-forming mineral.
 - GS chalcogenides
 - . oxides
 - ... dioxides
 - ... silicon dioxide
 - ... **quartz**
 - ... coesite
 - ... stishovite
 - ... silicon oxides
 - ... silicon dioxide
 - ... **quartz**
 - ... coesite
 - ... stishovite
 - minerals
 - . **quartz**
 - . coesite
 - . stishovite
 - silicon compounds
 - . silicon oxides
 - . silicon dioxide
 - ... **quartz**
 - ... coesite
 - ... stishovite
 - RT abrasives
 - felsite
 - flint
 - igneous rocks
 - rocks
 - sands
 - soils
- quartz crystals**
- GS crystals
 - . **quartz crystals**
 - RT frequency control
 - frequency stability
 - radio transmitters
 - silicon dioxide
- quartz lamps**
- GS lighting equipment
 - . luminaires
 - ... **quartz lamps**
- quartz transducers**
- GS transducers
 - . **quartz transducers**
 - RT piezoelectric crystals
- pressure sensors
- quartzite**
- GS rocks
 - . metamorphic rocks
 - ... **quartzite**
- quasars**
- UF *QSO (radio sources)*
 - quasi-stellar radio sources*
 - GS celestial bodies
 - . radio sources (astronomy)
 - ... **quasars**
 - RT active galactic nuclei
 - active galaxies
 - blazars
 - extragalactic radio sources
 - galaxies
 - gravitational collapse
 - irregular galaxies
 - pulsars
 - radio astronomy
 - radio bursts
 - radio emission
 - radio galaxies
 - radio jets (astronomy)
 - radio stars
 - stars
 - x ray spectra
- Quasat**
- SN (QUASAR SATELLITE)
 - GS artificial satellites
 - . scientific satellites
 - ... astronomical satellites
 - ... **Quasat**
 - observatories
 - . astronomical observatories
 - ... astronomical satellites
 - ... **Quasat**
 - RT European space programs
 - NASA programs
 - radio astronomy
 - radio telescopes
 - spaceborne astronomy
 - very long base interferometry
- quasi-biennial oscillation**
- (added May 2001)
 - DEF A natural, quasi-periodic (2-2.5 years) oscillation of the zonal (east-west) stratospheric winds over the equatorial region. The quasi-biennial oscillation (QBO) affects stratospheric temperatures and trace gases (including ozone) and influences the response of the stratosphere to volcanic eruptions.
 - UF *QBO (climatology)*
 - GS oscillations
 - . **quasi-biennial oscillation**
 - variations
 - . periodic variations
 - ... **quasi-biennial oscillation**
 - RT annual variations
 - atmospheric circulation
 - atmospheric temperature
 - climatology
 - el Nino
 - equatorial atmosphere
 - ozone
 - Southern Oscillation
 - tropical meteorology
 - zonal flow (meteorology)
- quasilinearity*
- USE **nonlinearity**
- quasi-particles*
- USE **elementary excitations**
- quasi-steady states**
- RT equilibrium flow
 - fluid dynamics
 - nonequilibrium flow
 - steady flow
 - steady state creep

quaternary alloys

uniform flow

quasi-stellar radio sources

USE **quasars**

quaternary alloys

GS alloys

. **quaternary alloys**

RT alloying

Quaternary period

(*added May 2001*)

DEF A period (sub-era) within the Cenozoic era, beginning about two million years ago and extending to the present. It is divided into two epochs--Holocene and Pleistocene.

GS Cenozoic Era

. **Quaternary period**

. . Holocene epoch

. . Pleistocene epoch

RT geochronology

Tertiary Period

quaternions

RT classical mechanics

number theory

Quebec

GS nations

. Canada

. . **Quebec**

quefrecencies

DEF In cepstral analysis, the frequency of periodic ripples in a spectra of a signal that contains echoes. Quefrecencies are expressed in cycles per hertz or in seconds.

GS frequencies

. acoustic frequencies

. . audio frequencies

. . . **quefrecencies**

RT cepstra

∞ quenching

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT extinguishing

quenching (atomic physics)

quenching (cooling)

rapid quenching (metallurgy)

quenching (atomic physics)

DEF Phenomena in which very strong electric fields cause the orbit of an electron or atom to precess rapidly so the average magnetic moment associated with its orbit angular momentum is reduced to zero.

GS gyration

. precession

. . **quenching (atomic physics)**

RT angular momentum

laser cooling

magnetic moments

particle spin

∞ physics

∞ quenching

quenching (cooling)

DEF Rapid cooling as in metallurgy. Used

for flame quenching.

UF *flame quenching*

GS cooling

. **quenching (cooling)**

. . rapid quenching (metallurgy)

RT baths

combustion

dipping

extinguishing

hardening (materials)

heat treatment

microstructure

∞ quenching

submerging

supercooling

supersaturation

thermomechanical treatment

water immersion

query languages

DEF Command languages used to search and retrieve information.

GS languages

. command languages

. . **query languages**

RT human-computer interface

information retrieval

Questol aircraft

(*added December 1990*)

SN (EXPERIMENTAL STOL TRANSPORT RESEARCH AIRPLANE)

UF *experimental STOL transport rsch airplane*

GS research vehicles

. research aircraft

. . **Questol aircraft**

V/STOL aircraft

. short takeoff aircraft

. . **Questol aircraft**

RT ∞ aircraft

NASA programs

queueing theory

RT ARPA computer network

bunching

mathematical models

operations research

statistical analysis

stochastic processes

∞ theories

quiet engine program

GS programs

. NASA programs

. . **quiet engine program**

RT aircraft engines

engine noise

jet aircraft noise

jet engines

noise reduction

QuikSCAT satellite

(*added May 2003*)

DEF A remote sensing satellite designed to measure wind speed and direction over the global oceans and to monitor coastal zones and polar regions. Launched in June 1999.

GS artificial satellites

. scientific satellites

. . **QuikSCAT satellite**

RT ocean dynamics

scatterometers

wind measurement

quinoline

GS bases (chemical)

. **quinoline**

nitrogen compounds

. **quinoline**

organic compounds

. **quinoline**

RT alkaloids

drugs

pyridines

quinones

(*added November 1992*)

UF *benzoquinone*

chinone

GS organic compounds

. **quinones**

RT ketones

quinoxalines

DEF A group of heterocyclic compounds consisting of a benzene ring condensed with a diazine ring.

GS organic compounds

. hydrocarbons

. . **quinoxalines**

plastics

. synthetic resins

. . thermoplastic resins

. . . **quinoxalines**

resins

. synthetic resins

. . thermoplastic resins

. . . **quinoxalines**

RT polymerization

quotients

RT dividing (mathematics)

R

R Coronae Borealis stars

- UF *RCB stars*
- GS celestial bodies
 - . stars
 - .. supergiant stars
 - ... **R Coronae Borealis stars**
 - .. variable stars
 - ... irregular variable stars
 - **R Coronae Borealis stars**
- RT carbon stars
 - cool stars
 - dust
 - stellar envelopes
 - stellar mass ejection

R5D aircraft

- USE **C-54 aircraft**

R7V aircraft

- USE **C-121 aircraft**

RA-28 engine

- GS engines
 - . air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **RA-28 engine**
 - . internal combustion engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **RA-28 engine**
 - . turbine engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **RA-28 engine**

rabbits

- GS animals
 - . vertebrates
 - .. mammals
 - ... rodents
 - **rabbits**

Racah coefficient

- RT angular momentum
 - coefficients
 - coupling
 - quantum mechanics
 - transformations (mathematics)

race factors

- RT anthropology
 - culture (social sciences)
 - ethnic factors
 - human beings
 - human performance
 - racess (anthropology)
 - social factors
 - sociology
 - ∞ variable

racess (anthropology)

- RT American Indians
 - anthropology
 - culture (social sciences)
 - human beings
 - minorities
 - race factors

racetracks (particle accelerators)

- RT ∞ accelerators
 - electromagnets
 - magnetic fields
 - particle acceleration
 - particle accelerators

particle trajectories

∞ racks

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT racks (frames)
- racks (gears)

racks (frames)

- RT ∞ racks
 - ∞ shelves
 - ∞ storage
 - supports

racks (gears)

- GS gears
 - . **racks (gears)**
- RT ∞ racks
 - translational motion

racon beacons

- USE **radar beacons**

radant

- GS antennas
 - . directional antennas
 - .. radar antennas
 - ... **radant**
 - radar equipment
 - . radar antennas
 - .. **radant**
- RT radar filters
 - radomes
 - slot antennas
 - waveguide antennas

radar

(added January 1991)

DEF A method, system or technique of using beamed, reflected, and timed radio waves for detecting, locating, or tracking objects (such as rockets), for measuring altitude, etc. , in any of various activities, such as air traffic control or guidance. The electronic equipment or apparatus used to generate, transmit, receive, and usually, to display radio scanning or locating waves, a radar set. Used for radio detection and ranging.

UF *radio detection and ranging*

radar

- GS
 - . airborne radar
 - .. airborne surveillance radar
 - .. coherent radar
 - . continuous wave radar
 - . Doppler radar
 - .. multistatic radar
 - .. pulse Doppler radar
 - ... monopulse radar
 - ... Shuttle Imaging Radar
 - . ground penetrating radar
 - . imaging radar
 - .. Shuttle Imaging Radar
 - . incoherent scatter radar
 - .. EISCAT radar system (Europe)
 - . infrared radar
 - . landing radar
 - . meteorological radar
 - . moving target indicators
 - . multispectral radar
 - . optical radar
 - .. differential absorption lidar
 - . pulse radar
 - .. pulse Doppler radar
 - ... monopulse radar
 - ... Shuttle Imaging Radar
 - . radar measurement
 - . range and range rate tracking
 - . satellite-borne radar
 - . search radar
 - .. over-the-horizon radar

- . secondary radar
- . space based radar
- .. Shuttle Imaging Radar
- . surveillance radar
- .. airborne surveillance radar
- .. Cobra Dane (radar)
- .. multistatic radar
- . synthetic aperture radar
- .. Shuttle Imaging Radar
- .. side-looking radar
- . tracking radar
- .. Cobra Dane (radar)
- . TRADEX radar system
- . Venus orbiting imaging radar (spacecraft)

RT

- aircraft instruments
- cancellation circuits
- circumlunar communication
- collision avoidance
- display devices
- distance measuring equipment
- electromagnetic radiation
- flight instruments
- instrument landing systems
- lunar communication
- microwave absorption
- navigation instruments
- night flights (aircraft)
- pulse compression
- radar detection
- scatterometers

radar absorbers

- GS absorbers (materials)
 - . **radar absorbers**
 - .. antiradar coatings
- RT countermeasures
 - electromagnetic absorption
 - microwave absorption
 - stealth technology

radar altimeters

- USE **radio altimeters**

radar antennas

- GS antennas
 - . directional antennas
 - .. **radar antennas**
 - ... radant
 - radar equipment
 - . **radar antennas**
 - .. radant
- RT aircraft antennas
 - diplexers
 - dipole antennas
 - doghouses (electronics)
 - high resolution coverage antennas
 - horn antennas
 - lens antennas
 - microwave antennas
 - parabolic antennas
 - radomes
 - reflector antennas
 - Schwarzschild antennas
 - sidelobe reduction
 - slot antennas
 - steerable antennas

radar approach control

- UF *RAPCON (control)*
- GS approach control
 - . **radar approach control**
 - ground based control
 - . air traffic control
 - .. **radar approach control**
 - traffic control
 - . air traffic control
 - .. **radar approach control**
- RT airborne radar approach
 - aircraft guidance
 - approach indicators

radar astronomy

- ∞ control
- instrument landing systems
- landing aids
- landing instruments
- landing radar
- radarscopes
- surveillance radar

radar astronomy

DEF The study of celestial bodies within the solar system by means of radiation originating on Earth but reflected from the body under observation.

- GS astronomy
 - . **radar astronomy**
- RT radio astronomy

radar attenuation

- GS attenuation
 - . wave attenuation
 - . . **radar attenuation**
- RT atmospheric attenuation
- electromagnetic absorption
- electromagnetic wave transmission
- radio attenuation
- sidelobe reduction
- signal transmission
- transmission
- wave propagation

radar beacons

DEF Beacons transmitting characteristic signals on radar frequency, permitting crafts to determine their bearings and sometimes the range of the beacons. Used for racon beacons.

- UF *racon beacons*
- GS navigation aids
 - . beacons
 - . . **radar beacons**
 - . . . discrete address beacon system
- radar equipment
 - . **radar beacons**
 - . . discrete address beacon system
- RT aircraft communication
- compasses
- position (location)
- solar compasses
- transponders

radar beams

- GS beams (radiation)
 - . **radar beams**
- RT beamforming
- pencil beams

radar clutter maps

- GS maps
 - . **radar clutter maps**

radar corner reflectors

- UF *luneberg lenses*
- GS radar equipment
 - . radar reflectors
 - . . **radar corner reflectors**
 - reflectors
 - . radar reflectors
 - . . **radar corner reflectors**
- RT reflector antennas
- retroreflectors

radar cross sections

DEF The ratios of power returned in a radar echo to power received by the target reflecting the signal.

- RT angels (radar)
- computational electromagnetics
- ∞ cross sections
- low observable reentry vehicles
- moving target indicators
- stealth technology

radar data

- RT ∞ data
- microwave photography

video data

radar detection

- GS detection
 - . **radar detection**
- RT coherent radar
- continuous wave radar
- digital radar systems
- Doppler radar
- electronic countermeasures
- electronic warfare
- multistatic radar
- optical radar
- over-the-horizon radar
- radar
- radar target scatter site program
- radarscopes
- resolution cell
- satellite-borne radar
- search radar
- signal detection
- space-time adaptive processing
- stealth technology

radar direction finders

USE **radio direction finders**

radar displays

USE **radarscopes**

radar echoes

- UF *radar reflections*
- GS echoes
 - . **radar echoes**
 - . . angels (radar)
 - . . clutter
 - . . lunar radar echoes
 - . . solar radar echoes
 - . . Venus radar echoes
- RT airborne radar
- auroral echoes
- chaff
- ghosts
- glint
- targets

radar equipment

- GS **radar equipment**
 - . doghouses (electronics)
 - . radar antennas
 - . . radant
 - . radar beacons
 - . . discrete address beacon system
 - . radar filters
 - . radar receivers
 - . radar reflectors
 - . . radar corner reflectors
 - . radar transmitters
 - . radarscopes
 - . . plan position indicators
 - . . retroreflectors
- RT airborne equipment
- airborne radar
- airport surface detection equipment
- automated radar terminal system
- digital radar systems
- diplexers
- distance measuring equipment
- Doppler radar
- ∞ equipment
- jammers
- look angles (electronics)
- onboard equipment
- parabolic antennas
- radio equipment
- radomes
- range finders
- servomechanisms
- synthetic aperture radar
- transponders

radar filters

- GS electromagnetic wave filters
 - . electric filters
 - . . **radar filters**
- radar equipment

. radar filters

- RT ∞ filters
- FIR filters
- microwave filters
- radant
- radio filters
- space-time adaptive processing
- waveguide filters

radar geology

DEF The application of imaging radar to geologic problems.

- GS geology
 - . **radar geology**
- RT geological surveys
- ground penetrating radar
- Shuttle Imaging Radar

radar homing missiles

DEF Radar-following missiles designed to attack radar transmitters.

- GS missiles
 - . **radar homing missiles**
- RT military technology
- missile control
- missile systems
- target recognition

radar imagery

- GS imagery
 - . **radar imagery**
- RT airborne radar
- change detection
- image analysis
- imaging radar
- imaging techniques
- infrared radar
- lunar equator
- Magellan spacecraft (NASA)
- Priroda module
- radar maps
- resolution cell
- Shuttle Imaging Radar
- side-looking radar
- x ray imagery

radar maps

- GS maps
 - . **radar maps**
- RT airborne radar
- digital elevation models
- map matching guidance
- meteorological charts
- radar imagery

radar measurement

- GS radar
 - . **radar measurement**
- RT altimetry
- differential absorption lidar
- distance measuring equipment
- ∞ measurement
- radio altimeters
- rangefinding
- satellite altimetry

radar navigation

- GS navigation
 - . **radar navigation**
- RT air navigation
- air traffic control
- aircraft guidance
- all-weather air navigation
- automatic flight control
- celestial navigation
- collision avoidance
- dead reckoning
- distance
- distance measuring equipment
- Doppler navigation
- Doppler radar
- Doppler-Fizeau effect
- ground based control
- inertial navigation
- interplanetary navigation
- map matching guidance

radarscopes
radio navigation
satellite navigation systems
space navigation
surface navigation
Tacan

radar networks

DEF A series of tracking stations each of which can individually or jointly track a target by utilizing an interchange of radar information. Used for multiradar tracking.

UF *multiradar tracking*

GS networks
. tracking networks
. . **radar networks**

RT Doppler radar
polystation doppler tracking system
tracking stations

radar observation

USE **radar tracking**

radar photography

GS imagery
. photography
. . multispectral photography
. . . **radar photography**

RT black and white photography
microwave photography
radarscopes
spectral reconnaissance
ultraviolet photography

radar range

DEF The distance from a radar to a target as measured by the radar. The maximum distance at which a radar set is effective in detecting targets.

GS distance
. **radar range**

RT continuous wave radar
optical slant range
over-the-horizon radar
radio range

radar receivers

GS radar equipment
. **radar receivers**
receivers
. **radar receivers**

RT airborne radar
digital radar systems
electromagnetic noise
microwave sensors
radio receivers
repeaters

radar reception

GS signal reception
. **radar reception**

RT radio reception
∞ receiving
sidelobe reduction

radar reflections

USE **radar echoes**

radar reflectors

DEF Devices capable of or intended for reflecting radar signals.

GS radar equipment
. **radar reflectors**
. . radar corner reflectors
reflectors
. **radar reflectors**

. . radar corner reflectors
RT parabolic antennas
parabolic reflectors
radio echoes
reflector antennas
sidelobe reduction

radar resolution

GS resolution
. **radar resolution**

RT angular resolution
display devices
high resolution coverage antennas
sidelobe reduction
spectral resolution

radar scanning

DEF The action or process of moving or directing a searching radar beam.

GS scanning

. **radar scanning**

RT conical scanning
digital radar systems
frequency scanning
meteorological radar
multiple beam interval scanners
panoramic scanning
radio tracking
side-looking radar
surveillance

radar scattering

GS scattering

. **radar scattering**

RT EISCAT radar system (Europe)
incoherent scatter radar
incoherent scattering
radar target scatter site program
scatterometers

radar signatures

GS signatures

. **radar signatures**

RT Cobra Dane (radar)
detection
imagery
microwave signatures
signature analysis
stealth technology
target recognition

radar target scatter site program

UF *RATSCAT program*

GS programs
. **radar target scatter site program**
targets

. radar targets
. . **radar target scatter site program**

RT radar detection
radar scattering

radar targets

DEF Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen.

GS targets

. **radar targets**

. . radar target scatter site program

RT airborne radar
digital radar systems
early warning systems
multiple target tracking
radial velocity

radar tracking

UF *radar observation*

GS tracking (position)

. **radar tracking**

RT automated radar terminal system
Ballistic Missile Early Warning System
compensatory tracking
digital radar systems
Doppler radar
early warning systems
meteorological radar
monopulse radar
moving target indicators
multiple target tracking
pursuit tracking
radio tracking
range and range rate tracking
rangefinding
rawinsondes
search radar
slewing
spacecraft tracking

surveillance radar
threat evaluation
tracking radar
transponder control group

radar transmission

GS transmission

. electromagnetic wave transmission

. . **radar transmission**

. signal transmission

. . **radar transmission**

RT atmospheric attenuation
digital radar systems
EISCAT radar system (Europe)
electromagnetic pulses
radio transmission
radome materials
wave attenuation
wave propagation

radar transmitters

GS radar equipment

. **radar transmitters**

transmitters

. **radar transmitters**

Radarsat

DEF A civilian remote sensing satellite that will be polar orbiting and is jointly being developed by Canada and the United Kingdom with NASA providing the launch. In addition to a synthetic aperture radar, it may carry other instruments such as the Advanced Along Track Scanning Radiometer (AATSR) and the Advanced Radar Altimeter (ARA)/Ocean Wave Spectrometer (OWS). Launch is planned for 1994.

GS Canadian spacecraft

. **Radarsat**

RT Canadian space program
synthetic aperture radar

radarscopes

DEF The cathode ray oscilloscopes used in radar sets, which display the received signal in such a manner as to indicate things such as range or bearing. Used for radar displays.

UF *radar displays*

GS display devices

. **radarscopes**

. . plan position indicators

radar equipment

. **radarscopes**

. . plan position indicators

RT aircraft guidance
indicating instruments
microwave imagery
microwave photography
radar approach control
radar detection
radar navigation
radar photography
surveillance radar

radial distribution

GS distribution (property)

. **radial distribution**

RT Rayleigh distribution

star distribution

wind profiles

radial drainage patterns

USE **drainage patterns**

radial flow

GS fluid flow

. **radial flow**

RT axial flow
centrifugal compressors
diffusion
flow geometry
gas flow
heat transmission

radial velocity

two dimensional flow

radial velocity

DEF In radar, that vector component of the velocity of a moving target that is directed away from or toward the ground station.

GS rates (per time)

. **radial velocity**

velocity

. **radial velocity**

RT astronomical spectroscopy

blue shift

Doppler effect

radar targets

red shift

velocity measurement

radiance

SN (DIRECTIONAL EMISSION RATE PER UNIT AREA OF RADIATION)

DEF In radiometry, a measure of the intrinsic radiant intensity emitted by a radiator in a given direction. It is the irradiance (radiant flux density) produced by radiation from the source upon a unit surface area oriented normal to the line between source and receiver, divided by the solid angle subtended by the source at the receiving surface. It is assumed that the medium between the radiator and receiver is perfectly transparent; therefore radiance is independent of attenuation between source and receiver.

GS electromagnetic properties

. optical properties

. . **radiance**

rates (per time)

. flux density

. . radiant flux density

. . . **radiance**

RT black body radiation

brightness

emissivity

emittance

glare

incandescence

∞ intensity

irradiance

lumens

luminosity

neutron flux density

solar flux density

transmissometers

visibility

radiancy

SN (EMISSION RATE PER UNIT AREA OF RADIATION)

DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere.

GS rates (per time)

. flux density

. . radiant flux density

. . . **radiancy**

RT electron flux density

illuminance

luminous intensity

neutron flux density

particle flux density

proton flux density

solar flux density

radiant cooling

GS cooling

. **radiant cooling**

RT radiative heat transfer

surface cooling

radiant energy

USE **radiation**

radiant flux density

SN (DYNES/CM-SEC AS DISTINGUISHED FROM RADIATION PRESSURE--DYNES/SQ CM)

DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere. Used for power density (electromagnetic), radi-

ant intensity, and radiation intensity.

UF **power density** (*electromagnetic*)

radiant intensity

radiation intensity

GS rates (per time)

. flux density

. . **radiant flux density**

. . . irradiance

. . . . illuminance

. . . . solar constant

. . . . lumens

. . . . luminous intensity

. . . . illuminance

. . . . luminance

. . . . particle flux density

. . . . electron flux density

. . . . neutron flux density

. . . . proton flux density

. . . radiance

. . . radiancy

. . . solar flux density

. . . . solar constant

RT BL Lacertae objects

brightness

brightness distribution

dosimeters

emissivity

emittance

far fields

flux (rate)

gamma ray bursts

laser outputs

luminosity

maser outputs

mass to light ratios

post-blast nuclear radiation

∞ radiation

radiation counters

radiation pressure

radio spectra

scattering functions

solar reflectors

sound intensity

view effects

radiant heating

UF *radiation heating*

GS heating

. **radiant heating**

RT ∞ energy

gas heating

∞ radiation

radiative heat transfer

radiative transfer

solar heating

radiant intensity

USE **radiant flux density**

∞ radiation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The process by which energy is emitted or transferred in the form of photons or electromagnetic waves. Used for radiant energy and radiation emission.

UF *radiant energy*

radiation emission

RT

alpha particles

antenna radiation patterns

artificial radiation belts

atmospheric radiation

background noise

background radiation

base heating

beams (radiation)

black body radiation

Cerenkov radiation

circumsolar radiation

coherent acoustic radiation

coherent electromagnetic radiation

coherent radiation

continuous radiation

corpussular radiation

cosmic rays

cyclotron radiation

diffuse radiation

Earth radiation budget experiment

elastic waves

electromagnetic noise

electromagnetic radiation

electron radiation

emission

extraterrestrial radiation

extreme ultraviolet radiation

fallout

far infrared radiation

far ultraviolet radiation

flux (rate)

flux density

galactic radiation

gamma rays

geophysics

gravitational waves

harmonic radiation

heating

incident radiation

infrared radiation

inner radiation belt

interstellar radiation

ion cyclotron radiation

ionizing radiation

irradiation

Kirchhoff law of radiation

light (visible radiation)

long wave radiation

longitudinal waves

lunar radiation

Lyman alpha radiation

Lyman beta radiation

microwaves

modulated continuous radiation

monochromatic radiation

near infrared radiation

near ultraviolet radiation

nonthermal radiation

nuclear medicine

nuclear radiation

nucleon potential

outer radiation belt

photons

photosynthetically active radiation

plane waves

planetary radiation

plasma radiation

polarized electromagnetic radiation

polarized radiation

post-blast nuclear radiation

pulsed radiation

quantum theory

radiant flux density

radiant heating

radiation absorption

radiation belts

radiation chemistry

radiation counters

radiation damage

radiation detectors

radiation distribution

radiation dosage

radiation effects

radiation hardening

radiation hazards

radiation injuries

radiation laws

radiation measurement

radiation measuring instruments

Radiation Meteoroid spacecraft

radiation pressure

radiation protection

radiation pyrometers

radiation shielding

radiation sickness

radiation sources

radiation spectra

radiation therapy

radiation tolerance

radiation transport

radiation trapping

radiative transfer

radioactivity

radiology

reflected waves

relic radiation
 resonance fluorescence
 self absorption
 short wave radiation
 silicon radiation detectors
 sky radiation
 solar corpuscular radiation
 solar radiation
 Solar Radiation 1 satellite
 Solar Radiation 3 satellite
 solar radiation shielding
 solar wind
 sound waves
 spectral emission
 standing waves
 stellar radiation
 Stokes law of radiation
 stratosphere radiation
 synchrotron radiation
 temperature effects
 terrestrial radiation
 thermal radiation
 TRAP program
 tropospheric radiation
 ultrasonic radiation
 ultraviolet radiation
 Volterra equations
 x ray sources

radiation absorption

GS energy absorption
 . **radiation absorption**
 . . . electromagnetic absorption
 . . . auroral absorption
 . . . gamma ray absorption
 . . . infrared absorption
 . . . microwave absorption
 . . . multiphoton absorption
 . . . photoabsorption
 . . . polar cap absorption
 . . . ultraviolet absorption
 . . . x ray absorption
 . . molecular absorption
 . . self absorption
 RT ∞ absorption
 absorption cross sections
 atmospheric attenuation
 gamma ray absorptiometry
 Golay detector cells
 gray gas
 interstellar extinction
 material absorption
 neutron absorbers
 nuclear reactions
 photon absorptiometry
 ∞ radiation
 radiation chemistry
 stopping power

Radiation and Meteoroid satellite

GS artificial satellites
 . geophysical satellites
 . . **Radiation and Meteoroid satellite**

radiation belts

DEF Envelopes of charged particles trapped in the magnetic field of a spatial body. Used for geomagnetically trapped particles and Van Allen radiation belts.

UF *geomagnetically trapped particles*
Van Allen radiation belts

GS particles
 . charged particles
 . . magnetically trapped particles
 . . . **radiation belts**
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 . . corpuscular radiation
 . . **radiation belts**
 . . . artificial radiation belts
 . . . inner radiation belt
 . . . outer radiation belt
 . . . proton belts
 . . trapped particles
 . . magnetically trapped particles

. . . **radiation belts**
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 RT aerospace environments
 ∞ belts
 cosmic rays
 Earth atmosphere
 Earth magnetosphere
 electron density (concentration)
 electron precipitation
 electron trajectories
 electrons
 elementary particles
 entrapment
 exosphere
 extraterrestrial radiation
 ionizing radiation
 ionospheric drift
 magnetic fields
 mirror point
 plasmas (physics)
 proton precipitation
 protons
 ∞ radiation
 solar radiation
 trapping
 upper atmosphere

radiation chemistry

DEF The branch of chemistry concerned with the chemical effects, including decomposition, of energetic radiation or particles of matter.

GS **radiation chemistry**
 . photodecomposition
 . photodissociation
 . photolysis
 . radiolysis

RT ∞ chemistry
 electromagnetic radiation
 ∞ radiation
 radiation absorption

radiation counters

DEF Instruments used for detecting or measuring moving subatomic particles by a counting process. Used for ionization counters, particle counters, and particle detectors.

UF *ionization counters*
particle counters
particle detectors

GS measuring instruments
 . counters
 . . **radiation counters**
 . . . Cerenkov counters
 . . . electron counters
 . . . Geiger counters
 . . . neutron counters
 neutron spectrometers
 . . . particle telescopes
 . . . proportional counters
 . . . quantum counters
 . . . scintillation counters
 . . . spark chambers
 . . radiation measuring instruments
 . . **radiation counters**
 . . . Cerenkov counters
 . . . electron counters
 . . . Geiger counters
 . . . neutron counters
 neutron spectrometers
 . . . particle telescopes
 . . . proportional counters
 . . . quantum counters
 . . . scintillation counters
 . . . spark chambers

RT anticoincidence detectors
 bubble chambers
 channel multipliers
 cloud chambers
 coincidence circuits
 dosimeters
 electrostatic probes
 fluence
 gas discharge tubes
 hodoscopes

ion traps (instrumentation)
 ionization chambers
 ionizing radiation
 nuclear emulsions
 particle flux density
 proton flux density
 radiant flux density
 ∞ radiation
 scintillating fibers
 spectrometers

radiation damage

GS damage
 . **radiation damage**
 . . laser damage
 radiation effects
 . **radiation damage**
 . . laser damage
 RT ionizing radiation
 ∞ radiation
 single event upsets

radiation detectors

GS measuring instruments
 . radiation measuring instruments
 . . **radiation detectors**
 . . . dosimeters
 threshold detectors (dosimeters)
 . . . Golay detector cells
 . . . silicon radiation detectors
 RT ∞ detectors
 Geiger counters
 health physics
 multi-anode microchannel arrays
 ∞ radiation
 satellite-borne instruments
 Vela satellites

radiation distribution

UF *radiation fields*
 GS distribution (property)
 . **radiation distribution**
 . . antenna radiation patterns
 . . . sidelobes
 . . diffraction patterns
 . . . Kossel pattern
 . . . rainbows
 RT corpuscular radiation
 elastic waves
 electromagnetic radiation
 field theory (physics)
 flux density
 null zones
 ∞ patterns
 ∞ radiation
 vertical distribution
 wave dispersion

radiation dosage

DEF The amount of radiation absorbed by a material, system, or tissue in a given amount of time; usually measured in units as roentgen. Used for radiation exposure.

UF *radiation exposure*
 GS dosage

. **radiation dosage**
 RT biological effects
 dosimeters
 exposure
 health physics
 irradiation
 ∞ radiation
 single event upsets

radiation effects

GS **radiation effects**
 . radiation damage
 . . laser damage
 . radiation injuries
 . radiolysis
 . single event upsets
 RT apoptosis
 biological effects
 blackout (propagation)
 Bragg curve
 CRRES (satellite)

radiation hardening

- damage
- dosimeters
- ∞ effects
- electron radiation
- fallout
- gamma rays
- health physics
- hematopoiesis
- irradiation
- mechanical properties
- mutagenesis
- neutrons
- nuclear explosion effect
- nuclear radiation
- nuclear vulnerability
- particle tracks
- physiological effects
- post-blast nuclear radiation
- Poynting-Robertson effect
- preserving
- ∞ radiation
- radioactive contaminants
- space based radar
- sterilization effects

radiation emission
USE **radiation**

radiation exposure
USE **radiation dosage**

radiation fields
USE **radiation distribution**

radiation hardening
GS hardening (systems)
. **radiation hardening**
RT antennas
electronic equipment
∞ radiation

radiation hazards
GS hazards
. **radiation hazards**
RT dermatitis
dosimeters
electromagnetic radiation
fallout
flux density
hazardous materials
hazardous wastes
health physics
ionizing radiation
laser damage
mutations
nuclear explosion effect
nuclear explosions
nuclear radiation
occupational diseases
operational hazards
∞ radiation
radioactive contaminants
radioactive materials
radioactive wastes
radioactivity
reactor safety
space weather

radiation heating
USE **radiant heating**

radiation injuries
GS injuries
. **radiation injuries**
radiation effects
. **radiation injuries**
RT burns (injuries)
health physics
∞ radiation

radiation intensity
USE **radiant flux density**

radiation laws
GS laws
. **radiation laws**

- . . . Kirchhoff law of radiation
- . . . Stefan-Boltzmann law
- . . . Stokes law of radiation
- RT electromagnetic radiation
- quantum theory
- ∞ radiation

radiation measurement

RT dosage
dosimeters
irradiation
∞ measurement
∞ radiation
sensitometry

radiation measuring instruments

UF *photoelectromagnetic detectors*
photosensors
radiation meters
GS measuring instruments
. **radiation measuring instruments**
. . . actinometers
. . . infrared spectrometers
. filter wheel infrared spectrometers
. . . pyranometers
. . . radiometers
. Dicke radiometers
. infrared detectors
. FLIR detectors
. infrared radiometers
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. microwave radiometers
. Advanced Microwave Sounding Unit
. passive L-band radiometers
. pressure modulator radiometers
. spectroradiometers
. MODIS (radiometry)
. . . solar spectrometers
. . . spectroheliographs
. . . spectrophotometers
. infrared spectrophotometers
. ultraviolet spectrophotometers
. ultraviolet detectors
. ultraviolet spectrometers
. high dispersion spectrographs
. Total Ozone Mapping Spectrometer
. ultraviolet spectrophotometers
. . . x ray detectors
. . bolometers
. . Ebert spectrometers
. . electrostatic probes
. . Fabry-Perot spectrometers
. . hodoscopes
. . infrared instruments
. . . infrared detectors
. FLIR detectors
. infrared radiometers
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. . . infrared interferometers
. . . infrared spectrometers
. filter wheel infrared spectrometers
. infrared spectrophotometers
. photometers
. electrophotometers
. ultraviolet spectrometers
. high dispersion spectrographs
. Total Ozone Mapping Spectrometer
. ultraviolet spectrophotometers
. . . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. neutron spectrometers

- particle telescopes
- proportional counters
- quantum counters
- scintillation counters
- spark chambers
- radiation detectors
- dosimeters
- threshold detectors (dosimeters)
- Golay detector cells
- silicon radiation detectors
- . . . riometers
- RT ∞ detectors
Earth radiation budget experiment
health physics
ionization chambers
monitors
nuclear emulsions
optical measuring instruments
∞ radiation
safety devices
solar instruments
Vela satellites
view effects

radiation medicine

USE **nuclear medicine**

Radiation Meteoroid spacecraft

RT meteoroids
∞ radiation
∞ spacecraft
spacecraft configurations

radiation meters

USE **radiation measuring instruments**

radiation noise

USE **electromagnetic noise**

radiation pressure

SN (DYNES/SQ CM AS DISTINGUISHED FROM RADIANT FLUX DENSITY-DYNES/CM-SEC)
DEF Pressure exerted upon any material body by electromagnetic radiation incident upon it.
GS pressure
. **radiation pressure**
. . electron pressure
. . lumens
. . luminous intensity
. . . illuminance
. . . luminance
. . sound pressure
RT baroclinic waves
Bessel-Bredichin theory
comet tails
corpuscular radiation
elastic waves
electromagnetic radiation
Kohoutek comet
particle flux density
perturbation
photophoresis
radiant flux density
∞ radiation
solar flux density
solar radiation
solar wind
stellar winds

radiation protection

GS protection
. **radiation protection**
. . radiation shielding
. . . solar radiation shielding
RT antiradiation drugs
cysteamine
health physics
∞ radiation
synchrotron radiation
thermal protection
visors

radiation pyrometers

GS measuring instruments
. temperature measuring instruments

- .. pyrometers
 - ... **radiation pyrometers**
 - RT bolometers
 - circumsolar telescopes
 - optical pyrometers
 - ∞ radiation
 - temperature measurement
 - thermocouple pyrometers
- radiation resistance*
- USE **radiation tolerance**
- radiation shielding**
- UF *nuclear shielding*
 - GS protection
 - . radiation protection
 - . **radiation shielding**
 - ... solar radiation shielding shielding
 - . **radiation shielding**
 - ... solar radiation shielding
 - RT absorbers (materials)
 - attenuators
 - Boral
 - electromagnetic absorption
 - electromagnetic shielding
 - gamma rays
 - ∞ insulated structures
 - magnetic shielding
 - neutron absorbers
 - neutron flux density
 - neutrons
 - nuclear reactors
 - protons
 - ∞ radiation
 - radio frequency shielding
 - reactor materials
 - reflectors
 - safety devices
 - space based radar
 - spacecraft shielding
 - stopping power
 - Tower Shielding Reactor 2
- radiation sickness**
- DEF A syndrome following intense acute exposure to ionizing radiation. It is characterized by nausea and vomiting a few hours after exposure. Further symptoms include bloody diarrhea, hemorrhage under the skin (and internally), epilation (hair falling out), and a decrease in blood cell level.
- GS diseases
 - . **radiation sickness**
 - RT antiradiation drugs
 - dermatitis
 - health physics
 - ∞ radiation
 - radiopathology
- radiation sources**
- UF *coherent sources*
 - GS **radiation sources**
 - . monochromators
 - . neutron sources
 - . point sources
 - RT corpuscular radiation
 - duochromators
 - electromagnetic radiation
 - electron sources
 - extragalactic radio sources
 - ∞ generators
 - heat sources
 - interstellar masers
 - ion sources
 - light sources
 - pulsars
 - ∞ radiation
 - radio sources (astronomy)
 - radioactive materials
 - sound generators
 - ∞ sources
 - x ray stars
- radiation spectra**
- GS spectra
 - . **radiation spectra**
 - ... absorption spectra
 - ... Fraunhofer lines
 - ... Herzberg bands
 - ... telluric lines
 - ... electromagnetic spectra
 - ... gamma ray spectra
 - ... infrared spectra
 - ... line spectra
 - ... Balmer series
 - ... D lines
 - ... electronic spectra
 - ... Fraunhofer lines
 - ... H lines
 - ... H alpha line
 - ... H beta line
 - ... H gamma line
 - ... K lines
 - ... Lyman spectra
 - ... Paschen series
 - ... Rydberg series
 - ... telluric lines
 - ... radio spectra
 - ... microwave spectra
 - ... Raman spectra
 - ... stellar spectra
 - ... solar spectra
 - ... UVB spectra
 - ... ultraviolet spectra
 - ... vibrational spectra
 - ... visible spectrum
 - ... x ray spectra
 - ... emission spectra
 - RT astronomical spectroscopy
 - Cosmic Background Explorer satellite
 - energy spectra
 - mass spectra
 - noise spectra
 - plasma spectra
 - ∞ radiation
- radiation therapy**
- UF *radiotherapy*
 - GS therapy
 - . **radiation therapy**
 - RT cancer
 - medical science
 - pathology
 - ∞ radiation
- radiation tolerance**
- UF *radiation resistance*
 - radiosensitivity*
 - GS sensitivity
 - . **radiation tolerance**
 - tolerances (physiology)
 - . **radiation tolerance**
 - RT human tolerances
 - irradiation
 - ∞ radiation
 - ∞ resistance
 - tolerances (mechanics)
- radiation transport**
- DEF The study of radiation from emission to absorption.
- RT exploding wires
 - ∞ radiation
 - radiative transfer
 - transport properties
- radiation trapping**
- DEF Confinement of radiation with a magnetic field.
- RT argon
 - Earth magnetosphere
 - excitation
 - metastable state
 - plasma physics
 - ∞ radiation
- radiative heat transfer**
- GS radiative transfer
 - . **radiative heat transfer**
 - transmission
 - . heat transmission
 - ... heat transfer
 - ... **radiative heat transfer**
- RT concentrators
- convective heat transfer
- cooling fins
- heat radiators
- infrared reflection
- near infrared radiation
- radiant cooling
- radiant heating
- satellite temperature
- spacecraft radiators
- Stefan-Boltzmann law
- surface cooling
- thermohydraulics
- Trombe walls
- view effects
- radiative lifetime**
- RT decay
 - half life
- radiative recombination**
- GS recombination reactions
 - . electron recombination
 - . **radiative recombination**
 - . electron-ion recombination
 - . **radiative recombination**
 - RT airglow
 - atomic recombination
 - carrier injection
 - deionization
 - lightning
- radiative transfer**
- GS **radiative transfer**
 - . radiative heat transfer
 - RT atmospheric correction
 - cosmic rays
 - electromagnetic radiation
 - energy transfer
 - extraterrestrial radiation
 - galactic radiation
 - heat transfer
 - heat transmission
 - interstellar radiation
 - near infrared radiation
 - planetary atmospheres
 - polarized electromagnetic radiation
 - radiant heating
 - ∞ radiation
 - radiation transport
 - radio bursts
 - radio stars
 - solar radiation
 - stellar atmospheres
 - stellar radiation
- ∞ radiators
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- DEF Any sources of radiant energy, especially electromagnetic radiation. Devices that dissipate the heat from something as from water or oil, not necessarily by radiation only.
- RT antennas
- heat radiators
- sound transducers
- thermosiphons
- radicals**
- GS **radicals**
 - . amino radical
 - . formyl ions
 - . free radicals
 - ... hydroxyl radicals
 - . methylidyne
 - . vanadyl radical
 - . vinyl radical
 - RT ∞ roots
- radii**
- UF *radius*
 - GS dimensions
 - . **radii**
 - ... Larmor radius

radio altimeters

geometry
. Euclidean geometry
. . . **radii**
. . . Larmor radius
RT circles (geometry)
circumferences
diameters
lines (geometry)
radio frequencies
segments

radio altimeters

DEF Devices that measure the altitude of a craft above the terrain by measuring the elapsed time between transmission of radio waves from the craft and the reception of the same waves reflected from the terrain. Used for radar altimeters.

UF *radar altimeters*

GS flight instruments

. **radio altimeters**

measuring instruments

. distance measuring equipment

. . . altimeters

. . . **radio altimeters**

RT aircraft instruments

automatic pilots

instrument landing systems

radar measurement

radio antennas

GS antennas

. **radio antennas**

. . . microwave antennas

. . . . horn antennas

. . . . lens antennas

. . . . rectennas

. . . . spacetennas

radio equipment

. **radio antennas**

. . . microwave antennas

. . . . horn antennas

. . . . lens antennas

. . . . rectennas

. . . . spacetennas

RT aircraft antennas

backfire antennas

directional antennas

omnidirectional antennas

reception diversity

reflector antennas

rhombic antennas

satellite antennas

Schwarzschild antennas

two reflector antennas

whip antennas

radio astronomy

DEF The study of celestial objects through observation of radiofrequency waves emitted or reflected by these objects. Specifically, the study of celestial objects by measurement of the radiation emitted by them in the radiofrequency range of the electromagnetic spectrum.

GS astronomy

. **radio astronomy**

RT astronomical interferometry

astronomical observatories

astronomical spectroscopy

brightness distribution

brightness temperature

coronal holes

cosmic microwave background

radiation

extragalactic radio sources

extraterrestrial radio waves

gamma ray astronomy

IUE

linear polarization

Maffei galaxies

Michelson interferometers

phase switching interferometers

pulsars

quasars

Quasat

radar astronomy

radio jets (astronomy)

SAS-1

SAS-2

SAS-3

∞ science

Sunyaev-Zeldovich effect

very high frequency radio equipment

Very Large Array (VLA)

very long base interferometry

Very Long Baseline Array (VLBA)

Radio Astronomy Explorer 2

USE **Explorer 49 satellite**

Radio Astronomy Explorer B

USE **Explorer 49 satellite**

Radio Astronomy Explorer satellite

GS artificial satellites

. scientific satellites

. . Explorer satellites

. . . **Radio Astronomy Explorer satellite**

radio attenuation

UF *radio signal attenuation*

GS attenuation

. wave attenuation

. . **radio attenuation**

RT atmospheric attenuation

electromagnetic absorption

electromagnetic wave transmission

ground effect (communications)

radar attenuation

signal transmission

transhorizon radio propagation

transmission

wave propagation

Radio Attenuation Measurement project

UF *RAM project*

GS programs

. projects

. . **Radio Attenuation Measurement project**

radio auroras

GS atmospheric radiation

. auroras

. . **radio auroras**

RT ∞ disturbances

ionospheric

nightglow

solar activity

radio beacons

DEF Transmitters together with their associated equipment, that emit signals enabling the determination, by means of suitable receiving equipment, of direction, distance, or position with respect to the beacon. Used for radio ranges.

UF *radio ranges*

GS navigation aids

. beacons

. . **radio beacons**

. . . omnidirectional radio ranges

. . . . self calibrating omnirange

radio equipment

. radio transmitters

. . **radio beacons**

. . . omnidirectional radio ranges

. . . . self calibrating omnirange

transmitters

. radio transmitters

. . **radio beacons**

. . . omnidirectional radio ranges

. . . . self calibrating omnirange

RT airport beacons

Beacon Collision Avoidance System

homing devices

instrument landing systems

landing aids

∞ markers

night flights (aircraft)

ORBIS

ORBIS CAL satellite

ranges (facilities)

solar compasses

radio broadcasting

USE **broadcasting**

radio bursts

GS bursts

. **radio bursts**

. . . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

electromagnetic radiation

. radio waves

. . extraterrestrial radio waves

. . . **radio bursts**

. . . . solar radio bursts

. type 2 bursts

. type 3 bursts

. type 4 bursts

. type 5 bursts

. . radio emission

. . . **radio bursts**

. . . . solar radio bursts

. type 2 bursts

. type 3 bursts

. type 4 bursts

. type 5 bursts

emission

. radio emission

. . **radio bursts**

. . . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

extraterrestrial radiation

. extraterrestrial radio waves

. . **radio bursts**

. . . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

RT ∞ disturbances

pulsars

quasars

radiative transfer

solar radio emission

stellar radiation

radio communication

GS telecommunication

. **radio communication**

. . radio relay systems

. . . code division multiple access

. . . . time division multiple access

. . . . radio telegraphy

. . . . radio telemetry

. . . . pulse frequency modulation

. telephony

. telephony

RT access control

aircraft communication

blackout (propagation)

broadcasting

circumlunar communication

code division multiplexing

communication equipment

communication networks

Fleet Satellite Communication System

frequency division multiple access

frequency division multiplexing

ground-air-ground communication

interplanetary communication

interstellar communication

land mobile satellite service

lunar communication

Marisat 1 satellite

Marisat satellites

mobile communication systems

MSAT

NASCOM network

point to point communication

Project SETI

pulse communication
radiotelephones
reentry communication
satellite communication
ship to shore communication
space communication
spacecraft communication
telegraph systems
telemetry
television systems
transoceanic communication
underground communication
vocoders
voice communication

radio control

DEF Remote control of a pilotless airplane, rocket, or spacecraft by means of radio signals that activate controlling devices.

GS remote control

. **radio control**

RT aircraft control
automatic control

∞ control

Deep Space Instrumentation Facility
ground based control
missile control
spacecraft control

radio detection and ranging

USE **radar**

radio direction finders

DEF Radio receiving sets, together with associated equipment, used to determine the direction from which a radio signal is transmitted. Used for direction finders (radio) and radar direction finders.

UF *direction finders (radio)*

radar direction finders

GS display devices

. position indicators

. . **radio direction finders**

measuring instruments

. indicating instruments

. . position indicators

. . . **radio direction finders**

navigation aids

. beacons

. . **radio direction finders**

. navigation instruments

. . **radio direction finders**

RT aircraft equipment

compasses

direction finding

flight instruments

gyrocompasses

homing

homing devices

radiogoniometers

VHF omnirange navigation

radio echoes

UF *radio reflection*

GS echoes

. **radio echoes**

RT angels (radar)

auroral echoes

ghosts

Harvard Radio Meteor Project

infrared reflection

lunar echoes

radar reflectors

ultraviolet reflection

radio electronics

RT ∞ electronics

radio emission

GS electromagnetic radiation

. radio waves

. . **radio emission**

. . . CN emission

. . . hydroxyl emission

. . . radio bursts

. . . . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

. . . solar radio emission

. . . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

emission

. **radio emission**

. . CN emission

. . hydroxyl emission

. . radio bursts

. . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

. . solar radio emission

. . solar radio bursts

. . . . type 2 bursts

. . . . type 3 bursts

. . . . type 4 bursts

. . . . type 5 bursts

RT extragalactic radio sources

extraterrestrial radio waves

quasars

radio jets (astronomy)

radio equipment

GS **radio equipment**

. radio antennas

. . microwave antennas

. . . horn antennas

. . . lens antennas

. . . rectennas

. . . spacetennas

. radio filters

. radio receivers

. . superheterodyne receivers

. . transmitter receivers

. . whistler recorders

. radio telescopes

. . kilometer wave orbiting telescope

. . Very Large Array (VLA)

. . Very Long Baseline Array (VLBA)

. radio transmitters

. . radio beacons

. . . omnidirectional radio ranges

. . . . self calibrating omnirange

. . radiometeorographs

. . radiosondes

. . . ionosondes

. . . rawinsondes

. . radiotelephones

. . sonobuoys

. . transmitter receivers

. reception diversity

. spacecraft antennas

. transponders

. very high frequency radio equipment

RT airborne equipment

antennas

broadcasting

communication equipment

crystal filters

cylindrical antennas

jammers

near fields

onboard equipment

radar equipment

radio filters

GS electromagnetic wave filters

. electric filters

. . **radio filters**

radio equipment

. **radio filters**

RT crystal filters

∞ filters

interference grating

microwave filters

radar filters

tunable filters

radio frequencies

DEF Frequencies at which coherent electromagnetic radiation of energy is useful for communications purposes.

GS frequencies

. **radio frequencies**

. . extremely low frequencies

. . high frequencies

. . intermediate frequencies

. . low frequencies

. . . very low frequencies

. . microwave frequencies

. . . C band

. . . extremely high frequencies

. . . P band

. . . superhigh frequencies

. . ultrahigh frequencies

. . . P band

. . very high frequencies

. . . P band

RT audio frequencies

carrier frequencies

radii

radio frequency discharge

GS electric current

. electric discharges

. . **radio frequency discharge**

RT electrodeless discharges

electron emission

ring discharge

radio frequency heating

GS heating

. **radio frequency heating**

RT induction heating

plasma heating

VASIMR (propulsion system)

radio frequency impedance probes

GS measuring instruments

. impedance probes

. . **radio frequency impedance probes**

RT impedance measurement

ion probes

microwave probes

plasma probes

radio frequency interference

DEF Degradation of the reception of a wanted signal caused by radio frequency disturbance.

UF *radio interference*

GS electromagnetic interference

. **radio frequency interference**

. . blackout (propagation)

. . . polar radio blackout

. . . chirp

. . . chirp signals

. . electromagnetic noise

. . . atmospheric

. . . . ionospherics

. dawn chorus

. hiss

. . . . sudden enhancement of

atmospherics

. . . . whistlers

. . . cosmic noise

. . . ionospheric noise

. . . whistlers

. . . shot noise

. . . white noise

. . . thermal noise

. . cochannel interference

. . ionospheric cross modulation

RT clutter

cross coupling

electromagnetic compatibility

electronic countermeasures

electronic warfare

extraterrestrial radio waves

∞ interference

interference grating

radio frequency shielding

interference immunity
jamming
noise generators
noise storms
signal fading

radio frequency ion thruster engines
USE **RIT engines**

radio frequency noise
USE **electromagnetic noise**

radio frequency radiation
USE **radio waves**

radio frequency shielding

GS shielding
. electromagnetic shielding
. . . **radio frequency shielding**
RT radiation shielding
spacecraft shielding

radio galaxies

GS celestial bodies
. galaxies
. . . active galaxies
. . . . **radio galaxies**
. radio sources (astronomy)
. . . extragalactic radio sources
. . . . **radio galaxies**
RT active galactic nuclei
blazars
disk galaxies
Maffei galaxies
quasars

radio horizons

DEF Loci or points at which direct rays from a radio transmitter become tangential to the Earth's surface.
GS horizon
. **radio horizons**
RT horizon scanners

radio interference

USE **radio frequency interference**

radio interferometers

DEF Interferometers operating at radio frequencies. Radio interferometers are used in radio astronomy and in satellite tracking.
GS measuring instruments
. interferometers
. . . **radio interferometers**
RT astrophysics
Orion (radio interferometry network)
very long base interferometry

radio jets (astronomy)

DEF Jets of energetic particles occurring in radio galaxies and quasars usually emitted from the nuclear (active) region of the extragalactic radio source.
GS celestial bodies
. radio sources (astronomy)
. . . extragalactic radio sources
. . . . **radio jets (astronomy)**
particles
. charged particles
. . . plasma jets
. . . . **radio jets (astronomy)**
RT astrophysics
energetic particles
extraterrestrial radiation
extraterrestrial radio waves
galactic nuclei
galactic radio waves
quasars
radio astronomy
radio emission

radio meteorology

GS meteorology
. **radio meteorology**
RT atmospheric
meteorological radar

radiosondes

radio meteors

DEF Meteors which have been detected by the reflection of radio signals from the meteor trails of relatively high ion density (ion columns).
GS celestial bodies
. meteoroids
. . . **radio meteors**
RT atmospheric ionization
meteor trails

radio navigation

DEF Navigation based upon the reception of radio signals.
GS navigation
. **radio navigation**
. . . hyperbolic navigation
. . . . Decca navigation
. . . . LORAC navigation system
. . . . loran
. loran C
. loran D
. . . . Shoran
. . . . Tacan
. . . VHF omnirange navigation
RT air navigation
air traffic control
aircraft guidance
all-weather air navigation
astronavigation
automatic flight control
celestial navigation
collision avoidance
dead reckoning
distance measuring equipment
Doppler navigation
flight control
guidance (motion)
homing devices
inertial navigation
interplanetary navigation
navigation aids
omnidirectional radio ranges
positioning
radar navigation
satellite navigation systems
solar compasses
space navigation
surface navigation

radio observation

GS observation
. **radio observation**
RT space observations (from Earth)

radio occultation

GS occultation
. **radio occultation**
RT atmospheric composition
atmospheric pressure
atmospheric temperature
planetary atmospheres
space probes
spacecraft trajectories

radio physics

RT ∞ physics
∞ science
theoretical physics

radio probing

RT measuring instruments
∞ probes

radio propagation

USE **radio transmission**

radio range

SN (EXCLUDES RADIO BEACONS)
GS distance
. **radio range**
range (extremes)
. frequency ranges
. . . **radio range**

RT radar range

radio ranges

USE **radio beacons**

radio receivers

GS communication equipment
. **radio receivers**
. . . superheterodyne receivers
. . . transmitter receivers
. . . whistler recorders
radio equipment
. **radio receivers**
. . . superheterodyne receivers
. . . transmitter receivers
. . . whistler recorders
receivers
. **radio receivers**
. . . superheterodyne receivers
. . . transmitter receivers
. . . whistler recorders
RT data links
directors (antenna elements)
electromagnetic noise
intermediate frequency amplifiers
loudspeakers
Orion (radio interferometry network)
parasitic elements (antennas)
radar receivers
reception diversity
television reception
transponders
tuners

radio reception

GS signal reception
. **radio reception**
RT homodyne reception
radar reception
∞ receiving
reception diversity
scatter propagation
television reception

radio reflection

USE **radio echoes**

radio relay systems

GS telecommunication
. radio communication
. . . **radio relay systems**
. . . . code division multiple access
. . . . time division multiple access
RT communication equipment
communication satellites
data links
Defense Communications Satellite System
Earth terminal measurement system
Earth terminals
Global Tracking Network
Molniya satellites
MSAT
orbit spectrum utilization
∞ relay
∞ systems
TDR satellites

radio scattering

GS scattering
. **radio scattering**
. . . microwave scattering
RT atmospheric diffusion
atmospheric scattering
scatter propagation
signal fading
signal transmission

radio signal attenuation

USE **radio attenuation**

radio signal propagation

USE **radio transmission**

radio signals

RT broadcasting

- Project SETI
 - Rayleigh fading
 - signal distortion
 - signal mixing
 - ∞ signals
 - transhorizon radio propagation
 - whistlers
- radio sources (astronomy)**
- SN (LIMITED TO EXTRATERRESTRIAL RADIO SOURCES)
 - DEF Celestial objects that emit radio waves.
 - GS celestial bodies
 - . **radio sources (astronomy)**
 - .. Cassiopeia A
 - .. extragalactic radio sources
 - ... radio galaxies
 - ... radio jets (astronomy)
 - .. quasars
 - .. radio stars
 - ... pulsars
 - RT BL Lacertae objects
 - blazars
 - CN emission
 - extraterrestrial radio waves
 - galactic nuclei
 - galaxies
 - gamma ray sources (astronomy)
 - hydroxyl emission
 - irregular galaxies
 - Maffei galaxies
 - Milky Way Galaxy
 - radiation sources
 - ∞ sources
- radio spectra**
- DEF Frequencies of electromagnetic radiation usable for radio communication.
 - GS spectra
 - . radiation spectra
 - .. electromagnetic spectra
 - ... **radio spectra**
 - ... microwave spectra
 - RT carrier waves
 - electromagnetic noise
 - H I regions
 - radiant flux density
- radio spectroscopy**
- GS spectroscopy
 - . **radio spectroscopy**
 - RT astronomical spectroscopy
 - ultraviolet spectra
 - ultraviolet spectroscopy
 - x ray spectroscopy
- radio stars**
- GS celestial bodies
 - . radio sources (astronomy)
 - .. **radio stars**
 - ... pulsars
 - . stars
 - .. **radio stars**
 - ... pulsars
 - RT quasars
 - radiative transfer
 - stellar radiation
- radio telegraphy**
- GS telecommunication
 - . radio communication
 - .. **radio telegraphy**
 - RT communication equipment
 - keying
 - Morse code
- radio telemetry**
- GS telecommunication
 - . radio communication
 - .. **radio telemetry**
 - ... pulse frequency modulation telemetry
 - . telemetry
 - .. **radio telemetry**
 - ... pulse frequency modulation telemetry
 - transmission
 - RT signal transmission
 - .. telemetry
 - ... **radio telemetry**
 - ... pulse frequency modulation telemetry
- radio telescopes**
- DEF Devices for receiving, amplifying, and measuring the intensity of radio waves originating outside the Earth's atmosphere or reflected from a body outside the atmosphere.
 - GS radio equipment
 - . **radio telescopes**
 - .. kilometer wave orbiting telescope
 - .. Very Large Array (VLA)
 - .. Very Long Baseline Array (VLBA) telescopes
 - . **radio telescopes**
 - .. kilometer wave orbiting telescope
 - .. Very Large Array (VLA)
 - .. Very Long Baseline Array (VLBA)
 - RT antennas
 - Jodrell Bank Observatory
 - optical equipment
 - phase switching interferometers
 - Quasat
- radio tracking**
- GS tracking (position)
 - . **radio tracking**
 - .. wildlife radiolocation
 - RT radar scanning
 - radar tracking
 - range and range rate tracking
 - rangefinding
 - rawinsondes
 - spacecraft tracking
- radio transmission**
- DEF The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation.
 - UF *radio propagation*
 - UF *radio signal propagation*
 - GS transmission
 - . electromagnetic wave transmission
 - .. **radio transmission**
 - ... double sideband transmission
 - ... ionospheric propagation
 - ... ionospheric F-scatter propagation
 - ... microwave transmission
 - ... multipath transmission
 - ... short wave radio transmission
 - ... single sideband transmission
 - ... spread spectrum transmission
 - ... transequatorial propagation
 - ... transhorizon radio propagation
 - . signal transmission
 - .. **radio transmission**
 - ... double sideband transmission
 - ... ionospheric propagation
 - ... ionospheric F-scatter propagation
 - ... microwave transmission
 - ... multipath transmission
 - ... short wave radio transmission
 - ... single sideband transmission
 - ... spread spectrum transmission
 - ... transequatorial propagation
 - ... transhorizon radio propagation
 - RT antipodes
 - atmospheric attenuation
 - broadcasting
 - code division multiplexing
 - companding
- radio transmitters**
- DEF Devices for producing radio-frequency power, for purposes of radio transmission.
 - GS radio equipment
 - . **radio transmitters**
 - .. radio beacons
 - ... omnidirectional radio ranges
 - ... self calibrating omnirange
 - .. radiometeorographs
 - .. radiosondes
 - ... ionosondes
 - ... rawinsondes
 - .. radiotelephones
 - .. sonobuoys
 - .. transmitter receivers
 - transmitters
 - . **radio transmitters**
 - .. radio beacons
 - ... omnidirectional radio ranges
 - ... self calibrating omnirange
 - .. radiometeorographs
 - .. radiosondes
 - ... ionosondes
 - ... rawinsondes
 - .. radiotelephones
 - .. sonobuoys
 - .. transmitter receivers
 - RT multichannel communication
 - quartz crystals
 - television transmission
 - transponders
 - wildlife radiolocation
- radio wave refraction**
- GS refraction
 - . atmospheric refraction
 - .. **radio wave refraction**
 - RT wave dispersion
- radio waves**
- DEF Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation.
 - UF *radio frequency radiation*
 - GS electromagnetic radiation
 - . **radio waves**
 - .. decametric waves
 - .. extraterrestrial radio waves
 - .. galactic radio waves
 - ... North Polar Spur (astronomy)
 - ... radio bursts
 - ... solar radio bursts
 - ... type 2 bursts
 - ... type 3 bursts
 - ... type 4 bursts
 - ... type 5 bursts
 - ... solar radio emission
 - ... solar radio bursts
 - ... type 2 bursts
 - ... type 3 bursts
 - ... type 4 bursts
 - ... type 5 bursts
 - ... cosmic microwave background radiation

radioactive age determination

- .. long wave radiation
- .. radio emission
- .. CN emission
- .. hydroxyl emission
- .. radio bursts
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
- .. solar radio emission
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
- .. short wave radiation
- .. microwaves
- .. centimeter waves
- .. cosmic microwave background radiation
 - decimeter waves
 - microwave emission
 - millimeter waves
 - submillimeter waves
- .. sky waves
- .. whistlers

RT

- atmospherics
- coherent electromagnetic radiation
- electromagnetic noise
- electromagnetic surface waves
- extraterrestrial radiation
- far infrared radiation
- frequencies
- ground wave propagation
- monochromatic radiation
- multipath transmission
- nonthermal radiation
- planetary radiation
- polarized electromagnetic radiation
- scatter propagation
- solar radiation
- solitary waves
- thermal radiation
- transverse waves
- traveling waves
- tropospheric waves

radioactive age determination

- UF *radioactive dating*
- RT ∞ aging
- fossils
- geochronology
- half life
- ∞ measurement
- radiochemistry
- radiogenic materials
- time measurement

radioactive contaminants

- GS contaminants
- . **radioactive contaminants**
- RT atmospheric composition
- fallout
- nuclear radiation
- radiation effects
- radiation hazards

radioactive dating

USE **radioactive age determination**

∞ **radioactive debris**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT debris
- fallout
- radioactive materials
- radioactive wastes
- radiogenic materials

radioactive decay

DEF The spontaneous transformation of a nuclide into one or more nuclides accompanied by the release of radiation.

- GS decay
- . **radioactive decay**

- .. alpha decay
- .. neutron emission
- nuclear reactions
- . **radioactive decay**
- .. alpha decay
- .. neutron emission
- RT emission
- gamma ray beams
- gamma rays
- half life
- hypernuclei
- nuclear fission
- nuclear radiation
- particle decay
- photoproduction
- post-blast nuclear radiation
- radioactivity
- radiogenic materials
- thermonuclear reactions
- vector currents

radioactive elements

USE **radioactive isotopes**

radioactive isotopes

- UF *radioactive elements*
- radioactive nuclides*
- radionuclides*
- GS chemical elements
- . nuclides
- . isotopes
- .. **radioactive isotopes**
- astatine isotopes
- beryllium 7
- beryllium 9
- beryllium 10
- carbon 14
- cerium 137
- cerium 144
- cesium 134
- cesium 137
- cesium 144
- cobalt 58
- cobalt 60
- copper isotopes
- gold 198
- indium isotopes
- iodine 125
- iodine 131
- iodine 132
- iron 59
- krypton 85
- niobium 95
- nitrogen 16
- phosphorus 32
- polonium 208
- polonium 209
- polonium 210
- potassium 38
- potassium 40
- rubidium 86
- sodium 22
- sodium 24
- strontium 85
- strontium 88
- strontium 89
- strontium 90
- transuranium elements
- americium
- americium isotopes
- americium 241
- berkelium
- californium
- californium isotopes
- curium
- curium isotopes
- curium 242
- curium 244
- einsteinium
- fermium
- lawrencium
- mendelevium
- neptunium
- neptunium isotopes
- nobelium
- plutonium
- plutonium isotopes

- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- sergenium
- tritium
- uranium 232
- uranium 233
- uranium 238
- xenon 133
- xenon 135
- zirconium 95
- RT actinide series
- arsenic isotopes
- gold isotopes
- isotope effect
- isotopic labeling
- radiocardiography
- radioisotope batteries
- radioisotope heat sources
- radiophosphors
- rhodium isotopes

radioactive materials

- RT actinide series
- fissile fuels
- fission products
- fissionable materials
- ionizing radiation
- isotopes
- ∞ materials
- nuclear fission
- nuclear radiation
- radiation hazards
- radiation sources
- ∞ radioactive debris
- radioactivity
- radiobiology
- radiochemistry
- uranium plasmas

radioactive nuclides

USE **radioactive isotopes**

radioactive wastes

- UF *nuclear wastes*
- GS wastes
- . **radioactive wastes**
- RT contamination
- decommissioning
- environment pollution
- environment protection
- environmental surveys
- fission products
- hazardous material disposal (in space)
- nonpoint sources
- plasma core reactors
- poisoning (reaction inhibition)
- pollution
- radiation hazards
- ∞ radioactive debris
- radiochemistry
- radiogenic materials
- soil pollution
- solid wastes
- waste disposal

radioactivity

DEF Spontaneous disintegration of atomic nuclei with emission of corpuscular or electromagnetic radiations. The number of spontaneous disintegrations per unit mass and per unit time of a given unstable (radioactive) element, usually measured in curies.

- RT ∞ activity
- alpha particles
- emission
- fallout
- fission products
- gamma rays
- geochemistry
- geophysics
- half life
- ionizing radiation

- nuclear radiation
- particle production
- post-blast nuclear radiation
- ∞ radiation
 - radiation hazards
 - radioactive decay
 - radioactive materials
 - radiochemistry
- radiobiology**
 - DEF The study of the effects produced on living organisms by radiation.
 - GS medical science
 - . nuclear medicine
 - . . **radiobiology**
 - RT antiradiation drugs
 - ∞ biology
 - biomagnetism
 - dosimeters
 - health physics
 - immunoassay
 - irradiation
 - ∞ medicine
 - nuclear radiation
 - radioactive materials
 - radiochemistry
 - radioimmunoassay
- radiocardiography**
 - DEF The technique of recording an intravenously injected radioisotope in the heart chambers.
 - GS bioengineering
 - . biometrics
 - . . **radiocardiography**
 - RT cardiology
 - radioactive isotopes
- radiochemical separation**
 - GS radiochemistry
 - . **radiochemical separation**
 - RT chemical reactions
 - quantitative analysis
 - ∞ separation
- radiochemistry**
 - UF *reactor chemistry*
 - GS **radiochemistry**
 - . radiochemical separation
 - RT chemical analysis
 - ∞ chemistry
 - ionizing radiation
 - isotopic labeling
 - nuclear chemistry
 - nuclear radiation
 - nuclear research
 - radioactive age determination
 - radioactive materials
 - radioactive wastes
 - radioactivity
 - radiobiology
- radiogenic materials**
 - RT nuclear reactions
 - radioactive age determination
 - ∞ radioactive debris
 - radioactive decay
 - radioactive wastes
 - transmutation
- radiogoniometers**
 - GS measuring instruments
 - . goniometers
 - . . **radiogoniometers**
 - RT radio direction finders
- radiography**
 - UF *cinelfluorography*
 - GS *cinerradiography*
 - imagery
 - . **radiography**
 - . . angiography
 - . . autoradiography
 - . . neutron radiography
 - . . tomography
 - . . . computer aided tomography
- . . urography
- RT Bragg angle
 - crystallography
- ∞ flash
 - irradiation
 - lixiscopes
- ∞ materials tests
 - metallography
 - nondestructive tests
 - photography
 - pneumography
 - radiology
 - x ray analysis
 - x ray apparatus
 - x ray astronomy
 - x ray diffraction
 - x ray fluorescence
 - x ray imagery
 - x ray inspection
 - x ray spectroscopy
 - x ray telescopes
 - x ray tubes
 - x rays
- radioimmunoassay**
 - DEF A medical diagnostic procedure for the components (hormones and immunoglobulins primarily) as well as pharmaceuticals in the blood. The RIA is based on the antigen antibody reactions.
 - GS immunoassay
 - . **radioimmunoassay**
 - RT antigens
 - assaying
 - biochemistry
 - immunology
 - radiobiology
- radioisotope batteries**
 - UF *atomic batteries*
 - GS electric generators
 - . direct power generators
 - . . **radioisotope batteries**
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 11
 - . . . SNAP 13
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - RT electric batteries
 - fission electric cells
 - nuclear auxiliary power units
 - radioactive isotopes
 - radioisotope heat sources
 - thermionic converters
 - thermoelectric generators
- radioisotope heat sources**
 - (added December 2002)
 - DEF Heat sources comprised of encapsulated radioactive isotopes; often used as heat units in thermoelectric generators.
 - UF *General Purpose Heat Sources GPHS (nucleonics)*
 - GS heat sources
 - . **radioisotope heat sources**
 - RT radioactive isotopes
 - radioisotope batteries
 - thermoelectric power generation
- radiology**
 - GS medical science
 - . **radiology**
 - RT aerospace medicine
 - ∞ medicine
 - ∞ radiation
 - radiography
 - x ray analysis
- x rays
- radiolysis**
 - GS chemical reactions
 - . photochemical reactions
 - . . **radiolysis**
 - decomposition
 - . **radiolysis**
 - dissociation
 - . **radiolysis**
 - radiation chemistry
 - . **radiolysis**
 - radiation effects
 - . **radiolysis**
 - RT photolysis
- radiometeorographs**
 - GS measuring instruments
 - . meteorological instruments
 - . . **radiometeorographs**
 - radio equipment
 - . radio transmitters
 - . . **radiometeorographs**
 - recording instruments
 - . **radiometeorographs**
 - transmitters
 - . radio transmitters
 - . . **radiometeorographs**
 - RT radio telemetry
 - radiosondes
- radiometers**
 - DEF Instruments for detecting and, usually, measuring radiant energy.
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . **radiometers**
 - Dicke radiometers
 - infrared detectors
 - FLIR detectors
 - infrared radiometers
 - Advanced Very High Resolution Radiometer
 - infrared scanners
 - visible infrared spin scan radiometer
 - microwave radiometers
 - Advanced Microwave Sounding Unit
 - passive L-band radiometers
 - pressure modulator radiometers
 - spectroradiometers
 - MODIS (radiometry)
 - RT bolometers
 - forest fire detection
 - horizon scanners
 - infrared photography
 - infrared tracking
 - Knudsen gages
 - photometers
 - pyranometers
 - radiometric resolution
 - spectrophotometers
 - thermistors
 - ultraviolet detectors
 - x ray detectors
- radiometric correction**
 - DEF An effort to correct the intensity range of an image. Used for radiometric rectification.
 - UF *radiometric rectification*
 - RT image enhancement
 - infrared radiometers
 - multispectral band scanners
 - vegetative index
- radiometric rectification*
- USE **radiometric correction**
- radiometric resolution**
 - DEF The sensitivity of the sensor to distinguish between gray levels.
 - GS resolution
 - . **radiometric resolution**
 - RT multispectral band scanners

radiopathology

radiometers
remote sensors
spectral resolution

radionuclides

USE **radioactive isotopes**

radiopathology

GS medical science
. **radiopathology**
RT antiradiation drugs
nuclear medicine
radiation sickness

radiophosphors

GS phosphors
. **radiophosphors**
RT radioactive isotopes

radioprotective agents

USE **antiradiation drugs**

radiosensitivity

USE **radiation tolerance**

radiosondes

DEF Instruments, usually balloonborne, for the simultaneous measurement and transmission of meteorological data while moving vertically through the atmosphere.

GS measuring instruments
. meteorological instruments
. . . **radiosondes**
. . . ionosondes
. . . rawinsondes
. sondes
. . . **radiosondes**
. . . ionosondes
. . . rawinsondes
radio equipment
. radio transmitters
. . . **radiosondes**
. . . ionosondes
. . . rawinsondes
transmitters
. radio transmitters
. . . **radiosondes**
. . . ionosondes
. . . rawinsondes
RT Arcas rocket vehicles
balloon sounding
balloon-borne instruments
dropsondes
meteorological balloons
radio meteorology
radio telemetry
radiometeorographs
ROBIN balloons
satellite sounding
sounding rockets

radiotelephones

GS radio equipment
. radio transmitters
. . . **radiotelephones**
receivers
. **radiotelephones**
telecommunication
. **radiotelephones**
telephones
. **radiotelephones**
transmitters
. radio transmitters
. . . **radiotelephones**
RT echo suppressors
radio communication
telephony
voice communication

radiotherapy

USE **radiation therapy**

radium

GS chemical elements
. actinide series
. . . **radium**

. . . radium isotopes
. . . . radium 226
metals
. actinide series
. . . **radium**
. . . radium isotopes
. . . . radium 226

radium 226

GS chemical elements
. actinide series
. . . radium
. . . . radium isotopes
. **radium 226**
. nuclides
. . . isotopes
. . . . radium isotopes
. **radium 226**
metals
. actinide series
. . . radium
. . . . radium isotopes
. **radium 226**

radium isotopes

GS chemical elements
. actinide series
. . . radium
. . . . **radium isotopes**
. radium 226
. nuclides
. . . isotopes
. . . . **radium isotopes**
. radium 226
metals
. actinide series
. . . radium
. . . . **radium isotopes**
. radium 226

radius

USE **radii**

radome materials

GS dielectrics
. **radome materials**
RT electromagnetic wave transmission
 ∞ materials
radar transmission
radio transmission
radomes
transparence

radomes

DEF Dielectric housings for antennas.
(From RAdar DOME. Pronounced ray-domes.)

GS housings
. **radomes**
shells (structural forms)
. domes (structural forms)
. . . **radomes**
RT inflatable structures
protuberances
radant
radar antennas
radar equipment
radome materials

radon

GS chemical elements
. rare gases
. . . **radon**
. . . . radon isotopes
gases
. rare gases
. . . **radon**
. . . . radon isotopes

radon isotopes

UF *thoron*
GS chemical elements
. nuclides
. . . isotopes
. . . . **radon isotopes**
. rare gases
. . . radon

. . . **radon isotopes**
gases
. rare gases
. . . radon
. . . . **radon isotopes**

Raduga satellite

DEF A Soviet communications satellite in geostationary orbit for radio and TV transmission.

GS artificial satellites
. communication satellites
. . . **Raduga satellite**
. . . Soviet satellites
. . . **Raduga satellite**

RAE 1

USE **Explorer 49 satellite**

RAE 2

USE **Explorer 49 satellite**

RAE B

USE **Explorer 49 satellite**

RAE-1

USE **Explorer 38 satellite**

rafts

GS **rafts**
. life rafts
RT floats
lifeboats
survival equipment

rail transportation

UF *railroads*
GS transportation
. **rail transportation**
RT automated guideway transit vehicles
automated transit vehicles
locomotives
magnetic levitation vehicles
marine transportation
rails
rapid transit systems
surface vehicles
urban transportation

railgun accelerators

DEF Linear dc motors consisting of a pair of rigid, field-producing rails, and a movable conducting armature.

RT ∞ accelerators
hypervelocity guns
hypervelocity launchers
mass drivers
nuclear fusion
particle accelerators
spacecraft launching

railroad humping tests

RT cargo
impact acceleration
materials handling
shock tests
 ∞ tests

railroads

USE **rail transportation**

rails

RT rail transportation
rapid transit systems
surface vehicles

rain

GS precipitation (meteorology)
. **rain**
. . . acid rain
RT aquifers
cloud seeding
condensation nuclei
flood predictions
hydrology

- hydrology models
 - limnology
 - precipitation measurement
 - rainbows
 - raindrops
 - rainstorms
 - ∞ showers
 - thunderstorms
 - TRMM satellite
 - watersheds
- rain erosion**
- DEF The wearing away of the land by rain.
 - GS erosion
 - . **rain erosion**
 - RT landslides
 - mud
 - sands
 - soil erosion
- rain forests**
- GS resources
 - . Earth resources
 - . . forests
 - . . . **rain forests**
 - RT canopies (vegetation)
 - geobotany
 - plants (botany)
 - ∞ showers
 - tropical regions
 - vegetation
- rain gages**
- UF *pluviographs*
 - GS measuring instruments
 - . meteorological instruments
 - . . **rain gages**
 - RT precipitation measurement
- rain impact damage**
- GS damage
 - . impact damage
 - . . **rain impact damage**
 - RT arroyos
 - erosion
 - soil erosion
 - water erosion
- rainbows**
- GS distribution (property)
 - . radiation distribution
 - . . diffraction patterns
 - . . . **rainbows**
 - RT halos
 - light transmission
 - rain
- raindrops**
- GS particles
 - . drops (liquids)
 - . . **raindrops**
 - RT drop size
 - falling spheres
 - rain
 - rainmaking
- rainmaking**
- GS weather modification
 - . **rainmaking**
 - RT climatology
 - cloud seeding
 - precipitation (meteorology)
 - raindrops
 - water resources
- rainstorms**
- GS storms
 - . storms (meteorology)
 - . . **rainstorms**
 - . . . thunderstorms
 - RT acid rain
 - flood control
 - flood predictions
 - hailstorms
 - precipitation (meteorology)
 - rain
- ∞ showers
 - storm damage
 - storm enhancement
 - storm suppression
 - tornadoes
- ∞ rakes**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT pressure sensors
 - slopes
- ∞ ram**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT antiradar coatings
 - rams (presses)
 - rams (pumps)
- ram accelerators**
- (added July 1994)
 - UF *ramjet-in-tube accelerators*
 - RT ∞ accelerators
 - detonation waves
 - hypervelocity guns
 - hypervelocity launchers
 - ramjet engines
- RAM B launch vehicle**
- GS launch vehicles
 - . **RAM B launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **RAM B launch vehicle**
 - RT solid propellant rocket engines
 - TX-354 engine
- ram effect (hydrodynamics)*
- USE **hydrodynamic ram effect**
- RAM project*
- USE **Radio Attenuation Measurement project**
- Raman effect*
- USE **Raman spectra**
- Raman lasers**
- GS stimulated emission devices
 - . lasers
 - . . **Raman lasers**
- Raman scattering*
- USE **Raman spectra**
- Raman spectra**
- DEF Spectra of the modified frequencies resulting from inelastic scattering when matter is irradiated by a monochromatic beam of radiant energy. Used for Raman effect and Raman scattering.
 - UF *Raman effect*
 - Raman scattering*
 - GS scattering
 - . wave scattering
 - . . electromagnetic scattering
 - . . . **Raman spectra**
 - spectra
 - . molecular spectra
 - . . **Raman spectra**
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **Raman spectra**
 - RT absorption spectra
 - emission spectra
 - light (visible radiation)
 - line spectra
 - molecular rotation
 - nonlinear optics
 - vibrational spectra
- Raman spectroscopy**
- UF *coherent anti-Stokes Raman spectroscopy*
 - GS spectroscopy
- . molecular spectroscopy
 - . . **Raman spectroscopy**
 - RT astronomical spectroscopy
 - infrared spectroscopy
 - laser-induced breakdown spectroscopy
 - line spectra
 - optogalvanic spectroscopy
 - Rayleigh scattering
 - spectroscopic analysis
- ramjet engines**
- DEF Jet engines with no mechanical compressor consisting of specially shaped tubes or ducts open at both ends, the air necessary for combustion being shoved into the duct and compressed by the forward motion of the engine, where the air passes through a diffuser and is mixed with fuel and burned, the exhaust gases issuing in a jet from the rear opening. Ramjet engines cannot operate under static conditions. Often called ramjets. Used for athodyds.
 - UF *athodyds*
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - . . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - RT dump combustors
 - hydrogen fuels
 - Meteor 1 rocket vehicle
 - Navaho missile
 - ram accelerators
 - rocket-based combined-cycle engines
 - Saenger space transportation system
 - supersonic low altitude missile
 - turbojet engines
- ramjet missiles**
- GS missiles
 - . **ramjet missiles**
 - . . Navaho missile
 - . . supersonic low altitude missile
 - RT air to air missiles
 - antiaircraft missiles
 - supersonic combustion ramjet engines
 - surface to air missiles
 - surface to surface missiles
- ramjet-in-tube accelerators*
- USE **ram accelerators**
- ramp functions**
- GS functions (mathematics)
 - . **ramp functions**
 - RT dynamic response
 - frequency response
 - ∞ ramps

ramps

reaction time
slopes
step functions

∞ ramps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ramp functions
ramps (structures)

ramps (structures)

RT bridges (structures)
crossings
highways
intake systems
intersections
∞ parking
∞ ramps
slopes
wheelchairs

rams (presses)

GS presses
. rams (presses)
RT hammers
platens
plungers
∞ ram

rams (pumps)

GS pumps
. rams (pumps)
RT plungers
∞ ram
water hammer

Ramsauer effect

RT ∞ effects
electron scattering
∞ interference
negative resistance devices
rare gases
scattering cross sections

rand project

GS programs
. projects
. . rand project
RT operations research

random access

DEF The process of obtaining data from, or placing data into, storage when there is no sequential relation governing the access time to successive storage location.

RT Aloha system
computer storage devices
input/output routines
random access memory
random processes
VSAT (network)

random access memory

GS computer components
. computer storage devices
. . random access memory
. . . core storage
memory (computers)
. random access memory
. . core storage
RT random access

random distributions

USE statistical distributions

random errors

DEF Errors that are not systematic, are not erratic, and are not mistakes.

GS errors
. random errors
RT BCH codes
∞ dispersion
probability theory
quality control
sampling

stochastic processes
systematic errors

random loads

GS loads (forces)
. random loads
. . gust loads
RT contact loads
dynamic loads
impact loads
static loads
structural design criteria
transient loads
variable amplitude loading

random noise

DEF Oscillations whose instantaneous amplitudes occur, as a function of time according to a normal (Gaussian) curve. Used for Gaussian noise.

UF Gaussian noise
GS random noise
. random signals
RT background noise
channel noise
communication theory
electromagnetic noise
∞ noise
noise (sound)
noise generators
noise spectra
probability theory
pseudonoise
signal to noise ratios
stochastic processes
white noise

random numbers

DEF Expressions formed by sets of digits selected from a sequence of digits in which each successive digit is equally likely to be any of the digits.

RT mathematical tables
∞ numbers
pseudorandom sequences

random positioning machines

(added July 2000)
USE clinostats

random processes

GS stochastic processes
. random processes
. . random walk
RT communication theory
information theory
intermittency
Markov processes
Monte Carlo method
random access
statistical analysis

random sampling

DEF The process of selecting units for a sample of size n in such a manner that all combinations of n units under consideration have an equal or ascertainable chance of being selected as the sample.

GS sampling
. random sampling
RT quality control

random signals

GS random noise
. random signals
RT noise spectra
signal to noise ratios
∞ signals
stochastic processes

random variables

DEF Variables characterized by random behavior in assuming their different possible values. Mathematically, they are described by their probability distribution, which specifies the possible values of a random variable together with

the probability associated (in an appropriate sense) with each value. Random variables are said to be continuous if their possible values extend over a continuum and discrete if their possible values are separated by finite intervals.

RT functions (mathematics)
Shannon-Wiener measure
∞ statistics
∞ variable

random vibration

GS vibration
. random vibration
RT bending vibration
flutter
forced vibration
lattice vibrations
linear vibration
missile vibration
noise (sound)
self induced vibration
structural vibration
torsional vibration

random walk

GS stochastic processes
. random processes
. . random walk
RT Markov chains
Monte Carlo method

∞ range

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT distance
orbital position estimation
range (extremes)
ranges (facilities)

range (extremes)

UF extrema
Gumbel theory
GS range (extremes)
. dynamic range
. frequency ranges
. . octaves
. . radio range
. . subaudible frequencies
. proportional limit
. Roche limit
RT confidence limits
constraints
distance
domains
dynamic characteristics
errors
functions (mathematics)
heterogeneity
horizon
integral equations
∞ limits
maxima
mean
minima
optimization
quality control
∞ range
sensitivity
standard deviation
statistical tests
tolerances (mechanics)
tolerances (physiology)
∞ travel
variability
variance (statistics)

range and range rate tracking

GS distance
. range and range rate tracking
radar
. range and range rate tracking
tracking (position)
. range and range rate tracking
RT Global Tracking Network
missile tracking
optical tracking

- radar tracking
 - radio tracking
 - satellite tracking
 - STDN (network)
- range control*
- USE **trajectory control**
- range errors**
- SN (EXCLUDES ERRORS IN DISTANCE TRAVELED—LIMITED TO ERRORS IN DISTANCE MEASUREMENT)
 - DEF Errors in radar range measurement due to the propagation of radio energy through a nonhomogeneous atmosphere. These errors are due to the fact that the velocity of radio wave propagation varies with the index of refraction and that ray travel is not in straight lines through actual atmospheres. The resulting range errors are generally insignificant.
 - GS errors
 - . **range errors**
 - RT accuracy
 - boresight error
 - distance measuring equipment
 - error analysis
 - error signals
- range finders**
- UF *range indicators*
 - GS measuring instruments
 - . distance measuring equipment
 - . . . **range finders**
 - optical range finders
 - laser range finders
 - RT altimeters
 - fire control
 - geodimeters
 - laser ranger/tracker
 - lunar rangefinding
 - navigation aids
 - position indicators
 - radar equipment
 - rangefinding
 - sound localization
 - space perception
 - stadimeters
 - tellurometers
- range indicators*
- USE **range finders**
- range measurement*
- USE **rangefinding**
- range resources**
- GS resources
 - . Earth resources
 - . . . **range resources**
- range safety**
- GS safety
 - . **range safety**
 - RT aerospace safety
 - impact prediction
 - missile ranges
 - test ranges
 - trajectory control
- rangefinding**
- UF *range measurement*
 - ranging*
 - GS **rangefinding**
 - . airborne range and orbit determination
 - . laser ranging
 - . lunar rangefinding
 - . sound ranging
 - . . . satellite laser ranging
 - RT ballistic cameras
 - laser ranger/tracker
 - Marots (ESA)
 - ∞ measurement
 - radar measurement
 - radar tracking
 - radio tracking
 - range finders
- tracking (position)
- **Ranger 6 lunar probe**
- rangelands**
- DEF Land providing forage for domestic and wild animals, wildlife cover, recreation opportunities, and vegetation for watershed protection.
 - GS land
 - . **rangelands**
 - RT cattle
 - grasslands
 - grazing
 - livestock
 - rural areas
 - rural land use
- Rangemaster aircraft*
- USE **G-1 aircraft**
- Ranger 1 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 1 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 1 lunar probe**
- Ranger 2 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 2 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 2 lunar probe**
- Ranger 3 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 3 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 3 lunar probe**
- Ranger 4 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 4 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 4 lunar probe**
 - RT Atlas Agena B launch vehicle
- Ranger 5 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 5 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 5 lunar probe**
- Ranger 6 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 6 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
- Ranger 7 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 7 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 7 lunar probe**
- Ranger 8 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 8 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 8 lunar probe**
- Ranger 9 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger 9 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 9 lunar probe**
- Ranger block 3 television system**
- GS communication equipment
 - . spacecraft television
 - . . **Ranger block 3 television system**
 - telecommunication
 - . spacecraft television
 - . . **Ranger block 3 television system**
 - television systems
 - . spacecraft television
 - . . **Ranger block 3 television system**
 - RT ∞ systems
- Ranger lunar landing vehicles**
- GS lunar spacecraft
 - . lunar probes
 - . . Ranger lunar probes
 - . . . **Ranger lunar landing vehicles**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Ranger lunar probes
 - **Ranger lunar landing vehicles**
 - RT BE-3 engine
 - ∞ vehicles
- Ranger lunar probes**
- UF *Ranger satellites*
 - GS lunar spacecraft
 - . lunar probes
 - . . **Ranger lunar probes**
 - . . . Ranger 1 lunar probe
 - . . . Ranger 2 lunar probe
 - . . . Ranger 3 lunar probe
 - . . . Ranger 4 lunar probe
 - . . . Ranger 5 lunar probe
 - . . . Ranger 6 lunar probe
 - . . . Ranger 7 lunar probe
 - . . . Ranger 8 lunar probe
 - . . . Ranger 9 lunar probe
 - . . . Ranger lunar landing vehicles
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . **Ranger lunar probes**
 - Ranger 1 lunar probe
 - Ranger 2 lunar probe
 - Ranger 3 lunar probe
 - Ranger 4 lunar probe

Ranger project

- Ranger 5 lunar probe
- Ranger 6 lunar probe
- Ranger 7 lunar probe
- Ranger 8 lunar probe
- Ranger 9 lunar probe
- Ranger lunar landing vehicles
- RT Atlas Agena B launch vehicle

Ranger project

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Ranger project**
 - Agena B Ranger Program
- . projects
 - . . **Ranger project**
 - . . . Agena B Ranger Program
 - . . space programs
 - . . . NASA space programs
 - **Ranger project**
 - Agena B Ranger Program
- RT Agena B rocket vehicle
- Agena rocket vehicles
- Atlas launch vehicles
- lunar photographs
- lunar photography
- lunar probes

Ranger satellites

- USE **Ranger lunar probes**

ranges (facilities)

- GS **ranges (facilities)**
 - . test ranges
 - . . ballistic ranges
 - . . missile ranges
- RT radio beacons
- ∞ range

ranging

- USE **rangefinding**

rank tests

- GS statistical analysis
 - . statistical tests
 - . . **rank tests**
- RT ∞ tests

Rankine cycle

DEF An ideal thermodynamic cycle consisting of heat addition at constant pressure, isentropic expansion, heat rejection at constant pressure, and isentropic compression; used as an ideal standard for the performance of heat-engine and heat-pump installations operating with a condensable vapor as the working fluid, such as a steam power plant.

- GS cycles
 - . thermodynamic cycles
 - . . **Rankine cycle**
- RT ASTEC solar turboelectric generator
- Brayton cycle
- Carnot cycle
- laser propulsion
- Otto cycle
- solar dynamic power systems
- solar generators
- thermodynamics

Rankine-Hugoniot relation

- RT aerothermodynamics
- ∞ density
- pressure gradients
- shock wave propagation

ranking

- RT arrays
 - comparison
 - evaluation
 - ratings
 - selection
 - sequencing
 - value

Raoult law

- RT composition (property)

- Henry law
- partial pressure
- solutions
- vapor pressure

RAPCON (control)

- USE **radar approach control**

rapid ballistics identification

- GS identifying
 - . **rapid ballistics identification**
- RT display devices
- imaging techniques
- laser applications
- lasers
- measuring instruments
- photography
- scanning
- stimulated emission
- stimulated emission devices

rapid eye movement state

- UF *desynchronized sleep*
- REMS**
- RT dreams
- eye movements
- sleep

rapid prototyping

(added November 2001)
DEF The fabrication of functional prototypes within a short turn-around time in order to support model verification, reduce design-cycle time, or reduce the overall cost of development. A set of advanced manufacturing technologies that can quickly generate three-dimensional objects directly from computer-based models.

- RT computer aided design
- computer aided manufacturing
- cost reduction
- fabrication
- product development
- prototypes
- three dimensional models

rapid quenching (metallurgy)

DEF Rapid cooling of molten metals or alloys to achieve maximum uniformity in the crystal structure. Used for rapid solidification.

- UF *rapid solidification*
- GS cooling
 - . quenching (cooling)
 - . . **rapid quenching (metallurgy)**
- RT crystal growth
- crystal lattices
- crystal structure
- ∞ metallurgy
- ∞ quenching

rapid solidification

- USE **rapid quenching (metallurgy) solidification**

rapid transit systems

- UF *high speed transportation*
- GS transportation
 - . **rapid transit systems**
- RT air transportation
- automated guideway transit vehicles
- automated transit vehicles
- cargo
- ground effect machines
- highways
- logistics
- passengers
- rail transportation
- rails
- roads
- ∞ systems
- ∞ transport vehicles
- transportation networks
- urban transportation

rapids

- RT meanders
- river basins

- rivers
- streams
- water currents
- water flow

rare earth alloys

- GS alloys
 - . **rare earth alloys**
 - . . erbium alloys
 - . . gadolinium alloys
 - . . lanthanum alloys
 - . . mischmetal
 - . . neodymium alloys
- RT yttrium alloys

rare earth compounds

- GS **rare earth compounds**
 - . cerium compounds
 - . . bastnasite
 - . . cerium oxides
 - . . dysprosium compounds
 - . . erbium compounds
 - . . europium compounds
 - . . lanthanum tellurides
 - . . lutetium compounds
 - . . neodymium compounds
 - . . praseodymium compounds
 - . . samarium compounds
 - . . scandium compounds
 - . . . scandium oxides
 - . . terbium compounds
 - . . thulium compounds
 - . . ytterbium compounds
- RT ∞ chemical compounds
- ∞ Group 3B compounds
- ∞ metal compounds

rare earth elements

- UF *lanthanide series metals*
- GS chemical elements
 - . **rare earth elements**
 - . . cerium
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . dysprosium
 - . . . dysprosium isotopes
 - . . erbium
 - . . . erbium isotopes
 - . . europium
 - . . . europium isotopes
 - . . gadolinium
 - . . . gadolinium isotopes
 - . . holmium
 - . . . holmium isotopes
 - . . lanthanum
 - . . . lanthanum isotopes
 - . . lutetium
 - . . . lutetium isotopes
 - . . neodymium
 - . . . neodymium isotopes
 - . . praseodymium
 - . . . praseodymium isotopes
 - . . promethium
 - . . . promethium isotopes
 - . . samarium
 - . . . samarium isotopes
 - . . scandium
 - . . . scandium isotopes
 - . . terbium
 - . . . terbium isotopes
 - . . thulium
 - . . . thulium isotopes
 - . . ytterbium
 - . . . ytterbium isotopes
 - . . yttrium
 - . . . yttrium isotopes
- metals
 - . **rare earth elements**
 - . . cerium
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . dysprosium
 - . . . dysprosium isotopes
 - . . erbium
 - . . . erbium isotopes

- .. europium
- ... europium isotopes
- .. gadolinium
- ... gadolinium isotopes
- .. holmium
- ... holmium isotopes
- .. lanthanum
- ... lanthanum isotopes
- .. lutetium
- ... lutetium isotopes
- .. neodymium
- ... neodymium isotopes
- .. praseodymium
- ... praseodymium isotopes
- .. promethium
- ... promethium isotopes
- .. samarium
- ... samarium isotopes
- .. scandium
- ... scandium isotopes
- .. terbium
- ... terbium isotopes
- .. thulium
- ... thulium isotopes
- .. ytterbium
- ... ytterbium isotopes
- .. yttrium
- ... yttrium isotopes
- RT alkali vapor lamps
- keep
- neodymium lasers
- transition metals

∞ rare gas compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
- excimer lasers
- excimers
- helium compounds
- xenon compounds

rare gases

DEF Gases such as helium, neon, argon, krypton, xenon, and radon, all of whose shells of planetary electrons contain stable numbers of electrons so that the atoms are almost completely chemically inactive. Used for inert gases and noble gases.

- UF *inert gases*
- noble gases*
- GS chemical elements
- . rare gases
- .. argon
- ... argon isotopes
- .. helium
- ... helium isotopes
- ... liquid helium
- ... liquid helium 2
- .. krypton
- ... krypton isotopes
- ... krypton 85
- .. neon
- ... liquid neon
- ... neon isotopes
- .. radon
- ... radon isotopes
- .. xenon
- ... xenon isotopes
- ... xenon 129
- ... xenon 133
- ... xenon 135
- gases
- . rare gases
- .. argon
- ... argon isotopes
- .. helium
- ... helium isotopes
- ... liquid helium
- ... liquid helium 2
- .. krypton
- ... krypton isotopes
- ... krypton 85
- .. neon
- ... liquid neon
- ... neon isotopes

- .. radon
- ... radon isotopes
- .. xenon
- ... xenon isotopes
- ... xenon 129
- ... xenon 133
- ... xenon 135
- RT monatomic gases
- nonpolar gases
- Ramsauer effect

rare gas-halide lasers

DEF A class of lasers in which the inert gases are used as the amplifying medium.

- GS stimulated emission devices
- . lasers
- . gas lasers
- ... rare gas-halide lasers
- ... krypton fluoride lasers
- ... xenon chloride lasers
- ... xenon fluoride lasers
- RT coherent light
- laser pumping
- lasing
- light beams
- optical pumping
- stimulated emission

rarefaction

- RT antinodes
- compressing
- elastic waves
- expansion
- vacuum

rarefaction waves

USE elastic waves

rarefied gas dynamics

- GS fluid mechanics
- . fluid dynamics
- . gas dynamics
- ... rarefied gas dynamics
- RT atomic beams
- BGK model
- Chapman-Enskog theory
- continuum flow
- ∞ dynamics
- free molecular flow
- Knudsen flow
- low density flow
- low density wind tunnels
- molecular beams
- molecular flow
- plasmas (physics)
- slip flow
- transition flow

rarefied gases

- UF *low density gases*
- GS gases
- . rarefied gases
- .. cosmic gases
- ... interplanetary gas
- ... interstellar gas
- RT electron gas
- free molecular flow
- gas density
- gas temperature
- high temperature gases
- low density flow
- low density research
- molecular gases

rarefied plasmas

- GS gases
- . rarefied plasmas
- particles
- . charged particles
- . energetic particles
- ... plasmas (physics)
- ... rarefied plasmas
- . corpuscular radiation
- . energetic particles
- . plasmas (physics)
- ... rarefied plasmas

- RT cathode glow
- cold plasmas
- collisionless plasmas
- electron plasma
- nonuniform plasmas

rasers

USE masers

raster scanning

DEF Sweeping a cathode ray screen or an antenna beam characterized by a network of parallel sweeps either from side to side or from top to bottom.

- GS imaging techniques
- . raster scanning
- scanning
- . raster scanning
- RT cathode ray tubes
- computer graphics
- display devices
- image processing
- images
- picture tubes
- television cameras

rate meters

USE measuring instruments

rate of climb indicators

- GS aircraft instruments
- . rate of climb indicators
- RT altimeters
- flight instruments
- ∞ indicators

rates (per time)

- GS rates (per time)
- . acceleration (physics)
- . angular acceleration
- . deceleration
- . spin reduction
- . electron acceleration
- . high acceleration
- . high gravity environments
- . impact acceleration
- . particle acceleration
- . plasma acceleration
- . transverse acceleration
- . acoustic velocity
- . airspeed
- . angular velocity
- . bit error rate
- . burning rate
- . collision rates
- . critical velocity
- . decay rates
- . electron decay rate
- . drift rate
- . escape velocity
- . evaporation rate
- . exhaust velocity
- . flow velocity
- . solar wind velocity
- . flux (rate)
- . heat flux
- . magnetic flux
- . solar flux
- . flux density
- . current density
- . photon density
- . radiant flux density
- . irradiance
- . illuminance
- . solar constant
- . lumens
- . luminous intensity
- . illuminance
- . luminance
- . particle flux density
- . electron flux density
- . neutron flux density
- . proton flux density
- . radiance
- . radiancy
- . solar flux density

ratings

. . . . solar constant
 . . sound intensity
 . . . zero sound
 . ground speed
 . group velocity
 . heart rate
 . . arrhythmia
 . . bradycardia
 . . tachycardia
 . high speed
 . hypersonic speed
 . ion production rates
 . landing speed
 . light speed
 . loading rate
 . low speed
 . mass flow rate
 . orbital velocity
 . phase velocity
 . physiological acceleration
 . propagation velocity
 . pulse rate
 . . pulse repetition rate
 . radial velocity
 . recombination coefficient
 . relativistic velocity
 . respiratory rate
 . . dyspnea
 . . hypoventilation
 . . tachypnea
 . rotor speed
 . signal fading rate
 . solar velocity
 . star formation rate
 . strain energy release rate
 . strain rate
 . subsonic speed
 . supersonic speed
 . systole
 . terminal velocity
 . tip speed
 . transmission rate (communications)
 . transonic speed
 . wind velocity
 . . solar wind velocity
 RT access time
 MTBF
 solitary waves
 time functions
 time measurement
 volume
ratings
 GS **ratings**
 . pilot ratings
 . . Cooper-Harper ratings
 RT assessments
 consistency
 evaluation
 normalizing (statistics)
 ∞ performance
 position (title)
 ranking
ratiometers
 GS measuring instruments
 . **ratiometers**
rational functions
 GS analysis (mathematics)
 . complex variables
 . . meromorphic functions
 . . . **rational functions**
 functions (mathematics)
 . meromorphic functions
 . . **rational functions**
rations
 GS **rations**
 . space rations
 RT ∞ food
ratios
 UF *percentage*
 GS **ratios**
 . aspect ratio

. . fineness ratio
 . . high aspect ratio
 . . low aspect ratio
 . . thickness ratio
 . Biot number
 . bypass ratio
 . compression ratio
 . fiber volume fraction
 . Froude number
 . fuel-air ratio
 . Grashof number
 . Hartmann number
 . hematocrit ratio
 . indexes (ratios)
 . . KP index
 . . morphological indexes
 . . vegetative index
 . . . leaf area index
 . . . normalized difference vegetation
 index
 . isotope ratios
 . Laval number
 . Lewis numbers
 . lift drag ratio
 . likelihood ratio
 . Mach number
 . mass ratios
 . . mass to light ratios
 . . mixing ratios
 . . payload mass ratio
 . . propellant mass ratio
 . Mills ratio
 . modular ratios
 . Nusselt number
 . Peclet number
 . perveance
 . Poisson ratio
 . Prandtl number
 . pressure ratio
 . Rayleigh number
 . Reynolds number
 . . high Reynolds number
 . . low Reynolds number
 . Brinkman number
 . Richardson number
 . scale (ratio)
 . Schmidt number
 . signal to noise ratios
 . similarity numbers
 . standing wave ratios
 . Stanton number
 . stress ratio
 . Strouhal number
 . temperature ratio
 . thrust-weight ratio
 . void ratio
 RT dynamic range
 efficiency
 fractals
 fractions
 proportion
 psychological tests
 refractivity
rats
 GS animals
 . vertebrates
 . . mammals
 . . . rodents
 **rats**
 RT mice
 pocket mice
RATSCAT program
 USE **radar target scatter site program**
Raven helicopter
 USE **OH-23 helicopter**
ravines
 GS landforms
 . **ravines**
 RT canyons
 erosion
 river basins
 topography

valleys
 water erosion

rawinsondes

DEF Combinations of raob and rawin; observations of temperature, pressure, relative humidity, and winds aloft by means of radiosonde and radio direction finding equipment of radar tracking.

GS measuring instruments
 . meteorological instruments
 . . radiosondes
 . . . **rawinsondes**
 . sondes
 . . radiosondes
 . . . **rawinsondes**
 radio equipment
 . radio transmitters
 . . radiosondes
 . . . **rawinsondes**
 transmitters
 . radio transmitters
 . . radiosondes
 . . . **rawinsondes**
 RT dropsondes
 meteorological balloons
 radar tracking
 radio tracking
 wind measurement

ray acoustics

USE **geometrical acoustics**

ray casting

(added May 1997)

USE **ray tracing**

ray optics

USE **geometrical optics**

ray tracing

DEF A procedure used in the graphical determination of the path followed by a single ray of radiant energy as it travels through media of varying indices of refraction.

UF *ray casting*

RT diffraction
 geometrical optics
 geometrical theory of diffraction
 gradient index optics
 grazing incidence
 optical measurement
 reflectance
 tracking (position)
 transmittance

Rayleigh distribution

GS functions (mathematics)
 . probability density functions
 . . **Rayleigh distribution**
 statistical analysis
 . probability density functions
 . . **Rayleigh distribution**
 statistical distributions
 . **Rayleigh distribution**
 RT error analysis
 operations research
 radial distribution

Rayleigh equations

RT ∞ equations
 flow equations
 heat transfer
 thermodynamics

Rayleigh fading

(added June 2000)

DEF Rapid-fluctuation, small-scale fading resulting from multipath effects, and typically occurring in non-line-of-sight (NLOS) environments.

GS fading
 . signal fading
 . . **Rayleigh fading**
 RT channels (data transmission)
 mobile communication systems

multipath transmission
 phase shift keying
 radio signals
 reception diversity

Rayleigh number

GS dimensionless numbers
 . **Rayleigh number**
 ratios
 . **Rayleigh number**
 RT Benard cells
 buoyancy
 Rayleigh-Benard convection

Rayleigh scattering

DEF Any scattering process produced by spherical particles whose radii are smaller than about one tenth the wavelength of the scattered radiation.

GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . Mie scattering
 **Rayleigh scattering**
 RT airglow
 gray gas
 light scattering
 Raman spectroscopy
 sky

Rayleigh waves

DEF Two dimensional barotropic disturbances in a fluid having one or more discontinuities in the vorticity profile. Surface waves associated with the free boundary of a solid, such that a surface particle describes an ellipse whose major axis is normal to the surface and whose center is at the undisturbed surface. At maximum particle displacement away from the solid surface the motion of the particle is opposite to that of the wave.

GS elastic waves
 . seismic waves
 . . **Rayleigh waves**
 RT barotropic flow
 fluid flow
 S waves
 two dimensional flow

Rayleigh-Benard convection

DEF The flow of a fluid contained between horizontal thermally conducting plates and heated from below. The Rayleigh number is proportional to the temperature difference between the plates.

GS convection
 . free convection
 . . **Rayleigh-Benard convection**
 . . . Benard cells
 fluid flow
 . convective flow
 . . **Rayleigh-Benard convection**
 . . . Benard cells
 RT buoyancy-driven flow
 convection currents
 convection-diffusion equation
 convective heat transfer
 forced convection
 hot surfaces
 laminar flow
 Rayleigh number
 solar convection (astronomy)
 stellar convection
 thermal boundary layer

Rayleigh-Ritz method

GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Rayleigh-Ritz method**
 RT ∞ methodology
 variational principles

rayon

DEF A manufactured fiber composed of regenerated cellulose, as well as fibers composed

of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.

GS fibers
 . synthetic fibers
 . . **rayon**
 textiles
 . **rayon**

∞ rays

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT atmospheric radiation
 background noise
 beams (radiation)
 caustics (optics)
 coherent radiation
 continuous radiation
 corpuscular radiation
 electromagnetic radiation
 extraterrestrial radiation
 gamma rays
 lunar rays
 polarized radiation
 pulsed radiation

Raytheon computers

GS data processing equipment
 . computers
 . . digital computers
 . . . **Raytheon computers**

razor blades

GS cutters
 . blades (cutters)
 . . **razor blades**

RB-47 aircraft

USE **B-47 aircraft**

RB-50 aircraft

USE **B-50 aircraft**

RB-57 aircraft

USE **B-57 aircraft**

RB-66 aircraft

USE **B-66 aircraft**

RBCC engines

(added August 1999)
 USE **rocket-based combined-cycle engines**

RBE

USE **relative biological effectiveness (RBE)**

RC circuits

UF *RC networks*
 GS circuits
 . **RC circuits**
 RT capacitance
 coupling circuits
 discriminators
 electric filters
 electrical resistance
 LC circuits
 network analysis
 network synthesis
 RLC circuits
 time constant
 transconductance

RC networks

USE **RC circuits**

RCA computers

GS data processing equipment
 . computers
 . . **RCA computers**
 . . . RCA spectra 70 computer
 . . . RCA-110 computers

RT data processing

RCA Satcom satellites

DEF Domestic commercial communications satellites launched by NASA for the RCA Corporation.
 GS artificial satellites
 . communication satellites
 . . **RCA Satcom satellites**
 commercial spacecraft
 . **RCA Satcom satellites**
 RT Delta launch vehicle
 domestic satellite communications systems

RCA spectra 70 computer

GS data processing equipment
 . computers
 . . digital computers
 . . . **RCA spectra 70 computer**
 . . . RCA computers
 . . . **RCA spectra 70 computer**

RCA-110 computers

GS data processing equipment
 . computers
 . . RCA computers
 . . . **RCA-110 computers**

RCB stars

USE **R Coronae Borealis stars**

RDX

UF *cyclotrimethylene trinitramine*
trinitrotriazocyclohexane
 GS explosives
 . **RDX**
 nitrogen compounds
 . azo compounds
 . . **RDX**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **RDX**
 propellants
 . **RDX**
 RT pyrotechnics
 solid propellants
 solid rocket propellants

reactance

GS electrical properties
 . electrical impedance
 . . **reactance**
 impedance
 . electrical impedance
 . . **reactance**
 RT capacitance
 electrical resistance
 Foster theory
 inductance
 Smith chart
 transconductance

reactance amplifiers

USE **parametric amplifiers**

reacting flow

(added August 1991)
 DEF Fluid flows in which chemical reactions are occurring or potentially can occur. Used for chemically reacting flow.

UF *chemically reacting flow*
 GS fluid flow
 . **reacting flow**
 . . combustible flow
 RT boundary layer combustion
 chemical reactions
 combustion chemistry
 detonable gas mixtures
 direct numerical simulation
 flame propagation
 ∞ flow
 fuel flow
 premixed flames
 propellant combustion

reaction

reaction kinetics
turbulent combustion
turbulent flow

∞ reaction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical reactions
human reactions
irritation
nuclear reactions
thrust

reaction bonding

DEF Chemical combining of ingredients to produce silicon nitride ceramics.

GS bonding
. **reaction bonding**
RT aluminum
ceramics
chemical reactions
melting points
nitrogen
oxygen
powder metallurgy
sialon
silicon
silicon nitrides
sintering

∞ reaction control

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical reaction control
∞ control
directional control
Marquardt R4D engine
nuclear reactor control
reactor safety
thrust control

reaction jet backpacks

USE **self maneuvering units**

reaction jets

USE **jet flow**
jet thrust

reaction kinetics

UF *chemical kinetics*
reaction rate
GS kinetics
. **reaction kinetics**
RT amino radical
association reactions
autocatalysis
catalysis
chemical equilibrium
chemical reactions
combustion chemistry
Damkohler number
Fischer-Tropsch process
half life
heat of dissociation
interstellar chemistry
irreversible processes
nitrous acid
nuclear reactions
pressure dependence
reacting flow
reaction-diffusion equations
reagents
solvation

reaction products

DEF The substances formed in a chemical reaction -- the desired items as well as the unwanted fumes, sludge, residues, etc.

GS products
. **reaction products**
. . combustion products
RT ashes
by-products
effluents
engines

exhaust gases
fumes
gases
infrared suppression
jet engines
precipitates
residues
slags
sludge

reaction rate

USE **reaction kinetics**

reaction time

DEF In human engineering, the interval between an input signal (physiological) or a stimulus (psychophysiological) and the response elicited by the signal. Used for reverse time.

UF *reverse time*
GS time
. **reaction time**
. . chronaxy
RT adaptation
conditioned reflexes
dynamic characteristics
dynamic response
human reactions
perceptual time constant
physiological effects
pontryagin principle
psychological effects
psychomotor performance
ramp functions
reflexes
refractory period
sensitivity
sensorimotor performance
step functions
time constant
time lag

reaction wheels

UF *inertia wheels*
GS wheels
. **reaction wheels**
RT attitude control
counter-rotating wheels
flywheels

reaction-diffusion equations

(added July 1994)
RT combustion physics
convection-diffusion equation
diffusion coefficient
∞ equations
Ficks equation
partial differential equations
reaction kinetics
transport theory

reactivity

DEF The ability to react. For proper use of the term, the reaction in question and the conditions should be stated and the parameter used in measuring reactivity indicated, such as rate, uniformity, or the like.

GS **reactivity**
. photorefractivity
RT chemical reactions
inhour equation
nuclear reactions

reactor chemistry

USE **radiochemistry**

reactor cores

DEF In nuclear reactors, the regions containing the fissionable material.

GS cores
. **reactor cores**
RT annular core pulse reactors
control rods
nuclear fuel elements
nuclear fuels
nuclear reactors
∞ operators

plasma core reactors
reflectometers
reflectors
void ratio

reactor design

RT annular core pulse reactors
blankets (fission reactors)
blankets (fusion reactors)
chemical reactors
computer aided design
∞ design
engine design
engineering test reactors
Hanford reactors
high temperature nuclear reactors
limiters (fusion reactors)
nuclear reactors
nuclear research and test reactors
offshore reactor sites
organic cooled reactors
pebble bed reactors
product development

reactor fuels

USE **nuclear fuels**

reactor in flight test program

USE **RIFT (reactor in flight test)**

reactor materials

RT annular core pulse reactors
blankets (fission reactors)
blankets (fusion reactors)
chemical reactors
∞ construction materials
coolants
limiters (fusion reactors)
loss of coolant
∞ materials
materials selection
moderators
nuclear fuel elements
nuclear fuels
nuclear reactors
pressure vessels
radiation shielding
spent fuels

reactor physics

GS nuclear physics
. **reactor physics**
RT annular core pulse reactors
beta factor
Hanford reactors
inhour equation
nuclear fuel burnup
nuclear reactors
∞ physics
∞ science

reactor safety

DEF Theoretical and experimental investigations of the behavior of reactor types and designs under various real or hypothetical accidents.

GS safety
. **reactor safety**
RT annular core pulse reactors
chemical reactors
control rods
explosions
industrial safety
nuclear reactor control
nuclear reactors
offshore reactor sites
radiation hazards
∞ reaction control
relief valves
Transient Reactor Test Facility

reactor startup tests

GS fuel tests
. **reactor startup tests**
RT initiation
nuclear fuels

- nuclear reactors
- starting
- ∞ tests
- reactor technology**
 - GS technologies
 - . **reactor technology**
 - RT annular core pulse reactors
 - ∞ engineering
 - engineering test reactors
 - Hanford reactors
 - high temperature nuclear reactors
 - Joint European Torus
 - nuclear fuel burnup
 - nuclear reactors
 - nuclear research and test reactors
 - offshore reactor sites
 - organic cooled reactors
 - pebble bed reactors
 - reverse field pinch
- ∞ **reactors**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT annular core pulse reactors
 - chemical reactors
 - electric reactors
 - fast test reactors
 - fusion reactors
 - fusion-fission hybrid reactors
 - high temperature nuclear reactors
 - molten salt nuclear reactors
 - nuclear reactors
 - nuclear research and test reactors
 - plasma core reactors
 - power reactors
 - RIFT (reactor in flight test)
 - SNAPTRAN reactor
 - spheromaks
 - swimming pool reactors
 - thermal reactors
 - tokamak devices
 - water cooled reactors
- readers**
 - UF *reading machines*
 - RT character recognition
 - conical scanning
 - ∞ detectors
 - magnetic tapes
 - microfilms
 - optical data processing
 - optical scanners
 - pattern recognition
 - punched cards
 - punched tapes
 - reading
- reading**
 - GS **reading**
 - . lip reading
 - RT character recognition
 - conical scanning
 - data transmission
 - display devices
 - input
 - ∞ interpretation
 - legibility
 - perception
 - printing
 - readers
 - scanners
 - scanning
 - symbols
 - visibility
- reading machines*
- USE **readers**
- readjustment*
- USE **adjusting**
- read-only memory devices**
 - DEF Computer devices for storing data in permanent or nonerasable form. Used for ROM devices.
- UF *ROM devices*
- GS computer components
 - . computer storage devices
 - . . **read-only memory devices**
 - . . . CD-ROM
- RT computer design
 - computer systems design
 - computers
- readout**
 - RT display devices
 - multiple output programs
 - output
 - printers (data processing)
 - printouts
 - remote consoles
- reagents**
 - RT catalysts
 - chemical analysis
 - chemical reactions
 - reaction kinetics
- real gases**
 - GS gases
 - . **real gases**
 - RT equations of state
 - gas density
 - ideal gas
 - kinetic theory
 - molecular gases
 - monatomic gases
- real numbers**
 - GS **real numbers**
 - . integers
 - RT complex numbers
 - ∞ numbers
- real time operation**
 - DEF Time in which reporting on events or recording of events is simultaneous with the events.
 - RT automatic control
 - computer programming
 - computers
 - display devices
 - integrated mission control center
 - multiprocessing (computers)
 - onboard data processing
 - windows (computer programs)
- real variables**
 - GS analysis (mathematics)
 - . **real variables**
 - . . Abel function
 - . . asymptotes
 - . . Bessel functions
 - . . . Hankel functions
 - . . Bethe-Salpeter equation
 - . . calculus of variations
 - . . composite functions
 - . . delta function
 - . . differential equations
 - . . . Blasius equation
 - . . . Chandrasekhar equation
 - . . . cosine series
 - . . . Duffing differential equation
 - . . . Falkner-Skan equation
 - . . . hyperbolic differential equations
 - . . . Lamé wave equations
 - . . . partial differential equations
 - biharmonic equations
 - Burger equation
 - Cauchy-Riemann equations
 - elliptic differential equations
 - Monge-Ampère equation
 - Euler-Cauchy equations
 - Fokker-Planck equation
 - Gauss equation
 - Helmholtz vorticity equation
 - Liouville equations
 - parabolic differential equations
 - Poisson equation
 - vlasov equations
 - Riccati equation
 - . . . vorticity equations
 - Helmholtz vorticity equation
 - . . . Einstein equations
 - . . . existence theorems
 - . . . extremum values
 - . . . limits (mathematics)
 - . . . maxima
 - . . . minima
 - Cramer-Rao bounds
 - . . . Fourier-Bessel transformations
 - . . Green's functions
 - . . hyperbolic functions
 - . . hyperplanes
 - . . Jacobi integral
 - . . Jacobi matrix method
 - . . kernel functions
 - . . Liapunov functions
 - . . linear equations
 - . . . linear evolution equations
 - . . . Riccati equation
 - . . Lipschitz condition
 - . . measure and integration
 - . . . binary integration
 - . . . Borel sets
 - . . . functional integration
 - . . . integral calculus
 - . . . J integral
 - . . . Lebesgue theorem
 - . . . numerical integration
 - Runge-Kutta method
 - . . . Stieltjes integral
 - . . . weighting functions
 - . . Neumann problem
 - . . nonlinear equations
 - . . . cubic equations
 - . . . Duffing differential equation
 - . . . Monge-Ampère equation
 - . . . nonlinear evolution equations
 - . . . quadratic equations
 - . . . quartic equations
 - . . numerical differentiation
 - . . periodic functions
 - . . . trigonometric functions
 - cosine series
 - sine series
 - tangents
 - . . . series (mathematics)
 - asymptotic series
 - Campbell-Hausdorff series
 - cosine series
 - Fourier series
 - Pade approximation
 - power series
 - Taylor series
 - MacLaurin series
 - progressions
 - Prony series
 - sine series
 - . . . Sturm-Liouville theory
 - . . . vector analysis
 - collinearity
 - coplanarity
 - curl (vectors)
 - vorticity
 - Weierstrass functions
 - . . . Whittaker functions
 - RT aperiodic functions
 - calculus
 - Cholesky factorization
 - complex variables
 - continuum
 - dependent variables
 - differential calculus
 - factorization
 - Fourier analysis
 - Hermitian polynomial
 - hyperspheres
 - infinity
 - inflection points
 - maximum principle
 - monotone functions
 - Schmidt method
 - stability derivatives
 - uniqueness theorem

reattached flow

∞ variable

rearward facing steps

USE **backward facing steps**

reattached flow

- GS fluid flow
 - . viscous flow
 - . . boundary layer flow
 - . . . **reattached flow**
- RT ∞ attachment
 - backward facing steps
 - boundary layer separation
 - Coanda effect
 - Crocco-Lee theory
 - flow characteristics
 - flow distribution
 - separated flow

reattachment

USE **attachment**

REB

USE **relativistic electron beams**

rebreathing

- RT air purification
 - carbon dioxide concentration
 - carbon dioxide removal
 - expired air
 - life support systems
 - spacecraft cabin atmospheres

receivers

DEF Initial components or sensing elements of measuring systems. For example, the receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the information carried by electromagnetic radiation. Receivers include circuits designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the information containing component of the received energy can be delivered to the desired indicating or recording equipment. Used for receiving systems.

UF *receiving systems*

GS **receivers**

- . linear receivers
- . logarithmic receivers
- . radar receivers
- . radio receivers
- . . superheterodyne receivers
- . . transmitter receivers
- . . whistler recorders
- . radiotelephones
- . television receivers

- RT amplifiers
- ∞ detectors
- display devices
- duplexers
- electric filters
- instrument receivers
- ∞ receiving
- repeaters
- tanks (containers)
- teleprinters
- teletypewriters
- transmitters

∞ **receiving**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *reception*

- RT acquisition
- collection
- delivery
- procurement
- radar reception
- radio reception
- receivers
- recognition
- signal reception

television reception

receiving systems

USE **receivers**

receptacles (containers)

USE **containers**

reception

USE **receiving**

reception diversity

- UF *space diversity*
- GS radio equipment
 - . **reception diversity**
- RT fading
 - radio antennas
 - radio receivers
 - radio reception
 - Rayleigh fading
 - signal fading

receptors (physiology)

DEF Sensory nerve endings or organs in a living organism that is sensitive to physical or chemical stimuli.

GS **receptors (physiology)**

- . baroreceptors
- . chemoreceptors
- . gravireceptors
- . . otolith organs
- . mechanoreceptors
- . photoreceptors
- . proprioceptors
- . thermoreceptors

RT sense organs

sensitometry

recesses

- RT cavities
- crevasses
- ∞ hollow

recession

- RT ∞ depression
- economics

recharging

DEF The restoring of discharged electric storage batteries to a charged condition by passing direct current through them in a direction opposite to that of the discharging current.

RT charge efficiency

reciprocal theorems

- GS theorems
 - . **reciprocal theorems**
- RT angles (geometry)
- geometry
- lines (geometry)
- points (mathematics)
- projective geometry

reciprocating engines

USE **piston engines**

reciprocation

- RT cycles
 - mechanical oscillators
 - piston engines
 - pistons

reciprocity theorem

DEF Any theorem expressing reciprocal relations for the behavior of some physical system in which input and output can be interchanged without altering the response of the system to a given excitation.

- GS theorems
 - . **reciprocity theorem**
- RT acoustic scattering
- electromagnetic fields
- electromagnetic scattering

wave scattering

recirculation

USE **circulation**

recirculative fluid flow

- GS fluid flow
 - . **recirculative fluid flow**
- RT backward facing steps
- boundary layer flow
- boundary layer separation
- reversed flow
- turbulent flow
- turbulent mixing
- vortices

reclamation

- GS **reclamation**
 - . materials recovery
 - . . gas recovery
 - . . nuclear fuel reprocessing
 - . . solvolysis
 - . . water reclamation
- RT environmental cleanup
- oil recovery
- ∞ recovery
- recycling
- regeneration (engineering)
- waste management

recognition

DEF The psychological process in which an observer so interprets the visual or auditory stimuli he receives from a distant object that he forms a correct conclusion as to the exact nature of that object or sound.

GS **recognition**

- . pattern recognition
- . . character recognition
- . . graphology
- . speech recognition
- . target recognition
- . timber identification

- RT acquisition
- consciousness
- crop identification
- identifying
- IFF systems (identification)
- ∞ interpretation
- memory
- ∞ remote sensing
- remote sensing

recoil atoms

- GS atoms
 - . **recoil atoms**
- RT recoilings

recoil ions

- GS ions
 - . **recoil ions**
- RT atomic collisions
- charge exchange
- electron scattering
- ion impact
- ion production rates
- ion scattering
- ionic collisions
- recoilings

recoil protons

- GS particles
 - . charged particles
 - . . protons
 - . . . **recoil protons**
 - . . . elementary particles
 - . . . fermions
 - . . . protons
 - **recoil protons**
- RT baryons
- recoilings

recoilings

- RT collisions
- particle motion
- recoil atoms

recoil ions
 recoil protons

recombinant DNA
 USE **deoxyribonucleic acid**

recombination coefficient
 DEF A measure of the specific rate at which oppositely charged ions join to form neutral particles (a measure of ion recombination).
 GS coefficients
 . **recombination coefficient**
 rates (per time)
 . **recombination coefficient**
 RT free electrons
 ion recombination
 ionized gases

recombination reactions
 GS **recombination reactions**
 . atomic recombination
 . . oxygen recombination
 . electron recombination
 . . radiative recombination
 . electron-ion recombination
 . . radiative recombination
 . hydrogen recombinations
 . ion recombination
 RT atomic collisions
 capture effect
 fertilization
 Suhl effect

recommendations
 GS **recommendations**
 . suggestion
 RT decision theory
 general overviews

recompression
 USE **compressing**

reconfigurable hardware
(added September 2001)
 DEF Electronic circuit devices whose architectures can be programmatically modified to suit the application at hand.
 GS **reconfigurable hardware**
 . programmable logic devices
 . . field-programmable gate arrays
 . evolvable hardware
 RT chips (electronics)
 ∞ hardware
 integrated circuits
 logic circuits

reconnaissance
 GS **reconnaissance**
 . aerial reconnaissance
 . . Airborne Integrated
 Reconnaissance System
 . photoreconnaissance
 . spectral reconnaissance
 RT COSPAS
 Earth resources
 observation
 patrols
 photogeology
 SarSat
 searching
 situational awareness
 space observations (from Earth)
 space surveillance (spaceborne)
 surveillance
 surveys
 terrain analysis

reconnaissance aircraft
 UF *Darkstar unmanned aerial vehicle*
 GS **reconnaissance aircraft**
 . A-9 aircraft
 . Breguet 1150 aircraft
 . Cessna L-19 aircraft
 . HS-801 aircraft
 . SR-71 aircraft
 . TSR-2 aircraft

. U-2 aircraft
 . Victor MK-1 aircraft
 . weather reconnaissance aircraft

RT aerial reconnaissance
 ∞ aircraft
 antisubmarine warfare aircraft
 Earth Resources Survey aircraft
 flying platforms
 jet aircraft
 light aircraft
 ∞ military aircraft
 ∞ military aviation
 military helicopters
 observation aircraft
 pilotless aircraft
 submersible aircraft
 supersonic aircraft
 utility aircraft
 V/STOL aircraft
 Valiant aircraft
 water takeoff and landing aircraft
 YF-12 aircraft

reconnaissance spacecraft
 GS military spacecraft
 . **reconnaissance spacecraft**
 . . Inspector satellite
 . . Midas satellites
 . . . Midas 2 satellite
 . . . Midas 3 satellite
 . . . Midas 4 satellite
 . . . Midas 5 satellite
 . . . Midas 6 satellite
 . . . Midas 7 satellite
 . . photo reconnaissance spacecraft
 . . Samos
 RT aerial reconnaissance
 artificial satellites
 manned orbital laboratories
 manned spacecraft
 unmanned spacecraft

reconstruction
 GS **reconstruction**
 . image reconstruction
 . wave front reconstruction
 RT construction
 restoration

∞ **recorders**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cable force recorders
 data recorders
 playbacks
 recording instruments
 registers (computers)
 tape recorders
 VLF emission recorders

recording
 GS **recording**
 . data recording
 . data smoothing
 . magnetic recording
 . photographic recording
 . prediction recording
 RT playbacks
 plotting
 privacy
 ∞ storage

recording heads
 RT data recording
 magnetic recording
 magnetic tapes
 recording instruments
 tape recorders
 video equipment

recording instruments
 UF *emissographs*
pluviographs
thermograms
 GS **recording instruments**
 . bathythermographs

. cable force recorders
 . flight recorders
 . . flight load recorders
 . force vector recorders
 . mechanograms
 . oscillographs
 . plotters
 . . x-y plotters
 . pressure recorders
 . radiometeorographs
 . seismographs
 . . lunar seismographs
 . tape recorders
 . . video tape recorders
 . weather data recorders
 . whistler recorders

RT aircraft instruments
 automatic control
 bubble technique
 control equipment
 counters
 data recorders
 electronic recording systems
 flight instruments
 graphs (charts)
 indicating instruments
 instrument receivers
 instrument transmitters
 ∞ instruments
 measuring instruments
 meteorological instruments
 ∞ pens
 photographic recording
 ∞ recorders
 recording heads
 sonograms
 sphymography
 transducers
 VLF emission recorders

records
 GS documents
 . **records**
 . . video disks
 RT case histories
 ∞ data
 data processing
 data recording
 documentation
 ∞ drawing
 format
 histories
 periodicals
 playbacks
 Presidential reports
 privacy
 records management
 reports
 supplements
 technical writing
 ∞ tests
 tests

records management
(added August 1989)
 GS management
 . information management
 . . **records management**
 RT data management
 information resources management
 information systems
 management information systems
 records

recoverability
 RT damage assessment
 ∞ properties
 ∞ recovery

recoverable launch vehicles
 GS launch vehicles
 . **recoverable launch vehicles**
 RT booster recovery
 launch vehicle configurations
 multiengine vehicles
 ∞ recovery

recoverable spacecraft

- recovery parachutes
- reusable launch vehicles
- ∞ vehicles
- ∞ winged vehicles
- X-33 reusable launch vehicle
- X-34 reusable launch vehicle

recoverable satellites

USE **recoverable spacecraft**

recoverable spacecraft

- UF *recoverable satellites*
- GS reentry vehicles
 - . **recoverable spacecraft**
 - . . Apollo spacecraft
 - . . . Apollo lunar experiment module
 - . . Astro vehicle
 - . . Gemini B spacecraft
 - . . Gemini spacecraft
 - . . . Gemini 2 spacecraft
 - . . Gemini (GT-1) spacecraft
 - . . Mercury spacecraft
 - . . . Aurora 7
 - . . . Faith 7
 - . . Friendship 7
 - . . SIGMA 7
 - . . reusable spacecraft
 - . . . aerospace planes
 - HOPE aerospace plane
 - HOTOL launch vehicle
 - VentureStar launch vehicle
 - X-30 vehicle
 - X-37 vehicle
 - X-40A vehicle
 - . . . MARS (Manned Reusable Spacecraft)
 - . . . single stage to orbit vehicles
 - Delta Clipper
 - HOTOL launch vehicle
 - . . . space shuttles
 - Buran space shuttle
 - Hermes manned spaceplane
 - Space Shuttle orbiters
 - Atlantis (orbiter)
 - Challenger (Orbiter)
 - Columbia (Orbiter)
 - Discovery (Orbiter)
 - Endeavour (orbiter)
 - Enterprise (Orbiter)
 - . . voskhod manned spacecraft
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
 - . . Vostok spacecraft
 - . . . Vostok 1 spacecraft
 - . . . Vostok 2 spacecraft
 - . . . Vostok 3 spacecraft
 - . . . Vostok 4 spacecraft
 - . . . Vostok 5 spacecraft
 - . . . Vostok 6 spacecraft
- RT booster rocket engines
- boosterglide vehicles
- expendable stages (spacecraft)
- hypersonic vehicles
- Inertial Upper Stage
- interim stages (spacecraft)
- lifting reentry vehicles
- maneuverable spacecraft
- manned spacecraft
- military spacecraft
- rendezvous spacecraft
- space capsules
- ∞ spacecraft
- spacecraft recovery
- unmanned spacecraft
- ∞ winged vehicles

∞ recovery

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT booster recovery
- gas recovery
- loop transfer recovery
- materials recovery
- nuclear fuel reprocessing
- oil recovery
- pressure recovery

- reclamation
- recoverability
- recoverable launch vehicles
- recovery parachutes
- retrieval
- reuse
- spacecraft recovery
- stress relaxation
- stress relieving
- visual discrimination

recovery parachutes

- GS parachutes
 - . **recovery parachutes**
- RT booster recovery
- Discoverer recovery capsules
- recoverable launch vehicles
- ∞ recovery
- ribbon parachutes
- spacecraft recovery

recovery vehicles

- SN (EXCLUDES RECOVERABLE VEHICLES)
- GS **recovery vehicles**
 - . Assured Crew Return Vehicle
 - . X-38 crew return vehicle
- RT helicopters
- ∞ military vehicles
- trucks
- ∞ vehicles

recovery zones

- RT downrange
- landing sites
- reentry range
- regions
- spacecraft recovery

recreation

- RT morale
- parks
- relaxation (physiology)
- rest
- Starsite program
- tourism
- urban planning
- urban research

recrystallization

- DEF In metals, the change from one crystal structure to another, as occurs on heating or cooling through a critical temperature. The formation of a new strain free grain structure from that existing in cold worked metal, usually accomplished by heating.
- GS crystallization
 - . **recrystallization**
- RT annealing
- heat treatment
- laser annealing
- ∞ metallurgy
- nucleation
- polygonization
- ∞ separation

rectangles

- GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . tetragons
 - **rectangles**
- RT rectangular planforms

rectangular beams

- GS structural members
 - . beams (supports)
 - . . **rectangular beams**

- RT box beams

rectangular coordinates

USE **Cartesian coordinates**

rectangular drainage

USE **drainage patterns**

rectangular panels

- GS panels
 - . **rectangular panels**
 - planforms
 - . rectangular planforms
 - . . **rectangular panels**
- RT strakes
- structural members
- wing panels

rectangular planforms

- GS planforms
 - . **rectangular planforms**
 - . . rectangular panels
 - . . rectangular plates
 - . . rectangular wings
- RT rectangles
- wing planforms

rectangular plates

- GS planforms
 - . rectangular planforms
 - . . **rectangular plates**
 - structural members
 - . plates (structural members)
 - . . **rectangular plates**
- RT flat plates
- metal plates
- ∞ plates

rectangular waveguides

- GS waveguides
 - . **rectangular waveguides**
- RT beam waveguides
- microwave filters

rectangular wind tunnels

- GS test facilities
 - . wind tunnels
 - . . **rectangular wind tunnels**
- RT subsonic wind tunnels

rectangular wings

- UF *straight wings*
- GS airfoils
 - . wings
 - . . unswept wings
 - . . . **rectangular wings**
 - planforms
 - . rectangular planforms
 - . . **rectangular wings**

rectennas

- DEF Devices that convert microwave energy into direct-current power by utilizing a number of small diodes each with its own diode rectifier. Used for rectifier antennas.
- UF *rectifier antennas*
- GS antennas
 - . radio antennas
 - . . microwave antennas
 - . . . **rectennas**
 - microwave equipment
 - . microwave antennas
 - . . **rectennas**
 - radio equipment
 - . radio antennas
 - . . microwave antennas
 - . . . **rectennas**
- RT satellite power transmission
- solar radiation
- spacetennas

rectification

- GS **rectification**
 - . geometric rectification (imagery)
- RT ∞ condensation
- distillation

- purification
 refining
- rectifier antennas*
 USE **rectennas**
- rectifiers**
 SN (EXCLUDES PHOTOGRAPHIC RECTIFIER)
 DEF Static devices having an asymmetrical conduction characteristic which is used to convert attending current into direct current.
 GS **rectifiers**
 . avalanche diodes
 . . cryosar
 . . crystal rectifiers
 . germanium diodes
 . ignitrons
 . thyratrons
 . thyristors
 . . silicon controlled rectifiers
 RT Barritt diodes
 current converters (AC to DC)
 diodes
 electron tubes
 ∞ energy sources
 form factors
 ITO (semiconductors)
 mercury arcs
 metal oxide semiconductors
 ∞ power supplies
 power supply circuits
 semiconductor devices
 solid state devices
 thin films
- rectum**
 GS anatomy
 . digestive system
 . . gastrointestinal system
 . . . intestines
 . . . **rectum**
- recuperators*
 USE **regenerators**
- recursion formulas*
 USE **recursive functions**
- recursive filters*
 (added December 2002)
 USE **IIR filters**
- recursive functions**
 UF *recursion formulas*
 GS functions (mathematics)
 . **recursive functions**
 RT FIR filters
 IIR filters
 LISP (programming language)
 strange attractors
- recycling**
 RT economy
 extraction
 materials recovery
 nuclear fuel reprocessing
 ∞ processing
 reclamation
 refining
 resources
 solvolysis
 spent fuels
 waste management
- red arcs**
 GS atmospheric radiation
 . auroras
 . . auroral arcs
 . . . **red arcs**
 RT ∞ arcs
- auroral ionization
- red blood cells*
 USE **erythrocytes**
- red dwarf stars**
 DEF Red stars of low luminosity, so designated by E. Hertzsprung. Red Dwarf stars are commonly those main sequence stars fainter than an absolute magnitude of plus 1, and are the faintest and coolest of the dwarfs.
 GS celestial bodies
 . stars
 . . main sequence stars
 . . . dwarf stars
 **red dwarf stars**
 RT hot stars
 late stars
 massive compact halo objects
 stellar luminosity
 stellar magnitude
 subdwarf stars
 supernova remnants
 white dwarf stars
- red giant stars**
 DEF Stars whose evolution has progressed to the point where hydrogen core burning has been completed, the helium core has become denser and hotter than originally, and the envelope has expanded to perhaps 100 times its initial size.
 GS celestial bodies
 . stars
 . . giant stars
 . . . **red giant stars**
 carbon stars
 RT asymptotic giant branch stars
 late stars
 M stars
 Mira variables
 S stars
 stellar evolution
 stellar luminosity
- Red Sea**
 GS seas
 . **Red Sea**
 RT Africa
 Asia
- red shift**
 DEF In astronomy, the displacement of observed spectral lines toward the longer wavelengths of the red end of the spectrum.
 RT blue shift
 cosmology
 Doppler effect
 Doppler-Fizeau effect
 galaxies
 Hubble constant
 Hubble diagram
 irregular galaxies
 radial velocity
- red sprites*
 (added January 2000)
 USE **sprites (atmospheric physics)**
- red tide**
 RT fishes
 marine environments
 microorganisms
 oceanography
 plankton
 sea water
 toxicology
- Redeye missile**
 GS missiles
 . antiaircraft missiles
 . . **Redeye missile**
 . . surface to air missiles
 . . **Redeye missile**
- RT solid propellant rocket engines
- Redox cells**
 DEF Cells for converting the energy of reactants to electrical energy; an intermediate reductant in the form of liquid electrolyte reacts at the anode in a conventional manner and is regenerated by reaction with a primary fuel.
 GS electrochemical cells
 . electric batteries
 . . **Redox cells**
 RT electrochemistry
 electrolytes
 energy conversion efficiency
 energy storage
- reduced gravity*
 USE **microgravity**
- reduced instruction set computing*
 USE **RISC processors**
- reduced order filters**
 GS linear filters
 . **reduced order filters**
 RT electric filters
 ∞ filters
 Kalman filters
 navigation aids
- ∞ **reduction**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 UF *decrementing*
 diminution
 shortening
 RT attenuation
 cleaning
 comminution
 contraction
 damping
 data reduction
 deceleration
 decontamination
 demagnetization
 deoxygenation
 depletion
 depolarization
 dilution
 dimming
 dispersing
 dissipation
 drag reduction
 elimination
 friction reduction
 hydrogenolysis
 ∞ inhibition
 iodimetry
 leakage
 metal working
 noise reduction
 optimization
 pressure reduction
 prevention
 purification
 reduction (chemistry)
 refining
 relaxation (mechanics)
 removal
 retarding
 shrinkage
 sidelobe reduction
 spin reduction
 stopping
 tapering
- reduction (chemistry)**
 GS chemical reactions
 . **reduction (chemistry)**
 . . deoxidizing
 . . hydrogenation
 RT ∞ chemistry
 dehydrogenation
 electrodeposition
 electrolysis
 metal powder

redundancy

- oxidation
- oxidation-reduction reactions
- purification
- ∞ reduction
- roasting
- smelting
- trichloroethylene

reduction (mathematics)

USE **optimization**

redundancy

DEF The existence of more than one means of accomplishing a given task, where all means must fail before there is an overall failure of the system.

RT assurance
communication theory
computer program integrity
correction
error detection codes
information theory
reliability

redundancy encoding

GS coding
. **redundancy encoding**
RT concatenated codes
data transmission
error correcting codes
error correcting devices
error detection codes
Reed-Solomon codes
repetition
signal encoding

redundant components

UF *redundant structures*
RT backups
∞ components
reliability
spare parts
∞ structures

redundant structures

USE **redundant components**

reeds (plants)

GS plants (botany)
. grasses
. . . **reeds (plants)**

Reed-Solomon codes

(added June 1992)
UF *RS codes*
GS error correcting codes
. **Reed-Solomon codes**
RT bit error rate
∞ codes
coding
concatenated codes
decoders
redundancy encoding
signal encoding

reefs

DEF Chains of rocks, sand ridges, or coral at or near the surface of water.

GS landforms
. barriers (landforms)
. . . **reefs**
RT atolls
bars (landforms)
coral reefs
island arcs
islands
oceanography
rocks
sands
shallow water
∞ shelves
shoals

reels

RT cables (ropes)
∞ containers

- magnetic tapes
- spools
- tethered balloons
- tethered satellites
- tethering

reentry

DEF The event occurring when a spacecraft or other object comes back into the sensible atmosphere after going to higher altitudes; the action involved in this event.

GS atmospheric entry
. **reentry**
. . hyperbolic reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
. . manned reentry
. . spacecraft reentry
. . . uncontrolled reentry (spacecraft)
RT ablation
aerodynamic heating
aerodynamic stability
aerodynamics
aerothermodynamics
descent
descent trajectories
∞ entry
flight paths
impact prediction
lifting reentry vehicles
low observable reentry vehicles
missiles
∞ rockets
space flight
terminal guidance

reentry bodies

USE **reentry vehicles**

reentry breakup

USE **spacecraft breakup**

reentry communication

GS telecommunication
. space communication
. . spacecraft communication
. . . **reentry communication**
RT blackout (propagation)
manned reentry
plasma sheaths
radio communication
voice communication

reentry decoys

GS countermeasures
. **reentry decoys**
decoys
. **reentry decoys**
reentry vehicles
. **reentry decoys**
RT ballistic missile decoys
missile defense

reentry effects

RT ablation
aerodynamic heating
blackout (propagation)
∞ effects
hypersonic reentry
plasma sheaths
spacecraft breakup
temperature effects

reentry gliders

USE **lifting reentry vehicles**

reentry guidance

GS guidance (motion)
. **reentry guidance**
RT automatic control
descent trajectories
inertial guidance
manual control
satellite guidance
spacecraft guidance

terminal guidance

reentry physics

RT ablation
aerothermochemistry
aerothermodynamics
hypersonic reentry
low observable reentry vehicles
∞ physics
plasma sheaths
∞ science

reentry range

GS distance
. **reentry range**
RT missile ranges
recovery zones

reentry shielding

GS shielding
. heat shielding
. . **reentry shielding**
RT ablation
ablative nose cones
aerodynamic heating
aerothermochemistry
heat sinks
∞ insulated structures
Ludox (trademark)
nose cones
reusable heat shielding
spacecraft shielding
thermal control coatings
thermal insulation
thermal protection

reentry trajectories

DEF Those parts of rocket trajectories that begin at reentry and end at target or at the surface.

GS trajectories
. descent trajectories
. . **reentry trajectories**
RT circumlunar trajectories
flight mechanics
hyperbolic reentry
missile trajectories
moon-Earth trajectories
spacecraft trajectories
terminal guidance

reentry vehicles

DEF Any payload carrying vehicles designed to leave the sensible atmosphere and then return through it to Earth. Used for reentry bodies.

UF *reentry bodies*
GS **reentry vehicles**
. boostglide vehicles
. . X-20 aircraft
. low observable reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft
. Mark 1 reentry body
. Mark 2 reentry body
. Mark 3 reentry body
. Mark 4 reentry body
. Mark 5 reentry body
. Mark 6 reentry body
. Mark 11 reentry body
. Mark 12 reentry body
. Mark 17 reentry body
. recoverable spacecraft
. . Apollo spacecraft
. . . Apollo lunar experiment module
. . Astro vehicle
. . Gemini B spacecraft
. . Gemini spacecraft

- . . . Gemini 2 spacecraft
- . . . Gemini (GT-1) spacecraft
- . . . Mercury spacecraft
- . . . Aurora 7
- . . . Faith 7
- . . . Friendship 7
- . . . SIGMA 7
- . . . reusable spacecraft
- . . . aerospace planes
- HOPE aerospace plane
- HOTOL launch vehicle
- VentureStar launch vehicle
- X-30 vehicle
- X-37 vehicle
- X-40A vehicle
- . . . MARS (Manned Reusable Spacecraft)
- . . . single stage to orbit vehicles
- Delta Clipper
- HOTOL launch vehicle
- . . . space shuttles
- Buran space shuttle
- Hermes manned spaceplane
- Space Shuttle orbiters
- Atlantis (orbiter)
- Challenger (Orbiter)
- Columbia (Orbiter)
- Discovery (Orbiter)
- Endeavour (orbiter)
- Enterprise (Orbiter)
- . . . voskhod manned spacecraft
- . . . Voskhod 1 spacecraft
- . . . Voskhod 2 spacecraft
- . . . Vostok spacecraft
- . . . Vostok 1 spacecraft
- . . . Vostok 2 spacecraft
- . . . Vostok 3 spacecraft
- . . . Vostok 4 spacecraft
- . . . Vostok 5 spacecraft
- . . . Vostok 6 spacecraft
- . reentry decoys
- . Trailblazer 1 reentry vehicle
- . Trailblazer 2 reentry vehicle
- . X-17 reentry vehicle
- RT ablative nose cones
- aeroshells
- aerothermochemistry
- Athena rocket vehicle
- ∞ ballistic vehicles
- bluff bodies
- ∞ bodies
- ferry spacecraft
- ∞ flight vehicles
- hypersonic vehicles
- ∞ insulated structures
- landing modules
- lifting bodies
- maneuverable spacecraft
- missiles
- nose cones
- pyramidal bodies
- ∞ rockets
- space capsules
- ∞ spacecraft
- spacecraft configurations
- terminal guidance
- test vehicles
- ∞ vehicles
- ∞ winged vehicles

reference atmospheres

- UF *standard atmospheres*
- GS models
- . atmospheric models
- . . **reference atmospheres**
- standards
- . **reference atmospheres**

reference stars

- GS celestial bodies
- . stars
- . . **reference stars**
- RT astronomical coordinates
- astronomical photography
- celestial navigation
- laser guide stars
- navigation aids

- space navigation
- ∞ **reference systems**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bibliographies
- celestial reference systems
- coordinates
- documentation
- indexes (documentation)
- inertial reference systems
- libraries
- spherical coordinates
- ∞ systems
- Wiswesser notations

references (standards)

- USE **standards**

refilling

- GS filling
- . **refilling**
- RT ∞ loading
- replenishment

refining

- GS **refining**
- . electrorefining
- . electroslag refining
- RT alkylation
- beneficiation
- chemical fractionation
- clean fuels
- cleaning
- ∞ conversion
- crystallizing
- desulfurizing
- dewaxing
- distillation
- drop transfer
- energy policy
- enrichment
- extraction
- fractionation
- hydrogenation
- hydrometallurgy
- isomerization
- materials recovery
- polymerization
- ∞ processing
- purification
- pyrometallurgy
- rectification
- recycling
- ∞ reduction
- ∞ separation
- smelting
- sublimation
- upgrading
- zone melting

reflectance

- DEF The ratio of the radiant flux reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.
- UF *reflection coefficient*
- reflectivity*
- GS electromagnetic properties
- . optical properties
- . . **reflectance**
- . . . bidirectional reflectance
- . . . spectral reflectance

- RT absorbance
- albedo
- attenuation coefficients
- birefringence
- bistatic reflectivity
- brightness
- coarseness
- cosmic ray albedo
- Earth albedo
- flow coefficients
- geometrical theory of diffraction
- luster
- optical measurement
- optical reflection

- photometry
- ray tracing
- reflection
- reflectometers
- surface properties
- surface roughness effects
- transmittance
- vegetative index

reflected radiation

- USE **reflected waves**

reflected rays

- USE **reflected waves**

reflected waves

- DEF Shock waves, expansion waves, or compression waves reflected by another wave incident upon a wall or other boundary. In electronics, radio waves reflected from a surface or object. Used for reflected radiation and reflected rays.

- UF *reflected radiation*
- reflected rays*
- RT corpuscular radiation
- elastic waves
- electromagnetic radiation
- evanescent waves
- incident radiation
- optical reflection
- photon beams
- ∞ radiation
- refracted waves
- retroreflection
- wave reflection

reflecting telescopes

- DEF Telescopes which collect light by means of concave mirrors.

- GS telescopes
- . **reflecting telescopes**
- . . Large Deployable Reflector
- . . Starsat telescope
- RT Cassegrain optics
- honeycomb mirrors
- mirrors
- optical equipment
- optical measuring instruments
- paraboloid mirrors
- reflectors
- Schmidt telescopes
- segmented mirrors
- spectroscopic telescopes
- stratoscope telescopes

reflection

- DEF The process whereby a surface of discontinuity turns back a portion of the incident radiation into the medium through which the radiation approached.

- GS **reflection**
- . infrared reflection
- . optical reflection
- . retroreflection
- . signal reflection
- . specular reflection
- . spread reflection
- . ultraviolet reflection
- . wave reflection
- . . Mach reflection
- RT bidirectional reflectance
- Brewster angle
- deflection
- diffusion
- echelette gratings
- echelle gratings
- electromagnetic absorption
- electromagnetic radiation
- impingement
- Lambert surface
- light (visible radiation)
- ∞ optics
- reflectance
- refraction
- scattering
- transmission

reflection nebulae

zero sound

reflection coefficient
USE **reflectance**

reflection nebulae

DEF Any celestial body having a hazy cloudy appearance whose brightness results from the scattering by dust particles of light from nearby stars.

GS celestial bodies
. nebulae
. . . **reflection nebulae**

RT cosmic dust
interstellar matter
light scattering

reflectivity
USE **reflectance**

reflectometers

DEF Instruments for measuring reflectance.

GS measuring instruments
. optical measuring instruments
. . . **reflectometers**
. . . . microwave reflectometers
optical equipment
. optical measuring instruments
. . . **reflectometers**
. . . . microwave reflectometers

RT comparators
directors (antenna elements)
optical measurement
photometers
reactor cores
reflectance
reflector antennas
Schelkunoff principle
two reflector antennas
ultraviolet reflection

reflector antennas

DEF Antennas consisting of one or more reflecting surfaces and a radiating (receiving) feed system.

GS antennas
. directional antennas
. . . **reflector antennas**
. . . . parabolic antennas
. . . . two reflector antennas

RT antenna feeds
antenna radiation patterns
Cassegrain antennas
microwave antennas
multibeam antennas
parabolic reflectors
radar antennas
radar corner reflectors
radar reflectors
radio antennas
reflectometers
reflectors
subreflectors

reflector satellites
USE **passive satellites**

reflectors

GS **reflectors**
. Fresnel reflectors
. parabolic reflectors
. . . paraboloid mirrors
. radar reflectors
. . . radar corner reflectors
. retroreflectors
. solar reflectors
. . . solar collectors
. . . solettas
. Bragg reflectors
. wiggler magnets

RT antennas
attenuators
baffles
ceilings (architecture)
deflectors
directors (antenna elements)

etalons
heliostats
Large Deployable Reflector
mirrors
parasitic elements (antennas)
plasma core reactors
radiation shielding
reactor cores
reflecting telescopes
reflector antennas
Schelkunoff principle
subreflectors
telescopes
two reflector antennas

reflexes

GS **reflexes**
. conditioned reflexes
. respiratory reflexes
. . . cough
. . . Hering-Breuer reflex
. . . sneezing
. baroreflexes
. vestibular nystagmus
. . . carotid sinus reflex

RT deconditioning
reaction time
vasoconstriction
vasodilation

reforestation

DEF The reestablishment of a tree crop on forest land.

GS management
. resources management
. . . forest management
. . . . **reforestation**

RT forests
timber inventory

refracted radiation
USE **refracted waves**

refracted rays
USE **refracted waves**

refracted waves

DEF Waves that have had their direction of motion changed by refraction. Used for refracted radiation and refracted rays.

UF *refracted radiation*
refracted rays

RT corpuscular radiation
eikonal equation
elastic waves
electromagnetic radiation
incident radiation
photon beams
reflected waves
refraction
 ∞ waves

refracting telescopes

DEF Telescopes which collect light by means of a lens or system of lenses.

GS telescopes
. **refracting telescopes**

RT lenses
optical equipment
optical measuring instruments
spectroscopic telescopes
stratoscope telescopes

refraction

DEF The process in which the direction of energy propagation is changed as the result of a change within the propagating medium, or as the energy passes through the interface representing a density discontinuity between the two media. In the first instance, the rays undergo a smooth bending over a finite distance. In the second case, the index of refraction changes through an interfacial layer that is thin compared to the wavelength of the radiation; thus, the refraction is abrupt, essentially discontinuous.

GS **refraction**

. atmospheric refraction
. . . radio wave refraction
. birefringence
. . . Kerr electrooptical effect

RT asphericity
astigmatism
 ∞ conduction
deflection
diffraction
distortion
divergence
Huygens principle
isochromatics
lenses
light (visible radiation)
photoelasticity
prisms
reflection
refracted waves
refractivity
sinking
Snells law
transmission
Voigt effect
wave dispersion
wave propagation

refractive index
USE **refractivity**

refractivity

UF *refractive index*

GS electromagnetic properties
. optical properties
. . . **refractivity**
. . . . photorefractivity

RT atmospheric refraction
birefringence
birefringent coatings
birefringent filters
Brewster angle
gradient index optics
isotropism
light (visible radiation)
opacity
optical thickness
polarization (waves)
ratios
refraction
reflectometers
Snells law
underwater optics

reflectometers

DEF Instruments for measuring the index of refraction of a liquid, gas, or solid.

GS measuring instruments
. optical measuring instruments
. . . **reflectometers**
optical equipment
. optical measuring instruments
. . . **reflectometers**

RT goniometers
optical measurement
refractivity

refractories

GS refractory materials
. **refractories**

RT ceramics
cermets
combustion chambers
forsterite
furnaces
hearth
mortars (material)
refractory coatings
rocket engines
rocket linings
thermal insulation
turbines

refractory coatings

DEF Pyrolytic materials used for coating other materials exposed to high temperatures.

GS coatings

- . protective coatings
- . . **refractory coatings**
- RT ceramics
- pyrolytic materials
- refractories
- thermal insulation
- refractory materials**
- UF *high melting compounds*
- high temperature materials*
- pyrographalloy*
- GS **refractory materials**
- . Ludox (trademark)
- . porcelain
- . refractories
- . refractory metal alloys
- . . molybdenum alloys
- . . . Rene 41
- . . . Rene 63
- . . . Rene 77
- . . . Rene 95
- . . niobium alloys
- . . osmium alloys
- . . rhenium alloys
- . . tantalum alloys
- . . tungsten alloys
- . refractory metals
- . . chromium
- . . . chromium isotopes
- . . iridium
- . . . iridium isotopes
- . . molybdenum
- . . niobium
- . . . niobium isotopes
- niobium 95
- . . osmium
- . . . osmium isotopes
- . . rhenium
- . . . rhenium isotopes
- . . tantalum
- . . . tantalum isotopes
- . . tungsten
- . . . tungsten isotopes
- refractory materials
- . **refractory metals**
- . . chromium
- . . . chromium isotopes
- . . iridium
- . . . iridium isotopes
- . . molybdenum
- . . niobium
- . . . niobium isotopes
- niobium 95
- . . osmium
- . . . osmium isotopes
- . . rhenium
- . . . rhenium isotopes
- . . tantalum
- . . . tantalum isotopes
- . . tungsten
- . . . tungsten isotopes
- RT heat resistant alloys
- transition metals
- refractory period**
- RT reaction time
- ∞ relaxation
- responses
- time lag
- Refrasil (trademark)*
- USE **fibers**
- silicon dioxide**
- refrigerants**
- RT absorbers (materials)
- absorption cooling
- air conditioning
- ammonia
- brines
- coolants
- cooling systems
- fluorohydrocarbons
- freon
- ice
- refrigerating
- refrigerating machinery
- refrigerators
- solid nitrogen
- refrigerating**
- RT air conditioning
- air cooling
- cold traps
- condensing
- coolers
- cooling
- cooling systems
- cryogenic cooling
- cryogenic equipment
- cryogenics
- defrosting
- dehumidification
- freezing
- freon
- frozen foods
- humidity
- low temperature
- magnetic cooling
- preserving
- refrigerants
- refrigerators
- temperature
- temperature control
- temperature distribution
- thermoacoustic refrigerators
- thermoelectric cooling
- ventilation
- refrigerating machinery**
- GS **refrigerating machinery**
- . refrigerators
- . . thermoacoustic refrigerators
- RT absorbers (equipment)
- air conditioning
- air conditioning equipment
- blowers
- compressors
- condensers (liquefiers)
- coolers
- cooling systems
- cryogenic equipment
- evaporators
- heat pumps
- ∞ machinery
- refrigerants
- temperature control
- thermoelectric cooling
- refrigerators**
- GS refrigerating machinery
- . **refrigerators**
- . . thermoacoustic refrigerators
- RT coolers
- defrosting
- refrigerants
- refrigerating
- Refsat**
- DEF A proposed satellite that broadcasts navigation aiding signals to low cost user terminals which employ the constellation of 24 NavStar Global Positioning System (GPS) satellites for position determination.
- GS artificial satellites
- . navigation satellites
- . . **Refsat**
- RT NAVSTAR satellites
- synchronous satellites
- refueling**
- UF *fueling*
- GS **refueling**
- . air to air refueling
- RT aircraft hazards
- flight operations
- fuel consumption
- fuel contamination
- fuel control
- fuel systems
- ground support equipment
- preflight operations
- propellant transfer
- replenishment
- retractable equipment
- ∞ **regeneration**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT regeneration (engineering)
- regeneration (physiology)
- regeneration (engineering)**
- UF *regenerative cycles*
- RT ∞ generation
- positive feedback
- reclamation
- ∞ regeneration
- regeneration (physiology)**
- UF *bioregeneration*

regenerative cooling

RT physiology
∞ regeneration

regenerative cooling

DEF The cooling of a part of an engine by the fuel or propellant being delivered to the combustion chamber; specifically, the cooling of a rocket engine combustion chamber or nozzle by circulating the fuel or oxidizer, or both, around the part to be cooled.

GS cooling
. **regenerative cooling**

RT heat exchangers
precooling
regenerators

regenerative cycles

USE **regeneration (engineering)**

regenerative feedback

USE **positive feedback**

regenerative fuel cells

GS electric generators
. direct power generators
. . . fuel cells
. . . **regenerative fuel cells**
electrochemical cells
. fuel cells
. . . **regenerative fuel cells**

RT biochemical fuel cells
phosphoric acid fuel cells
storage batteries

regenerators

DEF Devices used in a thermodynamic process for capturing and returning to the process heat that would otherwise be lost. Used for recuperators.

UF *recuperators*

GS **regenerators**
. thermosiphons

RT energy storage
heat exchangers
heat sinks
regenerative cooling
tube heat exchangers

Regge poles

RT angular momentum
∞ poles
Pomeranchuk theorem
pomérons
scattering cross sections

regimes

RT communities
culture (social sciences)
environments
governments
nations
politics

regional planning

GS planning
. **regional planning**
. . . urban planning

RT conservation
farmlands
forest management
forests
harbors
highways
industrial areas
lakes
land management
megalopolises
parks
residential areas
rural areas
rural land use
St Louis-Kansas City Corridor (MO)
suburban areas
urban development

urban transportation

shift registers

regions

UF *zones*

GS **regions**

. auroral zones
. Brillouin zones
. Central America
. Central Atlantic Region (US)
. Central Europe
. D region
. E region
. . . E-1 layer
. . . E-2 layer
. . . sporadic E layer
. equatorial regions
. F region
. . . F 1 region
. . . F 2 region
. Fresnel region
. Great Basin (US)
. Great Plains Corridor (North America)
. Gutenberg zone
. habitats
. lumbar region
. M region
. Middle East
. New England (US)
. null zones
. Pacific Northwest (US)
. Panama Canal Zone
. pelagic zone
. polar regions
. . . Antarctic regions
. . . . McMurdo sound
. . . . Ross ice shelf
. . . Arctic regions
. . . . subarctic regions
. remote regions
. . . Antarctic regions
. . . . McMurdo sound
. . . . Ross ice shelf
. . . Arctic regions
. . . . subarctic regions
. Sand Hills Region (GA-NC-SC)
. Sand Hills Region (NE)
. sciatic region
. Southeast Asia
. Southern California
. Southern Yemen
. temperate regions
. tropical regions
. . . Amazon region (South America)
. . . intertropical convergent zones

RT asteroid belts

∞ belts
boundaries
Earth ionosphere

∞ layers
recovery zones

∞ sectors
sites

∞ registers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT registers (air circulation)
registers (computers)

registers (air circulation)

RT cooling systems
∞ registers

registers (computers)

DEF Devices capable of retaining information, often that contained in a small subset (e. g. , one word) of the aggregate information in a digital computer.

GS computer components
. computer storage devices
. . . **registers (computers)**
. . . . accumulators (computers)

RT central processing units
∞ recorders
∞ registers

regolith

DEF The layer rock or blanket or unconsolidated rocky debris of any thickness that overlies bedrock and forms the surface of the land.

GS rocks

. **regolith**

RT basalt
bedrock
breccia
carbonaceous rocks
coal
core-mantle boundary
Earth mantle
Earth resources
enstatite
geology
igneous rocks
lava
lithology
lunar geology
lunar mantle
lunar rocks
magma
olivine
peridotite
pyroxenes
rock intrusions
selenology
stratigraphy

regression (statistics)

USE **regression analysis**

regression analysis

DEF The statistical counterpart or analog of the functional expression, in ordinary mathematics, of one variable in terms of others.

UF *regression (statistics)*

GS statistical analysis
. variance (statistics)
. . . multivariate statistical analysis
. . . . **regression analysis**
. regression coefficients

RT autoregressive moving average
autoregressive processes
clumps
correlation
covariance
experiment design
factor analysis
forecasting
least squares method
quality control
significance
statistical tests
variability

regression coefficients

GS coefficients
. **regression coefficients**
statistical analysis
. variance (statistics)
. . . multivariate statistical analysis
. . . . regression analysis
. **regression coefficients**

RT correlation
forecasting
mathematical models
quality control

regularity

RT continuity (mathematics)
convergence
irregularities
∞ normalizing
∞ patterns
periodic variations
physiology
∞ properties

- trend analysis
- regulation*
USE **control**
- regulations**
RT air law
allowances
∞ control
copyrights
crime
law (jurisprudence)
liabilities
licensing
patent policy
penalties
police
policies
procurement policy
prohibition
rules
- regulators**
SN (LIMITED TO DEVICES)
GS control equipment
. **regulators**
. . . automatic control valves
. . . . pressure regulators
. . . . relief valves
. . . cryostats
. . . current regulators
. . . flow regulators
. . . . fuel flow regulators
. . . oxygen regulators
. . . speed regulators
. . . thermostats
. . . voltage regulators
RT actuators
automatic control
∞ control
controllers
gibberellins
speed control
- regulatory mechanisms (biology)**
SN (RESTRICTED TO THE REGULATION OF PHYSIOLOGICAL AND PHYSIOCHEMICAL PROCESSES--EXCLUDES ECOLOGICAL, GENETIC, OR BIOTECHNOLOGICAL REGULATION)
DEF Specific processes by which living organisms control the rates of biochemical and physiological reactions involved in processes such as metabolism and cellular differentiation.
RT biocontrol systems
calmodulin
∞ control
hormones
thermoregulation
- Regulus missile**
GS missiles
. surface to surface missiles
. . **Regulus missile**
RT solid propellant rocket engines
turbojet engines
- reheating*
USE **heating**
- reignition*
USE **ignition**
- reinforced plastics**
DEF Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic laminates are the most common and strongest.
GS composite materials
. polymer matrix composites
. . **reinforced plastics**
. . . carbon fiber reinforced plastics
. . . . carbon-phenolic composites
. . . glass fiber reinforced plastics
. . . . micarta
plastics
. **reinforced plastics**
. . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . glass fiber reinforced plastics
RT aircraft survivability
aramid fiber composites
aramid fibers
boron fibers
boron reinforced materials
fiber composites
graphite-epoxy composites
hybrid composites
laminates
reinforcement (structures)
thermosetting resins
- reinforced plates**
GS structural members
. plates (structural members)
. . **reinforced plates**
RT anisotropic plates
corrugated plates
laminates
plastic plates
reinforcement (structures)
- reinforced shells**
GS shells (structural forms)
. **reinforced shells**
RT anisotropic shells
corrugated shells
cylindrical shells
fluid filled shells
hemispherical shells
liquid filled shells
metal shells
orthotropic shells
plastic shells
reinforcement (structures)
reinforcement rings
shell stability
spherical shells
thin walled shells
toroidal shells
wind tunnel walls
- ∞ **reinforcement**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT reinforcement (psychology)
reinforcement (structures)
- reinforcement (psychology)**
GS **reinforcement (psychology)**
. reward (psychology)
RT learning
motivation
∞ reinforcement
self stimulation
- reinforcement (structures)**
RT bulkheads
composite materials
fillers
longerons
reinforced plastics
reinforced plates
reinforced shells
∞ reinforcement
reinforcement rings
ribs (supports)
rigid structures
ring structures
stiffening
strakes
stringers
structural members
structural stability
structural strain
supports
thick walls
wire
- wire cloth
- reinforcement rings**
GS ring structures
. **reinforcement rings**
RT reinforced shells
reinforcement (structures)
ribs (supports)
∞ rings
- reinforcing fibers**
GS fibers
. **reinforcing fibers**
. . aramid fibers
. . . Kevlar (trademark)
. . boron fibers
. . carbon fibers
RT boron reinforced materials
braided composites
carbon fiber reinforced plastics
carbon-carbon composites
ceramic fibers
ceramic matrix composites
composite materials
Dacron (trademark)
debonding (materials)
fiber composites
fiber orientation
fiber pullout
fiber pushout
fiber volume fraction
fiber-matrix interfaces
glass fiber reinforced plastics
glass fibers
graphite-epoxy composites
hybrid composites
kink bands
lay-up
metal fibers
metal matrix composites
micromechanics
reinforcing materials
resin transfer molding
superhybrid materials
synthetic fibers
whisker composites
woven composites
- reinforcing materials**
DEF Fibers, filaments, fabrics, and other substances used for strengthening of matrices in composite materials.
RT aramid fibers
composite materials
fabrics
fiber composites
fibers
∞ filaments
∞ materials
matrix materials
particulate reinforced composites
reinforcing fibers
- Reissner theory**
RT Mindlin plates
plates (structural members)
stress analysis
∞ theories
- Reissner-Mindlin plates*
(added April 1998)
USE **Mindlin plates**
- Reissner-Nordstrom solution**
DEF The unique solution of general relativity theory describing a nonrotating, charged black hole.
RT astronomical models
black holes (astronomy)
charged particles
gravitational effects
relativity
- rejection**
RT acceptability
elimination

relational data bases

evaluation
exclusion
removal
selection

relational data bases

(added June 1997)

GS data bases

. relational data bases

RT architecture (computers)
computer systems design
data base management systems
data management
data retrieval

∞ relationships

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *interrelationships*

RT approximation
duality theorem
homology
stress-strain relationships

relative biological effectiveness (RBE)

UF *RBE*

GS biological effects

. relative biological effectiveness (RBE)

RT ∞ biology
physiological effects

relativistic effects

RT Bose-Einstein condensates
dimensions

∞ effects

gravitational lenses
mass
relativity
time
velocity

relativistic electron beams

DEF Beams of electrons traveling at approximately the speed of light. Used for REB.

UF *REB*

GS beams (radiation)

. particle beams
. electron beams
. . . relativistic electron beams

particles

. charged particles
. energetic particles
. electrons
. . . high energy electrons

. . . . relativistic electron beams

. corpuscular radiation

. electron radiation

. electron beams

. . . relativistic electron beams

. energetic particles

. electrons

. . . high energy electrons

. . . . relativistic electron beams

. elementary particles

. fermions

. leptons

. . . electrons

. . . high energy electrons

. . . . relativistic electron beams

. relativistic particles

. relativistic electron beams

RT beam plasma amplifiers

beta particles

controlled fusion

diffraction radiation

electron bombardment

electron scattering

inertial fusion (reactor)

ionizing radiation

plasma heating

plasma jets

plasma-particle interactions

relativistic particles

DEF Particles with a velocity so large that

their relativistic mass exceeds their rest mass by an amount which is significant for the computation or other considerations at hand.

GS particles

. relativistic particles

. . relativistic electron beams

RT Hamilton-Jacobi equation

relativistic plasmas

GS particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . relativistic plasmas

. corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . relativistic plasmas

RT Astron thermonuclear reactor

bremsstrahlung

cosmic plasma

electron plasma

electron-positron plasmas

gravitational collapse

high temperature plasmas

pinch effect

plasma jets

plasma radiation

plasma-particle interactions

ponderomotive forces

relativistic theory

UF *Wightman theory*

RT ∞ theories

relativistic velocity

DEF A velocity sufficiently high that some properties of a particle of this velocity have values significantly different from those obtaining when the particle is at rest.

GS rates (per time)

. relativistic velocity

velocity

. relativistic velocity

RT high speed

∞ hypervelocity

light speed

particle motion

relativity

DEF A principle that postulates the equivalence of the description of the universe, in terms of physical laws, by various observers, or for various frames of reference. Used for geometrodynamics and space-time continuum.

UF *geometrodynamics*

space-time continuum

RT big bang cosmology

continuums

differential geometry

event horizon

field theory (physics)

grand unified theory

gravitational lenses

Gravity Probe B

inertial reference systems

light-cone expansion

Lorentz contraction

naked singularities

nonrelativistic mechanics

paradoxes

ponderomotive forces

quantum mechanics

Reissner-Nordstrom solution

relativistic effects

Schwarzschild metric

space-time functions

string theory

supergravity

tensor analysis

unified field theory

∞ relaxation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cross relaxation

molecular relaxation
refractory period
relaxation (mechanics)
relaxation (physiology)
relaxation method (mathematics)

relaxation (mechanics)

GS relaxation (mechanics)

. spin-lattice relaxation

. stress relaxation

RT ∞ equilibrium

expansion

magnetic relaxation

molecular relaxation

nuclear relaxation

∞ reduction

∞ relaxation

relaxation method (mathematics)

relaxation time

residual stress

strain energy release rate

viscoelasticity

viscoplasticity

relaxation (physiology)

RT compressibility effects

massaging

recreation

∞ relaxation

work-rest cycle

relaxation method (mathematics)

DEF An iterative numerical method for solving elliptic partial differential equations, e. g. , a Poisson equation.

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . relaxation method (mathematics)

RT computational fluid dynamics

∞ methodology

∞ relaxation

relaxation (mechanics)

relaxation oscillators

GS oscillators

. relaxation oscillators

. . phantastrons

relaxation time

DEF In general, the time required for a system, object, or fluid to recover to a specified condition or value after disturbance. Specifically, the time taken by an exponentially decaying quantity to decrease in amplitude by a factor of $1/e = 0.3679$.

GS time

. relaxation time

RT ∞ equilibrium

excitation

Maxwell bodies

molecular relaxation

relaxation (mechanics)

spin-lattice relaxation

time constant

∞ relay

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT disconnect devices

electric contacts

electric relays

logic circuits

radio relay systems

repeaters

Relay 1 satellite

GS artificial satellites

. communication satellites

. . Relay satellites

. . . Relay 1 satellite

Relay 2 satellite

GS artificial satellites

. communication satellites

- . . Relay satellites
 - . . . **Relay 2 satellite**
- Relay satellites**
- GS artificial satellites
 - . communication satellites
 - . . **Relay satellites**
 - . . . Relay 1 satellite
 - . . . Relay 2 satellite
 - RT Advent Project
 - Thor Delta launch vehicle
 - transoceanic communication
- releasing**
- GS **releasing**
 - . fiber pullout
 - . fiber pushout
 - RT decoupling
 - ∞ discharge
 - disconnect devices
 - dispersing
 - dumping
 - ejection
 - emission
 - emptying
 - exhaust emission
 - materials handling
 - relieving
 - scattering
 - spilling
 - unloading
 - venting
- reliability**
- DEF Of a piece of equipment or a system, the probability of specified performance for a given period of time when used in the specified manner.
- GS **reliability**
 - . aircraft reliability
 - . circuit reliability
 - . component reliability
 - . software reliability
 - . . computer program integrity
 - . spacecraft reliability
 - . structural reliability
 - RT acceptability
 - accuracy
 - aircraft survivability
 - allowances
 - assurance
 - censored data (mathematics)
 - computer systems performance
 - confidence
 - confidence limits
 - consistency
 - cumulative damage
 - ∞ design
 - design analysis
 - downtime
 - durability
 - dynamic characteristics
 - errors
 - estimates
 - expectation
 - failure analysis
 - forecasting
 - maintainability
 - maintenance
 - maximum likelihood estimates
 - mechanical properties
 - missile design
 - MTBF
 - nondestructive tests
 - ∞ performance
 - performance prediction
 - precision
 - prelaunch problems
 - probability theory
 - product development
 - production management
 - productivity
 - quality
 - quality control
 - redundancy
 - redundant components
 - risk
- safety factors
 - sampling
 - specifications
 - stability
 - standards
 - statistical analysis
 - statistical distributions
 - statistical tests
 - ∞ statistics
 - system effectiveness
 - systems compatibility
 - systems engineering
 - ∞ tests
 - tolerances (mechanics)
 - total quality management
 - validity
 - variability
 - vulnerability
- reliability analysis**
- RT ∞ analyzing
 - design analysis
 - performance prediction
 - preventive maintenance
 - software reliability
 - trend analysis
- reliability control*
- USE **quality control**
reliability engineering
- reliability engineering**
- DEF The engineering discipline which formulates an acceptable combination of design features, repair philosophy, and maintenance resources to achieve a specified level of reliability as an operational requirement, at optimum life cycle costs.
- UF *reliability control*
 - RT complex systems
 - concurrent engineering
 - ∞ engineering
 - fault detection
 - fault tolerance
 - performance prediction
 - quality control
 - sneak circuit analysis
 - system effectiveness
 - system identification
 - systems compatibility
 - systems engineering
 - Taguchi methods
 - total quality management
 - value engineering
- relic radiation**
- DEF Background radiation resulting from the primordial big bang.
- RT astronomy
 - astrophysics
 - background radiation
 - big bang cosmology
 - cosmic microwave background
 - radiation
 - extraterrestrial radiation
 - large-scale structure of the universe
 - Microwave Anisotropy Probe
 - Population III stars
 - ∞ radiation
 - Sunyaev-Zeldovich effect
 - universe
- relief maps**
- GS maps
 - . **relief maps**
 - RT digital elevation models
 - hypsography
 - photogrammetry
 - photomaps
 - topography
- relief valves**
- GS control equipment
 - . regulators
 - . . automatic control valves
 - . . . **relief valves**
 - valves
 - . automatic control valves
 - . . **relief valves**
- RT automatic control
 - bypasses
 - fuel tank pressurization
 - fuel valves
 - gas valves
 - hydraulic equipment
 - pressure regulators
 - reactor safety
 - venting
 - vents
- relieving**
- GS **relieving**
 - . stress relieving
 - RT ∞ discharge
 - exhausting
 - purging
 - releasing
- relocation**
- RT installing
 - positioning
 - replacing
- reluctance**
- DEF The ratio of the magnetomotive force to the magnetic flux through any cross section of the magnetic circuit.
- UF *reluctivity*
 - GS magnetic properties
 - . **reluctance**
 - RT magnetic permeability
 - magneto-resistivity
- reluctivity*
- USE **reluctance**
- remagnetization*
- USE **magnetization**
- remanence**
- DEF The magnetic flux density which remains in a magnetic circuit after the removal of an applied magnetomotive force. Also called retentivity.
- GS magnetic properties
 - . **remanence**
 - RT flux density
 - paleomagnetism
- remelting*
- USE **melting**
- remodulation**
- RT demodulation
 - intermodulation
 - modulation
- remote consoles**
- GS computer components
 - . peripheral equipment (computers)
 - . . **remote consoles**
 - consoles
 - . **remote consoles**
 - data processing equipment
 - . peripheral equipment (computers)
 - . . **remote consoles**
 - RT computer components
 - computer graphics
 - data links
 - data processing terminals
 - display devices
 - plotters
 - readout
- remote control**
- DEF Control of an operation from a distance, especially by means of electricity or electronics; a controlling switch, lever, or other device used in this kind of control. Used for electromagnetic control.
- UF *electromagnetic control*
 - GS **remote control**

remote handling

- RT . radio control
- aircraft control
- antiradiation missiles
- attitude control
- automatic control
- ∞ automation
- cascade control
- ∞ control
- control boards
- controllers
- digital command systems
- dynamic characteristics
- electric control
- electronic control
- engine control
- flight control
- ground based control
- guidance (motion)
- hydraulic control
- ∞ instruments
- Kalman-Schmidt filtering
- manipulators
- manual control
- missile control
- optical control
- pneumatic control
- remote manipulator system
- rocket engine control
- satellite control
- servocontrol
- servomechanisms
- spacecraft control
- teleoperators
- telerobotics
- temperature control
- turbojet engine control
- visual control

remote handling

- UF *telechirics*
- GS materials handling
- . **remote handling**
- RT manipulators
- payload deployment & retrieval system
- Space Station Mobile Servicing System
- teleoperators

remote manipulator system

DEF Devices used in space for deploying and retrieving payloads by remote control; also used for space maintenance and/or servicing of satellites and other spacecraft.

- GS manipulators
- . **remote manipulator system**
- . . Space Station Mobile Servicing System
- RT payload deployment & retrieval system
- payload retrieval (STS)
- remote control
- space maintenance
- space transportation system
- ∞ systems

remote regions

- GS regions
- . **remote regions**
- . . Antarctic regions
- . . . McMurdo sound
- . . . Ross ice shelf
- . . Arctic regions
- . . . subarctic regions
- RT deserts
- Mojave Desert (CA)
- offshore reactor sites
- Sahara Desert (Africa)
- wilderness

remote sensing

DEF The collection of information about an object or phenomena by a recording device that is not in physical contact with it. The term is usually restricted to mean the methods for, and activity of, recording features and phenomena of

the Earth surface from a remote platform or vehicle. Typically the methods used record reflected or radiated electromagnetic energy, such as radiometry, photometry, spectrometry, and photographic and radar techniques.

- GS detection
- . **remote sensing**
- RT aeromagnetism
- airborne radar
- band ratioing
- change detection
- cluster analysis
- Coastal Zone Color Scanner
- desertification
- differential absorption lidar
- DMSP satellites
- Earth Observing System (EOS)
- Earth resources
- Envisat-1 satellite
- EOS data and information system
- Feature Identification and Location Exper
- FIRE (climatology)
- geographic distribution
- geographic information systems
- image analysis
- image classification
- imaging spectrometers
- in situ measurement
- ISCCP Project
- Landsat 6
- Landsat 7
- leaf area index
- low Earth orbits
- Mapsat
- Mission to Planet Earth
- MODIS (radiometry)
- multisensor applications
- multisensor fusion
- Multispectral Resource Sampler
- normalized difference vegetation index
- observation scheduling
- OSTA-3 payload
- pixels
- planetary geology
- plant stress
- Priroda module
- recognition
- Shuttle Imaging Radar
- small satellite technology
- space station polar platforms
- spectral mixture analysis
- swath width
- Terra spacecraft
- thematic mappers (LANDSAT)
- vegetative index

remote sensors

- GS **remote sensors**
- . thematic mappers (LANDSAT)
- RT Advanced Microwave Sounding Unit
- Advanced Very High Resolution Radiometer
- AgRISTARS project
- airborne lasers
- airborne radar
- automatic weather stations
- Coastal Zone Color Scanner
- crop identification
- crop inventories
- data acquisition
- data collection platforms
- ∞ detectors
- Earth resources
- Earthnet
- EROS (satellites)
- Feature Identification and Location Exper
- geographic applications program
- haze detection
- image classification
- imaging radar
- measuring instruments
- multisensor applications
- ocean color scanner
- ∞ probes

- radiometric resolution
- satellite-borne instruments
- Sea-viewing Wide Field-of-view Sensor
- ∞ sensors
- spaceborne lasers
- transducers
- wildlife radiolocation

remotely piloted vehicles

- UF *RPV*
- RT ∞ aircraft
- DAST program
- drone aircraft
- highly maneuverable aircraft
- Jindivik target aircraft
- oblique wings
- orbital maneuvering vehicles
- pilotless aircraft
- target drone aircraft
- unmanned ground vehicles
- VATOL aircraft
- ∞ vehicles

removal

- GS **removal**
- . carbon dioxide removal
- . paint removal
- RT anodic stripping
- cancellation
- clearing
- deletion
- depletion
- disposal
- dissipation
- ejection
- emptying
- evacuating (transportation)
- evacuating (vacuum)
- exhausting
- expulsion
- extraction
- materials recovery
- ∞ reduction
- rejection
- ∞ separation
- unloading
- wear

REMS

- USE **rapid eye movement state**

renal calculi

- USE **calculi**

renal function

- RT ∞ functions
- glomerulus
- kidneys

rendezvous

DEF The event of two or more objects meeting with zero relative velocity at a preconceived time and place. The point in space at which such an event takes place, or is to take place.

- GS **rendezvous**
- . space rendezvous
- . . orbital rendezvous
- . . . Earth orbital rendezvous
- . . . lunar orbital rendezvous
- RT Apollo Soyuz test project
- flight mechanics
- interception
- maneuvers
- orbital mechanics

rendezvous guidance

- GS guidance (motion)
- . **rendezvous guidance**
- RT Automated Transfer Vehicle
- command guidance
- homing devices
- injection guidance
- midcourse guidance
- orbital rendezvous
- proportional navigation

- satellite guidance
- spacecraft guidance
- terminal guidance
- rendezvous spacecraft**
 - GS maneuverable spacecraft
 - . **rendezvous spacecraft**
 - RT Columbus space station
 - command guidance
 - ferry spacecraft
 - interplanetary spacecraft
 - lunar spacecraft
 - manned spacecraft
 - military spacecraft
 - orbital rendezvous
 - recoverable spacecraft
 - space capsules
 - space stations
 - spacecrew transfer
 - unmanned spacecraft
- rendezvous trajectories**
 - GS trajectories
 - . **rendezvous trajectories**
 - RT ascent trajectories
 - circumlunar trajectories
 - Earth orbital rendezvous
 - Earth-Moon trajectories
 - flight mechanics
 - interplanetary trajectories
 - Near Earth Asteroid Rendezvous Mission
 - orbital mechanics
 - orbital rendezvous
 - Rosetta mission
 - space rendezvous
 - spacecraft docking
 - spacecraft trajectories
- Rene 41**
 - GS alloys
 - . chromium alloys
 - . . **Rene 41**
 - . cobalt alloys
 - . . **Rene 41**
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 41**
 - . nickel alloys
 - . . **Rene 41**
 - refractory materials
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . **Rene 41**
 - RT wrought alloys
- Rene 63**
 - GS alloys
 - . chromium alloys
 - . . **Rene 63**
 - . cobalt alloys
 - . . **Rene 63**
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 63**
 - . nickel alloys
 - . . **Rene 63**
 - refractory materials
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . **Rene 63**
 - RT wrought alloys
- Rene 77**
 - GS alloys
 - . chromium alloys
 - . . **Rene 77**
 - . cobalt alloys
 - . . **Rene 77**
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 77**
 - . nickel alloys
- . . **Rene 77**
- refractory materials
- . refractory metal alloys
- . . molybdenum alloys
- . . . **Rene 77**
- wrought alloys
- RT
- Rene 95**
 - DEF High-strength nickel-base superalloy.
 - GS alloys
 - . chromium alloys
 - . . **Rene 95**
 - . cobalt alloys
 - . . **Rene 95**
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 95**
 - . nickel alloys
 - . . **Rene 95**
 - refractory materials
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . **Rene 95**
- renewable energy**
 - (added December 1998)
 - GS **renewable energy**
 - . geothermal energy utilization
 - . hydroelectricity
 - . tidepower
 - . waterwave energy
 - . windpower utilization
 - RT bioconversion
 - biomass energy production
 - clean energy
 - energy policy
 - ∞ energy sources
 - energy technology
 - geothermal energy conversion
 - hydrogen-based energy
 - ocean thermal energy conversion
 - solar energy conversion
 - waste utilization
 - waterwave energy conversion
- renormalization group methods**
 - (added August 1990)
 - RT Monte Carlo method
 - normalizing (statistics)
 - statistical mechanics
 - turbulence models
- reorientation*
- USE **retraining**
- repairing*
- USE **maintenance**
- repeaters**
 - UF *interpolators*
 - GS transmitters
 - . **repeaters**
 - RT amplifiers
 - radar receivers
 - receivers
 - ∞ relay
 - ∞ translators
- repetition**
 - RT counting
 - pattern recognition
 - redundancy encoding
- replacing**
 - RT damage assessment
 - installing
 - maintenance
 - relocation
 - replenishment
 - substitutes
- replenishment**
 - RT filling
 - input
 - ∞ loading
- refilling
- refueling
- replacing
- replicas**
 - RT electron microscopes
 - metallography
 - models
 - reproduction (copying)
- report generators**
 - RT computer programs
 - computer systems programs
 - ∞ generators
 - user manuals (computer programs)
- reports**
 - GS **reports**
 - . congressional reports
 - . postlaunch reports
 - . Presidential reports
 - . wage surveys
 - RT aerospace technology transfer
 - conferences
 - ∞ discussion
 - documentation
 - documents
 - information
 - information dissemination
 - papers
 - proposals
 - records
 - summaries
 - supplements
 - technology transfer
- representations**
 - RT characterization
 - descriptions
 - drawings
 - graphs (charts)
 - images
 - photographs
 - signatures
- ∞ **reproduction**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT fertilization
 - reproduction (biology)
 - reproduction (copying)
 - reproductive systems
- reproduction (biology)**
 - RT ∞ biology
 - birth
 - breeding (reproduction)
 - cell division
 - cloning (biology)
 - embryology
 - fertility
 - fetuses
 - mitosis
 - progeny
 - ∞ reproduction
 - reproductive systems
 - sex glands
- reproduction (copying)**
 - UF *duplicating*
 - GS imagery
 - . **reproduction (copying)**
 - . . xerography
 - RT blueprints
 - document storage
 - drawings
 - engineering drawings
 - lithography
 - microfilms
 - photographic processing equipment
 - photography
 - printing
 - replicas
 - ∞ reproduction

reproductive systems

stencil processes

reproductive systems

- GS anatomy
 - . genitourinary system
 - . . . **reproductive systems**
 - sex glands
 - gonads
 - ovaries
 - testes
 - prostate gland
 - uterus
- RT birth
 - chromosomes
 - fertility
 - fetuses
 - ∞ reproduction
 - reproduction (biology)
 - ∞ systems

reptiles

- GS animals
 - . vertebrates
 - . . . **reptiles**
 - lizards
 - snakes
 - turtles
- RT poikilothermia

Republic aircraft

- GS **Republic aircraft**
 - . A-10 aircraft
 - . F-84 aircraft
 - . F-105 aircraft
- RT ∞ aircraft

Republic of China

USE **Taiwan**

Republic of Korea

USE **South Korea**

Republic of South Africa

- UF *South Africa*
- GS nations
 - . **Republic of South Africa**
- RT Africa
 - Botswana
 - Kalahari Basin (Africa)
 - Lesotho
 - Namibia
 - Swaziland

Republic of Vietnam

USE **Vietnam**

repulsion

USE **force**

requirements

- GS **requirements**
 - . user requirements
- RT specifications

rescue operations

- RT aeronautical satellites
 - Assured Crew Return Vehicle
 - COSPAS
 - HH-65 helicopter
 - Marots (ESA)
- ∞ operations
 - SarSat
 - spacecraft recovery
 - X-38 crew return vehicle

research

- GS **research**
 - . dynamic programming
 - . high temperature research
 - . linear programming
 - . low density research
 - . market research
 - . multidisciplinary research
 - . nonlinear programming
 - . nuclear research
 - . quadratic programming

- RT critical path method
 - ∞ design
 - ethics
 - exploration
 - interservice data exchange program
 - investigation
 - minimax technique
 - ∞ research projects

research aircraft

- UF *experimental aircraft*
 - . *ornithopter aircraft*
- GS research vehicles
 - . **research aircraft**
 - . . Avian 2/180 autogiro
 - . . AVRO 707 aircraft
 - . . B-70 aircraft
 - . . Breguet 940 aircraft
 - . . C-8A augmentor wing aircraft
 - . . D-558 aircraft
 - . . FD 2 aircraft
 - . . Firebee 2 target drone aircraft
 - . . H-17 helicopter
 - . . H-126 aircraft
 - . . HP-115 aircraft
 - . . meteorological research aircraft
 - . . Nord 1500 aircraft
 - . . Questol aircraft
 - . . rotor systems research aircraft
 - . . SC-1 aircraft
 - . . U-2 aircraft
 - . . VZ-2 aircraft
 - . . VZ-8 aircraft
 - . . X-1 aircraft
 - . . X-2 aircraft
 - . . X-3 aircraft
 - . . X-5 aircraft
 - . . X-13 aircraft
 - . . X-14 aircraft
 - . . X-15 aircraft
 - . . X-19 aircraft
 - . . X-20 aircraft
 - . . X-21 aircraft
 - . . X-21A aircraft
 - . . X-22 aircraft
 - . . X-22A aircraft
 - . . X-24 aircraft
 - . . X-31 aircraft
 - . . X-32 aircraft
 - . . X-35 aircraft
 - . . X-36 aircraft
 - . . X-45 aircraft
 - . . XH-51 helicopter
 - . . XV-4 aircraft
 - . . XV-5 aircraft
 - . . XV-8A aircraft
 - . . XV-9A aircraft
 - . . XV-11A aircraft
- RT aerospace planes
 - ∞ aircraft
 - drone aircraft
 - fan in wing aircraft
 - flight test vehicles
 - flying platforms
 - ground effect machines
 - hovercraft ground effect machines
 - hypersonic aircraft
 - jet aircraft
 - joined wings
 - ∞ military aircraft
 - nuclear propelled aircraft
 - rocket planes
 - submersible aircraft
 - supersonic aircraft
 - tailless aircraft
 - tandem wing aircraft
 - test vehicles
 - tilt wing aircraft
 - V/STOL aircraft
 - vertical takeoff aircraft
 - ∞ winged vehicles
 - YF-12 aircraft

research and development

- RT ∞ design
 - investigation
 - management planning

- operations research
- outer space treaty
- programs
- project management
- proposals
- ∞ research projects
 - systems engineering
 - technology utilization
 - weapons development

research facilities

- RT ∞ facilities
 - laboratories
 - ∞ research projects
 - space industrialization
 - space laboratories
 - test facilities

research management

- GS management
 - . **research management**
- RT allocations
 - block diagrams
- ∞ budgets
 - engineering management
 - feasibility analysis
 - goals
 - industrial management
 - manpower
 - multidisciplinary research
 - operations research
 - personnel
 - priorities

∞ research projects

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Chinese space program
 - Earth & Ocean Physics Applications Program
 - French space program
 - Indian space program
 - Japanese space program
 - management
 - NASA programs
 - programs
 - project management
 - projects
 - research
 - research and development
 - research facilities
 - space programs
 - SPHINX

research vehicles

- SN (VEHICLES DESIGNED TO BE SUBJECTS OF RESEARCH--NOT RESEARCH EQUIPMENT CONTAINERS)
- GS **research vehicles**
 - . automated mixed traffic vehicles
 - . research aircraft
 - . . Avian 2/180 autogiro
 - . . AVRO 707 aircraft
 - . . B-70 aircraft
 - . . Breguet 940 aircraft
 - . . C-8A augmentor wing aircraft
 - . . D-558 aircraft
 - . . FD 2 aircraft
 - . . Firebee 2 target drone aircraft
 - . . H-17 helicopter
 - . . H-126 aircraft
 - . . HP-115 aircraft
 - . . meteorological research aircraft
 - . . Nord 1500 aircraft
 - . . Questol aircraft
 - . . rotor systems research aircraft
 - . . SC-1 aircraft
 - . . U-2 aircraft
 - . . VZ-2 aircraft
 - . . VZ-8 aircraft
 - . . X-1 aircraft
 - . . X-2 aircraft
 - . . X-3 aircraft
 - . . X-5 aircraft
 - . . X-13 aircraft
 - . . X-14 aircraft
 - . . X-15 aircraft

- .. X-19 aircraft
- .. X-20 aircraft
- .. X-21 aircraft
- .. X-21A aircraft
- .. X-22 aircraft
- .. X-22A aircraft
- .. X-24 aircraft
- .. X-31 aircraft
- .. X-32 aircraft
- .. X-35 aircraft
- .. X-36 aircraft
- .. X-45 aircraft
- .. XH-51 helicopter
- .. XV-4 aircraft
- .. XV-5 aircraft
- .. XV-8A aircraft
- .. XV-9A aircraft
- .. XV-11A aircraft
- . underwater research laboratories
- . X-30 vehicle
- . X-37 vehicle
- . X-40A vehicle
- . X-43 vehicle
- RT boats
 - electric motor vehicles
 - ∞ flight vehicles
 - lunar roving vehicles
 - Mars roving vehicles
 - ∞ military vehicles
 - roving vehicles
 - ships
 - space laboratories
 - ∞ spacecraft
 - surface effect ships
 - underwater vehicles
 - ∞ vehicles
 - water vehicles
- reserpine**
 - GS bases (chemical)
 - . alkaloids
 - .. **reserpine**
 - drugs
 - . pentobarbital sodium
 - .. **reserpine**
 - nitrogen compounds
 - . alkaloids
 - .. **reserpine**
 - organic compounds
 - . cyclic compounds
 - .. heterocyclic compounds
 - ... alkaloids
 - ... **reserpine**
 - RT antihypertensive agents
- reserves**
 - RT abundance
 - availability
 - backups
 - contingency
 - crude oil
 - economic factors
 - energy policy
 - estimates
 - estimating
 - evaluation
 - exploitation
 - exploration
 - forecasting
 - inventories
 - inventory controls
 - ∞ materials
 - mineral deposits
 - mines (excavations)
 - ∞ production
 - resources
 - stockpiling
 - ∞ storage
- reservoirs**
 - SN (FOR SURFACE WATER STORAGE--NOT OIL OR GAS POOLS)
 - RT dams
 - evaporation
 - fresh water
 - lagoons
 - Lake Texoma (OK-TX)
- lakes
- ponds
- rivers
- solar ponds (heat storage)
- streams
- water resources
- windpowered pumps
- residential areas**
 - RT cities
 - inhabitants
 - land
 - land use
 - megalopolises
 - regional planning
 - rural areas
 - suburban areas
 - urban development
- residential energy**
 - DEF Household energy requirements in residences, apartments, etc.
 - RT energy conservation
 - energy technology
 - heat pumps
 - solar cooling
 - solar heating
 - solar houses
 - space cooling (buildings)
 - space heating (buildings)
 - water heating
- residual gas**
 - GS gases
 - . **residual gas**
 - RT getters
 - high vacuum
 - outgassing
 - partial pressure
 - ultrahigh vacuum
 - vacuum apparatus
 - vacuum tubes
- residual strength**
 - RT crack propagation
 - fatigue (materials)
 - fracture mechanics
 - fracture strength
 - residual stress
 - ∞ strength
 - tensile strength
- residual stress**
 - DEF In structures, any stress in an unloaded body. These stresses arise from local yielding of the material due to machining, welding, quenching or cold working. Used for internal stress.
 - UF *internal stress*
 - GS stresses
 - . **residual stress**
 - RT creep properties
 - machining
 - relaxation (mechanics)
 - residual strength
 - strain hardening
 - stress relaxation
 - stress relieving
 - stress-strain relationships
 - temperature inversions
- residues**
 - RT ashes
 - organic wastes (fuel conversion)
 - reaction products
 - solid wastes
 - waste treatment
 - waste water
 - wastes
- resilience**
 - GS mechanical properties
 - . **resilience**
 - RT compressive strength
 - elastic properties
 - shear properties
- springs (elastic)
- tensile strength
- resin bonding**
 - GS bonding
 - . **resin bonding**
 - RT adhesive bonding
 - metal bonding
 - metal-metal bonding
- resin film infusion**
 - (added August 1997)
 - UF *RFI (composite materials)*
 - RT composite materials
 - composite structures
 - fabrication
 - infiltration
 - polymer matrix composites
 - preforms
 - resin matrix composites
 - resin transfer molding
- resin matrix composites**
 - DEF Composite materials utilizing a matrix of filaments and/or fibers of glass, metal, or other material bound with a polymer or resin.
 - GS composite materials
 - . **resin matrix composites**
 - .. boron-epoxy composites
 - .. carbon-phenolic composites
 - .. graphite-epoxy composites
 - RT aramid fibers
 - bismaleimide
 - epoxy resins
 - hybrid composites
 - matrix materials
 - metal matrix composites
 - PEEK
 - polyimide resins
 - polymer matrix composites
 - prepregs
 - pultrusion
 - resin film infusion
 - resin transfer molding
 - resins
 - sheet molding compounds
- resin transfer molding**
 - (added May 1992)
 - UF *RTM (composite materials)*
 - GS forming techniques
 - . **resin transfer molding**
 - RT casting
 - composite materials
 - curing
 - fabrication
 - fiber composites
 - injection molding
 - matrix materials
 - molding materials
 - molds
 - polymer matrix composites
 - preforms
 - reinforcing fibers
 - resin film infusion
 - resin matrix composites
- resins**
 - GS **resins**
 - . alkyd resins
 - . ion exchange resins
 - . polyimide resins
 - . polyurethane resins
 - . silicone resins
 - . synthetic resins
 - .. addition resins
 - ... acrylic resins
 - ... vinyl copolymers
 - .. polyester resins
 - .. polyether resins
 - ... PEEK
 - ... polymethyl methacrylate
 - .. thermoplastic resins
 - ... PEEK
 - ... quinoxalines
 - ... thermoplastic films

resistance

. . . thermosetting resins
. . . epoxy resins
. . . phenolic epoxy resins
. . . furan resins
. . . polyamide resins
. . . . Kevlar (trademark)
. . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . phenolic epoxy resins

RT acrylates
Bakelite (trademark)
bismaleimide
Delrin (trademark)
fillers
Lexan (trademark)
melamine
paraplasts
∞ patterns
phenol formaldehyde
phloroglucinol
plastisols
resin matrix composites
teflon (trademark)

∞ **resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF In electricity, the factor by which the square of the instantaneous conduction current must be multiplied to obtain the power lost by heat dissipation or other permanent radiation of energy away from the electrical current. In mechanics, the opposition by frictional effects to forces tending to produce motion. Used for conductance and resistance coefficients.
UF *conductance*
resistance coefficients

RT abrasion resistance
acceleration tolerance
acoustic properties
aerodynamic drag
chemical properties
constrictions
contact resistance
corrosion resistance
crack propagation
creep strength
damping
diffusivity
durability
earthquake resistance
electrical properties
electrical resistance
electrical resistivity
flammability
flow resistance
fracture strength
fusibility
Hall resistance
∞ high resistance
immunity
impact resistance
impact strength
impedance
Kapitza resistance
life (durability)
∞ low resistance
magneto-resistivity
moisture resistance
negative resistance circuits
negative resistance devices
oxidation resistance
permeability
prevention
protection
quality
radiation tolerance
resistance thermometers
retarding
sensitivity
shock resistance
skin resistance
stability
thermal resistance
tolerances (physiology)

transconductance
vulnerability
wave resistance
wear resistance

resistance coefficients
USE **resistance**

resistance heating

UF *Joule heating*
GS heating
. **resistance heating**
RT arc heating
electroslag refining
gas heating
levitation melting

resistance thermometers

GS measuring instruments
. temperature measuring instruments
. . thermometers
. . . **resistance thermometers**
RT bolometers
ohmmeters
∞ resistance
temperature measurement
thermocouple pyrometers

resistivity

USE **electrical resistivity**

resistojet engines

UF *resistojets*
GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . **resistojet engines**
RT arc jet engines
plasma engines
pulsed jet engines
space station propulsion

resistojets

USE **resistojet engines**

resistors

UF *tunnel resistors*
GS attenuators
. **resistors**
. . potentiometers (resistors)
. . printed resistors
. . thermistors
RT ballasts (impedances)
electric conductors
electric filters
electric reactors
∞ filaments
photoconductors
semiconductors (materials)
solid state devices
varistors

resolution

DEF The ability of a film, a lens, a combination of both, or a vidicon system to render barely distinguishable a standard pattern of black and white lines. In radar, the minimum angular separation at the antenna at which two targets can be distinguished (a function of beamwidth); or the minimum range at which two targets at the same azimuth can be separated (equal to one half the pulse height). Of a gyro, a measure of response to small changes in input; the maximum value of the minimum input change that will cause a detectable change in the output for inputs greater than the threshold, expressed as a percent of one half the input range. Used for resolving power.

UF *resolving power*
GS **resolution**
. angular resolution
. high resolution
. image resolution
. radar resolution
. radiometric resolution

. spatial resolution
. spectral resolution
. temporal resolution

RT accuracy
automatic traffic advisory and resolution
blurring
character recognition
contrast
definition
dynamic characteristics
errors
foci
high resolution coverage antennas
image contrast
image enhancement
legibility
loci
numerical aperture
∞ optics
perception
∞ power
precision
resolution cell
sensitivity
spatial filtering
Stark effect
∞ thresholds
tolerances (mechanics)
visibility
vision

resolution cell

RT ∞ cells
imaging techniques
radar detection
radar imagery
resolution

resolvers

RT analog computers
instrument transformers
transformers

resolving power

USE **resolution**

resonance

DEF The phenomena of amplification of a free wave or oscillation of a system by a forced wave or oscillation of exactly equal period. The forced wave may arise from an impressed force upon the system or from a boundary condition. The growth of the resonant amplitude is characteristically linear in time. Of a system in forced oscillation, the condition which exists when any change, however small, in the frequency of excitation causes a decrease in the response of the system.

GS resonance

. baryon resonance
. cyclotron resonance
. . electron cyclotron resonance
. magnetic resonance
. . ferromagnetic resonance
. . nuclear magnetic resonance
. . . proton magnetic resonance
. . . proton resonance
. . paramagnetic resonance
. . . electron paramagnetic resonance
. magnetosonic resonance
. meson resonance
. . X mesons
. acoustic resonance
. microwave resonance
. nuclear quadrupole resonance
. optical resonance
. orbital resonances (celestial mechanics)
. plasma resonance
. resonant vibration
. spin resonance

RT Foster theory
oscillations
Overhauser effect
resonant frequencies

- syntony
 tuning
 vibration
- resonance charge exchange**
 GS exchanging
 . charge exchange
 . . **resonance charge exchange**
 RT spin exchange
- resonance fluorescence**
 DEF The emission of radiation by a gas or vapor as a result of excitation of atoms to a higher energy level by incident photons at the resonance frequency of the gas or vapor. Used for resonance radiation.
 UF *resonance radiation*
 GS emission
 . light emission
 . . luminescence
 . . . fluorescence
 **resonance fluorescence**
 RT atomic excitations
 atomic physics
 quantum electrodynamics
 ∞ radiation
- resonance lines**
 DEF Spectral lines which occur either as absorption or emission lines. Used for dielectric satellite lines.
 UF *dielectronic satellite lines*
 RT line spectra
 optical resonance
 plasma resonance
- resonance probes**
 GS measuring instruments
 . **resonance probes**
 RT impedance probes
 magnetic probes
 microwave plasma probes
 plasma diagnostics
 plasma resonance
 tuners
- resonance radiation*
 USE **resonance fluorescence**
- resonance scattering**
 SN (INTERACTION WITH THE INTERIOR OF THE NUCLEUS--EXCLUDES POTENTIAL SCATTERING)
 GS nuclear reactions
 . nuclear scattering
 . . **resonance scattering**
 scattering
 . nuclear scattering
 . . **resonance scattering**
 RT inverse scattering
 Mossbauer effect
 neutron scattering
- resonance testing**
 RT damping tests
 elastic damping
 electronic equipment tests
 fatigue tests
 resonant frequencies
 stability tests
 static tests
 structural stability
 ∞ tests
 vibration tests
 viscous damping
- resonant cavities*
 USE **cavity resonators**
- resonant frequencies**
 DEF Frequencies at which resonance exists. Used for natural frequencies and vibrational frequencies (structural).
 UF *natural frequencies*
 vibrational frequencies (structural)
 GS frequencies
- . resonant frequencies**
 RT acoustic frequencies
 acoustic resonance
 antinodes
 bandwidth
 beat frequencies
 Bordoni peaks
 cavity resonators
 critical frequencies
 critical velocity
 damping
 dynamic characteristics
 ∞ dynamics
 electromagnetic absorption
 harmonics
 impedance
 Mossbauer effect
 nodes (standing waves)
 oscillators
 resonance
 resonance testing
 resonators
 standing waves
 transient response
 tuners
 tuning
- resonant tunneling**
(added September 1988)
 RT barrier layers
 electron tunneling
 negative resistance devices
 quantum electronics
 quantum wells
 transistors
 tunnel diodes
 ∞ tunneling
- resonant vibration**
 UF *mechanical resonance*
 GS resonance
 . **resonant vibration**
 vibration
 . **resonant vibration**
 RT acoustic resonance
 damping
 dynamic stability
 ∞ dynamics
 flapping
 flutter
 mechanical oscillators
 oscillations
 Q factors
 stable oscillations
 structural vibration
 undamped oscillations
- resonators**
 DEF In radio and radar applications, circuits which will resonate at a given frequency, or over a range of frequencies, when properly excited.
 GS **resonators**
 . cavity resonators
 . . superconducting cavity resonators
 . Helmholtz resonators
 . multimode resonators
 . optical resonators
 RT delta antennas
 electron tubes
 frequency standards
 grazing flow
 magnetrons
 masers
 oscillators
 resonant frequencies
 self excitation
 tuning
 tuning fork gyroscopes
- resource allocation**
 GS allocations
 . **resource allocation**
 management
 . resources management
 . . **resource allocation**
 RT distributing
- energy conservation
 energy policy
 engineering management
 logistics
 NASA Interactive Planning System
 outer space treaty
 priorities
 products
 resources
- resources**
 GS **resources**
 . Earth resources
 . . forests
 . . . rain forests
 . . fossil fuels
 . . . coal
 anthracite
 lignite
 solvent refined coal
 . . crude oil
 . . natural gas
 . . . liquefied natural gas
 . . peat
 . . shale oil
 . glaciers
 . icebergs
 . kerogen
 . land ice
 . marine resources
 . oil fields
 . range resources
 . springs (water)
 . tar sands
 . thermal resources
 . . geothermal resources
 . . . geysers
 . . underwater resources
 . water resources
 . . aquifers
 . extraterrestrial resources
 . lunar resources
 . Internet resources
 . . websites
 RT abundance
 availability
 consulting
 depletion
 economic development
 economic factors
 economic impact
 economics
 energy conservation
 energy policy
 engineering management
 geothermal technology
 Great Lakes (North America)
 inventory management
 logistics
 logistics management
 man environment interactions
 manpower
 ∞ materials
 Mississippi River (US)
 personnel
 personnel development
 production management
 recycling
 reserves
 resource allocation
 site selection
 urban development
 vegetation
- resources management**
 GS management
 . **resources management**
 . . forest management
 . . . reforestation
 . . information resources management
 . . land management
 . . resource allocation
 RT Earth resources
 environment management
 environmental control
 leasing
 NASA Interactive Planning System

respiration

thermal resources
water runoff

respiration

DEF The interchange of gases of living organisms and the gases of the medium in which they live. Used for apnea and inhalation.

UF *apnea*
inhalation

GS **respiration**
. high altitude breathing
. liquid breathing
. pressure breathing

RT alveoli
asphyxia
∞ breathing
expiration
expired air
hydrogen metabolism
metabolism
oxygen metabolism
photosynthesis
physiology
respirators
respiratory system
resuscitation
sinuses
Valsalva exercise

respirators

GS medical equipment
. **respirators**

RT breathing apparatus
emergency breathing techniques
respiration
resuscitation
therapy

respiratory diseases

GS diseases
. **respiratory diseases**
. . . aerosinusitis
. . . asthma
. . . emphysema
. . . influenza
. . . pneumonia
. . . tuberculosis

RT beryllium poisoning
congestion
fungal diseases
lung morphology
pulmonary lesions

respiratory impedance

GS impedance
. **respiratory impedance**

respiratory physiology

GS physiology
. **respiratory physiology**

RT exercise physiology
∞ science

respiratory rate

GS rates (per time)
. **respiratory rate**
. . . dyspnea
. . . hypoventilation
. . . tachypnea

RT hypercapnia
hyperpnea
spirometers

respiratory reflexes

GS reflexes
. **respiratory reflexes**
. . . cough
. . . Hering-Breuer reflex
. . . sneezing

RT ∞ breathing

respiratory system

GS anatomy
. **respiratory system**
. . . bronchi
. . . diaphragm (anatomy)

. . . larynx
. . . . glottis
. . . . vocal cords
. . . lungs
. . . . alveoli
. . . nose (anatomy)
. . . paranasal sinuses
. . . pharynx
. . . trachea

RT evaporation
homeostasis
hypercapnia
organs
pleurae
pulmonary circulation
respiration
∞ systems

respirometers

GS measuring instruments
. **respirometers**

RT bioinstrumentation
exhalation

responders

USE **transponders**

response bias

GS bias
. **response bias**

RT dynamic response
errors
∞ time response
transient response

response time (computers)

GS time
. **response time (computers)**

RT computer programming
computer systems performance
data processing
parallel processing (computers)

responses

DEF Of devices or systems, the motions (or other output) resulting from excitation under specified conditions.

GS **responses**
. dynamic response
. . . transient response
. frequency response
. galvanic skin response
. modal response
. physiological responses
. . . hemodynamic responses

RT chronaxy
learning
refractory period
∞ thresholds
time lag
∞ time response

rest

GS **rest**
. bed rest

RT prone position
recreation
sitting position
sleep
supine position

restartable rocket engines

GS engines
. rocket engines
. . **restartable rocket engines**

RT ducted rocket engines
electric rocket engines
electrostatic engines
electrothermal engines
hybrid propellant rocket engines
ion engines
liquid propellant rocket engines
nuclear rocket engines
retrorocket engines
solid propellant rocket engines
sustainer rocket engines

turborocket engines
Vernier engines

restoration

RT addition
reconstruction

restraints

USE **constraints**

restrictions

USE **constrictions**

resultants

DEF The sums of two or more vectors.
RT vector analysis

resuscitation

UF *artificial respiration*

RT emergency breathing techniques
first aid
liquid breathing
respiration
respirators

retaining

RT asteroid capture
constraints
containment
∞ holding
∞ joining
locking
∞ retention
sealing
∞ storage

retardants

GS **retardants**
. flame retardants

RT accelerating agents
additives
antiicing additives
antiknock additives
antioxidants
catalysts
explosion suppression
inhibitors
neutralizers
penetrants
preservatives
∞ retarders
retarding
stabilizers (agents)
suppressors
surfactants
wear inhibitors

∞ retarders

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT retardants
retarders (devices)

retarders (devices)

RT blocking
brakes (for arresting motion)
braking
constrictions
∞ retarders
retarding

retarding

UF *suppression*

RT attenuation
blocking
braking
damping
deceleration
fouling
hysteresis
prevention
∞ reduction
∞ resistance
retardants
retarders (devices)

- stopping
- retarding ion mass spectrometers*
USE **mass spectrometers**
- ∞ **retention**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT retaining
retention (psychology)
- retention (psychology)**
RT learning
memory
∞ retention
- reticles**
DEF Systems of lines or wires placed in the focal plane of an optical instrument to serve as a reference. Also called a reticule.
GS **reticles**
. wire grid lenses
RT contact lenses
eyepieces
∞ grids
lenses
optical equipment
scale (ratio)
- reticulocytes**
GS cells (biology)
. blood cells
. . erythrocytes
. . . **reticulocytes**
RT hematology
hemoglobin
hemolysis
hemorrhages
- retina**
GS anatomy
. sense organs
. . eye (anatomy)
. . . **retina**
. . . . fovea
RT electroretinography
phosphene
photoreceptors
vision
visual fields
visual pigments
- retinal adaptation**
GS adaptation
. **retinal adaptation**
. . dark adaptation
. . light adaptation
RT perception
visibility
vision
- retinal images**
GS images
. **retinal images**
RT vision
visual fields
- retinene**
UF *vitamin A*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **retinene**
. lipids
. . **retinene**
vitamins
. **retinene**
RT aldehydes
carotene
- retirement**
RT employee relations
industries
personnel
- sociology
- retirement for cause**
DEF Procedure, primarily on aircraft, based on fracture mechanics, which allows safe utilization of the full life capacities of each component.
RT component reliability
engine parts
fatigue life
fracture strength
inventory management
life (durability)
metal fatigue
service life
spare parts
- RETORC (torpedoes)*
USE **torpedoes**
- retort processing**
DEF One method for converting shale oil into oil similar to petroleum oils.
RT fractionation
hydrocarbon fuels
oils
∞ processing
shale oil
- retractable equipment**
UF *retractable landing gear*
RT aerodynamic brakes
landing gear
refueling
- retractable landing gear*
USE **landing gear**
retractable equipment
- retraining**
UF *reorientation*
RT adaptation
education
management methods
manpower
personnel
tasks
training analysis
- retrieval**
GS **retrieval**
. data retrieval
. information retrieval
. payload retrieval (STS)
RT ∞ recovery
searching
- retroaction*
USE **retrothrust**
- retrofiring**
GS firing (igniting)
. rocket firing
. . **retrofiring**
RT deceleration
retrorocket engines
retrothrust
- retrofitting**
DEF Modification of equipment to incorporate changes made in later production of similar equipment; the changes may be performed in the factory or in the field.
GS **retrofitting**
. acoustic retrofitting
RT installing
- retrograde orbits**
(added June 1995)
DEF Motion in an orbit opposite to the usual orbital direction of celestial bodies within a given system. Specifically, of a satellite, motion in a direction opposite to the direction of rotation of the primary.
GS orbits
. **retrograde orbits**
RT interacting galaxies
- orbital mechanics
planetary orbits
precession
satellite orbits
spacecraft orbits
stellar orbits
three body problem
- retroreflection**
DEF Reflection wherein the reflected rays return along paths parallel to those of their corresponding incident rays. Also called retroreflection.
GS reflection
. **retroreflection**
RT antenna arrays
incident radiation
LAGEOS (satellite)
laser ranging
lunar retroreflectors
reflected waves
retroreflectors
satellite laser ranging
- retroreflectors**
DEF Class of optical instruments which cause reflected radiation to return along paths parallel to those of their corresponding incident rays.
GS radar equipment
. **retroreflectors**
reflectors
. **retroreflectors**
RT laser ranging
radar corner reflectors
retroreflection
satellite laser ranging
- retrorocket engines**
DEF Rocket engines fitted on or in spacecraft, satellites, or the like to produce thrust opposed to forward motion.
GS engines
. rocket engines
. . **retrorocket engines**
. . . BE-3 engine
RT control rockets
internal combustion engines
liquid propellant rocket engines
man operated propulsion systems
restartable rocket engines
retrofiring
retrothrust
solid propellant rocket engines
- retrothrust**
DEF Thrust used for a braking maneuver; reverse thrust. Used for retroaction.
UF *retroaction*
GS thrust
. rocket thrust
. . **retrothrust**
RT deceleration
retrofiring
retrorocket engines
- return beam vidicons**
GS electron tubes
. camera tubes
. . vidicons
. . . **return beam vidicons**
. . . . thermicons
RT television cameras
- return to Earth space flight**
GS space flight
. **return to Earth space flight**
RT Assured Crew Return Vehicle
interplanetary flight
manned Mars missions
Mars missions
spacecraft reentry
X-38 crew return vehicle
- reusable heat shielding**
GS shielding

reusable launch vehicles

. heat shielding
 . . **reusable heat shielding**
 RT cooling
 heat transfer
 reentry shielding
 spacecraft shielding
 temperature control
 thermal control coatings
 thermal protection

reusable launch vehicles
 GS launch vehicles
 . **reusable launch vehicles**
 . . single stage to orbit vehicles
 . . . Delta Clipper
 . . . HOTOL launch vehicle
 . . X-33 reusable launch vehicle
 . . X-34 reusable launch vehicle
 RT Advanced Launch System (STS)
 Aeromaneuvering Orbit to Orbit Shuttle
 recoverable launch vehicles
 rocket engines
 spacecraft launching
 spacecraft recovery
 ∞ vehicles
 X-37 vehicle
 X-40A vehicle

reusable rocket engines
 GS engines
 . rocket engines
 . . **reusable rocket engines**
 RT oxygen-hydrocarbon rocket engines

reusable spacecraft
 GS reentry vehicles
 . recoverable spacecraft
 . . **reusable spacecraft**
 . . . aerospace planes
 HOPE aerospace plane
 HOTOL launch vehicle
 VentureStar launch vehicle
 X-30 vehicle
 X-37 vehicle
 X-40A vehicle
 . . . MARS (Manned Reusable Spacecraft)
 . . . single stage to orbit vehicles
 Delta Clipper
 HOTOL launch vehicle
 . . . space shuttles
 Buran space shuttle
 Hermes manned spaceplane
 Space Shuttle orbiters
 Atlantis (orbiter)
 Challenger (Orbiter)
 Columbia (Orbiter)
 Discovery (Orbiter)
 Endeavour (orbiter)
 Enterprise (Orbiter)
 RT expendable stages (spacecraft)
 ferry spacecraft
 Inertial Upper Stage
 interim stages (spacecraft)
 interplanetary spacecraft
 landing modules
 lunar landing modules
 manned spacecraft
 Saenger space transportation system
 soft landing spacecraft
 Space Shuttle Boosters
 unmanned spacecraft
 X-33 reusable launch vehicle
 X-34 reusable launch vehicle

reuse
 GS utilization
 . **reuse**
 . . software reuse
 RT oil recovery
 ∞ recovery

revenue
 RT allocations
 assessments

budgeting
 costs
 international trade

reverberation
 DEF The persistence of sound in an enclosed space, as a result of multiple reflections, after the sound source has stopped. The sound that persists in an enclosed space, as a result of repeated reflection or scattering after the source of the sound has stopped.
 GS acoustic properties
 . acoustic scattering
 . . **reverberation**
 scattering
 . wave scattering
 . . acoustic scattering
 . . . **reverberation**
 RT echoes
 noise (sound)
 reverberation chambers
 sound waves

reverberation chambers
 DEF Chambers designed to eliminate outside noise for accurate acoustic measurement.
 GS compartments
 . test chambers
 . . **reverberation chambers**
 test facilities
 . **reverberation chambers**
 RT acoustic measurement
 acoustic simulation
 ∞ chambers
 environmental tests
 reverberation

reverse engineering
(added May 1992)
 RT computer programming
 design analysis
 reversing
 software development tools
 software engineering
 systems engineering

reverse field pinch
 DEF A method of plasma confinement under investigation as part of the mirror and pinch programs.
 GS pinch effect
 . **reverse field pinch**
 RT magnetohydrodynamic flow
 plasma control
 reactor technology
 screw pinch
 toroidal plasmas

reverse osmosis
 DEF The application of pressure to stop or reverse the transport of solvent through a semipermeable membrane separating two solutions of different solute concentration. The applied pressure required to prevent the flow of solvent across a perfectly semipermeable membrane is called the osmotic pressure and is a characteristic of the solution.
 GS osmosis
 . **reverse osmosis**
 RT demineralizing
 desalinating
 membranes
 permeating

reverse time
 USE **reaction time**

reversed flow
 GS fluid flow
 . **reversed flow**
 RT boundary layer separation
 recirculative fluid flow
 reversing

separated flow

reversing
 RT ∞ direction
 reverse engineering
 reversed flow

reviewing
 RT ∞ discussion
 evaluation
 examination
 training evaluation

revisions
 UF *alteration*
modification
 RT adjusting
 contracts
 correction
 extensions
 variations

revolution (motion)
 USE **revolving**

revolving
 DEF Moving in a path about an axis, usually external to the body accomplishing the motion. Used for revolution (motion).
 UF *revolution (motion)*
 GS gyration
 . **revolving**
 RT angular velocity
 centripetal force
 rotation

reward (psychology)
 GS reinforcement (psychology)
 . **reward (psychology)**
 RT comfort
 human reactions
 psychological factors

Reynolds averaging
(added October 1997)
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Reynolds averaging**
 RT average
 boundary layer equations
 computational fluid dynamics
 flow equations
 large eddy simulation
 Navier-Stokes equation
 Reynolds stress
 turbulence models

Reynolds equation
 UF *Reynolds law*
 GS equations of motion
 . **Reynolds equation**
 flow equations
 . **Reynolds equation**
 RT aerodynamic configurations
 ∞ equations
 Navier-Stokes equation
 scale models

Reynolds law
 USE **Reynolds equation**

Reynolds number
 DEF A nondimensional parameter representing the ratio of the momentum forces to the viscous forces in fluid flow. (After Osborne Reynolds, 1842-1912, English scientist). Used for critical Reynolds number.
 UF *critical Reynolds number*
 GS dimensionless numbers
 . **Reynolds number**
 . . high Reynolds number
 . . low Reynolds number
 ratios
 . **Reynolds number**
 . . high Reynolds number

. . low Reynolds number
 RT boundary layer flow
 boundary layer stability
 boundary layer transition
 critical velocity
 fluid flow
 Froude number
 Grashof number
 inviscid flow
 laminar flow
 Peclet number
 Prandtl number
 Richardson number
 scale effect
 transition points
 turbulent flow
 viscous flow

Reynolds stress

DEF In the mathematical treatment of a viscous, incompressible, homogeneous fluid in turbulent motion, that represents the transfer of momentum due to turbulent fluctuations.

GS stresses

. **Reynolds stress**

RT incompressible flow
 Navier-Stokes equation
 Reynolds averaging
 turbulent boundary layer
 turbulent flow

RF-4 aircraft

USE **F-4 aircraft**

RF-8 aircraft

USE **F-8 aircraft**

RFI (composite materials)

(added August 1997)

USE **resin film infusion**

RH-2 helicopter

USE **UH-1 helicopter**

Rhea (astronomy)

DEF A natural satellite of the planet Saturn orbiting at a mean distance of 527,000 kilometers.

GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Rhea (astronomy)**
 . . . Saturn satellites
 . . . **Rhea (astronomy)**

RT Saturn (planet)
 solar system

rhenium

GS chemical elements
 . **rhenium**
 . . rhenium isotopes
 metals
 . refractory metals
 . . **rhenium**
 . . . rhenium isotopes
 . transition metals
 . . **rhenium**
 . . . rhenium isotopes
 refractory materials
 . refractory metals
 . . **rhenium**
 . . . rhenium isotopes

rhenium alloys

GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **rhenium alloys**
 refractory materials
 . refractory metal alloys
 . . **rhenium alloys**

rhenium compounds

RT ∞ chemical compounds
 ∞ Group 7B compounds

∞ metal compounds

rhenium isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **rhenium isotopes**
 . rhenium
 . . **rhenium isotopes**
 metals
 . refractory metals
 . . rhenium
 . . . **rhenium isotopes**
 . transition metals
 . . rhenium
 . . . **rhenium isotopes**
 refractory materials
 . refractory metals
 . . rhenium
 . . . **rhenium isotopes**
 RT radioactive isotopes

rheocasting

DEF Use of partially solidified metal alloys (fractions solids) fed directly into a casting machine for forming into machine parts.

GS forming techniques
 . casting
 . . **rheocasting**

RT alloys
 cast alloys
 dies
 forging
 slurries
 solidification

rheoelectrical simulation

GS simulation
 . **rheoelectrical simulation**
 RT analog circuits
 analog simulation
 bionics
 flow distribution

rheoencephalography

RT blood circulation
 brain
 brain circulation

rheology

DEF The study of the deformation and flow of matter.

RT electrorheological fluids
 flow measurement
 flow theory
 ∞ fluids
 liquid flow
 magnetorheological fluids
 Maxwell fluids
 nonNewtonian fluids
 plastic flow
 plastic properties
 viscosity

rheometers

GS measuring instruments
 . flowmeters
 . . **rheometers**
 RT blood circulation

Rhesus factor

RT antigens
 blood
 congenital anomalies

rheumatic diseases

GS diseases
 . **rheumatic diseases**
 RT arthritis

rhizopus

GS plants (botany)
 . fungi
 . . **rhizopus**
 RT blight

∞ mold

rhodamine

(added July 1988)

GS dyes
 . **rhodamine**
 organic compounds
 . cyclic compounds
 . . **rhodamine**
 RT amines
 dye lasers
 fluorescence
 laser materials

Rhode Island

GS nations
 . United States
 . . **Rhode Island**
 RT Block Island Sound (RI)

Rhodesia

USE **Zimbabwe**

rhodium

GS chemical elements
 . **rhodium**
 . . rhodium isotopes
 metals
 . transition metals
 . . **rhodium**
 . . . rhodium isotopes

rhodium 102

USE **rhodium isotopes**

rhodium 106

USE **rhodium isotopes**

rhodium alloys

GS alloys
 . **rhodium alloys**
 RT platinum alloys

rhodium compounds

RT ∞ chemical compounds
 ∞ Group 8 compounds

rhodium isotopes

UF *rhodium 102*
rhodium 106
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **rhodium isotopes**
 . rhodium
 . . **rhodium isotopes**
 metals
 . transition metals
 . . rhodium
 . . . **rhodium isotopes**

rhombic antennas

DEF Antennas composed of long wire radiators comprising the sides of a rhombus. The antenna usually is terminated in an impedance. The sides of the rhombus, the angle between the sides, the elevation, and the termination are proportioned to give the desired directivity.

GS antennas
 . directional antennas
 . . **rhombic antennas**

RT antenna design
 radio antennas

rhombohedrons

GS geometry
 . Euclidean geometry
 . . polyhedrons
 . . . **rhombohedrons**

rhomboids

DEF Parallelograms whose adjacent sides are not equal.

GS geometry
 . Euclidean geometry

rho-mesons

.. polygons
 ... tetragons
 parallelograms
 rhomboids

rho-mesons

GS particles
 . elementary particles
 . bosons
 . mesons
 . . . vector mesons
 **rho-mesons**
 . fermions
 . baryons
 . . . **rho-mesons**
 . hadrons
 . baryons
 . . . **rho-mesons**
 . mesons
 . . . vector mesons
 **rho-mesons**
 . nuclear particles
 . bosons
 . mesons
 . . . vector mesons
 **rho-mesons**
 RT charged particles
 eta-mesons

Rhone Delta (France)

GS landforms
 . deltas
 . . **Rhone Delta (France)**
 RT France
 Mediterranean Sea
 rivers

rhyolite

GS rocks
 . igneous rocks
 . . **rhyolite**
 RT lava
 magma
 silicon dioxide

∞ rhythm

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT oscillations
 periodic variations
 rhythm (biology)

rhythm (biology)

UF *biological clocks*
biological rhythm
biorhythms
chronobiology
periodicity (biology)
 GS **rhythm (biology)**
 . circadian rhythms
 RT activity cycles (biology)
 alternations
 ∞ biology
 cycles
 desynchronization (biology)
 jet lag
 phenology
 ∞ rhythm
 zeitgebers

ribbon parachutes

DEF Parachutes having a canopy consisting of an arrangement of closely spaced tapes. These parachutes have high porosity with attendant stability and slight opening shock.
 GS parachutes
 . **ribbon parachutes**
 RT drag chutes
 recovery parachutes

ribbons

RT conveyors
 fabrics
 fasteners
 metal strips
 ∞ strip

∞ tapes

riblets

(added October 1988)
 DEF Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the wall vortices and turbulent dimensions.

GS grooves
 . V grooves
 . . **riblets**
 RT boundary layer control
 drag reduction
 friction drag
 shear layers
 skin friction
 striation
 turbulent boundary layer
 vortex alleviation

riboflavin

UF *vitamin B 2*
vitamin G
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **riboflavin**
 vitamins
 . **riboflavin**

ribonucleic acids

DEF A chemical found in the nucleus and cytoplasm of cells. It plays an important role in protein synthesis and other chemical activities of the cell. Used for RNA, messenger RNA, transfer RNA, and ribosomal RNA.

UF *messenger RNA*
ribosomal RNA
transfer RNA
 GS acids
 . nucleic acids
 . . **ribonucleic acids**
 biopolymers
 . nucleic acids
 . . **ribonucleic acids**
 organic compounds
 . nucleic acids
 . . **ribonucleic acids**
 RT adenines
 gene expression
 genes
 genome
 guanosines
 polynucleotides
 transcription (genetics)

ribose

GS organic compounds
 . carbohydrates
 . . sugars
 . . . monosaccharides
 pentose
 **ribose**
 RT nucleosides

ribosomal RNA

USE **ribonucleic acids**

ribs (supports)

RT longerons
 reinforcement (structures)
 reinforcement rings
 stiffening
 webs (supports)

Riccati equation

GS algebra
 . linear equations
 . . **Riccati equation**
 analysis (mathematics)
 . real variables
 . . differential equations
 . . . **Riccati equation**

.. linear equations
 ... **Riccati equation**

rice

GS farm crops
 . grains (food)
 . . **rice**
 plants (botany)
 . **rice**
 RT wheat

Richards theorem

GS theorems
 . **Richards theorem**
 RT network synthesis
 signal flow graphs

Richardson number

DEF A nondimensional number arising in the study of shearing flows of a stratified fluid.
 GS dimensionless numbers
 . **Richardson number**
 ratios
 . **Richardson number**
 RT aerodynamic stability
 Reynolds number
 shear flow

Richardson-Dushman equation

USE **temperature effects**
thermionic emission

∞ ridges

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *cuestas*
hogbacks
 RT bridges (landforms)
 buckling
 corrugating
 gaps (geology)
 karst
 landforms
 mid-ocean ridges
 mountains
 protuberances
 wrinkling

riding quality

GS quality
 . **riding quality**
 RT comfort
 passengers
 seats
 suspension systems (vehicles)
 transportation

Riemann integral

USE **measure and integration**

Riemann manifold

UF *Riemann space*
Riemann sphere
 GS geometry
 . differential geometry
 . . **Riemann manifold**
 manifolds (mathematics)
 . **Riemann manifold**
 RT Euclidean geometry

Riemann problem

USE **Cauchy problem**

Riemann space

USE **Riemann manifold**

Riemann sphere

USE **Riemann manifold**

Riemann waves

GS elastic waves
 . shock waves
 . . **Riemann waves**
 RT blast loads
 differential equations

- dynamic pressure
- explosions
- hyperbolic functions
- Riesz theorem**
 - GS theorems
 - . **Riesz theorem**
 - RT differential equations
 - hyperbolic functions
- rifles**
 - GS weapons
 - . guns (ordnance)
 - . . **rifles**
 - RT artillery
- RIFT (reactor in flight test)**
 - UF *reactor in flight test program*
 - RT electric propulsion
 - ∞ reactors
 - rocket engines
 - Rover project
 - Saturn project
- rift valleys*
 - USE **valleys**
- rifts*
 - USE **geological faults**
- rigging**
 - RT assembling
 - construction
 - ∞ equipment
 - materials handling
 - shrouds
- rigid bodies*
 - USE **rigid structures**
- rigid mounting**
 - GS mounting
 - . **rigid mounting**
 - RT pylon mounting
- rigid rotor helicopters**
 - GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . **rigid rotor helicopters**
 - CH-3 helicopter
 - F-28 helicopter
 - XH-51 helicopter
 - RT ∞ aircraft
 - OH-5 helicopter
- rigid rotors**
 - UF *hingeless rotors*
 - GS airfoils
 - . wings
 - . . rotary wings
 - . . . **rigid rotors**
 - rigid structures
 - . **rigid rotors**
 - rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **rigid rotors**
 - RT bearingless rotors
- rigid rotors (plasma physics)**
 - DEF Ensembles of electrons moving in circular or nearly circular orbits at a constant angular frequency.
 - GS **rigid rotors (plasma physics)**
 - . plasma physics
 - RT molecular collisions
 - molecular rotation
 - ∞ physics
 - plasma control
- rigid structures**
 - UF *inelastic bodies*
 - rigid bodies*
- stiff structures*
- GS **rigid structures**
 - . rigid rotors
 - . rigid wings
- RT arches
- composite materials
- concrete structures
- Euler equations of motion
- hybrid structures
- plastic bodies
- reinforcement (structures)
- sandwich structures
- space erectable structures
- steel structures
- ∞ structures
- translational motion
- welded structures
- rigid wings**
 - SN (EXCLUDES 'RIGID ROTORS')
 - airfoils
 - GS wings
 - . wings
 - . . **rigid wings**
 - rigid structures
 - . **rigid wings**
 - RT aeroelasticity
 - fixed wings
 - flexible wings
 - low aspect ratio wings
- ∞ **rigidity**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT flexibility
 - magnetic rigidity
 - mechanical properties
 - modulus of elasticity
 - ruggedness
 - stiffness
 - structural stability
- rills*
 - USE **valleys**
- rims**
 - RT ∞ blades
 - borders
 - edges
 - margins
 - sides
- ring currents**
 - GS electric current
 - . **ring currents**
 - RT atmospheric electricity
 - electrojets
 - plasma currents
- ring discharge**
 - GS electric current
 - . electric discharges
 - . . Townsend discharge
 - . . . gas discharges
 - toroidal discharge
 - **ring discharge**
 - RT ∞ discharge
 - electrodeless discharges
 - gas ionization
 - high frequencies
 - radio frequency discharge
- ring galaxies**
 - (*added November 1988*)
 - GS celestial bodies
 - . galaxies
 - . . **ring galaxies**
 - RT elliptical galaxies
 - galactic evolution
 - galactic structure
 - interacting galaxies
 - spiral galaxies
- ring lasers**
 - GS stimulated emission devices
 - . lasers
- . . **ring lasers**
- ring structures**
 - GS **ring structures**
 - . reinforcement rings
 - . ring wings
 - RT aerodynamic configurations
 - ∞ bands
 - hoops
 - reinforcement (structures)
 - ∞ rings
 - ∞ structures
- ring wings**
 - GS airfoils
 - . wings
 - . . uncambered wings
 - . . . **ring wings**
 - . . . unswept wings
 - **ring wings**
 - ring structures
 - . **ring wings**
 - RT ducted fans
 - shrouded propellers
 - twisted wings
- Ringleb flow**
 - (*added July 1998*)
 - GS fluid flow
 - . compressible flow
 - . . **Ringleb flow**
 - . . steady flow
 - . . . **Ringleb flow**
 - . . two dimensional flow
 - . . . **Ringleb flow**
 - RT critical flow
 - subsonic flow
 - transonic flow
- ∞ **rings**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT annuli
 - bodies of revolution
 - circles (geometry)
 - Jupiter rings
 - O ring seals
 - planetary rings
 - reinforcement rings
 - ring structures
 - rings (mathematics)
 - Saturn rings
 - storage rings (particle accelerators)
 - toroidal plasmas
 - toruses
 - Uranus rings
 - vortex rings
- rings (mathematics)**
 - RT ∞ mathematics
 - ∞ rings
- Rio Grande (North America)**
 - GS rivers
 - . **Rio Grande (North America)**
 - RT Gulf of Mexico
 - Mexico
 - New Mexico
 - texas
- riometers**
 - GS measuring instruments
 - . radiation measuring instruments
 - . . **riometers**
 - RT atmospheric ionization
 - auroral absorption
 - ionograms
 - ionosondes
 - ionospheric noise
 - ionospheric propagation
- ripples**
 - GS elastic waves
 - . capillary waves
 - . . **ripples**
 - surface waves

RISC processors

- . capillary waves
- . . . **ripples**
- RT gravity waves
- interfacial tension
- water waves
- wind (meteorology)

RISC processors

(added March 1995)

DEF A type of computer processor designed to optimize total system performance by simple, fast decoding of the instructions most commonly employed in computer operations and characterized by: a simple instruction set with the majority of instructions being single cycle; instructions that are register-to-register with LOAD and STORE commands being the only memory-reference instructions; very few addressing modes; hardwired control; instructions with one or two sizes and with fields at fixed locations; and some degree of pipelining.

UF *reduced instruction set computing*

GS computer components

- . central processing units
- . . . **RISC processors**

RT architecture (computers)

- chips (electronics)
- computer programming
- computer systems performance
- firmware
- pipelining (computers)
- systems-on-a-chip
- very large scale integration

risers

RT castings

- pipes (tubes)

risk

DEF The combined effect of the likelihood of an unfavorable occurrence and the potential impact of that occurrence.

RT acceptability

- assumptions
- ∞ capacity
- commerce
- confidence
- confidence limits
- contingency
- decision theory
- estimates
- estimating
- finance
- forecasting
- game theory
- hazards
- inventory controls
- mathematical models
- maximum likelihood estimates
- operations research
- predictions
- reliability
- strategy

RIT engines

DEF Radio frequency ion thrusters which generate thrust by converting electric energy into a reaction force by utilizing an electromagnetic field. Used for radio frequency ion thruster engines.

UF *radio frequency ion thruster engines*

GS engines

- . rocket engines
- . . . electric rocket engines
- electrostatic engines
- ion engines
- **RIT engines**

RT plasma engines

Ritz averaging method

GS analysis (mathematics)

- . numerical analysis
- . . approximation
- . . . **Ritz averaging method**

RT ∞ methodology

river basins

GS landforms

- . structural basins
- . . . **river basins**
- Atchafalaya River Basin (LA)
- Chena River Basin (AK)
- Columbia River Basin (ID-OR-WA)
- Delaware River Basin (US)
- Feather River Basin (CA)
- Missouri River Basin (US)
- Susquehanna River Basin (MD-NY-PA)
- Wabash River Basin (IL-IN-OH)
- wadis

RT Amazon region (South America)

- Chesapeake Bay (US)
- Death Valley (CA)
- International Hydrological Decade
- lakes
- meanders
- Mississippi River (US)
- Missouri River (US)
- rapids
- ravines
- rivers
- Sacramento Valley (CA)
- Saginaw Bay (MI)
- San Joaquin Valley (CA)
- Shenandoah Valley (VA)
- vadose water
- watersheds

rivers

DEF A general term for natural fresh water surface streams of considerable volume and permanent or seasonal flow, moving in definite channels toward seas, lakes, or other rivers. Rivers are large streams or ones larger than brooks or creeks, such as trunk systems and the larger branches of drainage systems.

GS **rivers**

- . Colorado River (North America)
- . Hudson River (NY-NJ)
- . Mississippi River (US)
- . Missouri River (US)
- . Ohio River (US)
- . Rio Grande (North America)

RT alluvium

- Amazon region (South America)
- Atchafalaya River Basin (LA)
- aufeis (ice)
- bayous
- canyons
- Columbia River Basin (ID-OR-WA)
- Delaware River Basin (US)
- deltas
- Earth resources
- erosion
- estuaries
- Feather River Basin (CA)
- inland waters
- Lake Erie
- Lake Huron
- Lake Michigan
- Lake Ontario
- Lake Superior
- meanders
- Mississippi Delta (LA)
- Missouri River Basin (US)
- rapids
- reservoirs
- Rhone Delta (France)
- river basins
- shoals
- shorelines
- sounds (topographic features)
- streams
- surface water
- Susquehanna River Basin (MD-NY-PA)
- tributaries
- valleys
- Wabash River Basin (IL-IN-OH)
- wadis

- water color
- water runoff
- watersheds
- waterways
- wharves

riveted joints

GS joints (junctions)

- . **riveted joints**

RT bolted joints

- butt joints
- lap joints
- metal joints
- welded joints

riveting

RT ∞ joining

- rivets
- sealing

rivets

GS fasteners

- . **rivets**

RT couplings

- holders
- pins
- riveting

RL circuits

UF *LR circuits*

GS circuits

- . **RL circuits**
- . . . RLC circuits

RT coupling circuits

- electrical resistance
- inductance
- LC circuits
- network analysis
- network synthesis
- time constant
- transconductance

RL-10 engines

GS engines

- . rocket engines
- . . liquid propellant rocket engines
- . . . **RL-10 engines**
- RL-10-A-1 engine
- RL-10-A-3 engine

RT Atlas Centaur launch vehicle

- Centaur project
- cryogenic rocket propellants
- Saturn launch vehicles

RL-10-A-1 engine

GS engines

- . rocket engines
- . . liquid propellant rocket engines
- . . . hydrogen oxygen engines
- **RL-10-A-1 engine**
- RL-10 engines
- **RL-10-A-1 engine**

RL-10-A-3 engine

GS engines

- . rocket engines
- . . liquid propellant rocket engines
- . . . hydrogen oxygen engines
- **RL-10-A-3 engine**
- RL-10 engines
- **RL-10-A-3 engine**

RT Saturn D launch vehicle

RLC circuits

UF *LRC circuits*

GS *RLC networks*

GS circuits

- . RL circuits
- . . **RLC circuits**

RT capacitance

- capacitance switches
- electrical resistance
- LC circuits
- network analysis
- network synthesis
- RC circuits

time constant
transconductance

RLC networks
USE **RLC circuits**

roads
GS **roads**
. highways
RT ∞ facilities
intersections
passageways
pavements
rapid transit systems
site selection
streets
transportation
transportation networks

roadway powered vehicles
DEF Surface vehicles utilizing a combination of an electrical power source embedded in a roadway and an inductive coupled power pickup.
GS surface vehicles
. **roadway powered vehicles**
RT electric batteries
electric motor vehicles
energy storage

roasting
UF *calcination*
RT baking
desulfurizing
drying
heating
ignition
oxidation
reduction (chemistry)
sintering

ROBIN balloons
GS expandable structures
. inflatable structures
. . balloons
. . . meteorological balloons
. . . **ROBIN balloons**
RT high altitude balloons
radiosondes
rockoons
skyhook balloons
sounding

robot arms
(added January 1990)
UF *arms (robotics)*
GS **robot arms**
. Space Station Mobile Servicing System
RT electroactive polymers
end effectors
manipulators
robot dynamics
robotics
robots

robot control
(added December 1990)
RT adaptive control
∞ control
control systems design
control theory
dynamic control
feedback control
inverse kinematics
robot dynamics
robotics
robots
unmanned ground vehicles

robot dynamics
(added January 1990)
UF *robot motion*
RT dynamic control
∞ dynamics
end effectors

gait
inverse kinematics
manipulators
robot arms
robot control
robotics
telerobotics
trajectory planning

robot fingers
USE **end effectors**

robot hands
USE **end effectors**

robot motion
USE **robot dynamics**

robot sensors
(added January 1990)
GS **robot sensors**
. tactile sensors (robotics)
. torque sensors (robotics)
RT acceleration measurement
computer vision
robotics
robots
∞ sensors

robotics
DEF A discipline that employs the principles and techniques of mechanical and electrical engineering and artificial intelligence to develop programmable or self-controlled machines that often include sensory systems and a degree of intelligence.
GS **robotics**
. telerobotics
RT artificial intelligence
automata theory
automatic control
∞ automation
computer aided design
computer aided manufacturing
computer aided mapping
computer vision
end effectors
inverse kinematics
man machine systems
manipulators
multisensor fusion
position sensing
robot arms
robot control
robot dynamics
robot sensors
robots
task planning (robotics)
teleoperators
trajectory planning
unmanned ground vehicles
voice control

robots
RT artificial intelligence
automata theory
bionics
computer vision
end effectors
psycholinguistics
robot arms
robot control
robot sensors
robotics
servomechanisms
Space Station Mobile Servicing System
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)
voice control

robustness (mathematics)
DEF Insensitivity of systems to uncontrolled perturbations and independent of changes in

environmental parameters as demonstrated mathematically.
RT algorithms
control stability
control theory
feedback control
linear systems
mathematical models

Roche limit
GS range (extremes)
. **Roche limit**
RT celestial mechanics
dimensional stability
gravitation
natural satellites
orbits
rotating bodies
two body problem

rock bolts
GS fasteners
. bolts
. . **rock bolts**

rock intrusions
DEF Vertical tabular bodies of rock that fill fissures in host rocks. Used for dikes (geology).
UF *dikes (geology)*
GS **rock intrusions**
. batholiths
RT contacts (geology)
igneous rocks
inliers (landforms)
regolith
rocks
veins (petrology)

rock mechanics
DEF The theoretical and applied science of the physical behavior of rocks, representing a branch of mechanics concerned with the response of rock to the force fields of its physical environment.
RT fracture mechanics
geology
rocks
soil mechanics
structural properties (geology)

rock salt
USE **halites**

rocket boosters
USE **booster rocket engines**

rocket catapults
GS launchers
. catapults
. . **rocket catapults**
. rocket launchers
. . **rocket catapults**
RT gun launchers
launch vehicles
launching sites
missiles
∞ rockets

rocket chambers
USE **thrust chambers**

rocket engine 9KS-11000
GS engines
. rocket engines
. . booster rocket engines
. . . **rocket engine 9KS-11000**

rocket engine cases
UF *missile engine cases*
rocket motor cases
GS cases (containers)
. **rocket engine cases**
RT bonded joints
missile bodies
orthotropic cylinders
perforated shells

rocket engine control

shells (structural forms)
thrust chambers

rocket engine control

GS engine control
 . **rocket engine control**
RT attitude control
 automatic control
∞ control
 directional control
 flight control
 fuel control
 HEUS rocket engines
 missile control
 remote control
 servocontrol
 spacecraft control
 thrust control

rocket engine design

GS engine design
 . **rocket engine design**
RT aerospike engines
 cold flow tests
∞ design
 engine tests
 prefiring tests
 Rover project

rocket engine noise

GS elastic waves
 . sound waves
 . noise (sound)
 . . . engine noise
 **rocket engine noise**
RT mufflers

rocket engines

DEF Reaction engines that contain within themselves, or carry along with themselves, all the substances necessary for their operation or for the consumption or combustion of their fuel, not requiring of any outside substance and hence capable of operation in outer space. Used for interplanetary propulsion.

UF *interplanetary propulsion*
GS engines

. **rocket engines**

. . booster rocket engines
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . X-405 engine
. . ducted rocket engines
. . electric rocket engines
. . electrostatic engines
. . . . ion engines
. cesium engines
. Hall thrusters
. mercury ion engines
. RIT engines
. . . electrothermal engines
. . . . arc jet engines
. . . . pulsed jet engines
. . . . resistojet engines
. . . plasma engines
. . . . magnetoplasmadynamic thrusters
. pulsed inductive thrusters
. pulsed plasma thrusters
. two stage plasma engines
. VASIMR (propulsion system)
. . HEUS rocket engines

. . hot water rocket engines
. . hybrid propellant rocket engines
. . . lithergol rocket engines
. . liquid propellant rocket engines
. . . AJ-10 engine
. . . F-1 rocket engine
. . . H-1 engine
. . . hydrazine engines
. . hydrogen oxygen engines
. . . . J-2 engine
. . . . M-1 engine
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . liquid air cycle engines
. . . LR-62-RM-2 engine
. . . LR-87-AJ-5 engine
. . . LR-91-AJ-5 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . oxygen-hydrocarbon rocket engines
. . . RL-10 engines
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . pulse detonation engines
. . Space Shuttle Main Engine
. . . X-405 engine
. . . XLR-99 engine
. . . YLR-91-AJ-1 engine
. . M-100 engine
. . microrocket engines
. . Orbit Maneuvering Engine (Space Shuttle)
. . nozzleless rocket engines
. . nuclear engine for rocket vehicles
. . nuclear ramjet engines
. . nuclear rocket engines
. . nuclear lightbulb engines
. . restartable rocket engines
. . retrorocket engines
. . BE-3 engine
. . reusable rocket engines
. . solid propellant rocket engines
. . Algol engine
. . apogee boost motors
. . ASROC engine
. . Hercules engine
. . M-46 engine
. . M-55 engine
. . M-56 engine
. . M-57 engine
. . Nike booster rocket engines
. . P-1 engine
. . SL-3 rocket engine
. . Space Shuttle Boosters
. . . Advanced Solid Rocket Motor (STS)
. . . SYNCOM apogee engines
. . . TX-77 engine
. . . TX-354 engine
. . . X-248 engine
. . . X-254 engine
. . . X-258 engines
. . . . X-258-B1 engine
. . . X-259 engine
. . . XM-33 engine
. . sustainer rocket engines
. . turborocket engines
. . ullage rocket engines
. . upper stage rocket engines
. . Vernier engines
. . control rockets
. . SYNCOM apogee engines
. . aerospike engines
. . rocket-based combined-cycle engines

RT aircraft engines
axial modes
burning time
dump combustors
ejectors
exhaust nozzles
expendable stages (spacecraft)
heavy lift launch vehicles
hybrid propulsion
ignition systems

internal combustion engines
jet engines
jet propulsion
laser propulsion
launch vehicles
Lunar Module Ascent Stage
magnetoplasmadynamics
matter-antimatter propulsion
missile configurations
missiles
multistage rocket vehicles
negative matter propulsion
post boost propulsion system
∞ propellant actuated devices
propellant explosions
refractories
reusable launch vehicles
RIFT (reactor in flight test)
∞ rockets
 single stage rocket vehicles
 solid rocket propellants
 spacecraft components
 spacecraft propulsion
 spacecraft structures
 thrust
 thrust vector control
∞ thrusters
 thrust-weight ratio

rocket exhaust

GS plumes
 . **rocket exhaust**
RT aerospike engines
 base heating
 combustion products
 exhaust clouds
 exhaust gases
 exhaust systems
 jet exhaust

rocket firing

GS firing (igniting)
 . **rocket firing**
 . . retrofiring
RT burning time
 detonation
 liftoff (launching)
 static firing
 test firing

rocket flight

RT climbing flight
 coasting flight
∞ flight
 flight paths
 horizontal flight
 hypersonic flight
 meteorological flight
 space flight
 suborbital flight
 supersonic flight
 trajectories
 transonic flight
 vertical flight

rocket launchers

DEF Devices for launching rockets.
GS launchers
 . **rocket launchers**
 . . rocket catapults
RT ground support equipment
 gun launchers
 launch vehicles
 launching
 launching sites
 missile launchers
∞ rockets
 rockoons
 sea launching

rocket launching

UF *blastoff*
GS launching
 . **rocket launching**
 . . liftoff (launching)
 . . lunar launch

RT . . orbital launching
 exhaust clouds
 launch vehicles
 launch windows
 launchers
 spacecraft launching

rocket linings

DEF In solid rockets, the layers of inhibitors applied to the inner surface of the chamber holding the grain.

GS linings
 . **rocket linings**
 RT bonded joints
 engine parts
 refractories

rocket motor cases

USE **rocket engine cases**

rocket nose cones

GS cones
 . nose cones
 . . **rocket nose cones**
 forebodies
 . noses (forebodies)
 . . nose cones
 . . . **rocket nose cones**
 RT ablative nose cones

rocket nozzles

DEF The exhaust nozzles of rockets.
 GS **rocket nozzles**
 . dual thrust nozzles
 RT aerospike engines
 annular nozzles
 carbon-phenolic composites
 conical nozzles
 convergent-divergent nozzles
 divergent nozzles
 hypersonic nozzles
 magnetic nozzles
 nozzle inserts
 nozzleless rocket engines
 ∞ nozzles
 plug nozzles
 skirts
 spike nozzles
 supersonic nozzles

rocket oxidizers

UF *propellant oxidizers*
 GS oxidizers
 . **rocket oxidizers**
 . . FLOX
 . . TAGN
 RT cryogenic fluids
 Domino propellants
 high energy oxidizers
 hydrogen peroxide
 liquid oxidizers
 liquid oxygen
 nitrogen tetroxide
 nitronium perchlorate
 TATB
 tetrafluorohydrazine

rocket planes

GS rocket vehicles
 . **rocket planes**
 . . X-1 aircraft
 . . X-2 aircraft
 . . X-15 aircraft
 RT aerospace planes
 ∞ aircraft
 boostglide vehicles
 research aircraft

rocket propellant tanks

USE **propellant tanks**

rocket propellants

DEF Agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts or any compounds or mix-

tures of these. Used for multipropellants.

UF *multipropellants*
 GS propellants
 . **rocket propellants**
 . . gaseous rocket propellants
 . . liquid rocket propellants
 . . . cryogenic rocket propellants
 . . . gelled rocket propellants
 . . . hypergolic rocket propellants
 . . . monopropellants
 . . . RP-1 rocket propellants
 . . . slurry propellants
 . . . slush hydrogen
 . . . aeroxine
 . . nitramine propellants
 . . solid rocket propellants
 . . . double base rocket propellants
 . . . HMX
 . . . HTPB propellants
 . . . metal propellants
 . . TAGN
 . . TATB

RT ascent propulsion systems
 auxiliary propulsion
 fuels
 hydrazines
 hydrocarbon fuels
 missiles
 propellant binders
 propellant consumption
 propellant storage
 propulsion
 solid propellants
 specific impulse
 storable propellants
 thrust
 torpedo engines

rocket propelled sleds

GS surface vehicles
 . sleds
 . . **rocket propelled sleds**
 RT Javelin rocket vehicle
 ∞ test equipment

rocket sondes

USE **sounding rockets**

rocket sounding

GS sounding
 . **rocket sounding**
 RT acoustic sounding
 atmospheric sounding
 barium ion clouds
 in situ measurement
 ionospheric sounding
 Judi-Dart rocket
 microwave sounding
 satellite sounding
 sounding rockets
 Vertical rockets

rocket test facilities

GS test facilities
 . **rocket test facilities**
 RT engine tests
 test firing
 test ranges
 test stands

rocket thrust

DEF The thrust of a rocket engine usually expressed in pounds.

GS thrust
 . **rocket thrust**
 . . retrothrust
 RT high thrust
 jet thrust
 liftoff (launching)
 low thrust
 low thrust propulsion
 microthrust
 propulsion system performance
 specific impulse
 static thrust
 thrust loads

thrust termination

variable thrust

rocket vehicles

DEF Vehicles propelled by rocket engines, used to place satellites in orbit, place missiles on target or carry passengers over rails as on rocket sleds.

GS **rocket vehicles**

. Arcon rocket vehicle
 . Blue Streak launch vehicle
 . Blue Streak missile
 . Centaur launch vehicle
 . . Atlas Centaur launch vehicle
 . Folding Fin aircraft rocket vehicle
 . hovering rocket vehicles
 . Meteor 1 rocket vehicle
 . multistage rocket vehicles
 . . Ablestar launch vehicle
 . . Antares rocket vehicle
 . . Argo rocket vehicles
 . . Astrobee rocket vehicles
 . . . Astrobee 1500 rocket vehicle
 . . Athena rocket vehicle
 . . Atlas launch vehicles
 . . . Atlas Able 5 launch vehicle
 . . . Atlas Agena B launch vehicle
 . . . Atlas Agena launch vehicles
 . . . Atlas Centaur launch vehicle
 . . . Atlas SLV-3 launch vehicle
 . . Berenice rocket vehicle
 . . Black Knight rocket vehicle
 . . Blue Scout rocket vehicle
 . . Diamant launch vehicle
 . . Eldo launch vehicle
 . . EXOS sounding rocket
 . . Jaguar rocket vehicle
 . . Javelin rocket vehicle
 . . Juno launch vehicles
 . . . Juno 1 launch vehicle
 . . . Juno 2 launch vehicle
 . . Jupiter C rocket vehicle
 . . Kappa rocket vehicles
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 . . Lambda rocket vehicles
 . . Little Joe 2 launch vehicle
 . . Nike rocket vehicles
 . . . Nike-Apache rocket vehicle
 . . . Nike-Cajun rocket vehicle
 . . . Nike-Hydac rocket vehicle
 . . . Nike-Iroquois rocket vehicle
 . . . Nike-Javelin rocket vehicle
 . . . Nike-Tomahawk rocket vehicle
 . . Nova launch vehicles
 . . Pegasus air-launched booster
 . . Phoenix sounding rocket
 . . RAM B launch vehicle
 . . Rubis rocket vehicle
 . . Saturn launch vehicles
 . . . Saturn 1 launch vehicles
 Saturn 1 SA-1 launch vehicle
 Saturn 1 SA-10 launch vehicle
 Saturn 1 SA-2 launch vehicle
 Saturn 1 SA-3 launch vehicle
 Saturn 1 SA-4 launch vehicle
 Saturn 1 SA-5 launch vehicle
 Saturn 1 SA-6 launch vehicle
 Saturn 1 SA-7 launch vehicle
 Saturn 1 SA-8 launch vehicle
 Saturn 1 SA-9 launch vehicle
 . . . Saturn 1B launch vehicles
 . . . Saturn 2 launch vehicles
 . . . Saturn 5 launch vehicles
 . . . Saturn D launch vehicle
 . . Scout launch vehicle
 . . Skylark rocket vehicle
 . . Thor launch vehicles
 . . . Thor Able rocket vehicle
 . . . Thor Agena launch vehicle
 . . . Thor Delta launch vehicle
 . . Titan launch vehicles
 . . . Titan 3 launch vehicle
 . . . Titan 4 launch vehicle
 Titan 4B launch vehicle
 . . vanguard 2 launch vehicle
 . . Vega launch vehicle

- . . WASP sounding rocket
- . payload assist module
- . rocket planes
- . . X-1 aircraft
- . . X-2 aircraft
- . . X-15 aircraft
- . Saturn stages
- . . Saturn S-1 stage
- . . Saturn S-1B stage
- . . Saturn S-1C stage
- . . Saturn S-2 stage
- . . Saturn S-4 stage
- . . Saturn S-4B stage
- . single stage rocket vehicles
- . . Agena rocket vehicles
- . . . Agena A rocket vehicle
- . . . Agena B rocket vehicle
- . . . Agena C rocket vehicle
- . . . Agena D rocket vehicle
- . . Arcas rocket vehicles
- . . Black Brant sounding rockets
- . . . Black Brant 1 sounding rocket
- . . . Black Brant 2 sounding rocket
- . . . Black Brant 3 sounding rocket
- . . . Black Brant 4 sounding rocket
- . . . Black Brant 5 sounding rocket
- . . Black Knight rocket vehicle
- . . Dornier paraglider rocket vehicle
- . . Genie rocket vehicle
- . . Honest John rocket vehicle
- . . Hyla-Star rocket vehicle
- . . Little John rocket vehicle
- . . Loki rocket vehicle
- . . Nomad launch vehicle
- . . Veronique rocket vehicles
- . . Viking rocket vehicle
- . . Zuni rocket vehicle
- . sounding rockets
- . . Aerobee rocket vehicle
- . . Antares rocket vehicle
- . . Apache rocket vehicle
- . . Arcas rocket vehicles
- . . Aries sounding rocket
- . . Astrobee rocket vehicles
- . . . Astrobee 1500 rocket vehicle
- . . Black Brant sounding rockets
- . . . Black Brant 1 sounding rocket
- . . . Black Brant 2 sounding rocket
- . . . Black Brant 3 sounding rocket
- . . . Black Brant 4 sounding rocket
- . . . Black Brant 5 sounding rocket
- . . Cajun rocket vehicle
- . . Dornier paraglider rocket vehicle
- . . EXOS sounding rocket
- . . Jaguar rocket vehicle
- . . Judi-Dart rocket
- . . Kappa rocket vehicles
- . . . Kappa 8 rocket vehicle
- . . . Kappa 9 rocket vehicle
- . . Lambda rocket vehicles
- . . Loki rocket vehicle
- . . Petrel sounding rocket
- . . Phoenix sounding rocket
- . . Skua rocket vehicles
- . . Skylark rocket vehicle
- . . Venus fly trap rocket vehicle
- . . Veronique rocket vehicles
- . . Vertikal rockets
- . . WASP sounding rocket
- . Standard Launch Vehicles
- . . Atlas SLV-3 launch vehicle
- . . Standard Launch Vehicle 5
- . surface to surface rockets
- . . Honest John rocket vehicle
- . . Little John rocket vehicle
- . Thorad launch vehicles
- . . Thor Able rocket vehicle
- . . Thor Agena launch vehicle
- . . Thor Delta launch vehicle
- . Titan Centaur launch vehicle

RT acoustic sounding

∞ ballistic vehicles

∞ flight vehicles

HEUS rocket engines

launch vehicles

missile configurations

multiengine vehicles

- ∞ rockets
- Space Processing Applications
- Rocket
- stage separation
- test vehicles
- Trailblazer 1 reentry vehicle
- Trailblazer 2 reentry vehicle
- ∞ vehicles
- ∞ winged vehicles
- X-17 reentry vehicle

rocket-based combined-cycle engines

(added August 1999)

DEF Launch vehicle engines that integrate a high specific impulse, low thrust-to-weight, airbreathing engine with a low-impulse, high thrust-to-weight rocket. The engines are often defined by four modes of operation in a single-stage-to-orbit configuration. In the first mode, the engine functions as a rocket-driven ejector. When the rocket engine is switched off, subsonic combustion (mode 2) is present in the ramjet mode. As the vehicle continues to accelerate, supersonic combustion (mode 3) occurs in the ramjet mode. Finally, as the edge of the atmosphere is approached and the engine inlet is closed off, the rocket is reignited and the final ascent to orbit is undertaken in an all-rocket mode (mode 4).

UF *RBCC engines*

GS engines

. rocket engines

. . **rocket-based combined-cycle engines**

RT air breathing boosters

air breathing engines

hybrid propulsion

integral rocket ramjets

ramjet engines

single stage to orbit vehicles

spacecraft propulsion

supersonic combustion ramjet engines

rocket-borne instruments

RT controllers

flight test instruments

∞ instruments

measuring instruments

meteorological instruments

position indicators

rocket-borne photography

GS imagery

. photography

. . **rocket-borne photography**

RT aerial photography

astronomical photography

black and white photography

photomapping

satellite-borne photography

spaceborne photography

∞ **rockets**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT air slew missiles

ammunition

escape rockets

heavy lift launch vehicles

incendiary ammunition

launch vehicles

missiles

nuclear ramjet engines

nuclear rocket engines

nuclear weapons

Patriot missile

Petrel sounding rocket

pyrotechnics

reentry

reentry vehicles

rocket catapults

rocket engines

rocket launchers

rocket vehicles

rockoons

space flight

surface to air missiles

surface to surface missiles

surface to surface rockets

torpedoes

warheads

weapon systems

weapons delivery

rockoons

DEF High altitude sounding systems that consist of small solid propellant research rockets carried aloft by large plastic balloons.

RT high altitude balloons

meteorological balloons

ROBIN balloons

rocket launchers

∞ rockets

skyhook balloons

rocks

DEF Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).

UF *stones (rocks)*

GS **rocks**

. andesite

. ataxite

. bedrock

. . Baltic Shield (Europe)

. . batholiths

. breccia

. gneiss

. igneous rocks

. . anorthosite

. . basalt

. . diorite

. . dunite

. . eclogite

. . felsite

. . gabbro

. . granite

. . obsidian

. . . moldavite

. . peridotite

. . pumice

. . rhyolite

. . syenite

. . trachyte

. lunar rocks

. . krep

. metamorphic rocks

. . quartzite

. . regolith

. . schist

. . sedimentary rocks

. . carbonaceous rocks

. . . coal

. . . . anthracite

. . . . lignite

. . . . solvent refined coal

. . limestone

. . sandstones

. . shales

. . shatter cones

RT aggregates

bauxite

boreholes

clays

contacts (geology)

crossbedding (geology)

dirt

dolomite (mineral)

Earth resources

effusives

enstatite

folds (geology)

formations

geology

gypsum

inliers (landforms)

karst

landslides

laterites

lava

ledges

lithology

- magma
 - metamorphism (geology)
 - minerals
 - nunataks
 - olivine
 - outliers (landforms)
 - paleomagnetism
 - petrography
 - petrology
 - pyroxenes
 - quartz
 - reefs
 - rock intrusions
 - rock mechanics
 - serpentine
 - soils
 - stratigraphy
 - tunneling (excavation)
 - veins (petrology)
- Rockwell hardness**
- GS mechanical properties
 - . hardness
 - . . **Rockwell hardness**
 - RT microhardness
- Rocky Mountains (North America)**
- GS landforms
 - . mountains
 - . . **Rocky Mountains (North America)**
 - RT Canada
 - United States
- rodents**
- GS animals
 - . vertebrates
 - . . mammals
 - . . . **rodents**
 - guinea pigs
 - hamsters
 - mice
 - jerboas
 - pocket mice
 - rabbits
 - rats
 - squirrels
 - ground squirrels
- rods**
- GS **rods**
 - . control rods
 - RT bars
 - billets
 - directors (antenna elements)
 - structural members
 - wire
- Roe flux difference splitting scheme*
- USE **flux difference splitting**
- Roentgen satellite*
- USE **ROSAT mission**
- Rogallo wings*
- USE **flexible wings**
- folding structures**
- rogue planets*
(added April 2001)
- USE **hypothetical planets**
- roll**
- DEF The act of rolling; rotational or oscillatory movement of an aircraft or similar body about a longitudinal axis through the body -- called roll for any degree of such rotation. The amount of this movement, i. e. , the angle of roll.
- GS attitude (inclination)
 - . **roll**
 - RT damping
 - lateral control
 - lateral oscillation
 - lateral stability
 - pitch (inclination)
 - rollers
- ∞ rolling
 - rolling moments
 - rotation
 - sideslip
 - turning flight
 - wing rock
 - yaw
- roll control*
- USE **lateral control**
- roll forming**
- GS forming techniques
 - . **roll forming**
 - RT cold working
 - metal working
- roller bearings**
- GS bearings
 - . antifriction bearings
 - . . **roller bearings**
 - . . . needle bearings
 - RT ball bearings
 - thrust bearings
- rollers**
- RT conveyors
 - cylindrical bodies
 - dispensers
 - distributors
 - idlers
 - platens
 - pulleys
 - roll
 - tires
 - vehicle wheels
 - wheels
- ∞ **rolling**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT ausforming
 - flattening
 - forging
 - leveling
 - metal working
 - roll
- rolling contact loads**
- GS loads (forces)
 - . contact loads
 - . . **rolling contact loads**
 - . dynamic loads
 - . . **rolling contact loads**
 - RT antifriction bearings
 - stresses
 - structural design criteria
- rolling moments**
- DEF Moments that tend to rotate an aircraft, rocket or spacecraft about a longitudinal axis. These moments are considered positive when they tend to depress the starboard side of the body.
- GS moments
 - . stability derivatives
 - . . **rolling moments**
 - RT aerodynamic coefficients
 - lateral stability
 - moments of inertia
 - pitching moments
 - roll
 - torque
 - yawing moments
- rollup solar arrays*
- USE **solar arrays**
- ROM devices*
- USE **read-only memory devices**
- Romania**
- UF *Rumania*
 - GS nations
 - . **Romania**
- RT Black Sea
 - Central Europe
 - Europe
- Ronchi test**
- DEF An improvement on the Foucault knife-edge test for curved mirrors, in which the knife edge is replaced with a transmission grating with 15 to 80 lines per centimeter, and the pinhole source is replaced with a slit or a section of the same grating.
- GS interferometry
 - . **Ronchi test**
 - RT electromagnetic radiation
 - etalons
 - gratings (spectra)
 - interferometers
 - measuring instruments
 - optical measurement
- roofs**
- RT buildings
 - sheaths
- room temperature**
- DEF A temperature in the range of 20 to 30 C (68 to 85 F).
- GS temperature
 - . **room temperature**
 - RT ambient temperature
 - operating temperature
- rooms**
- GS **rooms**
 - . clean rooms
 - . darkrooms
 - RT compartments
 - enclosures
 - ∞ lounges
- root-mean-square errors**
- DEF In statistics, the square root of the arithmetic mean of the squares of the deviations of the various items from the arithmetic mean of the whole.
- GS errors
 - . **root-mean-square errors**
 - RT error analysis
 - statistical analysis
- ∞ **roots**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT plant roots
 - radicals
 - roots of equations
 - wing roots
- roots of equations**
- UF *zero crossings*
 - RT eigenvalues
 - ∞ equations
 - existence theorems
 - matrices (mathematics)
 - Newton methods
 - nonlinear equations
 - polynomials
 - ∞ roots
- Rorschach tests**
- GS psychological tests
 - . **Rorschach tests**
 - RT mental health
 - psychology
 - ∞ tests
- ROSAT mission**
- UF *Roentgen satellite*
 - GS artificial satellites
 - . **ROSAT mission**
 - observatories
 - . astronomical observatories
 - . . **ROSAT mission**
 - RT astronomical satellites
 - international cooperation

Rosetta mission

- spaceborne astronomy
- spaceborne telescopes
- x ray astronomy
- x ray sources
- x ray telescopes

Rosetta mission

(added October 1995)

UF CNSR

GS space missions
. asteroid missions

. . . Rosetta mission

RT comet nuclei
Comet Rendezvous Asteroid Flyby Mission
∞ missions
Near Earth Asteroid Rendezvous Mission
rendezvous trajectories
sampling

rosette shapes

GS shapes

. rosette shapes

RT antenna radiation patterns
crystallites
spherulites
strain gages

Roshko prediction

GS predictions

. Roshko prediction

RT bluff bodies
laminar flow
Oseen approximation
three dimensional flow

rosin

GS gums (substances)

. rosin

RT organic materials

Ross ice shelf

GS regions

- . polar regions
- . . Antarctic regions
- . . . **Ross ice shelf**
- . remote regions
- . . Antarctic regions
- . . . **Ross ice shelf**
- Southern Hemisphere
- . Antarctic regions
- . . **Ross ice shelf**

RT McMurdo sound

Rossby regimes

RT barotropic flow
planetary waves

Rossby waves

USE **planetary waves**

Rossi X Ray Timing Explorer

(added March 1999)

USE **X Ray Timing Explorer**

rotary drives

USE **mechanical drives**

rotary engines

DEF A positive displacement engine consisting of a rotor and stator. The control volume which encloses the working fluid during the thermodynamic cycle moves in a generally circular motion rather than a linear motion as in a piston engine.

GS engines
. internal combustion engines

. . . rotary engines

. . . Wankel engines
RT aircraft engines
automobile engines
piston engines

rotary gyroscopes

GS gyroscopes

. rotary gyroscopes

. . fluid rotor gyroscopes
RT gyroscope fluids
gyroscopic stability
rotating bodies

rotary stability

UF *whirl instability*

GS dynamic characteristics

- . dynamic stability
- . motion stability
- . . . **rotary stability**
- . . . gyroscopic stability

- stability
- . dynamic stability
- . motion stability

. . . rotary stability

. . . gyroscopic stability

RT airfoil oscillations

- directional stability
- flow stability
- lateral stability
- longitudinal stability
- rotating bodies
- rotation
- rotor dynamics

rotary wing aircraft

DEF A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

UF *rotorcraft*

GS V/STOL aircraft

. rotary wing aircraft

- . . autogyros
- . . . Avian 2/180 autogiro
- . . helicopters
- . . . Alouette helicopters
- . . . SA-330 helicopter
- . . . SE-3160 helicopter
- . . . Bell 214A helicopter
- . . . compound helicopters
- . . . S-67 helicopter
- . . . H-17 helicopter
- . . . heavy lift helicopters
- . . . CH-62 helicopter
- . . . light helicopters
- . . . OH-4 helicopter
- . . . OH-5 helicopter
- . . . OH-6 helicopter
- . . . OH-58 helicopter
- . . . military helicopters
- . . . AH-1G helicopter
- . . . AH-1S helicopter
- . . . AH-1W helicopter
- . . . AH-63 helicopter
- . . . AH-64 helicopter
- . . . BO-105 helicopter
- . . . CH-3 helicopter
- . . . CH-21 helicopter
- . . . CH-34 helicopter
- . . . CH-46 helicopter
- . . . CH-47 helicopter
- . . . CH-54 helicopter
- . . . CH-62 helicopter
- . . . H-19 helicopter
- . . . H-43 helicopter
- . . . H-53 helicopter
- . . . H-54 helicopter
- . . . H-56 helicopter
- . . . H-60 Helicopter
- . . . HC-3 helicopter
- . . . HH-43 helicopter
- . . . HH-65 helicopter
- . . . OH-4 helicopter
- . . . OH-5 helicopter
- . . . OH-6 helicopter
- . . . OH-13 helicopter
- . . . OH-23 helicopter
- . . . OH-58 helicopter
- . . . P-531 helicopter
- . . . QH-50 helicopter
- . . . S-67 helicopter
- . . . SA-321 helicopter
- . . . SA-330 helicopter
- . . . SH-3 helicopter
- . . . SH-4 helicopter

- . . . Sikorsky Whirlwind helicopter
- . . . UH-1 helicopter
- . . . UH-2 helicopter
- . . . UH-34 helicopter
- . . . UH-60A helicopter
- . . . UH-61A helicopter
- . . . Westland Whirlwind helicopter
- . . . XV-9A aircraft
- . . . rigid rotor helicopters
- . . . CH-3 helicopter
- . . . F-28 helicopter
- . . . XH-51 helicopter
- . . . S-58 helicopter
- . . . S-61 helicopter
- . . . tandem rotor helicopters
- . . . CH-46 helicopter
- . . . CH-47 helicopter
- . . . H-25 helicopter
- . . . EH-101 helicopter
- . . . TH-55 helicopter
- . . . rotor systems research aircraft
- . . . tilt rotor aircraft
- . . . V-22 aircraft
- . . . XV-15 aircraft

RT ∞ aircraft

- autorotation
- commercial aircraft
- lifting rotors
- ∞ military aircraft
- passenger aircraft
- rotor stator interactions
- short takeoff aircraft
- ∞ subsonic aircraft
- transport aircraft
- vertical takeoff aircraft
- Weser aircraft
- Westland aircraft

rotary wings

UF *helicopter rotors*

hinged rotor blades

GS airfoils

. wings

. . . rotary wings

- . . . circulation control rotors
- . . . lifting rotors
- . . . bearingless rotors
- . . . rigid rotors
- . . . tilting rotors
- . . . tip driven rotors
- . . . x wing rotors
- rotating bodies
- . rotors
- . . **rotary wings**
- . . . circulation control rotors
- . . . lifting rotors
- . . . bearingless rotors
- . . . rigid rotors
- . . . tilting rotors
- . . . tip driven rotors
- . . . x wing rotors

RT blade tips

∞ blades

- blade-vortex interaction
- convertible fan-shaft engines
- fan blades
- flapping hinges
- folding structures
- ground resonance
- harmonic control
- helicopter propeller drive
- helicopter tail rotors
- lift fans
- propeller blades
- ∞ rotor blades
- rotor dynamics
- tail rotors
- Tilt Rotor Research Aircraft Program
- V-22 aircraft
- whirl towers

rotating

USE **rotation**

rotating bodies

UF *rotating vehicles*

solid rotation

GS **rotating bodies**
 . lunar rotation
 . rotating cylinders
 . rotating disks
 . rotating spheres
 . rotors
 . . . compressor rotors
 . . . flywheels
 . . . impellers
 pump impellers
 . . . rotary wings
 . . . circulation control rotors
 . . . lifting rotors
 bearingless rotors
 . . . rigid rotors
 . . . tilting rotors
 . . . tip driven rotors
 . . . x wing rotors
 . . tail rotors
 . . . helicopter tail rotors
 . . tip vanes
 . . turbine wheels
 . . wave rotors

RT axes of rotation
 ∞ bodies
 planetary rotation
 Roche limit
 rotary gyroscopes
 rotary stability
 rotation
 spinning unguided rocket trajectory

rotating cylinders
 GS rotating bodies
 . **rotating cylinders**
 symmetrical bodies
 . bodies of revolution
 . . cylindrical bodies
 . . . **rotating cylinders**

RT Couette flow
 ∞ cylinders
 cylindrical shells
 elasto-hydrodynamics
 Magnus effect
 shafts (machine elements)
 viscometers
 viscometry

rotating disks
 GS disks (shapes)
 . **rotating disks**
 rotating bodies
 . **rotating disks**

RT accretion disks
 counter rotation
 Karman-Bodewadt flow
 mistuning (turbomachinery)

∞ **rotating electrical machines**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT armatures
 commutators
 electric hybrid vehicles
 electric motors
 induction motors
 ∞ machinery
 rotating generators
 rotors
 servomotors
 stators

rotating environments
 GS environments
 . **rotating environments**

RT artificial gravity
 Barany chair
 clinorotation
 clinostats
 Coriolis effect
 high gravity environments
 Langley complex coordinator
 spacecraft environments

tumbling motion

rotating fluids
 GS matter (physics)
 . rotating matter
 . . **rotating fluids**
 . . . rotating liquids
 . . . rotating plasmas

RT counter rotation
 ∞ fluids
 Goertler instability
 Karman-Bodewadt flow
 liquid sloshing
 planetary waves
 superrotation
 Taylor instability
 trapped vortices
 turbulent flow
 vortex sheets
 vortices
 wing tip vortices

rotating generators
 UF *dynamos*
 GS electric generators
 . **rotating generators**
 . . amplidynes
 . . dynamometers
 . . homopolar generators
 . . turbogenerators
 . . . ASTEC solar turboelectric generator

RT AC generators
 commutators
 DC generators
 electrostatic generators
 ∞ generators
 ∞ rotating electrical machines
 turbines
 turbomachinery

rotating liquids
 UF *liquid rotation*
 GS liquids
 . **rotating liquids**
 matter (physics)
 . rotating matter
 . . rotating fluids
 . . . **rotating liquids**

RT Goertler instability
 planetary waves
 rotation
 trapped vortices
 vortices

rotating matter
 GS matter (physics)
 . **rotating matter**
 . . rotating fluids
 . . . rotating liquids
 . . . rotating plasmas

RT degenerate matter
 rotation
 spin dynamics

rotating mirrors
 GS mirrors
 . **rotating mirrors**

RT framing cameras
 high speed cameras

rotating plasmas
 GS matter (physics)
 . rotating matter
 . . rotating fluids
 . . . **rotating plasmas**
 particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **rotating plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **rotating plasmas**

RT drift rate

nonequilibrium plasmas
 plasma flux measurement
 theta pinch
 toroidal plasmas
 two fluid models
 zeta pinch

rotating shafts
 GS shafts (machine elements)
 . **rotating shafts**
 . . turboshafts

rotating spheres
 GS rotating bodies
 . **rotating spheres**
 symmetrical bodies
 . bodies of revolution
 . . spheres
 . . . **rotating spheres**

RT equators
 spherical shells

rotating stalls
 RT aerodynamic stalling
 boundary layer separation
 compressor blades
 ∞ rotor blades
 ∞ stalling
 turbocompressors

rotating vehicles
 USE **rotating bodies vehicles**

rotation
 DEF The motion of a body about some straight line wherein the particles of the body along the line or its extensions have a zero velocity relative to some reference. The line of stationary particles is called the axis of rotation. Used for rotating, whirl, and whirling.

UF *rotating whirl*
whirling

GS gyration
 . **rotation**
 . . autorotation
 . . corotation
 . . counter rotation
 . . Earth rotation
 . . galactic rotation
 . . image rotation
 . . lunar rotation
 . . molecular rotation
 . . muon spin rotation
 . . planetary rotation
 . . satellite rotation
 . . stellar rotation
 . . . solar rotation
 . . clinorotation
 . . superrotation

RT angular acceleration
 angular velocity
 axes of rotation
 circulation
 coning motion
 Coriolis effect
 cross polarization
 Faraday effect
 libration
 ∞ motion
 nutation
 pitch (inclination)
 polarization (spin alignment)
 polarization (waves)
 precession
 revolving
 roll
 rotary stability
 rotating bodies
 rotating liquids
 rotating matter
 rotors
 torque
 vortex avoidance
 vortices

rotational spectra

yaw

rotational flow
USE **fluid flow vortices**

rotational spectra
(added July 1989)
GS spectra
. molecular spectra
. . **rotational spectra**
RT absorption spectra
line spectra
molecular excitation
molecular rotation
molecular spectroscopy
rotational states
vibrational spectra

rotational states
(added December 1993)
SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)
GS level (quantity)
. energy levels
. . molecular energy levels
. . . **rotational states**
RT molecular excitation
rotational spectra

Rotifera
DEF A phylum of multicellular animals in the subkingdom Eumatazoa.
GS animals
. invertebrates
. . **Rotifera**
microorganisms
. **Rotifera**
RT worms

rotochutes
GS parachutes
. **rotochutes**
RT autorotation

rotons
GS fluid mechanics
. fluid dynamics
. . **rotons**
RT activation energy
excitation
photons
rotation

rotor aerodynamics
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . **rotor aerodynamics**
RT flapping
flapping hinges
ground resonance
rotor body interactions
rotor dynamics
rotor stator interactions
rotors
whirl towers

∞ **rotor blades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT helicopter tail rotors
mistuning (turbomachinery)
rotary wings
rotating stalls
rotor blades (turbomachinery)
tail rotors
x wing rotors

rotor blades (turbomachinery)
UF *impeller blades*
GS turbomachine blades
. **rotor blades (turbomachinery)**

RT airfoils
blade tips
∞ blades
compressor blades
compressor rotors
impellers
mistuning (turbomachinery)
∞ rotor blades
rotor stator interactions
rotors
stator blades
turbine blades

rotor body interactions
DEF Aerodynamic interactions between a helicopter rotor and a body.
RT aerodynamic characteristics
aerodynamic configurations
helicopter design
rotor aerodynamics
rotor stator interactions

rotor disks
USE **turbine wheels**

rotor dynamics
(added July 1989)
UF *rotordynamics*
RT dynamic characteristics
dynamic response
dynamic stability
∞ dynamics
rotary stability
rotary wings
rotor aerodynamics
rotors
structural vibration
turbomachinery

rotor hubs
USE **hubs rotors**

rotor lift
GS aerodynamic characteristics
. lift
. . **rotor lift**
aerodynamic forces
. lift
. . **rotor lift**
dynamic characteristics
. lift
. . **rotor lift**
RT distribution (property)

rotor speed
GS rates (per time)
. **rotor speed**
velocity
. **rotor speed**
RT angular velocity
high speed
labyrinth seals
tip speed

rotor stator interactions
(added June 1995)
DEF Aerodynamic interaction between a rotor and a stator.
RT aerodynamic interference
interactional aerodynamics
rotary wing aircraft
rotor aerodynamics
rotor blades (turbomachinery)
rotor body interactions
stator blades
structural stability
supersonic turbines
surface noise interactions
tilt rotor aircraft
turbine blades

rotor systems research aircraft
GS research vehicles
. research aircraft
. . **rotor systems research aircraft**

V/STOL aircraft
. rotary wing aircraft
. . **rotor systems research aircraft**

RT ∞ aircraft
aircraft design
helicopters
NASA programs
∞ systems

rotorcraft
USE **rotary wing aircraft**

rotordynamics
USE **rotor dynamics**

rotors
UF *rotor hubs*
GS rotating bodies
. **rotors**
. . compressor rotors
. . flywheels
. . impellers
. . . pump impellers
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
. tail rotors
. . . helicopter tail rotors
. . tip vanes
. turbine wheels
. . wave rotors
RT airfoils
armatures
centrifugal compressors
heavy lift airships
mistuning (turbomachinery)
∞ rotating electrical machines
rotor aerodynamics
rotor blades (turbomachinery)
rotor dynamics
stators
turbines
turbocompressors
turbomachine blades
turboshafts
wheels
wings

roughness
GS **roughness**
. sea roughness
. surface roughness
RT coarseness
contours
flatness
mechanical properties
motion stability
profilometers
smoothing
surface properties

round trip trajectories
GS trajectories
. **round trip trajectories**
. . circumlunar trajectories
RT Earth-Moon trajectories
interorbital trajectories
interplanetary flight
interplanetary trajectories
moon-Earth trajectories
orbital mechanics
spacecraft trajectories
swingby technique

Rouse belts
RT ∞ belts
cones (volcanoes)
earthquakes
geological faults
Mars volcanoes
seismology

- tremors
- volcanoes
- volcanology
- routes**
 - RT air traffic control
 - flight plans
 - ∞ paths
 - site selection
 - transportation
- ∞ **routines**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT computer programs
 - computer systems programs
 - data conversion routines
 - disk operating system (DOS)
 - input/output routines
 - merging routines
 - operating systems (computers)
 - user manuals (computer programs)
- Rover project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Rover project**
 - . projects
 - . . **Rover project**
 - . space programs
 - . . NASA space programs
 - . . . **Rover project**
 - RT KIWI reactors
 - nuclear engine for rocket vehicles
 - nuclear propulsion
 - nuclear reactors
 - RIFT (reactor in flight test)
 - rocket engine design
 - spacecraft propulsion
- roving vehicles**
 - UF *extraterrestrial roving vehicles*
 - GS surface vehicles
 - . **roving vehicles**
 - . . lunar roving vehicles
 - . . . Lunokhod lunar roving vehicles
 - . . . manned lunar surface vehicles
 - . . Mars roving vehicles
 - . . . Marsokhod Mars roving vehicles
 - RT Mars sample return missions
 - planetary landing
 - planetary surfaces
 - research vehicles
 - toroidal wheels
 - unmanned ground vehicles
 - ∞ vehicles
- ∞ **rovings**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT composite materials
 - webs (sheets)
 - yarns
- Rowland circles**
 - RT gratings (spectra)
 - optical filters
- RP-1 rocket propellants**
 - GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **RP-1 rocket propellants**
 - RT JP-4 jet fuel
 - kerosene
- RPV**
 - USE **remotely piloted vehicles**
- RS codes**
 - USE **Reed-Solomon codes**
- RTM (composite materials)**
 - USE **resin transfer molding**
- RTV-40 rubber (trademark)**
 - GS elastomers
- . rubber
 - . . synthetic rubbers
 - . . . silicone rubber
 - **RTV-40 rubber (trademark)**
 - . . . vulcanized elastomers
 - **RTV-40 rubber (trademark)**
- RTV-60 rubber (trademark)**
 - GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . silicone rubber
 - **RTV-60 rubber (trademark)**
 - . . . vulcanized elastomers
 - **RTV-60 rubber (trademark)**
- Ruanda-Urundi*
- USE **Burundi**
- Rwanda**
- rubber**
 - DEF A material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is modified to a state in which it is essentially insoluble (but can swell) in boiling solvent such as benzene, methyl ethyl ketone, and ethanol-toluene azeotrope.
 - GS elastomers
 - . **rubber**
 - . . synthetic rubbers
 - . . . Adiprene (trademark)
 - . . . Buna (trademark)
 - . . . silicone rubber
 - . . . RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
 - . . . Viton rubber (trademark)
 - . . . vulcanized elastomers
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
 - . . . chloroprene resins
 - RT guayule
 - gums (substances)
 - latex
 - organic materials
 - polyisoprenes
- rubber coatings**
 - GS coatings
 - . **rubber coatings**
 - RT paints
 - protective coatings
- rubidium**
 - GS chemical elements
 - . alkali metals
 - . . **rubidium**
 - . . . rubidium isotopes
 - rubidium 86
 - . metals
 - . . alkali metals
 - . . **rubidium**
 - . . . rubidium isotopes
 - rubidium 86
- rubidium 86**
 - GS chemical elements
 - . alkali metals
 - . . rubidium
 - . . . rubidium isotopes
 - **rubidium 86**
 - . . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **rubidium 86**
 - . . . rubidium isotopes
 - **rubidium 86**
 - . metals
 - . . alkali metals
 - . . rubidium
 - . . . rubidium isotopes
 - **rubidium 86**
- rubidium compounds**
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
- ∞ metal compounds
- rubidium isotopes**
 - GS chemical elements
 - . alkali metals
 - . . rubidium
 - . . . **rubidium isotopes**
 - rubidium 86
 - . . nuclides
 - . . isotopes
 - . . . **rubidium isotopes**
 - rubidium 86
 - . metals
 - . . alkali metals
 - . . rubidium
 - . . . **rubidium isotopes**
 - rubidium 86
- Rubis rocket vehicle**
 - GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Rubis rocket vehicle**
 - RT solid propellant rocket engines
- ruby**
 - RT aluminum oxides
 - crystals
- ruby lasers**
 - GS electronic equipment
 - . solid state devices
 - . . solid state lasers
 - . . . **ruby lasers**
 - . stimulated emission devices
 - . lasers
 - . . solid state lasers
 - . . . **ruby lasers**
 - RT pulsed lasers
 - Q switched lasers
 - Verneuil process
- rudders**
 - GS control surfaces
 - . **rudders**
 - . . aerial rudders
 - . . marine rudders
 - RT airfoils
 - pins
 - pintles
 - stabilizers (fluid dynamics)
 - sweptback tail surfaces
 - tabs (control surfaces)
 - tail assemblies
 - tail surfaces
 - trapezoidal tail surfaces
- ruggedness**
 - RT durability
 - ∞ high resistance
 - mechanical properties
 - ∞ rigidity
- ruler method**
 - RT ∞ methodology
- rules**
 - GS **rules**
 - . flight rules
 - . . instrument flight rules
 - . . visual flight rules
 - . Palmgren-Miner rule
 - . phase rule
 - . selection rules (nuclear physics)
 - . sum rules
 - . Whitham rule
 - RT laws
 - patent policy
 - policies
 - procurement policy
 - regulations

run time (computers)

sea law

Romania

USE **Romania**

run time (computers)

RT computer programming
computers
time sharing

Runge-Kutta method

DEF A method for the numerical solution of an ordinary differential equation.

GS analysis (mathematics)
. numerical analysis
. . numerical integration
. . . **Runge-Kutta method**
. real variables
. . measure and integration
. . . numerical integration
. . . . **Runge-Kutta method**
RT ∞ methodology

running

GS locomotion
. **running**
RT gait
physical exercise
walking

runoffs

USE **drainage**

runway alignment

SN (ALIGNMENT WITH RUNWAYS--NOT ALIGNMENT OF RUNWAYS)
RT aircraft landing
takeoff runs

runway conditions

GS conditions
. **runway conditions**
RT aviation meteorology
ice
runways
slush
surface roughness
water
weather

runway lights

GS landing aids
. airport lights
. . **runway lights**
lighting equipment
. luminaires
. . airport lights
. . . **runway lights**
RT approach control
∞ flares
∞ markers
runways
searchlights
visual control

runways

DEF A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.

RT airfield surface movements
airports
landing
landing aids
landing mats
landing sites
pavements
runway conditions
runway lights
∞ strip
takeoff
taxiing

rupturing

RT ∞ blisters
bursts
cracking (fracturing)

disrupting
failure
fracture mechanics
metal fatigue
self sealing
structural strain
tearing

rural areas

RT agriculture
farmlands
grasslands
land
megalopolises
rangelands
regional planning
residential areas
suburban areas
wilderness

rural land use

GS land use
. **rural land use**
RT agriculture
conservation
∞ development
Earth resources
farmlands
grasslands
grazing
Great Plains Corridor (North America)
land
land management
orchards
rangelands
regional planning
sites

Russia

USE **Russian Federation**

Russian Federation

(added August 1993)
UF *Russia*
GS nations
. **Russian Federation**
RT Asia
Automatic Universal Orbiting Stations
Europe
Moscow
Russian Space Program

Russian Space Program

(added September 1994)
GS programs
. space programs
. . **Russian Space Program**
RT Commonwealth of Independent States
cosmonauts
Energija launch vehicle
GLONASS
Granat satellite
international cooperation
Kvant modules
Proton launch vehicle
Russian Federation
Soviet satellites
Soviet spacecraft
U. S. S. R. space program
Vertikal rockets

rust fungi

UF *rusts (botany)*
GS plants (botany)
. fungi
. . **rust fungi**
RT blight
∞ mold
parasitic diseases
plant diseases

rusting

GS chemical reactions
. oxidation
. . **rusting**

corrosion
. **rusting**
RT atmospheric effects
chemical attack
coatings
corrosion resistance
degradation
desensitizing
deterioration
hot corrosion
metal-water reactions
oxidation resistance
passivity
scale (corrosion)
weathering

rusts (botany)

USE **rust fungi**

ruthenium

GS chemical elements
. **ruthenium**
. . ruthenium isotopes
metals
. noble metals
. . **ruthenium**
. . . ruthenium isotopes
. transition metals
. . **ruthenium**
. . . ruthenium isotopes

ruthenium 106

USE **ruthenium isotopes**

ruthenium alloys

GS alloys
. **ruthenium alloys**

ruthenium compounds

RT ∞ chemical compounds
∞ metal compounds
transition metals

ruthenium isotopes

UF *ruthenium 106*
GS chemical elements
. nuclides
. . isotopes
. . . **ruthenium isotopes**
. ruthenium
. . **ruthenium isotopes**
metals
. noble metals
. . ruthenium
. . . **ruthenium isotopes**
. transition metals
. . ruthenium
. . . **ruthenium isotopes**

rutherfordium

(added November 1994)
GS chemical elements
. **rutherfordium**
RT dubnium
∞ elements

rutile

DEF A mineral form of titanium oxide (TiO₂) (tetragonal crystallization), but usually produced chemically for use in ceramics and other products.

GS chalcogenides
. oxides
. . metal oxides
. . . titanium oxides
. . . . **rutile**
titanium compounds
. titanium oxides
. . **rutile**

RT anatase
coesite
cross relaxation
minerals
pigments

stishovite

Rwanda

- UF *Ruanda-Urundi*
- GS nations
- . **Rwanda**
- RT Africa
- Burundi

RXTE (satellite)
(added March 1999)

USE **X Ray Timing Explorer**

Ryan aircraft

- GS **Ryan aircraft**

- . Firebee 2 target drone aircraft
- . X-13 aircraft
- . XC-142 aircraft
- . XV-5 aircraft
- . XV-8A aircraft
- RT ∞ aircraft

Rydberg series

- GS spectra
- . radiation spectra
- . . electromagnetic spectra
- . . . line spectra
- **Rydberg series**

- RT absorption spectra
- atomic spectra
- electron transitions
- emission spectra
- H lines
- hydrogen

S

- S band*
 USE **superhigh frequencies**
ultrahigh frequencies
- S curves**
 GS geometry
 . curves (geometry)
 . . **S curves**
 . . . Gompertz curves
 . Euclidean geometry
 . . analytic geometry
 . . . **S curves**
 Gompertz curves
- S glass**
 GS glass
 . E glass
 . . **S glass**
 RT composite materials
 glass fiber reinforced plastics
 glass fibers
 silicon dioxide
- S matrix theory**
 UF *scattering matrix*
 RT operators (mathematics)
 scattering cross sections
 ∞ theories
- S stars**
 GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 **S stars**
 RT asymptotic giant branch stars
 giant stars
 M stars
 Mira variables
 red giant stars
- S waves**
 DEF Waves in an elastic media which cause an element of the medium to change its shape without a change in volume. Mathematically, S waves are ones whose velocity field has zero divergence. Used for secondary waves, shear disturbances, and shear waves.
 UF *secondary waves*
shear disturbances
shear waves
 GS elastic waves
 . **S waves**
 . . SH waves
 RT crustal fractures
 dilatational waves
 P waves
 polarized elastic waves
 Rayleigh waves
 seismic waves
 surface waves
 transverse waves
- S-2 aircraft**
 UF *US-2A aircraft*
 GS antisubmarine warfare aircraft
 . **S-2 aircraft**
 monoplanes
 . **S-2 aircraft**
 utility aircraft
 . **S-2 aircraft**
 RT ∞ aircraft
- S-3 aircraft**
 UF *ES-3A aircraft*
KS-3 aircraft
 GS antisubmarine warfare aircraft
 . **S-3 aircraft**
 jet aircraft
 . **S-3 aircraft**
- Lockheed aircraft
 . **S-3 aircraft**
 monoplanes
 . **S-3 aircraft**
 RT ∞ aircraft
 ∞ military aircraft
- S-3 satellite*
 USE **Explorer 12 satellite**
- S-6 satellite*
 USE **Explorer 17 satellite**
- S-16 satellite*
 USE **OSO-1**
- S-17 satellite*
 USE **OSO-2**
- S-18 satellite*
 USE **OAO**
- S-27 satellite*
 USE **Alouette 1 satellite**
- S-49 satellite*
 USE **OGO-A**
- S-50 satellite*
 USE **OGO-C**
- S-51 satellite*
 USE **Ariel 1 satellite**
- S-52 satellite*
 USE **Ariel 2 satellite**
- S-57 satellite*
 USE **OSO-C**
- S-58 helicopter**
 UF *Sikorsky S-58 helicopter*
 GS Sikorsky aircraft
 . **S-58 helicopter**
 transport aircraft
 . **S-58 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-58 helicopter**
 RT CH-34 helicopter
 UH-34 helicopter
- S-61 helicopter**
 UF *Sikorsky S-61 helicopter*
 GS Sikorsky aircraft
 . **S-61 helicopter**
 transport aircraft
 . **S-61 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-61 helicopter**
 RT ∞ aircraft
 antisubmarine warfare aircraft
 CH-3 helicopter
 SH-3 helicopter
 SH-4 helicopter
 water takeoff and landing aircraft
- S-64 helicopter*
 USE **CH-54 helicopter**
- S-66 satellite*
 USE **Beacon Explorer A**
- S-67 helicopter**
 UF *Sikorsky S-67 helicopter*
 GS Sikorsky aircraft
- . **S-67 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . compound helicopters
 **S-67 helicopter**
 military helicopters
 **S-67 helicopter**
 RT ∞ aircraft
- S-74 satellite*
 USE **Explorer 18 satellite**
- SA-321 helicopter**
 UF *Sud Aviation SA-321 helicopter*
 GS Sud Aviation aircraft
 . **SA-321 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **SA-321 helicopter**
 RT ∞ aircraft
- SA-330 helicopter**
 UF *Sud Aviation SA-330 helicopter*
 GS Sud Aviation aircraft
 . Alouette helicopters
 . . **SA-330 helicopter**
 transport aircraft
 . **SA-330 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . Alouette helicopters
 **SA-330 helicopter**
 military helicopters
 **SA-330 helicopter**
 RT ∞ aircraft
- Saab 37 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **Saab 37 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Saab 37 aircraft**
 Saab aircraft
 . **Saab 37 aircraft**
 supersonic aircraft
 . **Saab 37 aircraft**
 RT ∞ aircraft
 canard configurations
 Harrier aircraft
- Saab 105 aircraft**
 GS jet aircraft
 . turbofan aircraft
 . . **Saab 105 aircraft**
 light aircraft
 . **Saab 105 aircraft**
 monoplanes
 . **Saab 105 aircraft**
 Saab aircraft
 . **Saab 105 aircraft**
 utility aircraft
 . **Saab 105 aircraft**
 RT ∞ aircraft
 passenger aircraft
- Saab aircraft**
 GS **Saab aircraft**
 . Saab 37 aircraft
 . Saab 105 aircraft
 RT ∞ aircraft
- Sabatier reaction**
 GS chemical reactions
 . **Sabatier reaction**

RT photographic film

Sabot projectiles

DEF Projectiles having devices fitted around or in back of the projectiles in gun barrels or launching tubes to support or protect the projectiles or to prevent the escape of gas ahead of it. The sabot separates from the projectile after launching.

GS projectiles
 . **Sabot projectiles**

RT artillery
 fragmentation
 gun launchers
 guns (ordnance)

sabotage

DEF Deliberate destructive action that may be directed against property, processes, systems, organizations, governments, or people and that is intended to prevent a process, undermine a group, or interfere with progress towards a goal.

RT accidents
 air defense
 damage
 deactivation
 disasters
 hazards
 injuries
 prevention
 safety
 space law
 terrorism
 wreckage

Sabre aircraft

USE **F-86 aircraft**

Sabreliner aircraft

USE **T-39 aircraft**

Saccadic eye movements

GS eye movements
 . **Saccadic eye movements**
 RT fovea
 ∞ motion
 visual fields

saccharides

USE **carbohydrates**

saccharomyces

GS plants (botany)
 . fungi
 . . **saccharomyces**

Sacramento Valley (CA)

GS valleys
 . **Sacramento Valley (CA)**
 RT California
 river basins

saddle points

GS **saddle points**
 . saddle points (game theory)
 RT curve fitting
 game theory
 minimax technique

saddle points (game theory)

GS game theory
 . **saddle points (game theory)**
 saddle points
 . **saddle points (game theory)**
 RT operations research
 saddles
 ∞ theories
 zero sum games

saddles

RT saddle points (game theory)

saddles (supports)

GS structural members

. **saddles (supports)**
 supports
 . **saddles (supports)**

Saenger space transportation system

(added September 1995)

UF *Saenger space transportation system*
 GS transportation

. space transportation
 . . space transportation system
 . . . **Saenger space transportation system**

RT aerospace planes
 German space program
 piggyback systems
 ramjet engines
 reusable spacecraft

Safeguard system

GS weapon systems
 . missile systems
 . . **Safeguard system**
 RT antimissile defense
 ballistic missiles
 military technology
 missile defense
 Sentinel system
 ∞ systems

safety

GS **safety**
 . aerospace safety
 . aircraft safety
 . flight safety
 . industrial safety
 . range safety
 . reactor safety
 RT accident prevention
 accidents
 air bag restraint devices
 crashes
 ∞ detectors
 emergency life sustaining systems
 energy policy
 explosions
 fire prevention
 fireproofing
 fires
 hazards
 prevention
 protection
 sabotage
 ∞ storage
 vortex avoidance
 warning
 warning systems

safety devices

GS **safety devices**
 . abort apparatus
 . air bag restraint devices
 . arresting gear
 . ejection seats
 . . flying ejection seats
 . escape capsules
 . escape rockets
 . helmets
 . seat belts
 RT accident prevention
 accident proneness
 accidents
 aircraft safety
 ambulances
 antiskid devices
 automobile accidents
 ∞ barriers
 chemical defense
 deflectors
 ∞ devices
 emergency life sustaining systems
 enclosures
 ∞ equipment
 fail-safe systems
 fire prevention
 flame deflectors
 flight safety

gates (openings)
 guards (shields)
 harnesses
 hazards
 human factors engineering
 landing aids
 pressure suits
 protection
 protective clothing
 protectors
 radiation measuring instruments
 radiation shielding
 shielding
 smoke detectors
 space suits
 spacecraft shielding
 warning
 warning systems

safety factors

RT accident proneness
 aerospace safety
 design analysis
 escape systems
 hazards
 health physics
 reliability
 stability

safety management

GS management
 . **safety management**
 RT accident prevention
 aerospace safety
 Assured Crew Return Vehicle
 education
 fail-safe systems
 fire prevention
 guards (shields)
 hazards
 human factors engineering
 production management
 warning systems

SAGE air defense system

GS air defense
 . **SAGE air defense system**
 RT ∞ systems

SAGE satellite

DEF Spacecraft for the study of stratospheric aerosols and gases. Used for Stratospheric Aerosol & Gas Experiment.
 UF *Stratospheric Aerosol & Gas Experiment*
 GS artificial satellites
 . **SAGE satellite**
 RT aerosols
 ozone

Saginaw Bay (MI)

GS bays (topographic features)
 . **Saginaw Bay (MI)**
 RT inlets (topography)
 Lake Huron
 Michigan
 river basins

Sagittarius constellation

GS constellations
 . **Sagittarius constellation**

Sagnac effect

DEF A phase shift (and consequent measurable rotation rate) caused by nonreciprocity (different optical path lengths) of two counter-propagating light waves traveling in the same coil in a fiber optic gyro or ring interferometer.

GS phase shift
 . **Sagnac effect**
 RT angular velocity
 astronomical interferometry
 etalons
 fiber optics
 interferometers
 interferometry

Saha equations

laser gyroscopes
laser interferometry
light transmission
nonlinear optics
optical gyroscopes
optical paths
speckle interferometry
wave propagation

Saha equations

RT arc heating
electric arcs
∞ equations
ion density (concentration)
ionization potentials
temperature

Sahara Desert (Africa)

GS land
. deserts
. . . **Sahara Desert (Africa)**
RT Africa
arid lands
barren land
desertification
dunes
remote regions

SAIL project

UF *Shuttle Avionics Integration Laboratory*
GS programs
. NASA programs
. . . NASA space programs
. . . . **SAIL project**
. projects
. . . **SAIL project**
. space programs
. . . NASA space programs
. . . . **SAIL project**
RT Earth Viewing Applications Laboratory
laboratories
space laboratories
space shuttles

sailplanes

USE **gliders**

sails

GS **sails**
. magnetic sails
. sailwings
. solar sails
RT fins
gliders
tail assemblies

sailwings

UF *Princeton sailwings*
GS folding structures
. **sailwings**
sails
. **sailwings**
RT gliders
hang gliders

Saint Elmo fire

GS electric current
. electric discharges
. . . **Saint Elmo fire**
RT fires

Saint Venant flexure problem

USE **Saint Venant principle**

Saint Venant principle

UF *Saint Venant flexure problem*
St Venant flexure problem
RT plastic deformation
static deformation
static loads
stress analysis
stress concentration

temperature inversions

salicylates

GS **salicylates**
. sodium salicylates
RT acetylsalicylic acid
drugs
esters

salinity

GS chemical properties
. **salinity**
RT alkalinity
brines
core sampling
desalinization
ocean currents
oceanographic parameters
sea water
soil sampling
thermohaline circulation

saliva

GS body fluids
. **saliva**
RT digestive system
mucus
salivary glands

salivary glands

UF *parotid gland*
GS anatomy
. digestive system
. . . **salivary glands**
. glands (anatomy)
. . . **salivary glands**
RT mouth
saliva

salmonella

GS microorganisms
. bacteria
. . . **salmonella**

salt baths

GS baths
. **salt baths**
RT brines
heat treatment
molten salts

salt beds

DEF Deposits of sodium chloride and other salts resulting from the evaporation and/or precipitation of ancient oceans.

GS geology
. beds (geology)
. . . **salt beds**
landforms
. beds (geology)
. . . **salt beds**
RT brines
bromides
chlorides
flats (landforms)
sodium chlorides

salt flats

USE **flats (landforms)**

salt spray tests

GS chemical tests
. **salt spray tests**
environmental tests
. corrosion tests
. . . **salt spray tests**
RT corrosion
corrosion resistance
spray ingestion
stress corrosion
∞ tests

Salton Sea (CA)

GS seas
. **Salton Sea (CA)**
RT California

deserts

∞ salts

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT halites
inorganic compounds
molten salts
organic charge transfer salts
organic compounds
sodium chlorides
sulfonates

Saljut space station

GS artificial satellites
. space stations
. . . **Saljut space station**
manned spacecraft
. **Saljut space station**
Soviet spacecraft
. **Saljut space station**
stations
. space stations
. . . **Saljut space station**
RT Soyuz spacecraft
space bases
space laboratories
spacecraft docking
U. S. S. R. space program

Samaritan aircraft

USE **C-131 aircraft**

samarium

GS chemical elements
. rare earth elements
. . . **samarium**
. . . . samarium isotopes
metals
. rare earth elements
. . . **samarium**
. . . . samarium isotopes

samarium compounds

GS rare earth compounds
. **samarium compounds**
RT ∞ chemical compounds
∞ metal compounds

samarium isotopes

GS chemical elements
. nuclides
. . . isotopes
. . . . **samarium isotopes**
. rare earth elements
. . . samarium
. . . . **samarium isotopes**
metals
. rare earth elements
. . . samarium
. . . . **samarium isotopes**

Samoa

GS landforms
. islands
. . . Pacific islands
. . . . **Samoa**

Samos

UF *Satellite and Missile Observation System*
GS artificial satellites
. **Samos**
military spacecraft
. reconnaissance spacecraft
. . . **Samos**
RT satellite tracking

sample return missions

(added March 2001)
DEF Space missions to collect material samples from interplanetary space, a planet, or other body and return the samples to Earth.
GS space missions
. **sample return missions**

- . . Mars sample return missions
 - . . Stardust Mission
- RT samples
 - space exploration
- sampled data systems**
 - (added July 1990)
 - RT adaptive control
 - automatic control
 - control stability
 - control theory
 - data sampling
 - feedback control
- samplers**
 - UF *bombs (samplers)*
 - sampling devices*
 - RT ∞ bombs
 - core sampling
 - samples
 - sampling
 - selectors
 - ∞ test equipment
- samples**
 - DEF Physical or biological specimens intended to be representative of the whole.
 - GS **samples**
 - . Mars surface samples
 - RT acceptability
 - Mars sample return missions
 - sample return missions
 - samplers
 - sampling
 - specimens
- sampling**
 - DEF Obtaining of a portion representative of the material concerned.
 - GS **sampling**
 - . air sampling
 - . core sampling
 - . data sampling
 - . particulate sampling
 - . random sampling
 - . soil sampling
 - . water sampling
 - RT allowances
 - assaying
 - Bayes theorem
 - censored data (mathematics)
 - chemical analysis
 - chemical tests
 - collection
 - concentration (composition)
 - confidence limits
 - counting
 - estimating
 - exploration
 - Global Air Sampling Program
 - heterogeneity
 - homogeneity
 - inspection
 - investigation
 - probability theory
 - process control (industry)
 - quality control
 - random errors
 - reliability
 - Rosetta mission
 - samplers
 - samples
 - selection
 - sequential analysis
 - specimens
 - standards
 - statistical analysis
 - ∞ statistics
 - ∞ sweep circuits
 - ∞ tests
 - ∞ variability
- Weibull density functions
- sampling devices*
- USE **samplers**
- San Andreas Fault**
 - GS geological faults
 - . **San Andreas Fault**
 - RT California
 - crustal fractures
 - Earth crust
 - earthquakes
 - Mexico
- San Andreas Fault experiment**
 - RT earthquakes
 - geological faults
- San Francisco (CA)**
 - GS cities
 - . **San Francisco (CA)**
 - RT California
- San Francisco Bay (CA)**
 - GS bays (topographic features)
 - . **San Francisco Bay (CA)**
 - RT California
 - Pacific Ocean
 - San Pablo Bay (CA)
- San Joaquin Valley (CA)**
 - GS valleys
 - . **San Joaquin Valley (CA)**
 - RT California
 - river basins
- San Juan Mountains (CO)**
 - GS landforms
 - . mountains
 - . . **San Juan Mountains (CO)**
 - RT Colorado
- San Marco 1 satellite**
 - GS artificial satellites
 - . meteorological satellites
 - . . San Marco satellites
 - . . . **San Marco 1 satellite**
- San Marco 2 satellite**
 - GS artificial satellites
 - . meteorological satellites
 - . . San Marco satellites
 - . . . **San Marco 2 satellite**
- San Marco 3 satellite**
 - GS artificial satellites
 - . meteorological satellites
 - . . San Marco satellites
 - . . . **San Marco 3 satellite**
- San Marco satellites**
 - GS artificial satellites
 - . meteorological satellites
 - . . **San Marco satellites**
 - . . . San Marco 1 satellite
 - . . . San Marco 2 satellite
 - . . . San Marco 3 satellite
 - RT Scout launch vehicle
- San Marino**
 - GS nations
 - . **San Marino**
 - RT Europe
 - Italy
- San Pablo Bay (CA)**
 - GS bays (topographic features)
 - . **San Pablo Bay (CA)**
 - RT California
 - San Francisco Bay (CA)
- sand casting**
 - GS forming techniques
 - . casting
 - . . **sand casting**
- RT molding materials
- sands
- sand dunes*
- USE **dunes**
- Sand Hills Region (GA-NC-SC)**
 - GS regions
 - . **Sand Hills Region (GA-NC-SC)**
 - RT Georgia
 - North Carolina
 - South Carolina
- Sand Hills Region (NE)**
 - GS regions
 - . **Sand Hills Region (NE)**
 - RT Nebraska
- Sandpiper target missile**
 - GS missile configurations
 - . **Sandpiper target missile**
 - missiles
 - . **Sandpiper target missile**
 - RT drone vehicles
 - targets
- sands**
 - GS sediments
 - . **sands**
 - . . monazite sands
 - . . tar sands
 - soils
 - . **sands**
 - . . monazite sands
 - . . tar sands
 - RT aggregates
 - alluvium
 - aquifers
 - deltas
 - dunes
 - dust
 - Earth resources
 - fans (landforms)
 - gravels
 - grit
 - ilmenite
 - littoral drift
 - littoral transport
 - molding materials
 - porous materials
 - quartz
 - rain erosion
 - reefs
 - sand casting
 - sandstones
 - sedimentary rocks
 - silica glass
 - silicon dioxide
- sandstones**
 - GS rocks
 - . sedimentary rocks
 - . . **sandstones**
 - RT Earth resources
 - sands
 - schist
 - soils
- sandwich construction*
- USE **sandwich structures**
- sandwich structures**
 - UF *sandwich construction*
 - RT composite materials
 - epoxy matrix composites
 - honeycomb cores
 - honeycomb structures
 - interlayers
 - laminates
 - multilayer insulation
 - ply orientation
 - rigid structures
 - ∞ structures

sanitation

walls

Sanger space transportation system
 USE **Saenger space transportation system**

sanitation
 RT consumables (spacecrew supplies)
 health
 housekeeping (spacecraft)
 hygiene
 potable water
 public health
 sewers
 toilets
 warning systems
 waste disposal
 waste management

Santowax (trademark)
 RT polystyrene

sapphire
 GS aluminum compounds
 . aluminum oxides
 . . **sapphire**
 chalcogenides
 . oxides
 . . metal oxides
 . . . aluminum oxides
 **sapphire**

saprophytes
 GS plants (botany)
 . **saprophytes**
 RT bacteria
 microorganisms

sarcina
 GS microorganisms
 . bacteria
 . . **sarcina**

sarcoma
 USE **cancer**

sarcoplasmic reticulum
 GS organelles
 . endoplasmic reticulum
 . . **sarcoplasmic reticulum**
 RT cells (biology)
 cytology
 cytoplasm

Sargasso Sea
 DEF A region in the Atlantic characterized by mixing ocean currents and a lack of winds. Located northeast of the West Indies.
 RT Atlantic Ocean
 Gulf Stream
 ocean models
 ocean surface
 oceanography
 seas

SarSat
 DEF The US satellite of the COSPAS-SarSat project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies. Used for Search and Rescue Satellite.
 UF *Search and Rescue Satellite*
 GS artificial satellites
 . **SarSat**
 RT COSPAS
 NOAA 8 satellite
 reconnaissance
 rescue operations
 searching

SAS
 UF *Small Astronomy Satellites*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **SAS**

. . . . Explorer 53 satellite
 SAS-1
 SAS-2
 SAS-3
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **SAS**
 Explorer 53 satellite
 SAS-1
 SAS-2
 SAS-3
 RT Explorer 48 satellite
 Uhuru satellite

SAS-1
 UF *Small Astronomy Satellite 1*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . SAS
 **SAS-1**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . SAS
 **SAS-1**
 RT radio astronomy

SAS-2
 UF *Small Astronomy Satellite 2*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . SAS
 **SAS-2**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . SAS
 **SAS-2**
 RT Explorer 48 satellite
 radio astronomy
 spaceborne astronomy

SAS-3
 UF *Small Astronomy Satellite 3*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . SAS
 **SAS-3**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . SAS
 **SAS-3**
 RT Explorer 53 satellite
 radio astronomy
 spaceborne astronomy
 x ray astronomy

SAS-D
 USE **IUE**

Saskatchewan
 GS nations
 . Canada
 . . **Saskatchewan**

SATAN (sensor)
 USE **terrain analysis**

satellite altimetry
 GS altimetry
 . **satellite altimetry**
 RT altimeters
 digital elevation models
 geodesy
 geodetic satellites
 geoids
 GEOS 3 satellite
 Geosat satellites
 Ice, Cloud and Land Elevation Satellite
 radar measurement

satellite observation
 satellite-borne radar
 SEASAT satellites
 topography

Satellite and Missile Observation System
 USE **Samos**

satellite antennas
 GS antennas
 . **satellite antennas**
 RT furlable antennas
 multibeam antennas
 radio antennas
 telecommunication

satellite atmospheres
 DEF The atmospheres that are found on natural satellites.
 GS environments
 . extraterrestrial environments
 . . **satellite atmospheres**
 . . . lunar atmosphere
 RT ∞ atmospheres
 atmospheric chemistry
 atmospheric composition
 atmospheric physics
 Earth atmosphere
 Earth ionosphere
 Earth magnetosphere
 Huygens probe
 ionospheric composition
 magnetopause
 natural satellites
 planetary atmospheres
 stellar atmospheres
 Titan
 Triton
 upper atmosphere

satellite attitude control
 GS attitude control
 . **satellite attitude control**
 spacecraft control
 . satellite control
 . . **satellite attitude control**
 RT attitude stability
 automatic control
 ∞ control
 directional control
 gravity gradient satellites
 jet control
 lateral control
 longitudinal control
 Marquardt R4D engine
 three axis stabilization
 Transit Attitude Control satellite

satellite attitude disturbance
 USE **attitude stability**
spacecraft stability

satellite breakup
 USE **spacecraft breakup**

satellite capture
 USE **spacecraft recovery**

satellite clusters
 USE **satellite constellations**

satellite communication
 DEF Use of communication satellites, passive reflecting belts of dipoles or needles, or reflecting orbiting balloons to extend the range of radio communication by returning signals to Earth from the orbiting object, with or without amplification.
 GS telecommunication
 . space communication
 . . spacecraft communication
 . . . **satellite communication**
 RT ACTS
 ARPA computer network
 astronics
 circumlunar communication

- communication satellites
 - Earth terminals
 - facsimile communication
 - free-space optical communication
 - ground-air-ground communication
 - hoop column antennas
 - interplanetary communication
 - Iridium network
 - lunar communication
 - multibeam antennas
 - optical communication
 - packet transmission
 - plasma antennas
 - radio communication
 - satellite communications ships
 - satellite ground support
 - single channel per carrier transmission
 - system generated electromagnetic pulses
 - transmission rate (communications)
 - unified S band
- satellite communications ships**
- UF *USNS Kingsport*
 - GS surface vehicles
 - . **satellite communications ships**
 - water vehicles
 - . ships
 - . . **satellite communications ships**
 - RT satellite communication
 - spacecraft communication
- satellite configurations**
- GS spacecraft configurations
 - . **satellite configurations**
 - RT aerodynamic configurations
- satellite constellations**
(added February 1994)
- UF *satellite clusters*
 - GS networks
 - . satellite networks
 - . . **satellite constellations**
 - . . . Iridium network
 - RT communication networks
 - communication satellites
 - formation flying
 - Global Positioning System
 - microsatellites
 - nanosatellites
 - satellite ground tracks
 - satellite navigation systems
 - spatial distribution
 - stationkeeping
- satellite control**
- GS spacecraft control
 - . **satellite control**
 - . . satellite attitude control
 - RT attitude control
 - automatic control
 - ∞ control
 - directional control
 - flexible spacecraft
 - formation flying
 - gravity gradient satellites
 - jet control
 - lateral control
 - longitudinal control
 - manual control
 - remote control
 - thrust control
- satellite defense*
- USE **spacecraft defense**
- satellite design**
- GS spacecraft design
 - . **satellite design**
 - RT computer aided design
 - ∞ design
 - Indian space program
 - Japanese space program
 - microsatellites
 - nanosatellites
- product development
 - small satellite technology
 - spacecraft structures
 - structural design
 - systems engineering
- satellite doppler positioning**
- GS positioning
 - . **satellite doppler positioning**
 - RT Argos system
 - Doppler effect
 - Doppler navigation
 - Doppler radar
 - geodesy
 - geodetic accuracy
 - geodetic coordinates
 - geodetic satellites
 - geodetic surveys
 - polystation doppler tracking system
 - satellite tracking
 - tracking (position)
- satellite drag**
- GS dynamic characteristics
 - . drag
 - . . **satellite drag**
 - RT aerodynamic drag
 - electrostatic drag
 - friction drag
- satellite fragmentation*
- USE **spacecraft breakup**
- satellite ground support**
- RT ground support equipment
 - satellite communication
 - spacecraft communication
- satellite ground tracks**
- GS ground tracks
 - . **satellite ground tracks**
 - RT flight paths
 - orbits
 - satellite constellations
- satellite guidance**
- GS guidance (motion)
 - . spacecraft guidance
 - . . **satellite guidance**
 - RT automatic control
 - inertial guidance
 - injection guidance
 - LOCATES system
 - manual control
 - reentry guidance
 - rendezvous guidance
 - space navigation
- satellite imagery**
- GS imagery
 - . **satellite imagery**
 - RT atmospheric correction
 - Coastal Zone Color Scanner
 - image analysis
 - imaging techniques
 - normalized difference vegetation index
 - pixels
 - satellite observation
 - satellite-borne photography
 - vegetative index
- satellite instruments**
- GS spacecraft instruments
 - . **satellite instruments**
 - . . multispectral linear arrays
 - RT flight instruments
 - ∞ instruments
 - laser altimeters
 - measuring instruments
 - needs (data system)
 - wildlife radiolocation
- satellite interceptors**
- RT ∞ interceptors
- pursuit tracking
- satellite laser ranging**
(added July 2001)
- DEF A technique for determining the distance to or from an artificial satellite by precise measurement of the time required for a laser pulse to travel from a transmitter to a retroreflector and return to a detector.
- UF *SLR (ranging)*
 - GS rangefinding
 - . laser ranging
 - . . **satellite laser ranging**
 - utilization
 - . laser applications
 - . . laser ranging
 - . . . **satellite laser ranging**
 - RT celestial geodesy
 - geodetic satellites
 - LAGEOS (satellite)
 - laser range finders
 - passive satellites
 - retroreflection
 - retroreflectors
 - satellite tracking
- satellite launching*
- USE **spacecraft launching**
- satellite lifetime**
- GS life (durability)
 - . **satellite lifetime**
 - RT orbit decay
 - spacecraft reentry
- satellite maneuvers*
- USE **spacecraft maneuvers**
- satellite navigation systems**
- GS **satellite navigation systems**
 - . Global Positioning System
 - . GLONASS
 - . Transit navigation system
 - RT autonomous navigation
 - navigation satellites
 - radar navigation
 - radio navigation
 - satellite constellations
 - space navigation
 - ∞ systems
- satellite networks**
- SN (NETWORKS INCORPORATING SATELLITES)
 - GS networks
 - . **satellite networks**
 - . . Argos system
 - . . satellite constellations
 - . . . Iridium network
 - . . VSAT (network)
 - RT aeronautical satellites
 - Aerosat satellites
 - code division multiple access
 - communication networks
 - communication satellites
 - ComStar satellites
 - demand assignment multiple access
 - domestic satellite communications systems
 - formation flying
 - HET experiment
 - L-Sat
 - Marecs maritime satellites
 - military spacecraft
 - Molniya satellites
 - multimission modular spacecraft
 - navigation satellites
 - NAVSTAR satellites
 - network control
 - Skyнет satellites
 - TDR satellites
 - teleconferencing
 - time division multiple access
- satellite observation**
- SN (OBSERVATION OF THE EARTH BY SATELLITE)

satellite orbits

- GS observation
 - . Earth observations (from space)
 - .. **satellite observation**
- RT arc clouds
 - Earth Resources Program
 - Envisat-1 satellite
 - EOS data and information system
 - EROS (satellites)
 - ESSA satellites
 - FIRE (climatology)
 - IRIS satellites
 - ISCCP Project
 - Landsat satellites
 - meteorological satellites
 - METEOSAT satellite
 - Nimbus project
 - Nimbus satellites
 - satellite altimetry
 - satellite imagery
 - SIRS B satellite
 - spaceborne photography
 - swath width
 - Synchronous Earth Observatory satellite
 - TIROS operational satellite system
 - TIROS satellites
 - TOPEX
 - Uhuru satellite
 - vegetative index
 - Vela satellites
 - wildlife radiolocation
- satellite oceans*
(added June 2001)
 - USE **extraterrestrial oceans**
- satellite orbit calculation*
 - USE **orbit calculation**
- satellite orbits**
 - SN (LIMITED TO ORBITS OF ARTIFICIAL SATELLITES)
 - GS orbits
 - . spacecraft orbits
 - .. **satellite orbits**
 - ... geosynchronous orbits
 - ... parking orbits
 - ... stationary orbits
 - ... twenty-four hour orbits
 - RT circular orbits
 - Earth orbits
 - elliptical orbits
 - equatorial orbits
 - Lissajous figures
 - low Earth orbits
 - lunar orbits
 - orbit insertion
 - orbit spectrum utilization
 - orbital mechanics
 - orbital position estimation
 - orbital resonances (celestial mechanics)
 - planetary orbits
 - retrograde orbits
 - transfer orbits
- satellite orientation**
 - GS attitude (inclination)
 - . **satellite orientation**
 - RT flexible spacecraft
 - image dissector tubes
 - spin stabilization
 - three axis stabilization
- satellite perturbation**
 - GS perturbation
 - . orbit perturbation
 - .. **satellite perturbation**
 - RT Discos (satellite attitude control)
 - gravitational fields
 - orbital mechanics
 - Schach effect
 - spacecraft stability
 - tesseral harmonics
- satellite power transmission**
(added November 1989)
 - GS power beaming
 - . **satellite power transmission**
 - RT laser power beaming
 - microwave power beaming
 - rectennas
 - solar arrays
 - solar cells
 - solar power satellites
 - satellite rendezvous*
 - USE **orbital rendezvous**
 - satellite repair*
 - USE **orbital servicing**
 - satellite rotation**
 - GS gyration
 - . rotation
 - .. **satellite rotation**
 - RT flexible spacecraft
 - spin reduction
 - spin stabilization
 - tumbling motion
 - yo-yo devices
 - satellite solar energy conversion**
 - GS energy conversion
 - . **satellite solar energy conversion**
 - RT ∞ conversion
 - microwave transmission
 - microwaves
 - power conditioning
 - solar cells
 - sun
 - satellite solar power stations**
 - RT energy conversion
 - microwave transmission
 - microwaves
 - power conditioning
 - solar cells
 - sun
 - satellite sounding**
 - GS sounding
 - . **satellite sounding**
 - RT Advanced Microwave Sounding Unit
 - artificial satellites
 - atmospheric sounding
 - ionosondes
 - ionospheric sounding
 - meteorological satellites
 - radiosondes
 - rocket sounding
 - visible infrared spin scan radiometer
 - satellite surfaces**
 - SN (RESTRICTED TO NATURAL SATELLITES)
 - DEF The crust and soil of natural satellites.
 - GS **satellite surfaces**
 - . lunar surface
 - RT craters
 - extraterrestrial oceans
 - icy satellites
 - Mercury surface
 - natural satellites
 - ∞ surfaces
 - terrain analysis
 - satellite television**
 - GS communication equipment
 - . spacecraft television
 - .. **satellite television**
 - telecommunication
 - . spacecraft television
 - .. **satellite television**
 - television systems
 - . spacecraft television
 - .. **satellite television**
 - RT color television
 - direct broadcast satellites
 - meteorological satellites
 - space probes
 - stereotelevision
 - Symphonie satellites
 - television cameras
 - television transmission
 - satellite temperature**
 - GS spacecraft temperature
 - . **satellite temperature**
 - temperature
 - . **satellite temperature**
 - RT ambient temperature
 - radiative heat transfer
 - solar radiation shielding
 - spacecraft design
 - spacecraft environments
 - temperature distribution
 - temperature measurement
 - thermal environments
 - satellite tracking**
 - GS tracking (position)
 - . spacecraft tracking
 - .. **satellite tracking**
 - ... satellite-to-satellite tracking
 - RT cinetheodolites
 - Global Tracking Network
 - International Satellite Geodesy Experiment
 - laser target designators
 - minitrack system
 - optical satellite tracking program
 - orbit determination
 - photographic tracking
 - range and range rate tracking
 - Samos
 - satellite doppler positioning
 - satellite laser ranging
 - Space Flight Tracking and Data Network
 - STDN (network)
 - tracking networks
 - tracking stations
 - transponder control group
 - Satellite Tracking and Data Acq Network*
 - USE **STDN (network)**
 - satellite transmission**
 - GS transmission
 - . signal transmission
 - .. **satellite transmission**
 - RT Aloha system
 - binary phase shift keying
 - code division multiplexing
 - data transmission
 - direct broadcast satellites
 - domestic satellite communications systems
 - downlinking
 - Earth terminals
 - frequency division multiplexing
 - frequency reuse
 - MSAT
 - multiplexing
 - pulse communication
 - quadrature phase shift keying
 - radio transmission
 - single channel per carrier transmission
 - spacecraft television
 - TDR satellites
 - television transmission
 - uplinking
 - satellite-borne instruments**
 - GS measuring instruments
 - . **satellite-borne instruments**
 - .. Advanced Microwave Sounding Unit
 - .. Advanced Very High Resolution Radiometer
 - .. AMPS (satellite payload)
 - .. Total Ozone Mapping Spectrometer
 - RT AMPTE (satellites)
 - DIAL satellite
 - infrared radiometers
 - instrument packages
 - ∞ instruments
 - OPEN Project

- particle telescopes
 - radiation detectors
 - remote sensors
 - Sea-viewing Wide Field-of-view Sensor
 - single event upsets
 - Solar Backscatter UV Spectrometer
 - visible infrared spin scan radiometer
- satellite-borne photography**
- GS imagery
 - . photography
 - .. spaceborne photography
 - ... **satellite-borne photography**
 - RT aerial photography
 - astronomical photography
 - black and white photography
 - DMSF satellites
 - forest fire detection
 - geographic applications program
 - infrared photography
 - Mars photographs
 - photomapping
 - photomaps
 - rocket-borne photography
 - satellite imagery
 - space surveillance (spaceborne)
 - spectral reconnaissance
 - timber inventory
- satellite-borne radar**
- GS radar
 - . **satellite-borne radar**
 - RT Envisat-1 satellite
 - radar detection
 - satellite altimetry
 - search radar
 - surveillance radar
 - synthetic aperture radar
 - tracking radar
- ∞ **satellites**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Any objects, man-made or natural, that orbit celestial bodies.
 - RT artificial satellites
 - natural satellites
 - ∞ spacecraft
- satellite-to-satellite tracking**
- GS tracking (position)
 - . spacecraft tracking
 - .. satellite tracking
 - ... **satellite-to-satellite tracking**
 - RT space surveillance (spaceborne)
 - tracking networks
- saturable reactors**
- UF *SR (reactors)*
 - GS electric reactors
 - . **saturable reactors**
 - RT magnet coils
 - magnetic amplifiers
 - magnetic circuits
 - magnetic cores
 - magnetic switching
 - power reactors
 - transformers
- saturated hydrocarbons*
- USE **alkanes**
- ∞ **saturation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT concentration (composition)
 - condensing
 - crowding
 - desaturation
 - penetration
 - permeating
 - precipitation (chemistry)
 - precipitation (meteorology)
 - unsaturation (chemistry)
- wetting
- saturation (chemistry)**
- DEF The state of a solution when it holds the maximum equilibrium quantity of dissolved matter at a given temperature.
- RT chemical bonds
- ∞ chemistry
- dew point
 - precipitation (chemistry)
 - unsaturation (chemistry)
- ∞ **Saturn**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Saturn (planet)
 - Saturn project
- Saturn 1 launch vehicles**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn 1 launch vehicles**
 - ... Saturn 1 SA-1 launch vehicle
 - ... Saturn 1 SA-10 launch vehicle
 - ... Saturn 1 SA-2 launch vehicle
 - ... Saturn 1 SA-3 launch vehicle
 - ... Saturn 1 SA-4 launch vehicle
 - ... Saturn 1 SA-5 launch vehicle
 - ... Saturn 1 SA-6 launch vehicle
 - ... Saturn 1 SA-7 launch vehicle
 - ... Saturn 1 SA-8 launch vehicle
 - ... Saturn 1 SA-9 launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... **Saturn 1 launch vehicles**
 - ... Saturn 1 SA-1 launch vehicle
 - ... Saturn 1 SA-10 launch vehicle
 - ... Saturn 1 SA-2 launch vehicle
 - ... Saturn 1 SA-3 launch vehicle
 - ... Saturn 1 SA-4 launch vehicle
 - ... Saturn 1 SA-5 launch vehicle
 - ... Saturn 1 SA-6 launch vehicle
 - ... Saturn 1 SA-7 launch vehicle
 - ... Saturn 1 SA-8 launch vehicle
 - ... Saturn 1 SA-9 launch vehicle
- Saturn 1 SA-1 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-1 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-1 launch vehicle**
- Saturn 1 SA-10 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-10 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-10 launch vehicle**
- Saturn 1 SA-2 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-2 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-2 launch vehicle**
- Saturn 1 SA-3 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-3 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-3 launch vehicle**
- Saturn 1 SA-3 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-3 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-3 launch vehicle**
- Saturn 1 SA-4 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-4 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-4 launch vehicle**
- Saturn 1 SA-5 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-5 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-5 launch vehicle**
- Saturn 1 SA-6 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-6 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-6 launch vehicle**
- Saturn 1 SA-7 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-7 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-7 launch vehicle**
- Saturn 1 SA-8 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-8 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-8 launch vehicle**
- Saturn 1 SA-9 launch vehicle**
- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-9 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - ... **Saturn 1 SA-9 launch vehicle**
- Saturn 1 workshop**
- GS artificial satellites
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 1 workshop**
 - manned spacecraft
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 1 workshop**
 - RT airlock modules
 - Apollo applications program
 - Apollo project
 - multiple docking adapters

... Saturn 5 workshop
 manned spacecraft
 . orbital workshops
 . . **Saturn workshops**
 . . . Saturn 1 workshop
 . . . Saturn 5 workshop
 RT airlock modules
 Apollo applications program
 Apollo project
 multiple docking adapters
 Skylab program
 space stations

Saudi Arabia
 GS nations
 . **Saudi Arabia**
 RT Asia
 Saudi Arabian space program

Saudi Arabian space program
 GS programs
 . space programs
 . . **Saudi Arabian space program**
 RT Arabsat
 Arcomsat
 Saudi Arabia
 Space Shuttle mission 51-G

Savage aircraft
 USE **A-2 aircraft**

Savannah nuclear ship
 GS surface vehicles
 . cargo ships
 . . **Savannah nuclear ship**
 . nuclear powered ships
 . . **Savannah nuclear ship**
 water vehicles
 . ships
 . . cargo ships
 . . . **Savannah nuclear ship**
 . . nuclear powered ships
 . . . **Savannah nuclear ship**
 RT marine propulsion
 nuclear propulsion

savannahs
 USE **grasslands**

S-A-W devices
 USE **surface acoustic wave devices**

saws
 GS cutters
 . **saws**
 tools
 . **saws**
 RT machine tools
 shears

sawtooth waveforms
 GS waveforms
 . **sawtooth waveforms**
 RT pulse amplitude
 pulse duration
 square waves

SC-1 aircraft
 UF *Short SC-1 aircraft*
 GS jet aircraft
 . **SC-1 aircraft**
 monoplanes
 . **SC-1 aircraft**
 research vehicles
 . research aircraft
 . . **SC-1 aircraft**
 tailless aircraft
 . **SC-1 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **SC-1 aircraft**
 RT ∞ aircraft

SC-5 aircraft
 UF *Belfast aircraft*
Short Belfast C MK-1 aircraft

Short SC-5 aircraft
 GS jet aircraft
 . turboprop aircraft
 . . **SC-5 aircraft**
 monoplanes
 . **SC-5 aircraft**
 transport aircraft
 . **SC-5 aircraft**
 RT ∞ aircraft

SC-7 aircraft
 UF *Short SC-7 aircraft*
Skyvan aircraft
Turbo-Skyvan aircraft
 GS light aircraft
 . **SC-7 aircraft**
 monoplanes
 . **SC-7 aircraft**
 transport aircraft
 . **SC-7 aircraft**
 RT ∞ aircraft
 cargo aircraft
 passenger aircraft

scalar magnetic charge
 USE **magnetic charge density**

scalars
 DEF Any physical quantity whose field can be described by a single numerical value at each point in space.
 RT tensor analysis
 tensors

∞ **scale**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT scale (corrosion)
 scale (ratio)
 temperature scales
 weight indicators

scale (corrosion)
 GS corrosion
 . **scale (corrosion)**
 RT chemical attack
 degradation
 descaling
 hot corrosion
 pickling (metallurgy)
 rusting
 ∞ scale
 ∞ scaling

scale (ratio)
 GS ratios
 . **scale (ratio)**
 RT mapping
 reticles
 ∞ scale

scale effect
 DEF Any variation in the nature of the flow and in the force coefficients associated with a change in value of the Reynolds number, i. e. , caused by change in size without change in shape.
 RT ∞ effects
 force distribution
 multiscale models
 parameterization
 Reynolds number
 ∞ scaling

scale height
 DEF A measure of the relationship between density and temperature at any point in the atmosphere.
 GS dimensions
 . height
 . . **scale height**
 RT Earth atmosphere
 geopotential height

head (fluid mechanics)

scale models
 DEF Three-dimensional representations of objects or structures containing all parts in the same proportion as their true size.
 GS models
 . **scale models**
 RT aerodynamic configurations
 aircraft models
 multiscale models
 Reynolds equation
 scaling laws
 semispan models
 similarity theorem
 similitude law
 spacecraft models
 wind tunnel models

scalers
 DEF Devices that produce output pulses whenever a prescribed number of input pulses have been received.
 GS circuits
 . counting circuits
 . . **scalers**
 RT tensor analysis

∞ **scaling**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT calibrating
 errors
 scale (corrosion)
 scale effect
 scaling laws

scaling laws
 GS laws
 . **scaling laws**
 RT dimensional analysis
 dimensionless numbers
 scale models
 ∞ scaling
 similarity numbers
 wind tunnel calibration

scalping
 RT edges
 electron beams
 traveling wave tubes

Scandinavia
 RT Denmark
 Finland
 Norway
 Sweden

scandium
 GS chemical elements
 . rare earth elements
 . . **scandium**
 . . . scandium isotopes
 metals
 . rare earth elements
 . . **scandium**
 . . . scandium isotopes
 . transition metals
 . . **scandium**
 . . . scandium isotopes

scandium 46
 USE **scandium isotopes**

scandium compounds
 GS rare earth compounds
 . **scandium compounds**
 . . scandium oxides
 RT ∞ chemical compounds
 ∞ Group 3B compounds
 ∞ metal compounds

scandium isotopes
 UF *scandium 46*
 GS chemical elements

scandium oxides

- . nuclides
- . . isotopes
- . . . **scandium isotopes**
- . rare earth elements
- . . scandium
- . . . **scandium isotopes**
- metals
- . rare earth elements
- . . scandium
- . . . **scandium isotopes**
- . transition metals
- . . scandium
- . . . **scandium isotopes**

scandium oxides

- GS chalcogenides
- . oxides
- . . metal oxides
- . . . **scandium oxides**
- . rare earth compounds
- . scandium compounds
- . . **scandium oxides**

Scanner project

- GS programs
- . projects
- . . **Scanner project**
- RT horizon scanners
- infrared scanners
- optical equipment

scanners

DEF Radar mechanisms incorporating such things as rotatable antennas, radiators, motor drives, or mountings for directing a searching radar beam through space and imparting target information to an indicator. Used for scanning devices.

- UF *scanning devices*
- GS **scanners**
- . horizon scanners
- . infrared scanners
- . ocean color scanner
- . . Coastal Zone Color Scanner
- . . Sea-viewing Wide Field-of-view Sensor
- . optical scanners
- . . flying spot scanners
- . . multispectral band scanners
- . . . thematic mappers (LANDSAT)
- . ultrasonic scanners
- RT conical scanning
- optical data processing
- optical equipment
- panoramic scanning
- reading
- scanning
- subreflectors

scanning

DEF In radar, the motion of the antenna assembly when searching for targets.

- GS **scanning**
- . conical scanning
- . frequency scanning
- . panoramic scanning
- . radar scanning
- . raster scanning
- RT Earth resources
- EROS (satellites)
- examination
- monitors
- multispectral band scanners
- rapid ballistics identification
- reading
- scanners
- searching
- surveillance
- ultrasonic scanners

scanning devices

USE **scanners**

scanning electron microscopy

(added September 1992)

DEF A type of electron microscopy in which

a beam of electrons, a few hundred angstroms in diameter, systematically sweeps over the specimen. The intensity of secondary electrons generated at the point of impact of the beam on the specimen is measured and the resulting signal is fed into a cathode-ray-tube display which is scanned in synchronism with the scanning of the specimen.

- UF *SEM (microscopy)*
- GS microscopy
- . electron microscopy
- . . **scanning electron microscopy**
- RT electron beams
- electron microscopes
- field emission
- ion microscopes
- magnetic lenses
- microanalysis
- phase contrast
- secondary emission

scanning laser acoustic microscope (SLAM)

USE **acoustic microscopes**

scanning tunneling microscopy

(added October 1988)

- GS microscopy
- . electron microscopy
- . . **scanning tunneling microscopy**
- RT electron microscopes
- electron tunneling
- nanofabrication
- transmission electron microscopy

scapula

- GS anatomy
- . musculoskeletal system
- . . bones
- . . . **scapula**
- RT arm (anatomy)
- shoulders

SCAR program

USE **supersonic cruise aircraft research**

scarf joints

(added March 1998)

DEF A joint in which the overlapping parts are tapered to form a continuous length, with no increase in dimension at the joint.

- GS joints (junctions)
- . **scarf joints**
- RT bolted joints
- bonded joints
- lap joints
- metal joints
- scarfing

scarfing

- GS cutting
- . **scarfing**
- RT cleaning
- grinding (material removal)
- metal cutting
- scarf joints
- slicing

scarps

USE **escarpments**

scars

- GS tissues (biology)
- . **scars**

scars (geology)

USE **erosion**

SCAT

USE **supersonic commercial air transport**

SCATHA satellite

DEF Satellite for investigating spacecraft charging at high altitudes. A joint NASA-Air Force venture. Used for P78-2 satellite.

UF *P78-2 satellite*

Spacecraft Charging at High Altitude

- GS artificial satellites
- . scientific satellites
- . . **SCATHA satellite**
- RT ∞ charging
- electric charge
- electromagnetic interference
- electrostatic charge
- electrostatic probes
- electrostatic shielding
- high energy electrons

scatter plates (optics)

DEF Holograms of diffusing screens for scattering incident light by the process of diffraction.

- GS optical equipment
- . **scatter plates (optics)**
- RT beam splitters
- coherent light
- holographic interferometry
- holography
- interferometry
- light scattering
- ∞ optics
- ∞ plates
- speckle holography
- speckle interferometry

scatter propagation

DEF Specifically, the long-range propagation of radio signals by scattering due to index of refraction inhomogeneities in the lower atmosphere.

- GS transmission
- . electromagnetic wave transmission
- . . **scatter propagation**
- . . . ionospheric F-scatter propagation
- . wave propagation
- . . **scatter propagation**
- . . . ionospheric F-scatter propagation
- RT backscattering
- forward scattering
- ionospheric propagation
- meteor trails
- radio reception
- radio scattering
- radio transmission
- radio waves

scatterers

USE **scattering**

scattering

DEF The process by which small particles suspended in a medium of a different index of refraction diffuse a portion of the incident radiation in all directions. In scattering, no energy transformation results, only a change in the spatial distribution of the radiation. Used for scatterers.

UF scatterers

- GS **scattering**
- . backscattering
- . coherent scattering
- . Compton effect
- . elastic scattering
- . electron scattering
- . . electron runaway (plasma physics)
- . forward scattering
- . incoherent scattering
- . inelastic scattering
- . inverse scattering
- . ion scattering
- . nuclear scattering
- . . neutron scattering
- . . resonance scattering
- . nucleon-nucleon scattering
- . proton scattering
- . radar scattering
- . radio scattering
- . . microwave scattering
- . wave scattering
- . . acoustic scattering
- . . . reverberation
- . . atmospheric scattering

- . . . tropospheric scattering
- . . . electromagnetic scattering
- . . . ionospheric F-scatter propagation
- . . . light scattering
- halos
- . . . microwave scattering
- . . . Mie scattering
- . . . Rayleigh scattering
- . . . Raman spectra
- . . . Thomson scattering
- . . . x ray scattering
- RT atomic collisions
- bistatic reflectivity
- circumsolar radiation
- collision parameters
- collisions
- deep scattering layers
- deflection
- diffusion
- dispersing
- electromagnetic radiation
- encounters
- Huygens principle
- impingement
- incident radiation
- inelastic collisions
- mean free path
- particle collisions
- pomerons
- reflection
- releasing
- scatterometers
- shock wave interaction
- spread reflection
- spreading
- sprinkling
- statistical distributions
- transmittance
- wave degradation
- wave dispersion
- wave interaction

scattering amplitude

- GS amplitudes
- . **scattering amplitude**
- RT Faddeev equations
- Mandelstam representation
- wave scattering

scattering coefficients

DEF Measures of the attenuation due to scattering of radiation as it traverses a medium containing scattering particles.

- GS coefficients
- . **scattering coefficients**
- RT absorptivity
- attenuation coefficients
- form factors

scattering cross sections

DEF The hypothetical areas normal to the incident radiation that would geometrically intercept the total amount of radiation actually scattered by a scattering particle. They are also defined, equivalently, as the cross section areas of isotropic scatterers (spheres) which would scatter the same amount of radiation as the actual amount.

- RT absorption cross sections
- baryon resonance
- Born approximation
- ∞ cross sections
- electron runaway (plasma physics)
- ionization cross sections
- neutron cross sections
- Pomeranchuk theorem
- pomerons
- Ramsauer effect
- Regge poles
- S matrix theory
- stopping power

scattering functions

DEF The intensities of scattered radiation in a given direction per lumen of flux incident upon the scattering material.

- RT flux density
- ∞ functions
- radiant flux density

scattering matrix

- USE **S matrix theory**

scatterometers

- GS measuring instruments
- . **scatterometers**
- RT ∞ instruments
- microwave scattering
- microwaves
- QuikSCAT satellite
- radar
- radar scattering
- scattering
- wave scattering

scavenging

- RT cleaning
- degassing
- deoxidizing
- purification

SCCF

- USE **Solar Cell Calibration Facility**

scene analysis

- GS data processing
- . **scene analysis**
- RT change detection
- character recognition
- edge detection
- Feature Identification and Location
- Exper
- image analysis
- imagery
- imaging techniques
- optical flow (image analysis)
- video landmark acquisition and tracking

scene generation

(added July 1998)

- GS imaging techniques
- . **scene generation**
- simulation
- . **scene generation**
- RT computer graphics
- flight simulation
- image reconstruction
- scientific visualization
- target simulators

scenedesmus

- GS plants (botany)
- . algae
- . . **scenedesmus**

SCF

- USE **self consistent fields**

Schach effect

DEF When a slowly or nonrotating satellite is heated on its sunward side, the photons of thermal radiation carry away more momentum from the hot sunward side than the cold shadowed side, thereby giving the satellite a certain net acceleration in the direction away from the sun. This effect was discovered by Milton Schach in the course of an investigation of unknown perturbations in the LAGEOS satellite.

- RT celestial mechanics
- ∞ effects
- orbit perturbation
- perturbation
- satellite perturbation

Schauder fixpoint theorem

- GS theorems
- . **Schauder fixpoint theorem**
- RT complex variables

- differential equations

schedules

- GS **schedules**
- . countdown
- RT contract management
- precision
- predictions
- production planning
- time
- time lag
- turnaround (STS)

scheduling

- GS **scheduling**
- . prediction analysis techniques
- . programming (scheduling)
- . . . thrust programming
- . observation scheduling
- RT calendars
- consecutive events
- continuity
- ∞ control
- crop calendars
- decision theory
- forecasting
- lateness
- mathematical models
- matrix management
- mission planning
- optimization
- production engineering
- quality control
- sequencing
- task complexity
- task planning (robotics)
- tasks
- time series analysis

scheelite

- GS calcium compounds
- . **scheelite**
- chalcogenides
- . oxides
- . . metal oxides
- . . . tungsten oxides
- **scheelite**
- minerals
- . **scheelite**
- tungsten compounds
- . tungsten oxides
- . . **scheelite**

Schelkunoff principle

- RT antenna radiation patterns
- horn antennas
- Huygens principle
- reflectometers
- reflectors

schematics

- USE **circuit diagrams**

Schiff bases

- USE **imines**

schist

DEF A strongly foliated crystalline rock formed by dynamic metamorphism which can be readily split into thin flakes or slabs due to the well developed parallelism of more than 508 of the minerals present.

- GS rocks
- . **schist**
- RT limestone
- sandstones

schizophrenia

- GS psychoses
- . **schizophrenia**
- RT ∞ depression
- irrationality
- mental health

Schleicher aircraft

- RT ∞ aircraft

Schlieren photography

gliders

Schlieren photography

DEF A method of photography for flow patterns that takes advantage of the fact that light passing through a density gradient in a gas is refracted as though it were passing through a prism.

GS imagery

. photography
. . shadowgraph photography
. . . **Schlieren photography**

RT black and white photography
differential interferometry
flow visualization
Mach-Zehnder interferometers
Moire effects

Schmidt cameras

GS optical equipment
. cameras
. . **Schmidt cameras**
photographic equipment
. cameras
. . **Schmidt cameras**

RT astronomical photography
Baker-Nunn camera
telescopes

Schmidt method

RT differential equations
integral equations
∞ methodology
real variables

Schmidt number

GS dimensionless numbers
. **Schmidt number**
ratios

. **Schmidt number**
RT Nusselt number
Prandtl number

Schmidt telescopes

GS telescopes
. **Schmidt telescopes**
RT reflecting telescopes

schools

RT education
instructors
training evaluation
universities

schools (fish)

GS animals
. vertebrates
. . fishes
. . . **schools (fish)**

RT fishing
ichthyology

Schottky barrier diodes

USE **Schottky diodes**

Schottky diodes

UF *Schottky barrier diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Schottky diodes**
. solid state devices
. . semiconductor devices
. . . **Schottky diodes**
RT ∞ barriers
Barritt diodes
gallium arsenides
MSM (semiconductors)
n-type semiconductors
semiconductor junctions
silicon
SIS (semiconductors)
work functions

zinc selenides

Schottky effect

USE **work functions**

schreibersite

GS iron compounds
. **schreibersite**
minerals
. **schreibersite**
nickel compounds
. **schreibersite**
phosphorus compounds
. phosphides
. . **schreibersite**
RT iron meteorites
meteoritic composition
stony meteorites

Schrodinger equation

GS wave equations
. **Schrodinger equation**
RT ∞ equations
Wentzel-Kramer-Brillouin method

Schuler tuning

DEF Adjusting a system performing the function of a pendulum so that it has a period of 84 minutes.

GS tuning

. **Schuler tuning**

RT gyroscopic pendulums
gyroscopic stability
inertial navigation

Schumann-Runge bands

GS spectra
. spectral bands
. . **Schumann-Runge bands**
RT absorption spectra
∞ bands
emission spectra
Herzberg bands
oxygen
quantum theory

Schwartz inequality

GS inequalities
. **Schwartz inequality**
RT algebra
linear transformations
vectors (mathematics)

Schwartz method

GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Schwartz method**
stress analysis
. **Schwartz method**
RT ∞ methodology

Schwarz-Christoffel transformation

GS analysis (mathematics)
. complex variables
. . **Schwarz-Christoffel transformation**
functions (mathematics)
. **Schwarz-Christoffel transformation**
RT conformal mapping

Schwarzschild antennas

GS antennas
. **Schwarzschild antennas**
RT horns
parabolic reflectors
radar antennas
radio antennas

Schwarzschild metric

RT bimetric theories
coordinate transformations
escape velocity
event horizon
gravitational fields

ionization
light speed
orbitals
orbits
relativity

Schwassmann-Wachmann comet

GS celestial bodies
. comets
. . **Schwassmann-Wachmann comet**
RT Comet Nucleus Tour
solar system

sciatic region

GS anatomy
. **sciatic region**
regions
. **sciatic region**
RT human body
lumbar region
musculoskeletal system
nerves
spine

∞ science

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT acoustics
aeroacoustics
aerodynamics
∞ aeronautics
aerospace medicine
aerothermodynamics
algebra
anthropology
astrodynamics
astronomy
astrophysics
atmospheric physics
atomic physics
bioacoustics
bioastronautics
biodynamics
∞ biology
biophysics
botany
cloud physics
combustion physics
computational astrophysics
electrophysics
electrophysiology
entomology
fluid dynamics
fluid mechanics
geology
geometry
geophysics
health physics
helioseismology
hydrogeology
hydromechanics
life sciences
low temperature physics
marine biology
marine chemistry
marine meteorology
∞ materials science
∞ mathematics
∞ mechanics (physics)
medical science
∞ metallurgy
meteorology
∞ molecular physics
neurophysiology
neutron physics
nuclear physics
oceanography
∞ optics
∞ physical sciences
∞ physics
physiochemistry
physiology
plasma physics
polymer physics
psychophysics
psychophysiology

radio astronomy
 radio physics
 reactor physics
 reentry physics
 respiratory physiology
 seismology
 solar diameter
 solar physics
 solid mechanics
 ∞ solid state physics
 stellar physics
 sunrise
 sunset
 taxonomy
 theoretical physics
 trigonometry
 underwater physiology
 ∞ zoology

scientific instrument modules

USE **SIM**

scientific satellites

GS artificial satellites
 . **scientific satellites**
 . . AMPTE (satellites)
 . . astronomical satellites
 . . . Astronomical Netherlands
 Satellite
 Gamma Ray Observatory
 Ginga satellite
 HEAO
 HEAO 1
 HEAO 2
 HEAO 3
 HEAO 4
 Hubble Space Telescope
 Infrared Astronomy Satellite
 Infrared Space Observatory (ISO)
 IUE
 Large Deployable Reflector
 Magellan ultraviolet astronomy
 satellite
 OAO
 OAO 1
 OAO 2
 OAO 3
 OSO
 AOSO
 OSO-1
 OSO-2
 OSO-3
 OSO-4
 OSO-5
 OSO-6
 OSO-7
 OSO-8
 OSO-C
 Quasat
 SAS
 Explorer 53 satellite
 SAS-1
 SAS-2
 SAS-3
 James Webb Space Telescope
 LISA (observatory)
 Space Infrared Telescope Facility
 Spartan satellites
 Submillimeter Wave Astronomy
 Satellite
 Tenma satellite
 X Ray Astrophysics Facility
 XMM-Newton telescope
 ATS
 ATS 1
 ATS 2
 ATS 3
 ATS 4
 ATS 5
 ATS 6
 ATS 7
 ATS 8
 Azur satellite
 Cannonball 2 satellite
 CRRES (satellite)
 DIAL satellite
 Environmental Research Satellites

. . . ERS 17
 . . . ERS 18
 . . . Intasat satellite
 . . . EXOS satellites
 EXOS-A satellite
 EXOS-B satellite
 EXOS-C satellite
 EXOS-D satellite
 . . . Exosat satellite
 . . . Explorer satellites
 Applications Explorer Satellites
 Cosmic Background Explorer
 satellite
 Dual Air Density Explorer
 Dynamics Explorer satellites
 Dynamics Explorer 1 satellite
 Dynamics Explorer 2 satellite
 Explorer 1 satellite
 Explorer 2 satellite
 Explorer 3 satellite
 Explorer 4 satellite
 Explorer 5 satellite
 Explorer 6 satellite
 Explorer 7 satellite
 Explorer 8 satellite
 Explorer 9 satellite
 Explorer 10 satellite
 Explorer 11 satellite
 Explorer 12 satellite
 Explorer 14 satellite
 Explorer 15 satellite
 Explorer 16 satellite
 Explorer 17 satellite
 Explorer 18 satellite
 Explorer 19 satellite
 Explorer 20 satellite
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 Explorer 40 satellite
 Explorer 41 satellite
 Explorer 43 satellite
 Explorer 44 satellite
 Explorer 45 satellite
 Explorer 46 satellite
 Explorer 47 satellite
 Explorer 48 satellite
 Explorer 49 satellite
 Explorer 50 satellite
 Explorer 51 satellite
 Explorer 52 satellite
 Explorer 53 satellite
 Explorer 54 satellite
 Explorer 55 satellite
 Extreme Ultraviolet Explorer
 satellite
 Far UV Spectroscopic Explorer
 IMP
 International Magnetospheric
 Explorer
 International Sun Earth Explorers
 International Sun Earth Explorer
 1
 International Sun Earth Explorer
 2
 International Sun Earth Explorer
 3
 Advanced Composition Explorer
 IMAGE satellite
 Micrometeoroid Explorer satellites

. . . Radio Astronomy Explorer
 satellite
 . . . Solar Mesosphere Explorer
 . . . Submillimeter Wave Astronomy
 Satellite
 . . . Transition Region and Coronal
 Explorer
 . . . Uhuru satellite
 . . . X Ray Timing Explorer
 . . Geopotential Research Mission
 . . Hawkeye satellites
 . . Long Duration Exposure Facility
 . . LZEEBE satellite
 . . MagSat satellites
 . . . MagSat 1 satellite
 . . . Magsat A satellite
 . . . MagSat B satellite
 . . ORBIS
 . . . ORBIS CAL satellite
 . . . OV-1 satellites
 . . . OV-2 satellites
 . . . OV-3 satellites
 . . . OV-4 satellites
 . . . OV-5 satellites
 . . SCATHA satellite
 . . small scientific satellites
 . . . Submillimeter Wave Astronomy
 Satellite
 . . . Transition Region and Coronal
 Explorer
 . . UK satellites
 . . . Ariel 4 satellite
 . . . Ariel 5 satellite
 . . . Miranda satellite
 . . . UK 4 satellite
 . . Ice, Cloud and Land Elevation
 Satellite
 . . Polar/GGS spacecraft
 . . QuikSCAT satellite
 . . TRMM satellite
 . . Upper Atmosphere Research
 Satellite (UARS)
 . . Wind/GGS spacecraft
 RT Canadian space program
 Cluster Mission
 EOS data and information system
 ESRO 4 satellite
 SOHO Mission
 technology feasibility spacecraft

scientific visualization

(added July 1993)

UF *data visualization*
 GS information analysis
 . **scientific visualization**
 . . numerical flow visualization
 RT computer graphics
 computerized simulation
 display devices
 image processing
 Mission to Planet Earth
 scene generation
 software development tools

scientists

GS manpower
 . **scientists**
 personnel
 . **scientists**
 RT awards
 engineers

Scimitar aircraft

UF *Vickers Scimitar aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **Scimitar aircraft**
 BAC aircraft
 . **Scimitar aircraft**
 jet aircraft
 . **Scimitar aircraft**
 monoplanes
 . **Scimitar aircraft**

scintillating fibers

RT ∞ aircraft

scintillating fibers

(added December 1992)

UF *scintillation fibers*

GS fibers

. optical fibers

. . **scintillating fibers**

optical materials

. optical fibers

. . **scintillating fibers**

waveguides

. optical waveguides

. . optical fibers

. . . **scintillating fibers**

RT calorimeters

cosmic rays

fiber optics

gamma ray spectrometers

gamma ray telescopes

gamma rays

hodoscopes

photomultiplier tubes

radiation counters

scintillation

scintillation counters

scintillation

DEF Generic term for rapid variations in apparent position, brightness, or color of a distant luminous object viewed through the atmosphere. A flash of light produced in a phosphor by an ionizing event. On a radar display, a rapid apparent displacement of the target from its mean position.

RT glint

phosphorescence

scintillating fibers

seeing (astronomy)

scintillation counters

DEF The combinations of phosphor, photomultiplier tube, and associated circuits for counting scintillations. Used for scintillators and scintillometers.

UF *scintillators*

scintillometers

GS measuring instruments

. counters

. . radiation counters

. . . **scintillation counters**

. radiation measuring instruments

. . radiation counters

. . . **scintillation counters**

RT anticoincidence detectors

Cerenkov counters

neutron counters

particle telescopes

photomultiplier tubes

photopeak

scintillating fibers

scintillation fibers

USE **scintillating fibers**

scintillators

USE **scintillation counters**

scintillometers

USE **scintillation counters**

scission

USE **cleavage**

scoops

RT air intakes

conveyors

ducts

intake systems

nose inlets

side inlets

∞ water intakes

scopolamine

USE **hyoscine**

SCORE omnirange

USE **self calibrating omnirange**

SCORE satellite

GS artificial satellites

. **SCORE satellite**

scoring

UF *scribing*

RT abrasion

defects

friction

pitting

wear

Scorpio constellation

USE **Scorpius constellation**

Scorpius constellation

UF *Scorpio constellation*

GS constellations

. **Scorpius constellation**

RT zodiac

Scotchlite (trademark)

RT membrane structures

refractory materials

Scotland

GS nations

. United Kingdom

. . **Scotland**

RT Europe

Scout helicopter

USE **P-531 helicopter**

Scout launch vehicle

GS launch vehicles

. **Scout launch vehicle**

rocket vehicles

. multistage rocket vehicles

. . **Scout launch vehicle**

RT Algol engine

Explorer 9 satellite

Explorer 16 satellite

Explorer 19 satellite

Explorer 20 satellite

Explorer 22 satellite

Explorer 23 satellite

Explorer 24 satellite

Explorer 25 satellite

Explorer 27 satellite

Explorer 30 satellite

Explorer 37 satellite

Explorer 39 satellite

Explorer 40 satellite

San Marco satellites

solid propellant rocket engines

TX-354 engine

X-248 engine

X-254 engine

X-258 engines

X-259 engine

XM-33 engine

Scout project

GS programs

. NASA programs

. . NASA space programs

. . . **Scout project**

. projects

. . **Scout project**

. space programs

. . NASA space programs

. . . **Scout project**

RT ∞ boosters

Explorer satellites

launch vehicles

SCPC transmission

USE **single channel per carrier transmission**

SCR (rectifiers)

USE **silicon controlled rectifiers**

∞ SCRAM

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT missiles

shutdowns

supersonic combustion ramjet

engines

scrambling (communication)

RT intelligibility

security

signal distortion

signal encoding

vocoders

voice communication

scramjet engines

USE **supersonic combustion ramjet engines**

scramjets

USE **supersonic combustion ramjet engines**

scrap

RT chips

debris

metal particles

wastes

scrapers

RT cutters

files (tools)

honoring

∞ separation

screech tones

(added March 1998)

DEF Discrete acoustic tones produced by imperfectly expanded supersonic jets. The phenomenon is a result of a resonant feedback condition involving downstream traveling shear-layer disturbances and upstream traveling acoustic waves.

GS elastic waves

. sound waves

. . noise (sound)

. . . flow noise

. . . . aerodynamic noise

. **screech tones**

frequencies

. acoustic frequencies

. . **screech tones**

RT aeroacoustics

feedback

jet aircraft noise

jet mixing flow

nozzle flow

shear layers

supersonic jet flow

supersonic nozzles

screen effect

RT ∞ coma

dielectrics

Earth magnetosphere

∞ effects

electromagnetic wave filters

electromagnetic wave transmission

electron gas

semiconductors (materials)

wave propagation

∞ screening

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT filtration
 - finer
 - louvers
 - selection
 - water treatment

- ∞ **screens**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT curtains
 - display devices
 - protectors
 - shielding
 - sizing screens
 - wire cloth

- screw dislocations**
 - GS defects
 - . crystal defects
 - . . crystal dislocations
 - . . . **screw dislocations**
 - dislocations (materials)
 - . crystal dislocations
 - . . **screw dislocations**
 - RT edge dislocations

- screw pinch**
 - DEF A cylindrical plasma equilibrium in which the axial and azimuthal components of the vacuum field are of the same size.
 - GS pinch effect
 - . plasma pinch
 - . . **screw pinch**
 - RT magnetic fields
 - magnetohydrodynamic flow
 - plasma control
 - reverse field pinch
 - theta pinch
 - zeta pinch

- screws**
 - SN (EXCLUDES PROPELLERS AND CRYSTAL DEFECTS)
 - GS fasteners
 - . **screws**
 - RT anchors (fasteners)
 - bolts
 - couplings
 - holders
 - nuts (fasteners)
 - studs (structural members)
 - threads

- scribing*
 - USE **scoring**

- scrubbers**
 - DEF Apparatus used in sampling and in gas cleaning in which the gas is passed through a space containing wetted "packing" or spray.
 - RT cleaning
 - columns (process engineering)
 - flue gases
 - washing

- scrubbing*
 - USE **washing**

- scrubs (botany)*
 - USE **brush (botany)**

- Scutum constellation**
 - GS constellations
 - . **Scutum constellation**
 - RT zodiac

- Scylla**
 - GS plasma generators
 - . **Scylla**
 - RT magnetic fields
 - magnetic mirrors
 - magnetic variations
 - plasmas (physics)

- thermonuclear reactions

- SDP (computers)*
 - USE **site data processors**

- SDS 900 series computers**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 900 series computers**
 - SDS 930 computer

- SDS 930 computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . SDS 900 series computers
 - **SDS 930 computer**

- SDS 9300 computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 9300 computer**

- SDV*
 - USE **Shuttle Derived Vehicles**

- SE-210 aircraft**
 - UF *Caravelle aircraft*
 - Sud Aviation SE-210 aircraft*
 - GS commercial aircraft
 - . **SE-210 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **SE-210 aircraft**
 - monoplanes
 - . **SE-210 aircraft**
 - passenger aircraft
 - . **SE-210 aircraft**
 - Sud Aviation aircraft
 - . **SE-210 aircraft**
 - RT ∞ aircraft

- SE-3160 helicopter**
 - UF *Alouette 3 helicopter*
 - Sud Aviation SE-3160 helicopter*
 - GS Sud Aviation aircraft
 - . Alouette helicopters
 - . . **SE-3160 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . Alouette helicopters
 - **SE-3160 helicopter**

- SE-A
 - USE **Explorer 30 satellite**

- sea breeze**
 - DEF A coastal, local wind that blows from sea to land caused by temperature differences when the sea surface is colder than the adjacent land.
 - GS wind (meteorology)
 - . **sea breeze**
 - RT aerology
 - air currents
 - atmospheric circulation
 - barotropic flow
 - climatology
 - geostrophic wind
 - gusts
 - marine environments
 - meteorology
 - monsoons
 - offshore energy sources
 - tidal waves
 - wind direction
 - wind effects
 - wind erosion
 - wind measurement
 - windpower utilization

- winds aloft

- sea floor spreading**
 - (added July 1992)
 - DEF A hypothesis that the oceanic crust is increasing by convective upwelling of magma along the mid-ocean ridges or world rift system, and by a moving-away of the new material at a rate of one to ten centimeters per year. This movement provides the source of dynamic thrust in the hypothesis of plate tectonics.
 - UF *ocean floor spreading*
 - RT Earth crust
 - Earth mantle
 - Earth movements
 - mid-ocean ridges
 - neotectonics
 - ocean bottom
 - plates (tectonics)
 - tectonics
 - terradyamics

- sea grasses**
 - GS plants (botany)
 - . grasses
 - . . **sea grasses**
 - RT marine biology
 - oceanography
 - seaweeds
 - vegetation
 - wetlands

- sea ice**
 - UF *ice packs*
 - GS ice
 - . **sea ice**
 - . . ice floes
 - . . icebergs
 - . . pressure ice
 - RT air sea ice interactions
 - bay ice
 - freezing
 - glacial drift
 - glaciers
 - ice environments
 - ice formation
 - ice mapping
 - lake ice
 - land ice
 - nunataks
 - oceanography
 - polynyas

- sea keeping**
 - DEF Maintaining the stability of a surface vessel in linear response to wave height, pitch, heave, center of gravity, and bow acceleration.
 - RT attitude gyros
 - damping
 - gyroscopic stability
 - gyrostabilizers
 - motion stability
 - ∞ stabilizers
 - torquers

- Sea King helicopter*
 - USE **SH-3 helicopter**

- Sea Knight helicopter*
 - USE **CH-46 helicopter**

- sea launching**
 - GS launching
 - . **sea launching**
 - RT antiship missiles
 - antiship warfare
 - ballistic missile submarines
 - catapults
 - drydocks
 - fleet ballistic missiles
 - missile launchers
 - Poseidon missiles
 - rocket launchers
 - torpedoes
 - water takeoff and landing aircraft

Zenit launch vehicles

sea law

DEF United Nations declaration regarding rights to minerals and other marine resources.
 GS law (jurisprudence)
 . international law
 . . **sea law**
 RT ∞ cooperation
 international cooperation
 rules
 United Nations

sea level

DEF The level of the surface of the ocean; especially, the mean level halfway between high and low tide used as a standard in reckoning land elevation or sea depths.
 GS altitude
 . **sea level**
 RT ocean surface
 oceanography
 sea states

Sea of Japan

GS seas
 . **Sea of Japan**
 RT Asia

Sea of Okhotsk

GS seas
 . **Sea of Okhotsk**
 RT Pacific Ocean
 U. S. S. R.

sea roughness

GS roughness
 . **sea roughness**
 RT hydrodynamic coefficients
 ocean models
 ocean surface
 oceanography
 surface waves
 tidal waves
 tide powered generators
 tide powered machines
 tidepower
 tides
 turbulence
 water currents
 water waves
 waterwave energy conversion
 waterwave powered machines
 wind effects
 wind velocity

sea states

RT ocean models
 ocean surface
 ocean temperature
 oceanographic parameters
 oceanography
 sea level
 TOPEX
 water currents
 water waves
 wind effects

sea surface temperature

GS oceanographic parameters
 . ocean temperature
 . . **sea surface temperature**
 surface properties
 . surface temperature
 . . **sea surface temperature**
 temperature
 . surface temperature
 . . **sea surface temperature**
 . water temperature
 . . ocean temperature
 . . . **sea surface temperature**
 RT air water interactions
 land surface temperature
 ocean surface

oceanography

sea truth

RT aerial photography
 coastal currents
 imagery
 ocean surface
 ocean temperature
 photointerpretation

sea urchins

GS animals
 . invertebrates
 . . **sea urchins**

sea walls

USE **breakwaters**

sea water

GS water
 . **sea water**
 RT brines
 coastal water
 dissolved organic matter
 fisheries
 marine resources
 nearshore water
 ocean surface
 ocean temperature
 oceanography
 red tide
 salinity
 seaweeds
 thermoclines
 thermohaline circulation
 underwater photography
 underwater resources
 water resources
 water sampling

seaborgium

(added May 1998)
 GS chemical elements
 . **seaborgium**
 RT bohrium
 dubnium

Seafarer project

UF *Global Communications Antenna Grid (navy)*
underground radio antenna grid (navy)
 GS programs
 . projects
 . . **Seafarer project**
 RT extremely low frequencies
 radio transmission
 submarines
 telecommunication
 underwater communication

Seahorse helicopter

USE **UH-34 helicopter**

sealants

USE **sealers**

sealers

UF *sealants*
 RT adhesives
 coatings
 dopes
 fillers
 packaging
 packings (seals)
 paints
 sealing
 seals (stoppers)
 seams (joints)
 solders
 varnishes

sealing

GS **sealing**
 . self sealing
 RT adhesion

adhesive bonding

binding
 blocking
 blowers
 bonding
 brazing
 caulking
 cements
 clamps
 closing
 coating
 coatings
 containment
 coverings
 encapsulating glands (seals)
 ∞ joining
 lining processes
 moisture resistance
 ∞ packing
 packings (seals)
 plugging
 retaining
 riveting
 sealers
 soldering
 spraying
 stopping
 waterproofing
 welding

seals (animals)

GS animals
 . vertebrates
 . . mammals
 . . . marine mammals
 **seals (animals)**
 RT marine biology

seals (stoppers)

GS **seals (stoppers)**
 . brush seals
 . gaskets
 . glands (seals)
 . hermetic seals
 . labyrinth seals
 . O ring seals
 . packings (seals)
 . plugs
 . pump seals
 RT air locks
 barrier layers
 ∞ barriers
 blocking
 ∞ caps
 closures
 constrictions
 cuffs
 plugging
 sealers
 spherical caps
 ∞ tapes
 valves

seamounts

DEF Elevations of the ocean floor rising to about 3000-1000 feet or more with the summit about 1000-6000 feet below sea level.
 RT continental shelves
 crevasses
 ∞ faults
 folds (geology)
 islands
 landforms
 mid-ocean ridges
 ocean bottom
 structural basins

seams (joints)

GS joints (junctions)
 . **seams (joints)**
 RT adhesives
 fillets
 metal joints

- sealers
- seaplanes**
 GS water takeoff and landing aircraft
 . **seaplanes**
 RT amphibious aircraft
 amphibious vehicles
 hulls (structures)
 monoplanes
- Search and Rescue Satellite*
 USE **SarSat**
- Search for Extraterrestrial Intelligence*
 USE **Project SETI**
- search profiles**
 GS searching
 . **search profiles**
 RT data retrieval
 information retrieval
 ∞ profiles
- search radar**
 GS radar
 . **search radar**
 . . over-the-horizon radar
 RT airport surface detection equipment
 coherent radar
 continuous wave radar
 pulse radar
 radar detection
 radar tracking
 satellite-borne radar
 side-looking radar
 surveillance radar
 tracking radar
 TRADEX radar system
- searching**
 GS **searching**
 . search profiles
 conical scanning
 RT COSPAS
 panoramic scanning
 reconnaissance
 retrieval
 SarSat
 scanning
 selection
- searchlights**
 GS lighting equipment
 . luminaires
 . . **searchlights**
 RT airport lights
 arc lamps
 beacons
 projectors
 runway lights
- seas**
 DEF Inland bodies of salt water or geographic divisions of oceans or ocean areas of wave generation.
 GS **seas**
 . Arabian Sea
 . Baltic sea
 . Barents Sea
 . Beaufort Sea (North America)
 . Bering Sea
 . Black Sea
 . Caribbean Sea
 . Caspian Sea
 . Chukchi Sea
 . Mediterranean Sea
 . . Adriatic Sea
 . North Sea
 . Red Sea
 . Salton Sea (CA)
 . Sea of Japan
 . Sea of Okhotsk
 RT archipelagoes
 coastal currents
 coasts
 deep water
- Earth hydrosphere
 ocean temperature
 oceanography
 oceans
 Sargasso Sea
 seaweeds
 shallow water
 shoals
 straits
 thermal pollution
 underwater photography
- SEASAT 1**
 GS artificial satellites
 . SEASAT satellites
 . . **SEASAT 1**
 RT Landsat satellites
 oceanography
 programs
 SEASAT-B satellite
- SEASAT program**
 GS programs
 . NASA programs
 . . NASA space programs
 . . . Earth Resources Program
 Earth Resources Survey
 Program
 **SEASAT program**
 . space programs
 . . NASA space programs
 . . . Earth Resources Program
 Earth Resources Survey
 Program
 **SEASAT program**
 RT Landsat satellites
 oceanography
- SEASAT satellites**
 GS artificial satellites
 . **SEASAT satellites**
 . . SEASAT 1
 . . SEASAT-B satellite
 RT Landsat satellites
 NASA programs
 oceanography
 programs
 satellite altimetry
 Synchronous Earth Observatory
 satellite
- SEASAT-B satellite**
 GS artificial satellites
 . SEASAT satellites
 . . **SEASAT-B satellite**
 RT Landsat satellites
 oceanography
 programs
 SEASAT 1
- seasonal variations*
 USE **annual variations**
- seasons**
 GS **seasons**
 . autumn
 . spring (season)
 . summer
 . winter
 RT annual variations
 climatology
 crop calendars
 equinoxes
 meteorology
 solar position
 solstices
 weather
 wind variations
- Seasprite helicopter*
 USE **UH-2 helicopter**
- seat belts**
 DEF Safety belts that fasten across the lap.
 GS safety devices
 . **seat belts**
- RT ∞ belts
 harnesses
 seats
- seats**
 UF *benches*
chairs
 GS **seats**
 . Barany chair
 . ejection seats
 . . flying ejection seats
 RT comfort
 couches
 cushions
 harnesses
 ∞ lounges
 riding quality
 seat belts
 sitting position
- Sea-viewing Wide Field-of-view Sensor**
(added December 1998)
 UF *SeaWiFS*
 GS scanners
 . ocean color scanner
 . . **Sea-viewing Wide Field-of-view Sensor**
 RT chlorophylls
 Coastal Zone Color Scanner
 ocean surface
 phytoplankton
 remote sensors
 satellite-borne instruments
 water color
- seaweeds**
 UF *kelp*
 RT marine biology
 oceanography
 oceans
 sea grasses
 sea water
 seas
- SeaWiFS*
(added December 1998)
 USE **Sea-viewing Wide Field-of-view Sensor**
- sebaceous glands**
 GS anatomy
 . glands (anatomy)
 . . **sebaceous glands**
- sebacic acid**
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . **sebacic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **sebacic acid**
- secondary batteries*
 USE **storage batteries**
- secondary cosmic rays**
 DEF Secondary emission in the atmosphere stimulated by primary cosmic rays. Used for Moliere formula.
 UF *Moliere formula*
 GS ionizing radiation
 . cosmic rays
 . . **secondary cosmic rays**
 RT atmospheric radiation
 cosmic ray albedo
 cosmic ray showers
 electron decay rate
 electron photon cascades
 electron precipitation
 primary cosmic rays
 single event upsets
- secondary emission**
 DEF Emission of subatomic particles of

secondary flow

photons stimulated by primary radiation; for example, cosmic rays impinging on other particles and causing them, by disruption of their electron configurations or even of their nuclei, to emit particles or photons or both in turn.

- GS emission
 - . particle emission
 - . . . electron emission
 - . . . **secondary emission**
- RT dynodes
 - electron irradiation
 - field emission
 - monoscopes
 - multipactor discharges
 - photomultiplier tubes
 - scanning electron microscopy
 - Townsend avalanche

secondary flow

- GS fluid flow
 - . parallel flow
 - . . . three dimensional flow
 - . . . **secondary flow**
 - . viscous flow
 - . . . boundary layer flow
 - . . . **secondary flow**
 - translational motion
 - . three dimensional motion
 - . . . three dimensional flow
 - . . . **secondary flow**
- RT compressibility effects
 - corner flow
 - three dimensional boundary layer
 - vortices
 - vorticity

secondary injection

- GS injection
 - . **secondary injection**
- RT fluid injection
 - shock wave control
 - shock wave propagation
 - supersonic flow
 - thrust augmentation
 - thrust vector control

secondary ion mass spectrometry

- (added July 1991)
- DEF Mass spectrometry performed on ions sputtered from a sample by a primary ion beam.
- UF *SIMS (spectrometry)*
- GS spectroscopy
 - . mass spectroscopy
 - . . . **secondary ion mass spectrometry**
- RT mass spectrometers

secondary radar

- DEF A radar technique or mode of operation in which the return signals are obtained from beacons, transponders, or repeaters carried by the targets, contrasted with primary radar in which the return signals are obtained by reflection from the targets.
- GS radar
 - . **secondary radar**
- RT discrete address beacon system
 - interrogation

secondary waves

USE **S waves**

secretions

- GS secretions
 - . endocrine secretions
 - . . . hormones
 - . . . corticosteroids
 - aldosterone
 - hydroxycorticosteroid
 - cortisone
 - glucocorticoids
 - . . . estrogens
 - . . . hypertensin
 - . . . pituitary hormones
 - adrenocorticotropin (ACTH)
 - . . . prostaglandins

- . . . thyroxine
- . . . insulin
- . . . sweat
- RT body fluids
 - gall
 - glands (anatomy)
 - hydrogen metabolism
 - metabolism
 - mineral metabolism
 - skin (anatomy)

∞ sections

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT categories
 - classes
 - subdivisions
 - subsidiaries

∞ sectors

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT area
 - circles (geometry)
 - regions

secular perturbation

USE **long term effects**

secular variations

- GS variations
 - . periodic variations
 - . . . **secular variations**
- RT atmospheric physics
 - solar activity effects
 - solar cycles
 - teleconnections (meteorology)

security

- GS security
 - . airport security
 - . computer security
 - . . computer information security
 - . . firewalls (computers)
 - . . intrusion detection (computers)
- RT ∞ classifying
 - computer program integrity
 - crime
 - integrity
 - police
 - privacy
 - scrambling (communication)
 - selective dissemination of information
 - steganography
 - terrorism
 - vulnerability

sedatives

- GS drugs
 - . **sedatives**
- RT pentobarbital
 - phenobarbital
 - psychotropic drugs
 - tranquilizers

sediment transport

- RT mass flow
 - mass transfer
 - sediments

sedimentary rocks

DEF Rocks resulting from the consolidation of loose sediments that have accumulated in layers, e. g. , clastic rocks (such as fragments of older rocks transported from their source and deposited in water or from air or ice. Sedimentary rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and metamorphic rocks.

- GS rocks
 - . **sedimentary rocks**
 - . . carbonaceous rocks
 - . . . coal
 - anthracite
 - lignite

- . . . solvent refined coal
- . . . limestone
- . . . sandstones
- . . shales

- RT alluvium
 - breccia
 - clays
 - dolomite (mineral)
 - gypsum
 - igneous rocks
- ∞ layers
 - monazite sands
 - petrography
 - sands
 - sediments
 - shatter cones
 - soils
 - stratigraphy

sediments

DEF Solid fragmental materials that originate from weathering of rocks and are transported or deposited by air, water, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e. g. , sand, gravel, silt, mud, till, loess, and alluvium.

UF *silts*

GS sediments

- . gravels
- . mud
- . sands
- . . monazite sands
- . . tar sands
- RT alluvium
 - clays
 - deposition
 - deposits
 - dissolved organic matter
 - dredged materials
 - fans (landforms)
 - glacial drift
 - grit
 - littoral drift
 - marine chemistry
 - ocean bottom
 - peat
 - sediment transport
 - sedimentary rocks
 - sewage treatment
 - sludge
 - soil pollution

SEE (software engineering environments)

USE **programming environments**

Seebeck coefficient

USE **Seebeck effect**

Seebeck effect

DEF The establishment of an electric potential difference tending to produce a flow of current in a circuit of two dissimilar metals the junctions of which are at different temperatures. Used for Seebeck coefficient.

UF *Seebeck coefficient*

- RT ∞ effects
 - Peltier effects
 - temperature effects
 - thermocouples
 - thermodynamic properties
 - thermoelectricity
 - thermophysical properties
 - transport properties

seeding (inoculation)

USE **inoculation**

seeds

- RT alfalfa
 - barley
 - citrus trees
 - corn
 - embryos

farm crops
grains (food)
nuts (fruits)
oats
planting
plants (botany)
sugar beets
sugar cane
tomatoes
utricle
vegetables
viability

seeing (astronomy)

(added July 1989)

UF *atmospheric seeing*
RT astronomical observatories
astronomy
atmospheric effects
atmospheric optics
atmospheric turbulence
optical correction procedure
scintillation
space observations (from Earth)
telescopes
turbulence effects

seekers

USE **homing devices**

seepage

RT canals
drainage
flood damage
flow nets
hydrodynamics
intrusion
irrigation
leakage
losses
offshore energy sources
penetration
percolation
permeability
piezometers
water consumption

segmented mirrors

(added August 1995)

DEF Telescope mirrors made up of many small, thin, glass segments. Motorized controllers keep the segments optically aligned to form a single large mirror.

GS mirrors
. **segmented mirrors**
RT adaptive optics
astronomical observatories
deformable mirrors
honeycomb mirrors
optical correction procedure
reflecting telescopes

segments

RT circles (geometry)
∞ components
curves (geometry)
lines (geometry)
radii

Segre characteristic

RT ∞ characteristics
crack propagation
metal fatigue

segregation

USE **separation**

seismic energy

RT earthquake damage
∞ energy
strain energy methods

seismic waves

DEF The disturbance of earth tremors produced by a mechanical disturbance on the sur-

face or underground. Used for electroseismic effect.

UF *electroseismic effect*

GS elastic waves
. **seismic waves**
. . Love waves
. . microseisms
. . Rayleigh waves
RT crustal fractures
detonation waves
dilatational waves
Earth movements
earthquake damage
earthquake resistance
earthquake resistant structures
earthquakes
Gutenberg zone
large aperture seismic array
longitudinal waves
P waves
planetary quakes
polarized elastic waves
S waves
seismology
SH waves
shock waves
surface waves
tsunami waves
underground explosions
∞ waves

seismocardiography

DEF The measurement of the high frequency vibrations of the heart.

GS bioengineering
. biometrics
. . cardiography
. . . **seismocardiography**
RT ballistocardiography
fibrillation

seismograms

RT seismographs

seismographs

UF *seismometers*
GS measuring instruments
. vibration meters
. . **seismographs**
. . . lunar seismographs
recording instruments
. **seismographs**
. . lunar seismographs
RT accelerometers
acoustic measurement
phased arrays
seismograms
shock measuring instruments
tiltmeters

seismology

DEF The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.

GS **seismology**
. asteroseismology
. moonquakes
. . helioseismology
RT asthenosphere
crustal fractures
Earth movements
Earth sciences
earthquake damage
earthquakes
geology
geophysics
isostasy
large aperture seismic array
lunar geology
mid-ocean ridges
Rouse belts
∞ science
seismic waves
subduction (geology)

tidal waves

seismometers

USE **seismographs**

seizures

RT convulsions
cramps

SEL computers

GS data processing equipment
. computers
. . digital computers
. . . **SEL computers**

selection

UF *choice*
GS **selection**
. personnel selection
. . pilot selection
. materials selection
. site selection
RT certification
∞ classifying
collection
decisions
evaluation
figure of merit
options
ranking
rejection
sampling
∞ screening
searching
sorting algorithms
∞ tests

selection rules (nuclear physics)

GS rules
. **selection rules (nuclear physics)**
RT alpha decay
emission
forbidden transitions
neutron emission
∞ physics
quantum numbers

selective dissemination of information

GS communicating
. information dissemination
. . **selective dissemination of information**
RT computer information security
data storage
documentation
indexes (documentation)
information flow
information retrieval
information systems
libraries
management planning
security
technology transfer

selective fading

GS fading
. signal fading
. . **selective fading**
RT frequency analyzers
ground wave propagation
modulation
sidebands
signal fading rate

selective surfaces

DEF Surfaces, often coated, for which the spectral optical properties, such as reflectance, absorptance, emittance, or transmittance vary significantly with wavelength. Such properties are of interest in solar energy applications. Used for solar selective coatings.

UF *solar selective coatings*
RT energy absorption films
selectivity
solar collectors

selectivity

solar energy absorbers

selectivity

RT discrimination
photothermal conversion
selective surfaces

selectors

RT analyzers
circuits
electric relays
samplers
switches
switching circuits

selenides

GS chalcogenides
. **selenides**
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
selenium compounds
. **selenides**
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides

selenium

GS chemical elements
. **selenium**
RT selenium isotopes

selenium alloys

GS alloys
. **selenium alloys**
RT copper

selenium compounds

GS **selenium compounds**
. selenides
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
. selenium oxides
RT ∞ chemical compounds
∞ Group 6A compounds

selenium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **selenium isotopes**
RT selenium

selenium oxides

GS chalcogenides
. oxides
. . **selenium oxides**
selenium compounds
. **selenium oxides**

selenography

RT geography
lunar craters
lunar crust
lunar landing sites
lunar maps
lunar mobile laboratories
lunar rays
lunar rocks
lunar topography

moon
selenology
surface properties

selenology

DEF That branch of astronomy that treats of the moon, its magnitude, motion, constitution, and the like. Selene is Greek for moon.

RT astronomy
lunar composition
lunar core
lunar craters
lunar crust
lunar dust
lunar echoes
lunar eclipses
lunar effects
lunar environment
lunar equator
lunar evolution
lunar exploration
lunar far side
lunar figure
lunar geology
lunar gravitation
lunar gravitational effects
lunar limb
lunar luminescence
lunar magnetic fields
lunar mantle
lunar maria
lunar occultation
lunar phases
lunar radar echoes
lunar radiation
lunar rocks
lunar rotation
lunar seismographs
lunar shadow
lunar soil
lunar surface
lunar temperature
lunar tides
lunar topography
moon
moonquakes
regolith
selenography

self absorption

GS energy absorption
. radiation absorption
. . **self absorption**
RT ∞ absorption
absorption spectra
absorptivity
automatic control
diffusion
∞ radiation

self adaptive control systems

DEF Particular types of stability augmentation systems which change the responses of given control inputs by constantly sampling responses and adjusting their gain, rather than having fixed or selective gain systems.

GS automatic control
. adaptive control
. . **self adaptive control systems**
RT active control
adaptive optics
automata theory
autonomy
∞ control
∞ systems

self alignment

GS alignment
. **self alignment**
RT active control
adaptive control
automatic control
landing gear
model reference adaptive control

servomechanisms

self assembly

(added January 2001)

DEF Coordinated action of independent units to produce a larger structure or to achieve a desired group effect. A strategy for nanofabrication that involves designing molecules and supramolecular entities so that shape-complementarity or other properties causes them to aggregate into desired structures.

GS assembling
. **self assembly**
RT abiogenesis
∞ assembly
chemical evolution
fabrication
micelles
molecular biology
molecular structure
monomolecular films
nanofabrication
nanostructure (characteristics)
nanotechnology
synthesis (chemistry)

self calibrating omnirange

UF *SCORE omnirange*
GS navigation aids
. beacons
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
radio equipment
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
RT solar compasses

self consistent fields

UF *SCF*
RT computational chemistry
field theory (physics)
∞ fields
Hartree approximation
magnetic fields
molecular orbitals
quantum electrodynamics
shell theory

self deploying space stations

USE **self erecting devices**
space stations

self diffusion (solid state)

DEF The spontaneous movement of an atom to a new site in a crystal of its own species.

GS diffusion
. **self diffusion (solid state)**
RT atomic mobilities
ionic diffusion
molecular diffusion
particle diffusion

self erecting devices

UF *self deploying space stations*
RT ∞ automation
∞ devices
∞ equipment
inflatable spacecraft
inflatable structures
orbital assembly
space erectable structures

self excitation

GS excitation
. **self excitation**
RT forced vibration
free vibration
oscillators

- resonators
- self focusing**
- GS focusing
 - . **self focusing**
 - RT image contrast
 - ∞ machinery
 - optical correction procedure
 - optical measuring instruments
- self ignition*
(added April 1997)
- USE **spontaneous combustion**
- self induced vibration**
- GS vibration
 - . structural vibration
 - .. **self induced vibration**
 - ... panel flutter
 - ... subsonic flutter
 - ... supersonic flutter
 - ... transonic flutter
 - RT bending vibration
 - flutter
 - forced vibration
 - free vibration
 - missile vibration
 - pilot induced oscillation
 - random vibration
 - torsional vibration
- self initiated anti-aircraft missiles*
- USE **SIAM missiles**
- self lubricating materials**
- RT impregnating
 - lubrication
 - ∞ materials
 - solid lubricants
 - spacecraft lubrication
- self lubrication**
- GS lubrication
 - . **self lubrication**
 - RT impregnating
- self maneuvering units**
- UF *personnel propulsion systems*
 - reaction jet backpacks*
 - SMU (maneuvering units)*
 - space self maneuvering units*
 - GS **self maneuvering units**
 - . IMLSS
 - RT astronaut maneuvering equipment
 - extravehicular activity
 - extravehicular mobility units
 - maneuvers
 - manned maneuvering units
- self organizing systems**
- UF *perceptrons*
 - RT artificial intelligence
 - machine learning
 - ∞ systems
 - Turing machines
- self oscillation**
- GS oscillations
 - . **self oscillation**
 - RT feedback amplifiers
 - positive feedback
 - transfer functions
- self propagation**
- GS diffusion
 - . **self propagation**
 - transmission
 - . **self propagation**
 - RT ∞ propagation
- self regulating*
- USE **automatic control**
- self repairing devices**
- RT ∞ automation
- ∞ devices
- evolvable hardware
 - maintenance
- self sealing**
- GS sealing
 - . **self sealing**
 - RT flight safety
 - fuel systems
 - rupturing
 - support systems
- self shadowing**
- RT large space structures
 - shadows
 - solar arrays
- self stimulation**
- RT motivation
 - reinforcement (psychology)
- self subtraction holography*
- USE **holographic subtraction**
- self sustained emission**
- GS emission
 - . **self sustained emission**
 - RT electron emission
 - light emission
 - particle emission
 - stimulated emission
- self tests**
- DEF Programmed functions performed by a machine, either automatically at start-up or on user demand, that test the working order of the machine. In particular, programs stored in read-only memory that test the integrity of a machine's integrated circuits and the connections between the circuits and the devices they control.
- RT automatic test equipment
 - avionics
 - checkout
 - electronic equipment tests
 - fail-safe systems
 - ∞ tests
- Selsyns (trademark)*
- USE **servomotors**
- SEM (microscopy)*
- USE **scanning electron microscopy**
- semantics**
- GS linguistics
 - . **semantics**
 - RT communication theory
 - grammars
 - languages
 - message processing
 - messages
 - natural language processing
 - nomenclatures
 - orthography
 - parsing algorithms
 - predicate logic
 - psycholinguistics
 - sentences
 - speech
 - syllables
 - symbols
 - syntax
 - words (language)
- semicircular canals**
- DEF Structures of the inner ear, the primary function of which is to register movement of the body in space. They respond to change in the rate of movement.
- GS anatomy
 - . sense organs
 - .. ear
 - ... labyrinth
 - **semicircular canals**
 - RT eardrums
- middle ear
- otolith organs
 - vestibules
- semiconducting films**
- RT amorphous semiconductors
 - amorphous silicon
 - diamond films
 - energy absorption films
 - ∞ films
 - superconducting films
 - thick films
 - thin films
- semiconductor devices**
- DEF Electron devices in which the characteristic distinguishing electronic conduction takes place within semiconductors.
- GS electronic equipment
 - . solid state devices
 - .. **semiconductor devices**
 - ... avalanche diodes
 - cryosar
 - ... Barritt diodes
 - ... charge transfer devices
 - bucket brigade devices
 - charge coupled devices
 - charge injection devices
 - ... germanium diodes
 - ... heterojunction devices
 - high electron mobility transistors
 - MODFETS
 - ... junction diodes
 - MIM diodes
 - step recovery diodes
 - ... light emitting diodes
 - ... metal oxide semiconductors
 - ... CMOS
 - ITO (semiconductors)
 - SOS (semiconductors)
 - ... MIM (semiconductors)
 - ... MIS (semiconductors)
 - ... MOM (semiconductors)
 - ... MSM (semiconductors)
 - ... NDM semiconductor devices
 - ... neuristors
 - ... parametric diodes
 - ... photodiodes
 - ... photovoltaic cells
 - solar cells
 - vertical junction solar cells
 - ... Schottky diodes
 - ... semiconductor lasers
 - aluminum gallium arsenide lasers
 - gallium arsenide lasers
 - quantum cascade lasers
 - quantum well lasers
 - YLF lasers
 - ... SOI (semiconductors)
 - ... thermistors
 - ... thyristors
 - ... silicon controlled rectifiers
 - ... transferred electron devices
 - ... transistor amplifiers
 - ... transistors
 - bipolar transistors
 - field effect transistors
 - charge flow devices
 - JFET
 - MODFETS
 - high electron mobility transistors
 - MODFETS
 - junction transistors
 - JFET
 - phototransistors
 - silicon transistors
 - SOS (semiconductors)
 - ... cascode devices
 - ... TRAPATT devices
 - ... varactor diodes
 - ... varistors
 - RT barrier layers
 - bubble technique
 - chips (memory devices)
 - crystal rectifiers
 - diffusion electrodes

semiconductor diodes

- diffusion length
- diodes
- doping (materials)
- Gunn diodes
- Gunn effect
- Hall effect
- hybrid circuits
- ion implantation
- ∞ junctions
- microminiaturization
- modulation doping
- molecular electronics
- nanostructures (devices)
- organic semiconductors
- oscillators
- parametric amplifiers
- pentodes
- quantum dots
- quantum Hall effect
- quantum wires
- rectifiers
- semiconductors (materials)
- silicon films
- tetrodes
- triodes
- tunnel junctions
- wafers

semiconductor diodes

DEF Two-electrode semiconductor devices utilizing the rectifying properties of junctions or point contacts.

- GS electronic equipment
 - . diodes
 - . . . **semiconductor diodes**
 - . . . avalanche diodes
 - cryosar
 - Barritt diodes
 - germanium diodes
 - Gunn diodes
 - transferred electron devices
 - junction diodes
 - MIM diodes
 - step recovery diodes
 - light emitting diodes
 - parametric diodes
 - photodiodes
 - Schottky diodes
 - tunnel diodes
 - varactor diodes
- RT MIM diodes
- SIS (semiconductors)
- thermionic diodes

semiconductor insulator semiconductors

USE **SIS (semiconductors)**

semiconductor junctions

- GS **semiconductor junctions**
 - . heterojunctions
 - . homojunctions
 - . MBM junctions
 - . n-n junctions
 - . n-p-n junctions
 - . p-i-n junctions
 - . p-n junctions
 - . p-n-p junctions
 - . p-n-p-n junctions
 - . silicon junctions
- RT Barritt diodes
- heterojunction devices
- ∞ junctions
- MSM (semiconductors)
- n-type semiconductors
- p-type semiconductors
- Schottky diodes
- SIS (semiconductors)
- threshold voltage
- tunnel junctions

semiconductor lasers

- UF *laser diodes*
- GS electronic equipment
 - . solid state devices
 - . . . semiconductor devices
 - **semiconductor lasers**

- aluminum gallium arsenide lasers
- gallium arsenide lasers
- quantum cascade lasers
- quantum well lasers
- YLF lasers
- stimulated emission devices
 - . lasers
 - . . **semiconductor lasers**
 - . . . aluminum gallium arsenide lasers
 - . . . gallium arsenide lasers
 - . . . quantum cascade lasers
 - . . . quantum well lasers
 - . . . YLF lasers
- RT Bragg reflectors
- DBR lasers
- distributed feedback lasers
- fiber lasers
- gadolinium-gallium garnet
- gallium arsenides
- Gunn effect
- injection lasers
- laser arrays
- laser cavities
- optical switching
- pulsed lasers
- Q switched lasers
- quantum dots
- quantum wires
- solid state lasers
- surface emitting lasers
- waveguide lasers

semiconductor plasmas

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **semiconductor plasmas**
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - **semiconductor plasmas**
- RT electron mobility
- electron-hole drops
- holes (electron deficiencies)
- plasma physics
- semiconductors (materials)

semiconductors (materials)

DEF Electronic conductors, with resistivity in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range. Certain semiconductors possess two types of carriers, namely, negative electrons and positive holes.

- GS **semiconductors (materials)**
 - . acceptor materials
 - . amorphous semiconductors
 - . . amorphous silicon
 - . donor materials
 - . metal oxide semiconductors
 - . . CMOS
 - . . . ITO (semiconductors)
 - . . . SOS (semiconductors)
 - . . . metal-nitride-oxide-semiconductors
 - . . . metal-nitride-oxide-silicon
 - . . . MIM (semiconductors)
 - . . . MIS (semiconductors)
 - . . . MOM (semiconductors)
 - . . . n-type semiconductors
 - . . . organic semiconductors
 - . . . photoconductors
 - . . . p-type semiconductors
 - . . . superlattices
 - . . . Vycor

- RT aluminum arsenides
- antisite defects
- bipolar transistors
- bucket brigade devices
- carbon nitrides
- carrier density (solid state)
- carrier injection
- charge injection devices
- conducting polymers
- conduction bands

- conductors
- copper indium selenides
- doping (materials)
- electric conductors
- electron affinity
- electron density (concentration)
- electron tunneling
- electrons
- emitters
- excitons
- gadolinium-gallium garnet
- gallium nitrides
- hole distribution (electronics)
- holes (electron deficiencies)
- indium antimonides
- indium gallium arsenides
- indium selenides
- indium tellurides
- intermetallics
- majority carriers
- ∞ materials
 - . melts (crystal growth)
 - . metalloids
 - . minority carriers
 - . modulation doping
 - . nanostructure (characteristics)
 - . negative electron affinity
 - . organic charge transfer salts
 - . polyacetylene
 - . pseudopotentials
 - . resistors
 - . screen effect
 - . semiconductor devices
 - . semiconductor plasmas
- ∞ solid state physics
- thermoelectric materials

semiempirical equations

- RT algebra
- ∞ equations
- parameterization

semimetals

USE **metalloids**

semiregular variable stars

- GS celestial bodies
 - . stars
 - . . variable stars
 - . . . **semiregular variable stars**
- RT irregular variable stars
- periodic variations

semisolids

- RT plastic properties
- solids
- thixotropy
- viscous fluids

semispan models

- GS models
 - . **semispan models**
- RT aerodynamic configurations
- aircraft models
- scale models
- wind tunnel models

Senarmont polariscopes

- GS measuring instruments
 - . polariscopes
 - . . **Senarmont polariscopes**
 - . . . optical equipment
 - . . . polariscopes
 - **Senarmont polariscopes**
- RT lasers
- optical measuring instruments

senders

USE **transmitters**

Seneca aircraft

USE **PA-34 Seneca aircraft**

Senegal

- GS nations
 - . **Senegal**

- RT Africa
- sense organs**
- GS anatomy
- . **sense organs**
 - .. chemoreceptors
 - .. ear
 - ... eardrums
 - ... eustachian tubes
 - ... labyrinth
 - cochlea
 - Corti organ
 - otolith organs
 - semicircular canals
 - vestibules
 - .. middle ear
 - .. eye (anatomy)
 - .. choroid membranes
 - .. conjunctiva
 - .. cornea
 - .. oculomotor nerves
 - .. pupils
 - .. retina
 - ... fovea
 - .. gravireceptors
 - ... otolith organs
 - .. baroreceptors
 - .. mechanoreceptors
 - .. photoreceptors
 - .. proprioceptors
 - .. thermoreceptors
- RT fingers
- head (anatomy)
- nervous system
- olfactory perception
- organs
- perceptual time constant
- receptors (physiology)
- sensitometry
- skin (anatomy)
- senses*
- USE **sensory perception**
- sensibility*
- USE **sensitivity**
- sensing*
- USE **detection**
- sensitivity**
- DEF Response of a mathematical model to variations of the input parameters. Used for insensitivity and sensibility.
- UF *insensitivity*
- sensibility*
- GS **sensitivity**
- . anaphylaxis
 - . impact resistance
 - . notch sensitivity
 - . pain sensitivity
 - . photosensitivity
 - .. light adaptation
 - .. phototropism
 - . propellant sensitivity
 - . radiation tolerance
 - . sensitometry
 - . spectral sensitivity
- RT acuity
- adaptation
- amplification
- auditory perception
- dynamic characteristics
- dynamic response
- frequency response
- itching
- perception
- precision
- range (extremes)
- reaction time
- ∞ resistance
- resolution
- sensitizing
- shock resistance
- ∞ thresholds
- thresholds (perception)
- tolerances (mechanics)
- transfer functions
- transient response
- visibility
- vulnerability
- sensitivity analysis**
- (added February 2001)
- DEF Study of how the variation in the output of a system model can be qualitatively or quantitatively apportioned to different input parameters, model structures, or calibration data.
- RT ∞ analyzing
- design analysis
 - design optimization
 - error analysis
 - factorial design
 - optimization
 - parameter identification
 - parameterization
 - shape optimization
 - systems analysis
- sensitizing**
- RT activation
- actuation
- anaphylaxis
- corrosion prevention
- sensitivity
- sensitometry**
- DEF The measurement of the light response characteristics of photographic film under specified conditions of exposure and development.
- GS sensitivity
- . **sensitometry**
- RT gravireceptors
- mechanoreceptors
- photoreceptors
- photosensitivity
- proprioceptors
- radiation measurement
- receptors (physiology)
- sense organs
- thermoreceptors
- sensor fusion*
- USE **multisensor fusion**
- sensorimotor performance**
- GS **sensorimotor performance**
- . psychomotor performance
 - .. psychosomatics
- RT afferent nervous systems
- efferent nervous systems
- human performance
- human reactions
- perceptual time constant
- physiological tests
- pilot performance
- reaction time
- sensory feedback
- ∞ **sensors**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Devices designed to respond to physical stimuli (as temperature, illumination, and motion) and transmit a resulting signal for interpretation, or measurement, or for operating a control. Used for pickoffs and pickups.
- UF *pickoffs*
- pickups*
- RT bioinstrumentation
- character recognition
- charge flow devices
- contour sensors
- crop identification
- data acquisition
- electronic transducers
- FLIR detectors
- gas detectors
- guidance sensors
- image velocity sensors
- laser gyroscopes
- measuring instruments
- microwave sensors
- multispectral linear arrays
- remote sensors
- robot sensors
- servomotors
- smart materials
- tactile sensors (robotics)
- torque sensors (robotics)
- transducers
- sensory deprivation**
- GS deprivation
- . **sensory deprivation**
- RT confinement
- confining
- monotony
- perception
- sensory discrimination**
- GS discrimination
- . **sensory discrimination**
 - .. brightness discrimination
 - .. tactile discrimination
 - .. visual discrimination
- RT speech recognition
- time discrimination
- sensory feedback**
- UF *feelings*
- GS feedback
- . biofeedback
 - .. **sensory feedback**
- RT emotional factors
- emotions
- moods
- moon illusion
- nonlinear feedback
- perception
- sensorimotor performance
- sensory perception**
- UF *senses*
- GS perception
- . **sensory perception**
 - .. auditory perception
 - .. consciousness
 - .. extrasensory perception
 - .. kinesthesia
 - .. olfactory perception
 - .. pain
 - .. pain sensitivity
 - .. proprioception
 - ... autokinesis
 - .. taste
 - .. touch
 - ... tactile discrimination
 - .. vertical perception
 - .. vibration perception
 - .. visual perception
 - ... critical flicker fusion
 - ... space perception
 - ... autokinesis
 - ... visual discrimination
- RT afterimages
- anesthesia
- electrocutaneous communication
- itching
- sensory stimulation**
- GS stimulation
- . **sensory stimulation**
- RT chronaxy
- emotional factors
- subliminal stimuli
- sentences**
- RT communication theory
- languages
- messages
- semantics
- signal reception
- signal transmission
- speech
- syntax
- talking

Sentinel system

words (language)

Sentinel system

- GS weapon systems
 - . **Sentinel system**
- RT antimissile defense
 - antimissile missiles
 - civil defense
 - Nike missiles
 - Safeguard system
 - Spartan missile
 - Sprint missile
 - surface to air missiles
 - ∞ systems

SEO (*Indian spacecraft*)

USE **Indian spacecraft**

SEOCS (satellite)

DEF An ESA meteorological satellite designed for sun-Earth observation and climatology.

- GS artificial satellites
 - . meteorological satellites
 - . . **SEOCS (satellite)**

SEOS

USE **Synchronous Earth Observatory satellite**

SEPAC (payload)

DEF Space experiment particle accelerators. A Spacelab 1 payload that experiments on the Earth's ionosphere and magnetosphere. Used for Space Exper with Particle Accelerators.

UF *Space Exper with Particle Accelerators*

- GS payloads
 - . **SEPAC (payload)**

- RT ∞ accelerators
 - particle accelerators
 - Spacelab

separated flow

UF *flow separation*

- GS fluid flow
 - . viscous flow
 - . . boundary layer flow
 - . . . **separated flow**
 - boundary layer separation

- RT
 - cavitation flow
 - conical flow
 - Crocco-Lee theory
 - flow characteristics
 - flow distribution
 - forward facing steps
 - reattached flow
 - reversed flow
 - ∞ separation
 - surface roughness effects
 - turbulence effects
 - vortex flaps

∞ separation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- UF *segregation*
- RT adsorption
 - aeration
 - agglomeration
 - agitation
 - beneficiation
 - boundary layer separation
 - breaking
 - centrifuging
 - chemical fractionation
 - chipping
 - classifiers
 - cleaning
 - coagulation
 - coalescing
 - Coanda effect
 - colloids
 - concentrating
 - condensing

- crystallization
- cutting
- debonding (materials)
- decontamination
- degassing
- dehumidification
- dehydration
- deionization
- delaminating
- demineralizing
- deoxygenation
- deposition
- descaling
- desorption
- dialysis
- diffusion
- dispersing
- dissolving
- distillation
- diverters
- ∞ division
- drying
- electrodialysis
- electrostatic precipitators
- elimination
- elution
- evaporation
- exchanging
- exclusion
- external store separation
- extraction
- filtration
- flaking
- flashing (vaporizing)
- flotation
- flushing
- foaming
- fractionation
- fracturing
- homogenizing
- ion exchanging
- ion extraction
- ion stripping
- isolation
- leaching
- materials recovery
- melting
- mixing
- osmosis
- percolation
- phase separation (materials)
- polarization (charge separation)
- precipitation (chemistry)
- purging
- purification
- radiochemical separation
- recrystallization
- refining
- removal
- scrapers
- separated flow
- separators
- settling
- shaking
- shearing
- size separation
- slicing
- solvent extraction
- sorption
- spacing
- splitting
- spreading
- stage separation
- stripping (distillation)
- sublimation
- swirling
- thermal diffusion
- thermophoresis
- tumbling motion
- vaporizing
- venting
- washing
- zone melting

separators

- UF *battery separators*
- GS **separators**

- . classifiers
 - . . sizing screens
 - . . thickeners (equipment)
- . dividers
- . drying apparatus
 - . . desiccators
- . dust collectors
- . evaporators
- . fluid filters
 - . . air filters
- . precipitators
 - . . electrostatic precipitators
- . sieves
- . spirals (concentrators)
- . stills
- RT centrifuges
 - cleaners
 - columns (process engineering)
 - concentrating
 - concentrators
 - condensers (liquefiers)
 - curtains
 - ∞ diffusers
 - diverters
 - ∞ filters
 - floats
 - fluidized bed processors
 - furnaces
 - ion exchange membrane electrolytes
 - mixers
 - ∞ separation
 - shakers
 - spacers
 - traps
 - vaporizers
 - washers (cleaners)
 - washers (spacers)
 - windows (apertures)

septum

- RT mediastinum
 - membranes
 - ∞ partitions

sequencing

- RT consecutive events
 - coordination
 - critical path method
 - interruption
 - ∞ operations
 - operations research
 - packet switching
 - Petri nets
 - planning
 - priorities
 - ranking
 - scheduling
 - sequential control
 - switching
 - switching theory
 - turnaround (STS)

sequential analysis

- GS statistical analysis
 - . **sequential analysis**
- RT quality control
 - sampling
 - sorting algorithms
 - temporal logic

sequential computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **sequential computers**

sequential control

- DEF Control by completion of a series of one or more events.
- GS automatic control
 - . **sequential control**
- RT accuracy
 - computer programming
 - consecutive events
 - ∞ control
 - data flow analysis

- numerical control sequencing
- Serbska Republic**
(added June 1996)
GS nations
 . **Serbska Republic**
RT Bosnia and Herzegovina
 Europe
 Yugoslavia
- sergeant missiles**
GS missiles
 . surface to surface missiles
 . . **sergeant missiles**
RT Juno 1 launch vehicle
 Juno 2 launch vehicle
 Jupiter C rocket vehicle
 Little Joe 2 launch vehicle
 solid propellant rocket engines
- sergenium**
GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **sergenium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **sergenium**
 metals
 . actinide series
 . . transuranium elements
 . . . **sergenium**
- series (mathematics)**
GS analysis (mathematics)
 . calculus
 . . **series (mathematics)**
 . . . asymptotic series
 . . . Campbell-Hausdorff series
 . . . cosine series
 . . . Fourier series
 . . . Pade approximation
 . . . power series
 Taylor series
 MacLaurin series
 . . . progressions
 . . . Prony series
 . . . sine series
 . real variables
 . . **series (mathematics)**
 . . . asymptotic series
 . . . Campbell-Hausdorff series
 . . . cosine series
 . . . Fourier series
 . . . Pade approximation
 . . . power series
 Taylor series
 MacLaurin series
 . . . progressions
 . . . Prony series
 . . . sine series
RT Abel function
 Chebyshev approximation
 divergence
 form factors
 Fourier-Bessel transformations
 function space
 functional analysis
 Gibbs phenomenon
 infinity
 series expansion
 sums
- series expansion**
DEF In mathematics, a divergent series of terms the sum of which is asymptotic or ascending.
GS expansion
 . **series expansion**
RT asymptotic series
 divergence
 ∞ mathematics
- series (mathematics)
- serotonin**
GS amines
 . tryptamines
 . . **serotonin**
 drugs
 . vasoconstrictor drugs
 . . **serotonin**
 organic compounds
 . **serotonin**
- serpentine**
GS minerals
 . **serpentine**
RT asbestos
 chromites
 rocks
 soils
- serratia**
GS microorganisms
 . bacteria
 . . **serratia**
- SERT 1 spacecraft**
RT electric propulsion
 electric rocket engines
 engine tests
 space electric rocket tests
 ∞ spacecraft
- SERT 2 spacecraft**
RT electric propulsion
 electric rocket engines
 engine tests
 space electric rocket tests
 ∞ spacecraft
- SERT (rocket tests)*
USE **space electric rocket tests**
- serums**
GS **serums**
 . inoculum
RT antiserums
 ∞ fluids
 proteins
- service life**
UF *machine life*
GS life (durability)
 . **service life**
RT accelerated life tests
 ∞ equipment
 fatigue life
 maintenance
 retirement for cause
 systems health monitoring
- Service Module (ISS)**
(added March 1999)
DEF Primary Russian component of the International Space Station providing an early station living quarters and life support system functions to all early elements. Also provides propulsive attitude control and reboost capability for the early station.
UF *Zvezda Service Module*
GS modules
 . space station modules
 . . **Service Module (ISS)**
RT International Space Station
 life support systems
- service modules**
GS modules
 . **service modules**
 spacecraft components
 . **service modules**
RT Apollo spacecraft
 command modules
 spacecraft docking modules
- spacecraft modules
- services**
GS **services**
 . medical services
 . meteorological services
RT ∞ food
 government procurement
 Internet resources
 inventory management
 logistics
 logistics management
 materials handling
 personnel
 procurement
 procurement management
 products
 site selection
 support systems
 transportation
 utilities
- servoamplifiers**
GS amplifiers
 . **servoamplifiers**
 control equipment
 . **servoamplifiers**
 controllers
 . servomechanisms
 . . **servoamplifiers**
RT feedback amplifiers
 fly by tube control
 servocontrol
- servocontrol**
UF *servostability control*
RT aeroservoelasticity
 aircraft hydraulic systems
 automatic control
 ∞ control
 control moment gyroscopes
 control theory
 digital command systems
 feedback control
 hydraulic equipment
 manipulators
 manual control
 off-on control
 pneumatic equipment
 proportional control
 remote control
 rocket engine control
 servoamplifiers
 servomechanisms
 servomotors
 stepping motors
 turbojet engine control
 visual control
- servomechanisms**
DEF Control systems incorporating feedback in which one or more of the system signals represent mechanical motion.
GS controllers
 . **servomechanisms**
 . . servoamplifiers
 . . servomotors
RT active control
 actuators
 aircraft hydraulic systems
 automatic control
 automatic control valves
 ∞ automation
 ∞ control
 control moment gyroscopes
 electric motors
 feedback control
 hydraulic equipment
 pneumatic equipment
 radar equipment
 remote control
 robots
 self alignment
 servocontrol
 stepping motors
 tactile sensors (robotics)

servomotors

torque sensors (robotics)

servomotors

- UF *Magnesyn (trademark)*
Selsyns (trademark)
servos
- GS controllers
. servomechanisms
. . **servomotors**
motors
. **servomotors**
- RT actuators
amplidyne
automatic control
electric motors
heliostats
∞ rotating electrical machines
∞ sensors
servocontrol
slewing
synchronizers
torque motors

servos

USE **servomotors**

servostability control

USE **servocontrol**

SES

USE **surface effect ships**

SES (Shuttle)

USE **Shuttle Engineering Simulator**

set

- SN (EXCLUDES SET THEORY)
- GS mechanical properties
. **set**
- RT deformation
shear properties

set theory

- UF *subsets (mathematics)*
- GS mathematical logic
. **set theory**
. . Borel sets
. . equivalence
. . threshold logic
- RT Boolean algebra
branching (mathematics)
combinatorial analysis
∞ conjunction
Fibonacci numbers
fractals
fuzzy sets
fuzzy systems
graph theory
homotropy
hyperplanes
lattices (mathematics)
Lebesgue theorem
Orlicz space
permutations
∞ space
subdivisions
subgroups
∞ theories

SETI

USE **Project SETI**

∞ **setting**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT adjusting
coagulation
curing
hardening (materials)
polymerization
positioning

solidification

settling

- RT accumulations
agglomeration
agitation
beneficiation
coagulation
coalescing
concentrating
crystallization
deposition
effluents
flocculating
flotation
particle motion
precipitation (chemistry)
∞ processing
∞ separation
size separation
Stokes law (fluid mechanics)
subsidence
water treatment

setups

- RT machining
tooling

Severe Storms Observing Satellite

USE **StormSat satellite**

sewage

- GS wastes
. **sewage**
- RT activated sludge
effluents
environment effects
human wastes
liquid wastes
metabolic wastes
organic wastes (fuel conversion)
sewers
solid wastes
waste disposal
water treatment

sewage treatment

- GS management
. waste management
. . waste treatment
. . . **sewage treatment**
- RT aerobes
anaerobes
chemical sterilization
filtration
Modular Integrated Utility System
purification
sediments
sludge
∞ treatment
waste disposal

sewers

- DEF Networks of pipelines for the transportation of metabolic and/or industrial wastes for disposal.
- GS pipelines
. **sewers**
- RT drainage
effluents
garbage
human wastes
metabolic wastes
sanitation
sewage
waste disposal
wastes

sewing

- RT binding

∞ joining
needles
weaving

sex

- RT ∞ drives
females
males
sex factor

sex factor

- RT females
males
physiological factors
psychological factors
sex
sex glands

sex glands

- GS anatomy
. genitourinary system
. . reproductive systems
. . . **sex glands**
. . . . gonads
. ovaries
. testes
. prostate gland
. glands (anatomy)
. . **sex glands**
. . . gonads
. . . . ovaries
. testes
. prostate gland
- RT estrogens
reproduction (biology)
sex factor

sextants

- DEF Double reflecting instruments for measuring angles, primarily altitudes of celestial bodies.
- GS measuring instruments
. optical measuring instruments
. . **sextants**
optical equipment
. optical measuring instruments
. . **sextants**
- RT navigation aids
position indicators
stadimeters
theodolites
transits

Seychelles

(added February 1989)

- GS landforms
. islands
. . **Seychelles**
nations
. **Seychelles**
- RT Africa
Indian Ocean

Seyfert galaxies

- GS celestial bodies
. galaxies
. . active galaxies
. . . **Seyfert galaxies**
- RT active galactic nuclei
blazars
galactic nuclei
infrared radiation
line spectra
luminous intensity
Markarian galaxies
spiral galaxies
stellar spectra

ultraviolet radiation

SFAR
USE **sound fixing and ranging**

sferics
USE **atmospherics**

SGEMP
USE **system generated electromagnetic pulses**

SGML
USE **document markup languages**

SGR (astronomy)
(added January 2000)
USE **soft gamma repeaters**

SGR (nuclear reactors)
USE **sodium graphite reactors**

SH waves
(added September 1988)
UF *horizontally polarized shear waves*
GS elastic waves
. S waves
. . **SH waves**
RT nondestructive tests
seismic waves
transverse waves
ultrasonic tests
∞ waves

SH-3 helicopter
UF *HSS-2 helicopter*
Sea King helicopter
Sikorsky HSS-2 helicopter
GS antisubmarine warfare aircraft
. **SH-3 helicopter**
Sikorsky aircraft
. **SH-3 helicopter**
transport aircraft
. **SH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-3 helicopter**
RT S-61 helicopter
SH-4 helicopter

SH-4 helicopter
GS antisubmarine warfare aircraft
. **SH-4 helicopter**
Sikorsky aircraft
. **SH-4 helicopter**
transport aircraft
. **SH-4 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-4 helicopter**
RT S-61 helicopter
SH-3 helicopter

Shackleton bomber
GS attack aircraft
. bomber aircraft
. . **Shackleton bomber**
Hawker Siddeley aircraft
. **Shackleton bomber**
monoplanes
. **Shackleton bomber**

shades
RT louvers
shielding
∞ shutters

shadowgraph photography
DEF Photography in which steep density gradients in the flow about a body are made visible, the body itself being presented in silhou-

ette. Used for shadowgraphs and spark shadowgraph photography.
UF *shadowgraphs*
spark shadowgraph photography
GS imagery
. photography
. . **shadowgraph photography**
. . . Schlieren photography
RT black and white photography
color photography
flow visualization
wind tunnel models

shadowgraphs
USE **shadowgraph photography**

shadows
DEF Darknesses in regions, caused by obstructions between the source of light and the regions.
GS **shadows**
. lunar shadow
. penumbras
RT cloud cover
clouds (meteorology)
darkness
illuminating
light (visible radiation)
night
self shadowing
umbras

shafts (machine elements)
UF *axles*
journals (shafts)
trunnions
GS **shafts (machine elements)**
. rotating shafts
. . turbshafts
RT axes of rotation
bearings
bushings
∞ journals
∞ loading
loads (forces)
mandrels
mechanical drives
packings (seals)
pintles
pivots
rotating cylinders
spindles
supports
torque
transmissions (machine elements)
vehicle wheels
wheels

shakers
RT classifiers
mixers
separators
shaking
sieves
sizing screens
vertical motion simulators
vibration simulators

shaking
GS **shaking**
. dithers
RT agitation
buffeting
dispersing
epilepsy
flapping
flutter
mixing
∞ separation
shakers
structural vibration
suspending (mixing)
swirling

vibration

shale oil
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **shale oil**
oils
. **shale oil**
resources
. Earth resources
. . fossil fuels
. . . **shale oil**
RT fuel oils
fuels
gasoline
hydrocarbon fuels
kerogen
kerosene
lubricating oils
paraffins
retort processing

shales
DEF Fine grained detrital sedimentary rocks, formed by the consolidation (especially by compression) of clay, silt, or mud. They are characterized by finely laminated structures, which impart a fissility approximately parallel to the bedding, along which rocks break readily into thin layers and are commonly most conspicuous on weathered surfaces. They are characterized by an appreciable content of clay minerals and detrital quartz; thinly laminated or fissile claystones, siltstones, or mudstones.
GS rocks
. sedimentary rocks
. . **shales**
RT boreholes
clays
Earth resources
minerals
soils

shallow shell equations
RT end plates
∞ equations
pressure vessels
stress analysis

shallow shells
GS shells (structural forms)
. **shallow shells**
RT critical loading
shell stability
shell theory

shallow water
GS water
. **shallow water**
RT cnoidal waves
fisheries
oceanography
oceans
reefs
seas
shorelines
topography
water depth

shanks
USE **joints (junctions)**

Shannon information theory
USE **information theory**

Shannon-Wiener measure
RT entropy
information theory
random variables

shape control
DEF The control of large flexible platforms in orbit by means of actuators strategically located.

shape functions

RT actuators
Columbus space station
∞ control
control theory
flexible spacecraft
large space structures
space platforms
spacecraft control

shape functions

(added July 1992)
GS functions (mathematics)
. **shape functions**
RT finite element method
polynomials
shape optimization
structural analysis

shape memory alloys

DEF Martensitic alloys (titanium-nickel) which exhibit shape recovery characteristics by stress-induced transformation and reorientation. Reverse transformation during heating restores the original grain structure of the high temperature phase.

GS alloys
. **shape memory alloys**
. . nitinol alloys
ferroelastic materials
. **shape memory alloys**
. . nitinol alloys
RT ferroelasticity
microstructure
nickel alloys
phase transformations
plastic memory
smart materials
stress-strain diagrams
temperature effects
titanium alloys
transition metals

shape optimization

(added February 2001)
DEF Process of, or techniques for, determining values of shape design variables that minimize or maximize a selected object function while satisfying limiting constraints.

GS optimization
. design optimization
. . **shape optimization**
RT aircraft design
airfoil profiles
∞ design
design analysis
fineness ratio
sensitivity analysis
shape functions
structural analysis
structural design
structural design criteria

shaped charges

DEF An explosive device configured so that its energy can be controlled in one direction.

GS explosive devices
. **shaped charges**
RT ammunition
bombs (ordnance)
explosive forming
explosives
projectiles
torpedoes
warheads
weapons

shapers

GS tools
. machine tools
. . **shapers**
RT grinding machines
milling machines

shapes

UF *curved surfaces*

form
GS **shapes**
. convexity
. ellipticity
. flatness
. line shape
. ogee shape
. rosette shapes
. T shape

RT asymmetry
concavity
contour sensors
contours
corners
∞ cross sections
crystal morphology
curvature
curved panels
geoids
geometry
morphology
oblate spheroids
planforms
∞ profiles
profilometers
prolateness
∞ surface geometry
symmetry
topology

sharks

GS animals
. vertebrates
. . fishes
. . . **sharks**

sharp leading edges

GS edges
. leading edges
. . **sharp leading edges**
RT airfoils
forebodies
trailing edges

∞ sharpness

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT clarity
contrast
precision
slender bodies

shatter cones

DEF Distinctively striated conical rock fragments along which fracturing has occurred, ranging in length from less than a centimeter to several meters, and generally found in nested or composite groups in rocks of cryptoexplosion structures and believed to be formed by shock waves generated by meteorite impact.

GS cones
. **shatter cones**
rocks
. **shatter cones**
RT carbonaceous rocks
cometary collisions
crustal fractures
formations
geology
geomorphology
meteorite collisions
meteorite craters
sedimentary rocks
shock loads
striation
structural properties (geology)

shattering

USE **fragmentation**

Shawnee helicopter

USE **CH-21 helicopter**

∞ shear

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT dilatational waves
shearing
shears

shear creep

GS mechanical properties
. creep properties
. . **shear creep**
RT plastic deformation
tensile creep

shear disturbances

USE **S waves**

shear fatigue

USE **shear stress**

shear flow

GS fluid flow
. **shear flow**
RT coaxial flow
core flow
creep properties
∞ flow
grazing flow
Kolmogorov theory
Krook equation
mixing length flow theory
plastic flow
Richardson number
stratified flow

shear layers

UF *Chapman shear layer*
RT boundary layers
Earth ionosphere
∞ layers
mixing layers (fluids)
riblets
screech tones
shock layers
shock wave control
∞ transition layers

shear properties

GS mechanical properties
. **shear properties**
. . shear strength
RT creep properties
ductility
fatigue (materials)
Hookes law
hysteresis
impact strength
modulus of elasticity
∞ properties
resilience
set
stress relaxation
stresses
stress-strain diagrams
temperature inversions
toughness

shear strain

DEF The tangent of the angular change, due to force, between two lines originally perpendicular to each other through a point in a body.

RT mechanical properties
Mindlin plates
structural strain
torsional vibration

shear strength

DEF The maximum shear stress which a material is capable of sustaining. Shear strength is calculated from the maximum load during a shear or torsion test and is based on the original dimensions of the cross section of the specimen.

GS mechanical properties
. shear properties
. . **shear strength**
RT compressive strength
fiber strength

- high strength
interfacial energy
∞ strength
tensile strength
- shear stress**
DEF The stress component tangential to the plane on which the forces act. Used for shear fatigue and shearing stress.
UF *shear fatigue*
shearing stress
GS stresses
. **shear stress**
. . torsional stress
RT interlaminar stress
mechanical properties
shearography
transverse loads
- shear waves*
USE **S waves**
- shearing**
GS cutting
. **shearing**
RT blanking (cutting)
cold working
failure
failure modes
hot working
loads (forces)
metal cutting
metal working
∞ separation
∞ shear
shears
stamping
structural strain
- shearing stress*
USE **shear stress**
- shearography**
(added February 1996)
DEF An interferometric method that provides whole field observation of derivatives of small surface displacement and hence, strain.
GS interferometry
. **shearography**
RT displacement measurement
nondestructive tests
shear stress
strain measurement
stress measurement
- shears**
GS cutters
. **shears**
tools
. **shears**
RT machine tools
saws
∞ shear
shearing
- sheaths**
GS **sheaths**
. ion sheaths
. plasma sheaths
RT ∞ casing
encapsulating
fairings
jackets
linings
protectors
roofs
walls
- shedding**
RT ejection
molting
peeling
- vortex shedding
- sheds**
RT shelters
- sheep**
GS animals
. vertebrates
. . mammals
. . . **sheep**
RT livestock
wool
- sheet metal*
USE **metal sheets**
- sheet molding compounds**
(added July 1993)
DEF Resin matrix of polymer matrix fiber composites formed into sheets and used as molding materials for structures.
GS molding materials
. **sheet molding compounds**
RT composite materials
composite structures
fiber composites
graphite-epoxy composites
molds
plastics
polymer matrix composites
resin matrix composites
∞ sheets
- ∞ **sheets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coatings
current sheets
elastic sheets
fabrics
flat plates
laminates
membrane structures
membranes
metal foils
metal sheets
multilayer insulation
neutral sheets
panels
papers
polymeric films
sheet molding compounds
thick plates
thin plates
vortex sheets
vortex streets
webs (sheets)
- shell anodes**
GS electrodes
. anodes
. . **shell anodes**
RT heat measurement
- shell galaxies**
(added March 1991)
GS celestial bodies
. galaxies
. . **shell galaxies**
RT elliptical galaxies
galactic structure
interacting galaxies
- shell stability**
GS mechanical properties
. dimensional stability
. . structural stability
. . . **shell stability**
stability
. static stability
. . dimensional stability
. . . structural stability
. . . . **shell stability**
RT buckling
fluid filled shells
liquid filled shells
- orthotropic shells
plastic shells
reinforced shells
shallow shells
- shell stars**
(added November 1988)
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . B stars
. **shell stars**
. . peculiar stars
. . . **shell stars**
RT stellar envelopes
- shell theory**
RT perforated shells
self consistent fields
shallow shells
∞ theories
- shellfish**
DEF Aquatic invertebrate animals having shells.
RT coastal water
marine biology
marine environments
marine resources
mollusks
- shells (structural forms)**
GS **shells (structural forms)**
. anisotropic shells
. circular shells
. conical shells
. corrugated shells
. cylindrical shells
. domes (structural forms)
. . radomes
. elastic shells
. fluid filled shells
. . liquid filled shells
. hemispherical shells
. metal shells
. orthotropic shells
. perforated shells
. plastic shells
. reinforced shells
. shallow shells
. spherical shells
. . spherical caps
. thin walled shells
. toroidal shells
RT aircraft structures
arches
bays (structural units)
∞ capsules
clamped structures
coverings
cowlings
enclosures
fairings
housings
hulls (structures)
isotensoid structures
membrane structures
membranes
monocoque structures
nacelles
pressure vessel design
protuberances
rocket engine cases
skin (structural member)
walls
- shelters**
GS **shelters**
. lunar shelters
RT buildings
civil defense
environmental engineering
habitability
sheds
Starsite program

shelves

- survival
- ∞ **shelves**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bedrock
cases (containers)
cliffs
continental shelves
racks (frames)
reefs
- Shenandoah Valley (VA)**
- GS valleys
. **Shenandoah Valley (VA)**
- RT river basins
Virginia
- Shenzhou 5 spacecraft**
(added October 2003)
- DEF Chinese manned spacecraft consisting of a forward orbital module, a re-entry capsule, and an aft service module.
- GS Chinese spacecraft
. **Shenzhou 5 spacecraft**
manned spacecraft
. **Shenzhou 5 spacecraft**
- RT Chinese space program
Long March launch vehicles
- shergottites**
(added September 1991)
- DEF Achondritic stony meteorites composed mainly of pigeonite and maskolynite.
- GS celestial bodies
. meteorites
. . . stony meteorites
. . . . achondrites
. . . . **shergottites**
- RT chassignites
nakhlites
SNC meteorites
- Shergotty Nakhla Chassigny meteorites*
(added March 1998)
- USE **SNC meteorites**
- shielding**
- DEF The arrangement of shields used for any particular circumstance; the use of shields.
- GS **shielding**
. electromagnetic shielding
. . . radio frequency shielding
. electrostatic shielding
. heat shielding
. . . reentry shielding
. . . reusable heat shielding
. magnetic shielding
. radiation shielding
. . . solar radiation shielding
. spacecraft shielding
ablative nose cones
absorbers (materials)
armor
attenuation
attenuators
baffles
∞ barriers
blast deflectors
blinds
deflectors
diverters
enclosures
flame deflectors
guards (shields)
 housings
linings
louvers
manipulators
panels
protection
protectors
safety devices
∞ screens
shades
suppressors
- windows (apertures)
windshields
- shields (geology)**
USE **bedrock**
- ∞ **shift**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT exchanging
frequency shift
phase shift
shift registers
transferring
- shift registers**
- GS computer components
. **shift registers**
- RT computer storage devices
delay lines (computer storage)
digital techniques
registers (computers)
∞ shift
- shifting equilibrium flow**
- GS fluid flow
. gas flow
. . . equilibrium flow
. . . . **shifting equilibrium flow**
- RT frozen equilibrium flow
- Shillelagh missiles**
- GS missiles
. surface to surface missiles
. . . antitank missiles
. . . . **Shillelagh missiles**
- ship hulls**
- GS hulls (structures)
. **ship hulls**
- RT hydrodynamic coefficients
hydrodynamics
ships
structural design
submarines
- ship terminals**
- GS terminal facilities
. **ship terminals**
- RT artificial harbors
deepwater terminals
harbors
Marots (ESA)
offshore docking
tanker terminals
∞ terminals
wharves
- ship to shore communication**
- DEF Communication between a ship at sea and a shore station.
- GS telecommunication
. communication
. . . **ship to shore communication**
- RT data transmission
radio communication
ships
telemetry
- ships**
- GS water vehicles
. **ships**
. . . Advanced Range Instrumentation Ship
. . . aircraft carriers
. . . cargo ships
. . . . Savannah nuclear ship
. . . . tanker ships
. . . nuclear powered ships
. . . . Savannah nuclear ship
. . . satellite communications ships
. . . submarines
. . . . ballistic missile submarines
. . . . guided missile submarines
. . . . trident submarine
- . . . surface effect ships
. . . SWATH (ship)
- RT amphibious vehicles
antiship missiles
antiship warfare
boats
harbors
hydrofoil craft
hydrofoils
keels
marine transportation
∞ military vehicles
navy
ocean data acquisitions systems
propellers
research vehicles
ship hulls
ship to shore communication
shipyards
surface navigation
surface vehicles
∞ transport vehicles
transportation energy
underwater vehicles
∞ vessels
- shipyards**
- RT cargo ships
construction
enclosures
industrial areas
industries
logistics
maintenance
oceanography
∞ ports
ships
tanker ships
water vehicles
- Shiva laser system**
- DEF High energy multi-arm solid state (Nd doped ED-2 glass) infrared laser system used for laser driven fusion experiments.
- GS stimulated emission devices
. lasers
. . . high power lasers
. . . . **Shiva laser system**
- RT coherent light
laser fusion
laser outputs
Nova Laser System
∞ systems
- shivering**
- GS **shivering**
. dithers
- RT body temperature
- shoals**
- GS water
. **shoals**
- RT beaches
lakes
oceanography
oceans
reefs
rivers
seas
water depth
- ∞ **shock**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT convulsions
mechanical shock
shock (physiology)
shock resistance
thermal shock
- shock (physiology)**
- DEF Clinical manifestations of circulatory insufficiency, including hypotension, weak pulse, tachycardia, pallor, and diminished urinary output.
- RT human reactions

human tolerances
physiological effects
physiology
∞ shock

shock absorbers

DEF Devices for the dissipation of energy used to modify the response of a mechanical system to applied shock.

RT ∞ absorbers
absorbers (equipment)
cushions
damping
energy absorption
hydraulic equipment
impact
impact acceleration
isolators
landing gear
mechanical shock
pneumatic equipment
silencers
springs (elastic)
suspension systems (vehicles)
vibration damping
vibration isolators

shock diffusers

USE **diffusers**
shock wave attenuation

shock discontinuity

GS discontinuity
. **shock discontinuity**
RT density distribution
wave fronts

shock fronts

DEF Shock waves regarded as the forward surfaces of fluid regions having characteristics different from those of the region ahead of the wave. The front sides of shock waves.

GS wave fronts
. **shock fronts**
RT ∞ fronts
magnetosheath
wave propagation
wave scattering

shock heating

GS heating
. kinetic heating
. . aerodynamic heating
. . . **shock heating**
. transient heating
. . **shock heating**
RT magnetohydrodynamic shear heating
plasma heating

shock layers

RT ∞ layers
normal shock waves
oblique shock waves
shear layers
stress waves
∞ transition layers

shock loads

GS loads (forces)
. dynamic loads
. . transient loads
. . . **shock loads**
. . . . blast loads
RT aerodynamic loads
axial compression loads
compression loads
contact loads
crustal fractures
impact loads
landing loads
shatter cones
structural design criteria

shock measuring instruments

GS measuring instruments
. **shock measuring instruments**

RT accelerometers
pressure gages
seismographs
strain gages

shock resistance

GS **shock resistance**
. impact resistance
earthquake resistance
high acceleration
impact
mechanical properties
mechanical shock
propellant sensitivity
∞ resistance
sensitivity
∞ shock
thermal shock
vibration

shock simulators

GS simulators
. **shock simulators**
RT vertical motion simulators
vibration simulators

shock spectra

DEF Plots of the maximum acceleration experienced by single degree of freedom systems as a function of their own natural frequency in response to applied shocks.

GS spectra
. **shock spectra**
RT dynamic structural analysis
energy spectra
mechanical shock
noise spectra
stroking tests
structural design
structural vibration

shock tests

RT drop tests
impact tests
load tests
railroad humping tests
∞ tests
vibration tests

shock tubes

DEF Relatively long tubes or pipes in which very brief high speed gas flows are produced by the sudden release of gas at very high pressure into low pressure portions of the tubes; the high speed flows move into the region of low pressure behind shock waves.

GS shock wave generators
. **shock tubes**
. . magnetic annular shock tubes
. . shock tunnels
RT gas temperature
hotshot wind tunnels
hypersonic flow
hypersonic wind tunnels
hypervelocity wind tunnels
low density research
low density wind tunnels
magnetic pistons
test facilities
tube lasers
∞ tubes

shock tunnels

DEF Shock tubes used as wind tunnels.
GS shock wave generators
. shock tubes
. . **shock tunnels**
test facilities
. wind tunnels
. . hypersonic wind tunnels
. . . **shock tunnels**
. . hypervelocity wind tunnels
. . . **shock tunnels**
RT cascade wind tunnels
hotshot wind tunnels
hypersonic flow

low density research
low density wind tunnels
supersonic wind tunnels

shock wave attenuation

UF *shock diffusers*
GS attenuation
. wave attenuation
. . acoustic attenuation
. . . **shock wave attenuation**
RT atmospheric attenuation
noise reduction
wave propagation

shock wave control

RT ∞ control
secondary injection
shear layers

shock wave generators

GS **shock wave generators**
. shock tubes
. . magnetic annular shock tubes
. . shock tunnels
RT ∞ generators
magnetic pistons
pressure sensors
pulse generators
wave generation

shock wave interaction

GS wave interaction
. **shock wave interaction**
RT Godunov method
interactional aerodynamics
∞ interactions
propagation modes
scattering
wave degradation

shock wave luminescence

GS emission
. light emission
. . luminescence
. . . **shock wave luminescence**
RT low density research
wave interaction

shock wave profiles

RT Krook equation
pressure distribution
∞ profiles
velocity distribution
wave interaction

shock wave propagation

GS transmission
. wave propagation
. . **shock wave propagation**
RT atmospheric attenuation
Burger equation
Crocco method
high temperature gases
nonequilibrium radiation
Rankine-Hugoniot relation
secondary injection
sound propagation
two fluid models
wave attenuation
wave interaction

shock waves

DEF Surfaces or sheets of discontinuity (i. e. , abrupt changes in conditions) set up in supersonic fields of flow, through which the fluids undergo a finite decrease in velocity accompanied by a marked increase in pressure, density, temperature, and entropy, as occurs, e. g. , in supersonic flows about bodies. Used for bow shock waves.

UF *bow shock waves*
GS elastic waves
. **shock waves**
. . detonation waves
. . Mach cones
. . normal shock waves

Shoemaker-Levy 9 comet

. . oblique shock waves
 . . Riemann waves
 . . sonic booms
 RT adiabatic equations
 aerodynamic noise
 blast loads
 ∞ blasts
 bow waves
 Burnett equations
 caustic lines
 crustal fractures
 detonation
 earthquake damage
 earthquake resistance
 earthquake resistant structures
 earthquakes
 electrostatic waves
 exploding wires
 explosions
 gas temperature
 geodynamics
 Hugoniot equation of state
 hypersonic flow
 hypersonic shock
 hypersonic wakes
 impact
 implosions
 longitudinal waves
 Mach number
 Mach reflection
 magnetohydrodynamic waves
 mechanical shock
 molecular relaxation
 noise (sound)
 novae
 plane waves
 planetary quakes
 plasma waves
 plumes
 pressure pulses
 seismic waves
 sound pressure
 sound waves
 stress waves
 supersonic flow
 ∞ transition layers
 transonic flow
 tsunami waves
 underwater acoustics
 underwater communication
 ∞ waves
 wedge flow
 Whitham rule

Shoemaker-Levy 9 comet

(added June 1994)

GS celestial bodies
 . comets
 . . Shoemaker-Levy 9 comet
 RT cometary collisions
 Jupiter (planet)

shoes

GS clothing
 . shoes
 RT boots (footwear)
 leather
 protective clothing
 socks

Shooting Star aircraft

USE T-33 aircraft

shops

RT maintenance

Shoran

DEF A precision electronic position fixing system using a pulse transmitter and receiver and two transponder beacons at fixed points. Used for short range navigation.

UF *short range navigation*
 GS navigation
 . radio navigation
 . . hyperbolic navigation
 . . . Shoran

RT air navigation
 Decca navigation
 distance measuring equipment
 navigation aids
 solar compasses

shorelines

RT beaches
 coastal water
 coasts
 lakes
 oceanography
 oceans
 rivers
 shallow water
 tidal flats
 wetlands

Short Belfast C MK-1 aircraft

USE SC-5 aircraft

short circuit currents

DEF The steady value of the input alternating currents that flow when the output direct current terminals are short-circuited and rated line alternating voltage is applied to the line terminals.

GS electric current
 . short circuit currents
 RT open circuit voltage
 photovoltaic cells
 short circuits
 solar cells
 volt-ampere characteristics

short circuits

DEF An abnormal connection of relatively low resistance between two points on a circuit. The result is a flow of excess (often damaging) current between these points.

GS electrical faults
 . short circuits
 RT circuits
 electric arcs
 failure
 jumpers
 short circuit currents
 sneak circuit analysis
 system failures

short cracks

GS fractures (materials)
 . cracks
 . . short cracks
 RT crack geometry
 crack initiation
 crack propagation
 fatigue life
 fracture mechanics
 metal fatigue

short haul aircraft

GS transport aircraft
 . short haul aircraft
 . . C-8A augmentor wing aircraft
 . . Cessna 402B aircraft
 . . Mercure aircraft
 RT air transportation
 ∞ aircraft
 aircraft design
 airline operations
 passenger aircraft
 V/STOL aircraft

short range ballistic missiles

GS missiles
 . ballistic missiles
 . . short range ballistic missiles
 . surface to surface missiles
 . . short range ballistic missiles
 RT field army ballistic missiles

intermediate range ballistic missiles

short range navigation
 USE Shoran

Short SC-1 aircraft

USE SC-1 aircraft

Short SC-5 aircraft

USE SC-5 aircraft

Short SC-7 aircraft

USE SC-7 aircraft

short takeoff & vertical landing aircraft

USE STOVL aircraft

short takeoff aircraft

UF STOL aircraft
 GS V/STOL aircraft
 . short takeoff aircraft
 . . Aladin 2 aircraft
 . . Breguet 940 aircraft
 . . Breguet 941 aircraft
 . . C-8A augmentor wing aircraft
 . . C-15 aircraft
 . . C-123 aircraft
 . . DHC 4 aircraft
 . . DHC 5 aircraft
 . . Questol aircraft
 . . U-10 aircraft

RT ∞ aircraft
 circulation control airfoils
 compound helicopters
 externally blown flaps
 fan in wing aircraft
 helicopters
 JATO engines
 jet aircraft
 jet flaps
 lift fans
 lifting rotors
 ∞ military aircraft
 powered lift aircraft
 rotary wing aircraft
 Siebel aircraft
 STOVL aircraft
 ∞ subsonic aircraft
 takeoff runs
 tilt wing aircraft
 vertical takeoff aircraft
 ∞ winged vehicles

short wave radiation

SN (RADIO WAVES)
 GS electromagnetic radiation
 . radio waves
 . . short wave radiation
 . . . microwaves
 . . . centimeter waves
 . . . cosmic microwave background radiation
 . . . decimeter waves
 . . . microwave emission
 . . . millimeter waves
 . . submillimeter waves
 RT far infrared radiation
 high frequencies
 long wave radiation
 monochromatic radiation
 ∞ radiation

short wave radio transmission

GS transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . short wave radio transmission
 . signal transmission
 . . radio transmission
 . . . short wave radio transmission
 RT high frequencies

- wave propagation
- shortening**
USE **reduction**
- ∞ **shot**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ammunition
launching
orbital shots
pellets
shot noise
shot peening
- shot noise**
DEF Quantum noise caused by electric current fluctuations attributable to the discrete nature of charge carriers.
GS electromagnetic interference
. radio frequency interference
. . . electromagnetic noise
. . . **shot noise**
RT Barritt diodes
∞ shot
thermal noise
- shot peening**
GS hardening (materials)
. **shot peening**
metal finishing
. peening
. . . **shot peening**
RT cold working
descaling
fatigue (materials)
metal working
∞ shot
strain hardening
surface finishing
work hardening
- shoulders**
RT joints (anatomy)
scapula
- ∞ **showers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cosmic ray showers
flood predictions
meteoroid showers
rain
rain forests
rainstorms
- shrapnel**
RT fragmentation
fragments
projectiles
weapons
- shredding**
GS comminution
. **shredding**
RT composting
cutting
tearing
- Shrike missile**
GS missiles
. air to surface missiles
. . . **Shrike missile**
RT solid propellant rocket engines
- shrinkage**
RT casting
contraction
growth
∞ reduction
sintering
temperature inversions
- warpage
- shrouded bodies**
USE **shrouds**
- shrouded nozzles**
RT annular nozzles
nozzle geometry
nozzle walls
∞ nozzles
- shrouded propellers**
UF *ducted propellers*
GS propellers
. **shrouded propellers**
RT ducted fans
ring wings
thrust augmentation
XV-11A aircraft
- shrouded turbines**
GS turbomachinery
. turbines
. . . **shrouded turbines**
- shrouds**
UF *shrouded bodies*
RT coverings
ducted bodies
rigging
- shunts**
USE **bypasses**
circuits
- shutdowns**
DEF The processes of decreasing engine thrusts to zero.
RT deactivation
engines
∞ SCRAM
- ∞ **shutters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blinds
camera shutters
louvers
shades
- Shuttle Avionics Integration Laboratory*
USE **SAIL project**
- Shuttle Boosters*
USE **Space Shuttle Boosters**
- Shuttle Derived Vehicles**
DEF New configuration resulting from the production and operation of the Space Shuttle. Used for SDV.
UF *SDV*
RT Advanced Launch System (STS)
manned spacecraft
Space Shuttle orbiters
space shuttles
∞ spacecraft
spacecraft design
- Shuttle Engineering Simulator**
DEF Training equipment for crew members in mission operation procedures including various approach maneuvers, braking, final approach, etc.
UF *SES (Shuttle)*
GS simulators
. **Shuttle Engineering Simulator**
RT space shuttles
- shuttle glow*
USE **spacecraft glow**
- Shuttle Imaging Radar**
UF *Earth resources shuttle imaging radar*
SIR-A
SIR-B
SIR-C
SIR-D
GS radar
. Doppler radar
. . . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. imaging radar
. . . **Shuttle Imaging Radar**
. pulse radar
. . . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. space based radar
. . . **Shuttle Imaging Radar**
. synthetic aperture radar
. . . **Shuttle Imaging Radar**
RT Earth observations (from space)
radar geology
radar imagery
remote sensing
Space Shuttle payloads
synthetic arrays
- Shuttle Mission Simulator**
UF *SMS (Shuttle)*
GS simulators
. **Shuttle Mission Simulator**
- Shuttle Orbiters*
USE **Space Shuttle orbiters**
- Shuttle pallet satellites**
DEF Reusable pallet type structures designed to be shuttle launched which will act as building blocks for larger platforms. Used for SPAS (ESA platforms).
UF *SPAS (ESA platforms)*
GS artificial satellites
. **Shuttle pallet satellites**
RT space shuttles
- Shuttle Superlightweight Tank (added June 1998)*
USE **external tanks**
propellant tanks
- SI**
USE **International System of Units**
- sialon**
DEF Any composition containing silicon, aluminum, oxygen, and nitrogen and usually produced by the high-temperature reactions among the ingredients.
GS mixtures
. **sialon**
RT aluminum
ceramics
high temperature
nitrogen
oxygen
reaction bonding
refractory materials
silicon nitrides
sintering
- SIAM missiles**
UF *self initiated antiaircraft missiles*
GS missiles
. antiaircraft missiles
. . . **SIAM missiles**
RT air to air missiles
antimissile missiles
- Siberia**
RT Arctic regions
Asia
U. S. S. R.
- SIC (coefficient)*
USE **structural influence coefficients**
- Sicily**
GS landforms
. islands
. . . **Sicily**
RT Italy

sicknesses

Mediterranean Sea

sicknesses

- GS **sicknesses**
 - . altitude sickness
 - . decompression sickness
 - . motion sickness

SID (ionospheric disturbances)

USE **sudden ionospheric disturbances**

side inlets

- GS intake systems
 - . **side inlets**
- RT air intakes
 - bypass ratio
 - hypersonic inlets
 - inlet airframe configurations
 - nose inlets
 - scoops
 - supersonic inlets
- ∞ water intakes

sidebands

- RT ∞ bands
 - double sideband transmission
 - selective fading
 - single sideband transmission

sidelobe reduction

- GS attenuation
 - . **sidelobe reduction**
- RT apodization
 - horn antennas
 - radar antennas
 - radar attenuation
 - radar reception
 - radar reflectors
 - radar resolution
- ∞ reduction
- sidelobes

sidelobes

- GS distribution (property)
 - . radiation distribution
 - . . antenna radiation patterns
 - . . . **sidelobes**
- RT antenna design
 - ∞ lobes
 - near fields
 - sidelobe reduction

side-looking radar

- GS radar
 - . synthetic aperture radar
 - . . **side-looking radar**
- RT airborne radar
 - change detection
 - imaging radar
 - radar imagery
 - radar scanning
 - search radar

sidereal time

DEF Time based upon the rotation of the Earth relative to the vernal equinox.

- GS time
 - . **sidereal time**
- RT astronomy
 - Earth rotation
 - stellar motions
 - time measurement
 - units of measurement

siderite meteorites

USE **iron meteorites**

siderites

- DEF A spathic iron ore; an iron carbonate.
- GS carbon compounds
 - . carbonates
 - . . **siderites**
 - iron compounds
 - . **siderites**
 - minerals

. **siderites**

siderophile elements

(added January 2002)

DEF Elements having a chemical affinity for iron, and normally found in the metal-rich interiors of compositionally segregated planets and asteroids.

- GS chemical elements
 - . **siderophile elements**
- RT chondrites
 - Earth mantle
 - geochemistry
 - iron
 - lunar composition
 - meteoritic composition
 - mineralogy
 - minerals
 - petrography
 - planetary composition
 - trace elements

sides

- RT edges
 - geometry
 - rims
 - walls

sideslip

- GS maneuvers
 - . **sideslip**
- RT roll
 - skidding
- ∞ slip
 - spacecraft motion
 - yaw

sidewash

USE **backwash**

Sidewinder missiles

- GS missiles
 - . air to air missiles
 - . . **Sidewinder missiles**
 - . . . anti-aircraft missiles
 - . . . **Sidewinder missiles**

Siebel aircraft

- RT ∞ aircraft
 - short takeoff aircraft

Siemens 2002 computer

- GS data processing equipment
 - . computers
 - . . **Siemens 2002 computer**

Sierra Leone

- GS nations
 - . **Sierra Leone**
- RT Africa

Sierra Nevada Mountains (CA)

- GS landforms
 - . mountains
 - . . **Sierra Nevada Mountains (CA)**
- RT California

sieves

- GS separators
 - . **sieves**
- RT fluid filters
 - shakers
 - sizing screens
 - wire cloth

sight

USE **visual perception**

SIGMA 5 computer

- GS data processing equipment
 - . computers
 - . . analog computers
 - . . . **SIGMA 5 computer**
 - . . . digital computers

. . . **SIGMA 5 computer**

SIGMA 7

- GS manned spacecraft
 - . Mercury spacecraft
 - . . **SIGMA 7**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Mercury spacecraft
 - . . . **SIGMA 7**
 - soft landing spacecraft
 - . Mercury spacecraft
 - . . **SIGMA 7**
 - space capsules
 - . Mercury spacecraft
 - . . **SIGMA 7**
- RT Mercury MA-8 flight

SIGMA 9 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . SIGMA computers
 - **SIGMA 9 computer**

SIGMA computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SIGMA computers**
 - SIGMA 9 computer

Sigma Orionis

- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - **Sigma Orionis**
 - early stars
 - hot stars
 - B stars
 - **Sigma Orionis**
 - peculiar stars
 - **Sigma Orionis**
- RT Orion constellation
 - stellar systems

sigma-mesons

- GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - vector mesons
 - **sigma-mesons**
 - fermions
 - baryons
 - **sigma-mesons**
 - hadrons
 - baryons
 - **sigma-mesons**
 - mesons
 - vector mesons
 - **sigma-mesons**
 - nuclear particles
 - bosons
 - mesons
 - vector mesons
 - **sigma-mesons**
- RT charged particles
 - eta-mesons

signal analysis

- GS data processing
 - . **signal analysis**
 - . . cepstral analysis
- RT ∞ analyzing
 - digital radar systems
 - frequency analyzers
 - Gabor transformation
 - phase deviation
 - signal measurement
 - spectrum analysis
 - wavelet analysis

signal analyzers

- GS measuring instruments

. analyzers
 . . **signal analyzers**
 RT analog computers
 autodynes

signal detection

GS detection
 . **signal detection**
 . . correlation detection
 RT autodynes
 ∞ detectors
 discrimination
 dynamic range
 phase detectors
 preamplifiers
 radar detection
 signal measurement
 sound transducers
 telecommunication

signal detectors

UF *signal discriminators*
 RT anticoincidence detectors
 autodynes
 ∞ detectors
 discrimination
 microwave sensors
 preamplifiers
 signal measurement
 sound transducers
 telecommunication

signal discriminators

USE **signal detectors**

signal distortion

GS distortion
 . **signal distortion**
 RT intersymbolic interference
 radio signals
 scrambling (communication)

signal encoding

GS coding
 . **signal encoding**
 . . amplitude modulation
 . . . quadrature amplitude modulation
 . . frequency modulation
 . . . feedback frequency modulation
 . . . FM/PM (modulation)
 . . . frequency shift keying
 . . . pulse frequency modulation
 . . phase modulation
 . . . FM/PM (modulation)
 . . . phase shift keying
 binary phase shift keying
 quadrature phase shift keying
 . . pulse modulation
 . . . pulse amplitude modulation
 . . . pulse code modulation
 . . . delta modulation
 differential pulse code modulation
 . . . pulse frequency modulation
 . . . pulse time modulation
 pulse duration modulation
 pulse position modulation
 . . trellis coding
 RT concatenated codes
 digital to analog converters
 pulse frequency modulation telemetry
 redundancy encoding
 Reed-Solomon codes
 scrambling (communication)
 telecommunication
 transmitters
 video compression
 Viterbi decoders
 voice data processing
 wavelet analysis

signal fadeout

USE **signal fading**

signal fading

UF *signal fadeout*

GS fading
 . **signal fading**
 . . Rayleigh fading
 . . selective fading
 RT acoustic instability
 atmospheric scattering
 attenuation
 diffraction patterns
 electromagnetic absorption
 ground effect (communications)
 radio frequency interference
 radio scattering
 reception diversity
 signal measurement
 smear
 sound intensity

signal fading rate

GS rates (per time)
 . **signal fading rate**
 RT fading
 selective fading
 sound intensity

signal flow graphs

RT duality principle
 ∞ flow graphs
 network analysis
 Richards theorem
 sneak circuit analysis

signal generators

DEF Shielded sources of voltage or power, the output level and frequency of which are calibrated, and usually variable over a range.

GS **signal generators**
 . frequency synthesizers
 . function generators
 RT circuits
 ∞ generators
 Hall generators
 oscillators
 sirens
 solid state devices
 sound generators
 subharmonic generators
 voltage generators

signal measurement

UF *electronic signal measurement*
 RT electromagnetic measurement
 ionospheric propagation
 ∞ measurement
 signal analysis
 signal detection
 signal detectors
 signal fading
 signal processing
 signal to noise ratios

signal mixing

GS mixing
 . **signal mixing**
 RT auditory signals
 error signals
 four-wave mixing
 magnetic signals
 radio signals

signal processing

GS data processing
 . **signal processing**
 . . space-time adaptive processing
 RT audio signals
 companding
 direction finding
 discrete cosine transform
 equalizers (circuits)
 frequency domain analysis
 interference immunity
 maximum entropy method
 message processing
 multisensor fusion
 onboard data processing
 ∞ processing
 signal measurement

smoke detectors
 surface acoustic wave devices
 telemetry
 time domain analysis
 VHSIC (circuits)
 video signals
 Viterbi decoders
 wavelet analysis

signal reception

GS **signal reception**
 . homodyne reception
 . radar reception
 . radio reception
 . television reception
 RT antenna gain
 preamplifiers
 ∞ receiving
 sentences
 transmission rate (communications)
 vocoders

signal reflection

GS echoes
 . **signal reflection**
 reflection
 . **signal reflection**
 RT cepstral analysis
 spread reflection
 transmission
 wave reflection

signal stabilization

GS stabilization
 . **signal stabilization**
 RT frequency control
 transmission circuits

signal to noise ratios

DEF Ratios which measure the comprehensibility of a data source or transmission link, usually expressed as the root mean square signal amplitude divided by the root mean square noise amplitude.

GS ratios
 . **signal to noise ratios**
 RT amplitude distribution analysis
 attenuation
 background noise
 bit error rate
 carrier to noise ratios
 channel noise
 communication theory
 companding
 correlation detection
 dark current
 dynamic range
 electromagnetic interference
 electromagnetic noise
 false alarms
 image contrast
 image enhancement
 interference immunity
 low noise
 matched filters
 maximum entropy method
 ∞ noise
 noise propagation
 noise spectra
 noise threshold
 random noise
 random signals
 signal measurement
 ∞ signals
 white noise

signal transmission

GS transmission
 . **signal transmission**
 . . data transmission
 . . . automatic picture transmission
 . . . multiple access
 Aloha system
 carrier sense multiple access
 code division multiple access

signals

- demand assignment multiple access
- frequency division multiple access
- time division multiple access
- packet transmission
- Aloha system
- single channel per carrier transmission
- microwave attenuation
- radar transmission
- radio transmission
- double sideband transmission
- ionospheric propagation
- ionospheric F-scatter propagation
- microwave transmission
- multipath transmission
- short wave radio transmission
- single sideband transmission
- spread spectrum transmission
- transequatorial propagation
- transhorizon radio propagation
- satellite transmission
- telemetry
- biotelemetry
- P. A. C. M. telemetry
- PCM telemetry
- radio telemetry
- pulse frequency modulation telemetry
- television transmission

RT

- audio signals
- code division multiplexing
- message processing
- messages
- multiplexing
- orthogonal multiplexing theory
- packet switching
- pulse communication
- radar attenuation
- radio attenuation
- radio scattering
- sentences
- sound transmission
- syllables
- talking
- telecommunication
- transmission efficiency
- transmission rate (communications)
- video signals
- wireless communication

signal-processing-in-the-element detectors
(added January 2000)

USE **infrared detectors**

∞ **signals**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT

- audio signals
- auditory signals
- beacons
- bells
- chirp signals
- electric pulses
- error signals
- horns
- magnetic signals
- messages
- pseudorandom sequences
- pyrotechnics
- radio signals
- random signals
- signal to noise ratios
- sirens
- sound generators
- symbols
- telecommunication
- time signals
- video signals
- visual signals
- visual stimuli

signature analysis

RT ∞ analyzing

- cepstral analysis
- detection
- imagery
- infrared signatures
- microwave signatures
- missile signatures
- radar signatures
- signatures
- target recognition

signatures

GS **signatures**

- . infrared signatures
- . magnetic signatures
- . missile signatures
- . radar signatures
- . spectral signatures

. . microwave signatures

RT amplitude distribution analysis

- biomarkers
- detection
- representations
- signature analysis
- target recognition
- video landmark acquisition and tracking

significance

RT confidence limits

- correlation
- covariance
- degrees of freedom
- finite difference theory
- null hypothesis
- numerical analysis
- regression analysis
- statistical tests
- teleconnections (meteorology)

signs (symbols)

USE **symbols**

signs and symptoms

UF *symptoms*

syndromes

GS **signs and symptoms**

- . acquired immunodeficiency syndrome
- . bradycardia
- . cough
- . dyspnea
- . edema
- . headache
- . hematuria
- . leukopenia
- . nausea
- . vertigo

RT asphyxia

- diseases
- hallucinations

∞ indication

symptomology

Sikhote-Alin meteorite

GS celestial bodies

- . meteorites
- . . iron meteorites
- . . . **Sikhote-Alin meteorite**

Sikkim

GS nations

- . **Sikkim**

RT Asia

- Bhutan
- Himalayas
- India

Sikorsky aircraft

GS **Sikorsky aircraft**

- . CH-3 helicopter
- . CH-34 helicopter
- . CH-54 helicopter
- . H-19 helicopter
- . H-53 helicopter
- . H-56 helicopter
- . H-60 Helicopter

- . S-58 helicopter
- . S-61 helicopter
- . S-67 helicopter
- . SH-3 helicopter
- . SH-4 helicopter
- . Sikorsky Whirlwind helicopter
- . UH-34 helicopter
- . UH-60A helicopter
- . UH-61A helicopter

RT ∞ aircraft

Sikorsky HSS-2 helicopter
USE **SH-3 helicopter**

Sikorsky S-58 helicopter
USE **S-58 helicopter**

Sikorsky S-61 helicopter
USE **S-61 helicopter**

Sikorsky S-64 helicopter
USE **CH-54 helicopter**

Sikorsky S-65 helicopter
USE **H-53 helicopter**

Sikorsky S-67 helicopter
USE **S-67 helicopter**

Sikorsky Whirlwind helicopter

GS Sikorsky aircraft

- . **Sikorsky Whirlwind helicopter**

V/STOL aircraft

- . rotary wing aircraft
- . . helicopters
- . . . military helicopters
- **Sikorsky Whirlwind helicopter**

RT ∞ aircraft

silanes

GS hydrogen compounds

- . hydrides
- . . **silanes**
- . . . chlorosilanes
- . . . methyl chlorosilanes

silicon compounds

- . **silanes**
- . . chlorosilanes
- . . methyl chlorosilanes

RT disilicides

- polycarbosilanes
- polysilanes

silence

RT noise reduction

- transmission loss

silencers

RT attenuators

- damping
- inhibitors
- mufflers
- shock absorbers
- snufflers
- suppressors
- zero sound

silica

USE **silicon dioxide**

silica gel

DEF A colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent, as a catalyst carrier, and sometimes as a catalyst.

GS gels

. **silica gel**

RT aerogels

- dehumidification
- dehydration
- drying
- silicon dioxide

- xerogels
- silica glass**
 GS glass
 . **silica glass**
 RT glass coatings
 glass electrodes
 glass fibers
 glassware
 sands
 silicon dioxide
- silicates**
 GS silicon compounds
 . **silicates**
 . . aluminum silicates
 . . . andesite
 . . . gehlenite
 . . . kaolinite
 . . . montmorillonite
 . . . pyrophyllite
 . . aragonite
 . . beryl
 . . alexandrite
 . . calcium silicates
 . . . gehlenite
 . . cordierite
 . . fayalite
 . . feldspars
 . . fluorosilicates
 . . forsterite
 . . garnets
 . . . gadolinium-gallium garnet
 . . . yttrium-aluminum garnet
 . . . yttrium-iron garnet
 . . merwinite
 . . monticellite
 . . nepheline
 . . potassium silicates
 . . pyroxenes
 . . . enstatite
 . . sodium silicates
 . . . spodumene
 . . . talc
 . . . tourmaline
 . . zeolites
 RT akermanite
 amphiboles
 disilicides
 minerals
 silicides
 silicon dioxide
 tetraethyl orthosilicate
 vermiculite
- silicides**
 GS silicon compounds
 . **silicides**
 . . disilicides
 RT intermetallics
 silicates
- silicon**
 GS chemical elements
 . metalloids
 . . **silicon**
 . . . amorphous silicon
 . . . porous silicon
 . . . silicon isotopes
 RT float zones
 reaction bonding
 Schottky diodes
 silicon alloys
- silicon alloys**
 GS alloys
 . **silicon alloys**
 RT aluminum alloys
 germanium alloys
 iron alloys
 magnesium alloys
 microstructure
 nickel alloys
- silicon
- silicon carbides**
 GS carbon compounds
 . carbides
 . . **silicon carbides**
 silicon compounds
 . **silicon carbides**
 RT abrasives
 Carborundum (trademark)
 ceramic fibers
 nanocomposites
 polycarbosilanes
- silicon compounds**
 GS **silicon compounds**
 . flint
 . organic silicon compounds
 . . triphenyl silicon
 . silanes
 . . chlorosilanes
 . . methyl chlorosilanes
 . silicates
 . . aluminum silicates
 . . . andesite
 . . . gehlenite
 . . . kaolinite
 . . . montmorillonite
 . . pyrophyllite
 . . aragonite
 . . beryl
 . . alexandrite
 . . calcium silicates
 . . . gehlenite
 . . cordierite
 . . fayalite
 . . feldspars
 . . fluorosilicates
 . . forsterite
 . . garnets
 . . . gadolinium-gallium garnet
 . . . yttrium-aluminum garnet
 . . . yttrium-iron garnet
 . . merwinite
 . . monticellite
 . . nepheline
 . . potassium silicates
 . . pyroxenes
 . . . enstatite
 . . sodium silicates
 . . . spodumene
 . . . talc
 . . . tourmaline
 . . zeolites
 . . silicides
 . . . disilicides
 . . silicon carbides
 . . silicon nitrides
 . . silicon oxides
 . . muscovite
 . . nephelite
 . . silicon dioxide
 . . . quartz
 coesite
 stishovite
 . . spodumene
 . . silicon tetrachloride
 RT akermanite
 ∞ chemical compounds
 ∞ Group 4A compounds
 methyl polysiloxanes
 polysiloxanes
 silicones
 siloxanes
- silicon controlled rectifiers**
 UF *SCR (rectifiers)*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . thyristors
 **silicon controlled rectifiers**
 rectifiers
 . thyristors
 . . **silicon controlled rectifiers**
 RT current converters (AC to DC)
- thyratrons
- silicon dioxide**
 DEF The chemically resistant dioxide of silicon. Used for Refrasil (trademark) and silica.
 UF *Refrasil (trademark)*
silica
 GS chalcogenides
 . oxides
 . . dioxides
 . . . **silicon dioxide**
 quartz
 coesite
 stishovite
 . . silicon oxides
 . . . **silicon dioxide**
 quartz
 coesite
 stishovite
 silicon compounds
 . silicon oxides
 . . **silicon dioxide**
 . . . quartz
 coesite
 stishovite
 RT borosilicate glass
 ceramics
 E glass
 glass
 metallic glasses
 obsidian
 porcelain
 quartz crystals
 rhyolite
 S glass
 sands
 silica gel
 silica glass
 silicates
 Vycor
 xerogels
- silicon films**
 RT amorphous silicon
 ∞ films
 semiconductor devices
 SOI (semiconductors)
 thin films
- silicon isotopes**
 GS chemical elements
 . metalloids
 . . silicon
 . . . **silicon isotopes**
 . . nuclides
 . . isotopes
 . . . **silicon isotopes**
- silicon junctions**
 GS semiconductor junctions
 . **silicon junctions**
 RT amorphous silicon
 heterojunctions
 homojunctions
 SIS (semiconductors)
 SOI (semiconductors)
 threshold voltage
- silicon nitrides**
 GS nitrogen compounds
 . nitrides
 . . **silicon nitrides**
 silicon compounds
 . **silicon nitrides**
 RT ceramic matrix composites
 nanocomposites
 reaction bonding
 sialon
- silicon oxides**
 GS chalcogenides
 . oxides
 . . **silicon oxides**
 . . . muscovite
 . . . nephelite
 . . . silicon dioxide

silicon polymers

- quartz
 - coesite
 - stishovite
 - spodumene
 - silicon compounds
 - . **silicon oxides**
 - . . muscovite
 - . . nephelite
 - . . silicon dioxide
 - . . quartz
 - coesite
 - stishovite
 - spodumene
 - RT akermanite
- silicon polymers**
- GS **silicon polymers**
 - . silicone resins
 - . silicones
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - . . polysilanes
 - . . polycarbosilanes
 - RT ∞ polymers
- silicon radiation detectors**
- GS measuring instruments
 - . radiation measuring instruments
 - . . radiation detectors
 - . . . **silicon radiation detectors**
 - RT ∞ radiation
- silicon rectifiers*
- USE **crystal rectifiers**
- silicon solar cells*
- USE **solar cells**
- silicon tetrachloride**
- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **silicon tetrachloride**
 - . halides
 - . . chlorides
 - . . . **silicon tetrachloride**
 - silicon compounds
 - . **silicon tetrachloride**
- silicon transistors**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . transistors
 - **silicon transistors**
 - SOS (semiconductors)
 - RT SOI (semiconductors)
- silicone resins**
- GS resins
 - . **silicone resins**
 - silicon polymers
 - . **silicone resins**
 - RT thermosetting resins
- silicone rubber**
- GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . **silicone rubber**
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
- silicones**
- GS silicon polymers
 - . **silicones**
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - RT ∞ polymers
 - silicon compounds
- siliconizing**
- GS hardening (materials)
 - . **siliconizing**

- RT coating
 - coatings
 - corrosion prevention
 - corrosion resistance
 - oxidation resistance
 - passivity
- silicon-on-insulator semiconductors*
- USE **SOI (semiconductors)**
- silicon-on-sapphire junctions*
- USE **SOS (semiconductors)**
- silicon-on-sapphire semiconductors*
- USE **SOS (semiconductors)**
- silicon-on-sapphire transistors*
- USE **SOS (semiconductors)**
- silk**
- GS fabrics
 - . **silk**
 - fibers
 - . **silk**
 - RT crepe
 - organic materials
- silkworms**
- GS animals
 - . invertebrates
 - . . arthropods
 - . . . insects
 - moths
 - **silkworms**
 - larvae
 - . **silkworms**
 - RT infestation
- silos (missile storage)*
- USE **missile silos**
- siloxanes**
- GS silicon polymers
 - . silicones
 - . . **siloxanes**
 - RT ∞ polymers
 - polysiloxanes
 - silicon compounds
- silts*
- USE **sediments**
- silver**
- GS chemical elements
 - . **silver**
 - . . silver isotopes
 - metals
 - . noble metals
 - . . **silver**
 - . . . silver isotopes
 - . . transition metals
 - . . **silver**
 - . . . silver isotopes
- silver alloys**
- GS alloys
 - . **silver alloys**
 - RT bearing alloys
 - gold alloys
- silver bromides**
- GS halogen compounds
 - . bromine compounds
 - . . bromides
 - . . . **silver bromides**
 - . halides
 - . . bromides
 - . . . **silver bromides**
 - . . metal halides
 - . . . silver halides
 - **silver bromides**
 - silver compounds
 - . silver halides

- . . **silver bromides**
- silver cadmium batteries**
- UF *cadmium silver batteries*
 - GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **silver cadmium batteries**
 - RT nickel cadmium batteries
- silver chlorides**
- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **silver chlorides**
 - . halides
 - . . chlorides
 - . . . **silver chlorides**
 - . . metal halides
 - . . . silver halides
 - **silver chlorides**
 - silver compounds
 - . silver halides
 - . . **silver chlorides**
- silver compounds**
- GS **silver compounds**
 - . silver halides
 - . . silver bromides
 - . . silver chlorides
 - . . silver iodides
 - . silver nitrates
 - . silver oxides
 - RT ∞ chemical compounds
 - ∞ Group 1B compounds
 - ∞ metal compounds
- silver halides**
- GS halogen compounds
 - . halides
 - . . metal halides
 - . . . **silver halides**
 - silver bromides
 - silver chlorides
 - silver iodides
 - silver compounds
 - . **silver halides**
 - . . silver bromides
 - . . silver chlorides
 - . . silver iodides
- silver hydrogen batteries**
- DEF Secondary batteries having silver and hydrogen electrodes. They have good energy density and cycle life.
 - GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **silver hydrogen batteries**
- silver iodides**
- GS halogen compounds
 - . halides
 - . . metal halides
 - . . . silver halides
 - **silver iodides**
 - . iodine compounds
 - . . iodides
 - . . . **silver iodides**
 - silver compounds
 - . silver halides
 - . . **silver iodides**
- silver isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **silver isotopes**
 - . silver
 - . . **silver isotopes**
 - metals
 - . noble metals
 - . . silver
 - . . . **silver isotopes**
 - . transition metals
 - . . silver

- ... **silver isotopes**
- silver nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . . inorganic nitrates
 - . . . **silver nitrates**
 - silver compounds
 - . **silver nitrates**
- silver oxide zinc batteries*
 - USE **silver zinc batteries**
- silver oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **silver oxides**
 - silver compounds
 - . **silver oxides**
- silver zinc batteries**
 - UF *silver oxide zinc batteries*
 - zinc silver batteries*
 - zinc silver oxide batteries*
 - GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **silver zinc batteries**
- silviculture**
 - DEF The theory and practice of controlling the establishment, composition, and growth of stands of trees for the harvesting of foliage limbs, and possibly the trees themselves for biomass.
 - GS agriculture
 - . **silviculture**
 - RT biomass
 - botany
 - cultivation
 - forests
 - orchards
 - planting
 - trees (plants)
- SIM**
 - UF *scientific instrument modules*
 - GS modules
 - . spacecraft modules
 - . . **SIM**
 - spacecraft components
 - . spacecraft modules
 - . . **SIM**
 - RT Apollo 15 flight
 - Apollo project
 - cameras
 - instrument packages
 - ∞ instruments
- SIMD (computers)**
 - DEF A type of parallel computer with multiple memories and an arithmetic logic unit for each memory. A single control unit allocates instruction execution according to the memory that holds the required operands. Used for single instruction multiple datastream.
 - UF *single instruction multiple datastream*
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . parallel computers
 - **SIMD (computers)**
 - RT architecture (computers)
 - computer design
 - computer programming
 - concurrent processing
 - interprocessor communication
 - MIMD (computers)
 - operating systems (computers)
- parallel processing (computers)
- SIMICOR (image correlator)*
 - USE **image correlators**
- similarities*
 - USE **analogies**
- similarity numbers**
 - GS dimensionless numbers
 - . **similarity numbers**
 - ratios
 - . **similarity numbers**
 - RT dimensional analysis
 - scaling laws
- similarity theorem**
 - GS theorems
 - . **similarity theorem**
 - . . Lagrange similarity hypothesis
 - RT dynamic models
 - mathematical models
 - scale models
- similitude law**
 - GS laws
 - . **similitude law**
 - RT gravitation
 - inertia
 - scale models
 - viscosity
- simple harmonic motion**
 - DEF A motion such that the displacement is a sinusoidal function of time.
 - GS harmonic motion
 - . **simple harmonic motion**
 - harmonics
 - . **simple harmonic motion**
 - RT acoustics
 - Fourier analysis
 - harmonic excitation
- simplex method**
 - DEF A finite iterative algorithm used in linear programming whereby successive solutions are obtained and tested for optimality.
 - GS mathematical logic
 - . algorithms
 - . . **simplex method**
 - optimization
 - . **simplex method**
 - RT linear programming
 - mathematical programming
 - matrices (mathematics)
 - ∞ methodology
 - problem solving
- simplification**
 - RT assumptions
 - linearization
- SIMS (spectrometry)*
 - USE **secondary ion mass spectrometry**
- simulated altitude*
 - USE **altitude simulation**
- simulated annealing**
 - (added December 1992)
 - RT annealing
 - computerized simulation
 - laser annealing
 - optimization
 - pulse heating
 - simulation
- simulation**
 - GS **simulation**
 - . atmospheric entry simulation
 - . computerized simulation
 - . . analog simulation
 - . . digital simulation
 - . . distributed interactive simulation
 - . control simulation
 - . data simulation
 - . environment simulation
 - . . acoustic simulation
 - . . altitude simulation
 - . . space environment simulation
 - . . thermal simulation
 - . . . weightlessness simulation
 - neutral buoyancy simulation
 - . exhaust flow simulation
 - . flight simulation
 - . . in-flight simulation
 - . landing simulation
 - . motion simulation
 - . rheoelectrical simulation
 - . solar simulation
 - . systems simulation
 - . . computer systems simulation
 - . direct numerical simulation
 - . hardware-in-the-loop simulation
 - . large eddy simulation
 - . scene generation
 - RT analogies
 - bionics
 - bond graphs
 - data processing equipment
 - deception
 - game theory
 - heuristic methods
 - hypervelocity projectiles
 - mathematical models
 - Monte Carlo method
 - operations research
 - simulated annealing
 - simulators
 - spacecraft cabin simulators
 - systems analysis
 - validity
 - virtual reality
 - war games
 - simulator training*
 - USE **training simulators**
 - simulators**
 - GS **simulators**
 - . environment simulators
 - . . Lunar Gravity Simulator
 - . . solar simulators
 - . . space simulators
 - . . . clinostats
 - . . . High Vacuum Orbital Simulator
 - . . . Langley complex coordinator
 - . lunar orbit and landing simulators
 - . motion simulators
 - . shock simulators
 - . Shuttle Engineering Simulator
 - . Shuttle Mission Simulator
 - . target simulators
 - . training simulators
 - . . flight simulators
 - . . . cockpit simulators
 - . . spacecraft cabin simulators
 - . vibration simulators
 - . . vertical motion simulators
 - RT analogs
 - computer systems simulation
 - dummies
 - ∞ missile simulators
 - models
 - simulation
 - ∞ test equipment
 - test facilities
 - training devices
 - simultaneous equations**
 - RT ∞ equations
 - least squares method
 - matrices (mathematics)
 - simultaneous image correlator*
 - USE **image correlators**
 - sine series**
 - GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)

- . . . **sine series**
- . real variables
- . . . periodic functions
- trigonometric functions
- **sine series**
- . . series (mathematics)
- . . . **sine series**
- functions (mathematics)
- . transcendental functions
- . . periodic functions
- . . . trigonometric functions
- **sine series**

sine waves

DEF Waves which can be expressed as the sine of a linear function of time, or space, or both. Used for sinusoids.

- UF *sinusoids*
- RT elastic waves
- electromagnetic radiation
- trigonometric functions
- wavelet analysis
- ∞ waves

Singapore

- GS nations
- . **Singapore**
- RT Asia

single channel per carrier transmission

DEF Voice and data transmission system for satellite communication featuring the use of a carrier frequency for each channel of communication. Used for SCPC transmission.

- UF *SCPC transmission*
- GS telecommunication
- . **single channel per carrier transmission**
- transmission
- . signal transmission
- . . data transmission
- . . . **single channel per carrier transmission**
- RT carrier frequencies
- channels (data transmission)
- satellite communication
- satellite transmission
- spacecraft communication
- telegraph systems
- telemetry
- telephony
- voice communication
- voice data processing

single crystals

- UF *monocrystals*
- GS crystals
- . **single crystals**
- RT bicrystals
- boules
- Bravais crystals
- Bridgman method
- crystal lattices
- diamonds
- graphite
- kink bands
- needles
- piezoelectric crystals
- polycrystals
- space processing
- ultrapure metals

single engine aircraft

- GS **single engine aircraft**
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . F-8 aircraft
- . F-9 aircraft
- . F-16 aircraft
- . F-84 aircraft
- . F-86 aircraft
- . F-94 aircraft
- . F-100 aircraft
- . F-101 aircraft
- . F-102 aircraft

- . F-104 aircraft
- . F-105 aircraft
- . F-106 aircraft
- . Jaguar aircraft
- . jet provost aircraft
- . L-29 jet trainer
- . MiG aircraft
- . Mirage aircraft
- . . Mirage 3 aircraft
- . P-51 aircraft
- . P-1127 aircraft
- . P-1154 aircraft
- . T-2 aircraft
- . T-28 aircraft
- . T-33 aircraft
- . Vampire MK 35 aircraft
- . VJ-101 aircraft
- RT ∞ aircraft
- fighter aircraft
- general aviation aircraft

single event upsets

DEF Radiation-induced errors in microelectronic circuits caused when charged particles (usually from the radiation belts or from cosmic rays) lose energy by ionizing the medium through which they pass, leaving behind a wake of electron-hole pairs.

- GS radiation effects
- . **single event upsets**
- RT astronics
- avionics
- charged particles
- cosmic rays
- electron-hole drops
- inner radiation belt
- ionization
- microelectronics
- radiation damage
- radiation dosage
- satellite-borne instruments
- secondary cosmic rays
- spacecraft charging
- spacecraft electronic equipment

single input single output systems

USE **SISO (control systems)**

single instruction multiple datastream

USE **SIMD (computers)**

single sideband modulation

USE **single sideband transmission**

single sideband transmission

- UF *single sideband modulation*
- GS transmission
- . electromagnetic wave transmission
- . . radio transmission
- . . . **single sideband transmission**
- . signal transmission
- . . radio transmission
- . . . **single sideband transmission**
- RT amplitude modulation
- double sideband transmission
- sidebands
- television transmission
- voice communication
- wave propagation

single stage rocket vehicles

- GS rocket vehicles
- . **single stage rocket vehicles**
- . . Agena rocket vehicles
- . . . Agena A rocket vehicle
- . . . Agena B rocket vehicle
- . . . Agena C rocket vehicle
- . . . Agena D rocket vehicle
- . . Arcas rocket vehicles
- . . Black Brant sounding rockets
- . . . Black Brant 1 sounding rocket
- . . . Black Brant 2 sounding rocket
- . . . Black Brant 3 sounding rocket
- . . . Black Brant 4 sounding rocket
- . . . Black Brant 5 sounding rocket
- . . Black Knight rocket vehicle

- . . Dornier paraglider rocket vehicle
- . . Genie rocket vehicle
- . . Honest John rocket vehicle
- . . Hyla-Star rocket vehicle
- . . Little John rocket vehicle
- . . Loki rocket vehicle
- . . Nomad launch vehicle
- . . Veronique rocket vehicles
- . . Viking rocket vehicle
- . . Zuni rocket vehicle
- RT Mauler missile
- rocket engines
- ∞ vehicles

single stage to orbit vehicles

DEF Second and third generation (post-Space Shuttle) vehicles studied for Earth orbit international space transportation system.

- GS launch vehicles
- . reusable launch vehicles
- . . **single stage to orbit vehicles**
- . . . Delta Clipper
- . . . HOTOL launch vehicle
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . **single stage to orbit vehicles**
- Delta Clipper
- HOTOL launch vehicle
- RT NASA programs
- rocket-based combined-cycle engines
- space shuttles
- space transportation
- ∞ vehicles
- X-30 vehicle

single-phase flow

- UF *one-phase flow*
- uniphase flow*
- GS fluid flow
- . **single-phase flow**
- RT critical flow
- gas flow
- laminar flow
- liquid flow
- mass flow
- multiphase flow
- orifice flow
- pipe flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- turbulent flow
- two phase flow
- uniform flow
- unsteady flow

singular integral equations

- GS analysis (mathematics)
- . functional analysis
- . . integral equations
- . . . **singular integral equations**
- RT ∞ equations

singularity (mathematics)

- GS analysis (mathematics)
- . complex variables
- . . **singularity (mathematics)**
- . . . naked singularities
- RT points (mathematics)
- uniqueness

sinkholes

DEF Circular depressions in a Karst area. Their drainage is subterranean, their size is measured in meters or tens of meters, and they are commonly funnel shaped.

- GS landforms
- . structural basins
- . . karst
- . . . **sinkholes**
- RT kettles (geology)

- structural properties (geology)
- sinking**
RT falling
refraction
submerging
water immersion
- sinks**
SN (EXCLUDES PLUMBING
FIXTURES--LIMITED TO AREAS FOR
ABSORPTIVE DISPOSAL OF HEAT OR
FLUIDS)
GS **sinks**
. heat sinks
RT absorbers (materials)
disposal
∞ sources
- sinks (geology)*
USE **structural basins**
- Sinope**
(added January 1996)
DEF A natural satellite of Jupiter orbiting at
a mean distance of 23,700,000 kilometers.
GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . **Sinope**
RT Jupiter (planet)
- sintered aluminum powder**
GS particles
. metal particles
. . . metal powder
. . . . powdered aluminum
. . . . **sintered aluminum powder**
. powder (particles)
. . . metal powder
. . . powdered aluminum
. . . . **sintered aluminum powder**
RT aluminum
powder metallurgy
- sintering**
DEF The bonding of adjacent surfaces of
particles in a mass of powders, usually metal, by
heating. Used for presintering.
UF *presintering*
GS **sintering**
. liquid phase sintering
RT agglomeration
combustion synthesis
furnaces
growth
heating
hot isostatic pressing
hot pressing
metal powder
mixed crystals
porosity
powder metallurgy
pyrometallurgy
reaction bonding
roasting
shrinkage
sialon
- sinuses**
DEF A term used in anatomical nomencla-
ture to designate a cavity or hollow space.
GS **sinuses**
. paranasal sinuses
RT carotid sinus body
carotid sinus reflex
nose (anatomy)
respiration
- sinusoids*
USE **sine waves**
- Sioux helicopter*
USE **OH-13 helicopter**
- siphoning**
DEF The transfer of a liquid from a high to a
- lower level by atmospheric pressure forcing it up
the shorter leg while the weight of the liquid in
the longer leg causes continuous downward
flow.
RT ∞ fluids
siphons
thermosiphons
- siphons**
RT materials handling
pipelines
pipes (tubes)
pumps
siphoning
∞ tubes
- SIR-A*
USE **Shuttle Imaging Radar**
- SIR-B*
USE **Shuttle Imaging Radar**
- SIR-C*
USE **Shuttle Imaging Radar**
- SIR-D*
USE **Shuttle Imaging Radar**
- sirens**
RT horns
noise intensity
signal generators
∞ signals
sound generators
sound intensity
sound transmission
warning systems
- SIRIO satellite**
GS artificial satellites
. synchronous satellites
. . . **SIRIO satellite**
RT Italian space program
Italy
- SIRS B satellite**
GS artificial satellites
. meteorological satellites
. . . **SIRS B satellite**
RT meteorological flight
meteorological instruments
satellite observation
unmanned spacecraft
- SIRTF*
USE **Space Infrared Telescope Facility**
- SIS (semiconductors)**
DEF Semiconductor devices consisting of
an electrically insulating layer sandwiched be-
tween two semiconducting materials. Used for
semiconductor insulator semiconductors.
UF *semiconductor insulator
semiconductors*
GS electronic equipment
. solid state devices
. . . **SIS (semiconductors)**
RT barrier layers
MIM (semiconductors)
MIS (semiconductors)
MSM (semiconductors)
photodiodes
photovoltaic cells
p-n junctions
Schottky diodes
semiconductor diodes
semiconductor junctions
silicon junctions
SOI (semiconductors)
solar cells
SOS (semiconductors)
tin oxides
transistors
- SIS (superconductors)**
(added March 1989)
- UF *superconductor insulator
superconductors*
GS electronic equipment
. solid state devices
. . . **SIS (superconductors)**
superconducting devices
. **SIS (superconductors)**
RT high temperature superconductors
Josephson effect
Josephson junctions
squid (detectors)
- SISO (control systems)**
(added October 1988)
UF *single input single output systems*
RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability
- site data processors**
UF *SDP (computers)*
GS data processing equipment
. computers
. . . **site data processors**
RT Apollo project
∞ data
data links
data processing
- site selection**
DEF Selecting the location for any physical
plant (nuclear power, solar house, etc.) while
considering the environmental impact, safety,
etc.
GS selection
. **site selection**
RT airports
certification
∞ facilities
industrial areas
land use
leasing
logistics
Mars landing sites
options
resources
roads
routes
services
sites
terminal facilities
transportation
utilities
- sites**
UF *tracts*
GS **sites**
. Central Atlantic Regional Ecol Test
Site
. landing sites
. . . lunar landing sites
. . . Mars landing sites
. launching sites
. . . launching pads
. offshore reactor sites
RT airport planning
barren land
∞ facilities
land
∞ plots
position (location)
regions
rural land use
site selection
- sitting position**
RT prone position
rest
seats

situational awareness

supine position

situational awareness

(added October 2001)

DEF The degree and accuracy to which a human or robotic agent perceives the operating environment.

RT accident prevention
air traffic control
alertness
decision support systems
display devices
flight management systems
human factors engineering
operator performance
perception
pilot performance
pilot support systems
reconnaissance
surveillance
threat evaluation

size (dimensions)

GS **size (dimensions)**

. grain size

RT fineness

size determination

GS **size determination**

. precipitation particle measurement

RT body measurement (biology)

classifiers
dimensional measurement

∞ measurement
particle size distribution
∞ sizing

size distribution

DEF The study of the size of objects or features and their distribution.

GS **size distribution**

. particle size distribution

RT drop size
mass distribution
statistical distributions

size separation

UF *sizing (separation)*

RT beneficiation

classifiers
∞ classifying
concentrators
filtration
flotation
metal powder
particle size distribution
powder (particles)
∞ separation
settling
∞ sizing

∞ sizing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT body measurement (biology)

size determination
size separation
sizing (shaping)
sizing (surface treatment)
sizing materials

sizing (separation)

USE **size separation**

sizing (shaping)

GS metal working

. **sizing (shaping)**

RT coining

pressing (forming)

∞ sizing

sizing (surface treatment)

SN (EXCLUDES MECHANICAL SHAPING OR REMOVAL OF SURFACE MATERIALS)

RT finishes

∞ sizing

sizing materials

∞ surfaces

sizing materials

SN (MATERIALS USED FOR SURFACE TREATMENT)

RT binders (materials)

clays

fillers

glues

∞ materials

∞ sizing

sizing (surface treatment)

starches

sizing screens

GS separators

. classifiers

. . **sizing screens**

RT agitation

concentrators

fluid filters

∞ screens

shakers

sieves

skeleton

USE **musculoskeletal system**

skewness

RT asymmetry

deformation

displacement

distortion

distribution moments

eccentricity

moments

skid landings

RT air cushion landing systems

crash landing

hydroplaning

skidding

skidding

RT hydroplaning

landing gear

sideslip

skid landings

sleds

yaw

skills

USE **abilities**

skin (anatomy)

GS anatomy

. **skin (anatomy)**

. . epidermis

RT albinism

∞ blisters

carotene

chlorophylls

collagens

contact dermatitis

cytochromes

dermatitis

dermatology

epithelium

evaporation

hair

homeostasis

leather

melanin

membranes

perspiration

petechia

pigments

secretions

sense organs

thermoreceptors

touch

skin (structural member)

GS membranes

. membrane structures

. . **skin (structural member)**

structural members

. membrane structures

. . **skin (structural member)**

RT aircraft construction materials

∞ construction materials

hulls (structures)

metal shells

shells (structural forms)

stressed-skin structures

thin walled shells

thin walls

toroidal shells

webs (supports)

skin friction

UF *friction pressure drop*

GS friction

. **skin friction**

. . friction drag

. . . aerodynamic drag

. . . . supersonic drag

. . . viscous drag

RT aerodynamic heating

drag

drag devices

flow resistance

fluid flow

friction factor

riblets

streamlining

skin grafts

RT surgery

therapy

skin resistance

GS electrical properties

. electrical impedance

. . electrical resistance

. . . **skin resistance**

impedance

. electrical impedance

. . electrical resistance

. . . **skin resistance**

RT ∞ resistance

skin temperature (biology)

GS temperature

. **skin temperature (biology)**

RT ∞ biology

fever

hyperthermia

hypothermia

skin temperature (non-biological)

GS surface properties

. surface temperature

. . **skin temperature**

(non-biological)

temperature

. surface temperature

. . **skin temperature**

(non-biological)

RT

aerodynamic heating

aerothermodynamics

Skinner boxes

RT behavior

psychological tests

psychometrics

skirts

RT afterbodies

boattails

conical nozzles

exhaust nozzles

foundations

∞ jet nozzles

rocket nozzles

skis

RT hydrofoils

hydroplanes (surfaces)

- landing gear
- Skua rocket vehicles**
 - GS rocket vehicles
 - . sounding rockets
 - .. **Skua rocket vehicles**
 - RT solid propellant rocket engines
 - ∞ vehicles
- skull**
 - GS anatomy
 - . head (anatomy)
 - .. **skull**
 - ... cranium
 - ... intracranial cavity
 - ... mastoids
 - . musculoskeletal system
 - . bones
 - ... **skull**
 - ... cranium
 - ... intracranial cavity
 - ... mastoids
 - RT forehead
 - intercranial circulation
- sky**
 - GS **sky**
 - . night sky
 - RT cloud cover
 - clouds (meteorology)
 - dayglow
 - Rayleigh scattering
 - sunlight
- sky brightness**
 - GS electromagnetic properties
 - . optical properties
 - .. brightness
 - ... **sky brightness**
 - RT airglow
 - auroras
 - cloud cover
 - daytime
 - gegenschein
 - glare
 - light (visible radiation)
 - light emission
 - luminance
 - night
 - night sky
 - nightglow
 - solar radiation
 - sunlight
 - zodiacal light
- sky radiation**
 - GS atmospheric radiation
 - . **sky radiation**
 - .. airglow
 - ... geocoronal emissions
 - ... nightglow
 - ... twilight glow
 - .. dayglow
 - .. elves
 - .. sprites (atmospheric physics)
 - electromagnetic radiation
 - . light (visible radiation)
 - .. **sky radiation**
 - ... airglow
 - ... geocoronal emissions
 - ... nightglow
 - ... twilight glow
 - ... dayglow
 - ... elves
 - ... sprites (atmospheric physics)
 - RT background radiation
 - pyranometers
 - ∞ radiation
 - stratosphere radiation
 - sunlight
 - thermal radiation
 - tropospheric radiation
- sky surveys (astronomy)**
 - GS observation
 - . **sky surveys (astronomy)**
- surveys
 - . **sky surveys (astronomy)**
- RT asteroid detection
 - astronomical catalogs
 - astronomy
 - indexes (documentation)
 - northern sky
 - Southern sky
- sky waves**
 - DEF In radio, radio energy that is received after having been reflected by the ionosphere.
 - GS electromagnetic radiation
 - . radio waves
 - .. **sky waves**
 - ... whistlers
 - RT ground wave propagation
 - ionospheric noise
- Skybolt missile**
 - GS missiles
 - . ballistic missiles
 - .. **Skybolt missile**
 - RT solid propellant rocket engines
- Skycrane helicopter*
 - USE **CH-54 helicopter**
- Skydrol (trademark)**
 - GS liquids
 - . hydraulic fluids
 - .. **Skydrol (trademark)**
 - RT esters
 - phosphates
 - plasticizers
- Skyhawk aircraft*
 - USE **A-4 aircraft**
- skyhook balloons**
 - DEF Large free balloons having plastic envelopes, used especially for constant level meteorological observations at very high altitudes. (Originally a code name for a U. S. Navy project.)
 - GS expandable structures
 - . inflatable structures
 - .. balloons
 - ... high altitude balloons
 - ... **skyhook balloons**
 - RT high altitude
 - meteorological balloons
 - ROBIN balloons
 - rockoons
- Skylab 1**
 - UF *SKYLAB space station (unmanned)*
 - SL 1
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 1**
 - . space stations
 - .. **Skylab 1**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 1**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 1**
 - . orbital workshops
 - .. **Skylab 1**
 - stations
 - . space stations
 - .. **Skylab 1**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - space missions
- Skylab 2**
 - UF SL 2
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 2**
- . space stations
 - .. **Skylab 2**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 2**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 2**
 - . orbital workshops
 - .. **Skylab 2**
 - stations
 - . space stations
 - .. **Skylab 2**
- RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 3**
 - UF SL 3
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 3**
 - . space stations
 - .. **Skylab 3**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 3**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 3**
 - . orbital workshops
 - .. **Skylab 3**
 - stations
 - . space stations
 - .. **Skylab 3**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 4**
 - UF SL 4
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 4**
 - . space stations
 - .. **Skylab 4**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 4**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 4**
 - . orbital workshops
 - .. **Skylab 4**
 - stations
 - . space stations
 - .. **Skylab 4**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab program**
 - GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Skylab program**
 - . space programs
 - .. NASA space programs
 - ... **Skylab program**
 - RT AAP 1 mission
 - AAP 2 mission
 - AAP 3 mission

Skyllark rocket vehicle

AAP 4 mission
 airlock modules
 Apollo applications program
 Apollo flights
 Apollo project
 Apollo spacecraft
 Apollo telescope mount
 Earth Telescopes Information System
 Earth Resources Program
 Earth Resources Survey Program
 orbital workshops
 Saturn 1 workshop
 Saturn 5 workshop
 Saturn workshops
 Spacelab

SKYLAB space station (unmanned)
 USE **Skyllab 1**

Skyllark
 USE **Skyllark rocket vehicle**

Skyllark rocket vehicle
 UF *Skyllark*
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Skyllark rocket vehicle**
 . sounding rockets
 . . **Skyllark rocket vehicle**
 RT solid propellant rocket engines

Skyllaster aircraft
 USE **C-54 aircraft**

Skyllnet satellites
 GS artificial satellites
 . **Skyllnet satellites**
 RT communication satellites
 satellite networks
 UK satellites

Skyllraider aircraft
 USE **A-1 aircraft**

Skyllrocket aircraft
 USE **D-558 aircraft**

Skyllstreak aircraft
 USE **D-558 aircraft**

Skyllvan aircraft
 USE **SC-7 aircraft**

Skyllwarrior aircraft
 USE **A-3 aircraft**

SL 1
 USE **Skyllab 1**

SL 2
 USE **Skyllab 2**

SL 3
 USE **Skyllab 3**

SL 4
 USE **Skyllab 4**

SL-3 rocket engine
 GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **SL-3 rocket engine**

slabs
 RT billets
 blocks
 flat plates
 metal plates
 plates (structural members)
 ∞ platforms
 structural members

slags
 RT aggregates

reaction products
 wastes

SLAM
 USE **supersonic low altitude missile**

slamming
 RT fluid dynamics

slant
 USE **slopes**

slant perception
 USE **space perception**

slashes
 USE **clearings (openings)**

Slater orbitals
 GS orbitals
 . **Slater orbitals**
 RT Hartree-Fock-Slater method

sleds
 GS surface vehicles
 . **sleds**
 . . rocket propelled sleds
 RT dollies
 skidding
 towed bodies
 tractors
 trailers

sleep
 UF *drowsiness*
 GS **sleep**
 . hypersomnia
 . hypnosis
 . insomnia
 RT dreams
 ∞ drives
 rapid eye movement state
 rest

sleep deprivation
 GS deprivation
 . **sleep deprivation**
 RT consciousness
 fatigue (biology)
 insomnia
 wakefulness

sleeves
 SN (EXCLUDES CLOTHING)
 RT connectors
 couplings
 fasteners
 fittings
 joints (junctions)

slender bodies
 GS **slender bodies**
 . slender cones
 RT aerodynamic configurations
 aerodynamics
 axisymmetric bodies
 ∞ bodies
 ducted bodies
 fineness ratio
 missile bodies
 power law bodies
 ∞ sharpness
 streamlined bodies
 symmetrical bodies
 ∞ thin bodies

slender cones
 GS cones
 . conical bodies
 . . **slender cones**
 slender bodies
 . **slender cones**
 symmetrical bodies
 . bodies of revolution
 . . conical bodies
 . . . **slender cones**

RT aerodynamic configurations
 axisymmetric bodies

slender wings
 UF *high aspect ratio wings*
 GS airfoils
 . wings
 . . **slender wings**
 . . . infinite span wings
 RT fixed wings
 wing planforms
 wing rock

slenderness ratio
(added March 2000)
 USE **aspect ratio**

slewing
 DEF Of a gyro, the rotation of the spin axis caused by applying torque about the axis of rotation. In radar, changing the scale on the display.
 RT antennas
 error signals
 positioning devices (machinery)
 radar tracking
 servomotors
 ∞ spinners

slicing
 GS cutting
 . **slicing**
 RT metal cutting
 planing
 planning
 scarfing
 ∞ separation
 splitting

slicks
 USE **oil slicks**

slides
 USE **chutes**

slides (microscopy)
 DEF Rectangular pieces of glass on which objects are mounted for microscopic examination.
 RT microscopy

sliding
 DEF Relative displacement between two bodies along a surface, without loss of contact between the bodies.
 RT interfacial tension
 lubrication
 mass flow
 ∞ slip
 slumping
 static friction

∞ **sliding contact**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT contact loads
 electric contacts
 sliding friction
 vapor phase lubrication

sliding friction
 GS friction
 . kinetic friction
 . . **sliding friction**
 RT coefficient of friction
 dry friction
 electric contacts
 ∞ sliding contact
 static friction
 tribometers
 wear

- wear resistance
- ∞ **slip**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT plastic deformation
polyslips
sideslip
sliding
- slip bands*
- USE **edge dislocations**
- slip casting**
- GS forming techniques
. casting
.. **slip casting**
- slip flow**
- SN (LIMITED TO RAREFIED GAS FLOW IN THE REGION BETWEEN KNUDSEN NUMBERS 0. 01 AND 0. 1 ONLY—EXCLUDES TRANSITION FLOW, FREE MOLECULE FLOW CREEP, SHEAR FLOW, AND PLASTIC FLOW)
- DEF Rarefied gas flow in the region between Knudsen numbers 0. 01 and 0. 1.
- GS fluid flow
. gas flow
.. molecular flow
... **slip flow**
- RT continuum flow
free molecular flow
low density wind tunnels
rarefied gas dynamics
transition flow
- slipstreams**
- GS wakes
. aircraft wakes
.. **slipstreams**
... propeller slipstreams
. turbulent wakes
.. **slipstreams**
... propeller slipstreams
- RT backwash
Strouhal number
turbulence
- slits**
- GS openings
. **slits**
- RT apertures
Fresnel reflectors
slots
- slivers**
- RT fibers
wood
- slopes**
- DEF The inclined surfaces of any part of the Earth's surface, as in hillslopes; also broad parts of a continent descending toward an ocean, as in the Pacific slope. Used for cant, slant, and steepness.
- UF *cant*
slant
steepness
- GS **slopes**
. glide paths
- RT angles (geometry)
cliffs
escarpments
- ∞ grade
gradients
height
- ∞ inclination
landforms
landslides
level (horizontal)
pitch (inclination)
- ∞ profiles
- ∞ rakes
ramp functions
ramps (structures)
- topography
- slushing*
- USE **liquid slushing**
- slot antennas**
- UF *slotted antennas*
- GS antennas
. directional antennas
.. **slot antennas**
- RT antenna design
horn antennas
microwave antennas
radant
radar antennas
waveguide antennas
- slots**
- GS **slots**
. wing slots
- RT lift devices
louvers
openings
slits
- slotted antennas*
- USE **slot antennas**
- slotted wind tunnels**
- GS test facilities
. wind tunnels
.. **slotted wind tunnels**
- RT supersonic wind tunnels
transonic wind tunnels
trisonic wind tunnels
vents
- Slovakia**
- (added September 1994)
- GS nations
. **Slovakia**
- RT Czech Republic
Czechoslovakia
Europe
- slow neutrons*
- USE **thermal neutrons**
- SLR (ranging)*
- (added July 2001)
- USE **satellite laser ranging**
- sludge**
- DEF A water-formed sedimentary deposit.
- GS **sludge**
. activated sludge
- RT deposits
liquid wastes
mud
ocean bottom
organic wastes (fuel conversion)
reaction products
sediments
sewage treatment
solid wastes
waste treatment
wastes
- slumping**
- RT geomorphology
mass flow
sliding
- slurries**
- GS mixtures
. **slurries**
- RT dispersions
emulsions
gels
rheocasting
slurry propellants
slush hydrogen
- slurry propellants**
- GS propellants
- . rocket propellants
.. liquid rocket propellants
... **slurry propellants**
... slush hydrogen
- RT aircraft fuels
colloidal propellants
dispersions
gelled rocket propellants
metal fuels
metal propellants
monopropellants
slurries
solid rocket propellants
- slush**
- RT bay ice
cryogenic rocket propellants
ice
runway conditions
snow
water
- slush hydrogen**
- (added March 1990)
- GS propellants
. rocket propellants
.. liquid rocket propellants
... slurry propellants
... **slush hydrogen**
- RT hydrogen fuels
liquid hydrogen
slurries
- SLV
- USE **Standard Launch Vehicles**
- SLV (soft landing vehicles)*
- USE **soft landing spacecraft**
- SLWT (propellant tank)*
- (added June 1998)
- USE **external tanks**
propellant tanks
- SM-65 missile*
- USE **Atlas launch vehicles**
- SM-68 missile*
- USE **Titan 1 ICBM**
- SM-68B missile*
- USE **Titan 2 ICBM**
- SMA (image analysis)*
- (added July 2000)
- USE **spectral mixture analysis**
- Small Astronomy Satellite 1*
- USE **SAS-1**
- Small Astronomy Satellite 2*
- USE **SAS-2**
- Small Astronomy Satellite 3*
- USE **SAS-3**
- Small Astronomy Satellites*
- USE **SAS**
- small perturbation flow**
- GS fluid flow
. **small perturbation flow**
- RT flow distortion
oscillating flow
- small satellite technology**
- (added January 1996)
- UF *Small Satellite Technology Initiative*
SSTI
- GS technologies
. **small satellite technology**
- RT cost reduction
microsatellites
nanosatellites
remote sensing

small scientific satellites

- satellite design
 - small scientific satellites
- Small Satellite Technology Initiative*
USE **small satellite technology**
- small scientific satellites**
- GS artificial satellites
 - . scientific satellites
 - . . **small scientific satellites**
 - . . . Submillimeter Wave Astronomy Satellite
 - . . . Transition Region and Coronal Explorer
 - RT microsatellites
 - nanosatellites
 - small satellite technology
- Small Water Plane Area Twin Hull*
USE **SWATH (ship)**
- smallpox**
- GS diseases
 - . infectious diseases
 - . . viral diseases
 - . . . **smallpox**
- smart materials**
(added March 1998)
- DEF Engineered materials capable of responding to their environment to a significant degree, by virtue of intrinsic properties and/or built-in sensor/actuator elements. Applications of these materials include vibration suppression/isolation, precision positioning, damage detection, and tunable devices.
- UF *intelligent materials*
 - RT actuators
 - biomimetics
 - composite materials
 - electrorheological fluids
 - electrostriction
 - ferroelastic materials
 - ferroelasticity
 - ferroelectric materials
 - ferromagnetic materials
 - magnetorheological fluids
 - ∞ materials
 - piezoelectric actuators
 - piezoelectric ceramics
 - ∞ sensors
 - shape memory alloys
 - smart structures
 - vibration damping
- smart structures**
(added August 1990)
- DEF Structures and/or structural components which contain embedded internal sensors. The sensors serve as lifetime health monitors analogous to a central nervous system, and give information on structural properties, providing real time nondestructive evaluation.
- UF *intelligent structures*
 - RT active control
 - adaptive control
 - biomimetics
 - composite structures
 - fiber optics
 - large space structures
 - piezoelectric actuators
 - smart materials
 - space station structures
 - spacecraft structures
 - strain measurement
 - structural engineering
 - structural members
 - ∞ structures
 - systems health monitoring
 - tensegrity structures
- smear**
- RT frequency response
 - image contrast
 - signal fading
 - television transmission
- video data
- smectite*
(added October 2001)
USE **montmorillonite**
- smell*
USE **olfactory perception**
- smelting**
- RT melting
 - ∞ metallurgy
 - reduction (chemistry)
 - refining
- Smith chart**
- RT electrical impedance
 - impedance
 - polar coordinates
 - reactance
 - standing wave ratios
 - transmission lines
 - waveguides
- SMM-A*
USE **Solar Maximum Mission-A**
- smog**
- RT air pollution
 - air sampling
 - carbon monoxide
 - combustion products
 - environmental chemistry
 - exhaust gases
 - flames
 - fog
 - hydrocarbon combustion
 - hydrocarbon poisoning
 - lead poisoning
 - particulates
 - smoke
- smoke**
- GS mixtures
 - . dispersions
 - . . plastisols
 - . . . **smoke**
 - RT aerosols
 - air pollution
 - biomass burning
 - combustion products
 - dust
 - exhaust gases
 - fire damage
 - fog
 - forest fires
 - fumes
 - haze detection
 - ∞ markers
 - particles
 - particulates
 - smog
 - smoldering
 - soot
 - vapors
 - visibility
- smoke abatement**
- RT aerosols
 - air pollution
 - carbon dioxide removal
 - exhaust gases
 - pollution
 - soot
- smoke detectors**
- GS measuring instruments
 - . indicating instruments
 - . . **smoke detectors**
 - RT fire prevention
 - fumes
 - gas detectors
 - safety devices
- signal processing
- smoke trails**
- RT ∞ tracks
 - wind direction
 - wind measurement
 - wind profiles
- smoldering**
(added July 1997)
- DEF A slow, flameless combustion of a solid fuel.
- GS combustion
 - . **smoldering**
 - RT burning rate
 - combustion stability
 - erosive burning
 - fires
 - flammability
 - smoke
- smoothing**
- GS **smoothing**
 - . data smoothing
 - RT adjusting
 - flattening
 - honing
 - leveling
 - planing
 - polishing
 - roughness
 - structured grids (mathematics)
- SMS*
USE **Synchronous Meteorological Satellite**
- SMS 1**
- DEF A meteorological satellite in synchronous orbit over the Atlantic Ocean to give coverage to the Eastern US. It was launched in May 1974 and is no longer operational, but still in orbit.
- GS artificial satellites
 - . meteorological satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 1**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 1**
 - . synchronous satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 1**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 1**
 - RT GOES 2
 - NOAA satellites
- SMS 2**
- DEF Meteorological satellite in synchronous orbit over Honolulu to give coverage to the Western US. It was launched in February 1975 and is no longer operational, but still in orbit.
- GS artificial satellites
 - . meteorological satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 2**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 2**
 - . synchronous satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 2**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 2**
 - RT GOES 2

NOAA satellites

SMS (Shuttle)
 USE **Shuttle Mission Simulator**

SMU (maneuvering units)
 USE **self maneuvering units**

S-N diagrams
 UF *fatigue diagrams*
 GS diagrams
 . **S-N diagrams**
 RT bending fatigue
 cyclic loads
 fatigue (materials)
 fatigue life
 fatigue tests
 metal fatigue
 stress analysis
 stress cycles
 stress measurement
 stress ratio

snails
 GS animals
 . invertebrates
 . mollusks
 . . . **snails**

snakes
 GS animals
 . vertebrates
 . reptiles
 . . . **snakes**

snaking
 USE **lateral oscillation**

SNAP
 UF *Systems for Nuclear Auxiliary Power*
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . **SNAP**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 nuclear electric power generation
 . nuclear auxiliary power units
 . . **SNAP**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 RT electric generators
 heat exchangers

nuclear power reactors
 SNAPTRAN reactor
 space power unit reactors
 ∞ systems
 thermionic converters
 thermionic power generation
 thermoelectric generators
 thermoelectric power generation
 Transient Reactor Test Facility
 turbogenerators

SNAP 1
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 1**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 1**
 RT heat exchangers
 turbogenerators

SNAP 2
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 2**
 . . . space power reactors
 fission electric cells
 **SNAP 2**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 2**
 . . . space power reactors
 fission electric cells
 **SNAP 2**
 . . . nuclear power reactors
 . . . space power reactors
 fission electric cells
 **SNAP 2**
 nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . fission electric cells
 **SNAP 2**
 RT heat exchangers
 space power unit reactors
 turbogenerators

SNAP 3
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 3**
 electric generators
 . direct power generators
 . . thermoelectric generators
 . . . **SNAP 3**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 3**

SNAP 4
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 4**
 . . . space power reactors
 fission electric cells
 **SNAP 4**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 4**
 . . . space power reactors
 fission electric cells
 **SNAP 4**
 . . . nuclear power reactors
 . . . space power reactors

. . . fission electric cells
 **SNAP 4**
 nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . fission electric cells
 **SNAP 4**
 RT space power unit reactors

SNAP 7
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 7**
 electric generators
 . direct power generators
 . . radioisotope batteries
 . . . **SNAP 7**
 . . . thermoelectric generators
 **SNAP 7**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 7**

SNAP 8
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 8**
 . . . space power reactors
 fission electric cells
 **SNAP 8**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 8**
 . . . space power reactors
 fission electric cells
 **SNAP 8**
 . . . nuclear power reactors
 . . . space power reactors
 fission electric cells
 **SNAP 8**
 nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . fission electric cells
 **SNAP 8**
 RT heat exchangers
 space power unit reactors
 turbogenerators

SNAP 9A
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 9A**
 electric generators
 . direct power generators
 . . radioisotope batteries
 . . . **SNAP 9A**
 . . . thermoelectric generators
 **SNAP 9A**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **SNAP 9A**

SNAP 10A
 GS auxiliary power sources
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 **SNAP 10A**
 . . . space power reactors
 fission electric cells
 **SNAP 10A**
 electric generators
 . direct power generators
 . . thermoelectric generators
 . . . **SNAP 10A**
 nuclear electric power generation
 . nuclear auxiliary power units

- .. SNAP
 - ... fission electric cells
 - **SNAP 10A**
 - .. space power reactors
 - ... fission electric cells
 - **SNAP 10A**
 - .. nuclear power reactors
 - ... space power reactors
 - ... fission electric cells
 - **SNAP 10A**
 - .. nuclear reactors
 - .. nuclear power reactors
 - .. space power reactors
 - ... fission electric cells
 - **SNAP 10A**
 - RT heat exchangers
 - Snapshot satellite
- SNAP 11**
- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 11**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 11**
 - .. thermoelectric generators
 - ... **SNAP 11**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 11**
- SNAP 13**
- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 13**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 13**
 - .. thermionic converters
 - ... **SNAP 13**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 13**
 - RT thermionic power generation
- SNAP 15**
- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 15**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 15**
 - .. thermoelectric generators
 - ... **SNAP 15**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 15**
- SNAP 17**
- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 17**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 17**
 - .. thermoelectric generators
 - ... **SNAP 17**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 17**
- SNAP 19**
- GS auxiliary power sources
 - .. nuclear auxiliary power units

- .. SNAP
 - ... **SNAP 19**
- electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 19**
 - .. thermoelectric generators
 - ... **SNAP 19**
- nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 19**

SNAP 21

- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 21**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 21**
 - .. thermoelectric generators
 - ... **SNAP 21**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 21**

SNAP 23

- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 23**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 23**
 - .. thermoelectric generators
 - ... **SNAP 23**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 23**

SNAP 27

- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 27**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 27**
 - .. thermoelectric generators
 - ... **SNAP 27**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 27**

SNAP 29

- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 29**
 - electric generators
 - .. direct power generators
 - .. radioisotope batteries
 - ... **SNAP 29**
 - .. thermoelectric generators
 - ... **SNAP 29**
 - nuclear electric power generation
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 29**

SNAP 50

- GS auxiliary power sources
 - .. nuclear auxiliary power units
 - .. SNAP
 - ... **SNAP 50**
 - .. space power reactors
 - ... **SNAP 50**
 - nuclear electric power generation
 - .. nuclear auxiliary power units

- .. SNAP
 - ... **SNAP 50**
- .. space power reactors
 - ... **SNAP 50**
- .. nuclear power reactors
 - .. space power reactors
 - ... **SNAP 50**
- nuclear reactors
 - .. nuclear power reactors
 - .. space power reactors
 - ... **SNAP 50**
- RT space power unit reactors

Snapshot satellite

- GS artificial satellites
 - .. **Snapshot satellite**
- RT SNAP 10A

SNAPTRAN reactor

- RT ∞ reactors
- SNAP

snatching

- USE **spacecraft recovery**

SNC meteorites*(added March 1998)*

DEF Meteorites with petrologic characteristics, isotopic signatures, trapped gas compositions, and relatively young crystallization ages (less than 1.3 billion years), which together point to a Martian origin. The name of these meteorites is derived from first three known examples-- Shergotty, Nakhla, and Chassigny.

- UF *Martian meteorites*
 - Shergotty Nakhla Chassigny meteorites*
- GS celestial bodies
 - .. meteorites
 - ... stony meteorites
 - ... achondrites
 - ... **SNC meteorites**
- RT chassignites
 - Mars (planet)
 - Mars surface
 - nakhilites
 - shergottites

sneak circuit analysis

DEF In electrical or electronic circuits, the detection and/or prevention of "sneak circuits" -- paths having latent electrical conditions resulting from unapparent stimulus-response relationships which cause unwanted functions or inhibit desired function.

- GS network analysis
 - .. **sneak circuit analysis**
- RT automatic test equipment
 - circuit protection
 - circuit reliability
 - critical path method
 - electric networks
 - electrical faults
 - reliability engineering
 - short circuits
 - signal flow graphs
 - trees (mathematics)

sneezing

- GS reflexes
 - .. respiratory reflexes
 - .. **sneezing**
- RT involuntary actions
 - vasoconstriction

Snellen tests

- RT ∞ tests
 - visual acuity

Snells law

DEF A law of geometric optics that defines the amount of bending that takes place when a light ray strikes a refractive boundary (e. g. , an air-glass interface) at a non-normal angle.

- GS laws
 - .. **Snells law**

- RT geometrical optics
 ∞ optics
 refraction
 refractivity
- snow**
 DEF A form of ice composed of small white or translucent hexagonal crystals of frozen water, formed directly by sublimation of atmospheric water vapor around solid nuclei at a temperature below the freezing point. The crystals grow while floating or falling to the ground, and are often agglomerated into snowflakes.
 GS precipitation (meteorology)
 . **snow**
 RT acid rain
 cirques (landforms)
 cloud glaciation
 graupel
 ice formation
 precipitation measurement
 slush
 storms (meteorology)
- Snow aerial applicator aircraft S-2B*
 USE **agricultural aircraft**
- snow cover**
 GS precipitation (meteorology)
 . **snow cover**
 RT cloud glaciation
 cold weather
 Earth cryosphere
 storm damage
 storms
 storms (meteorology)
- Snow S-2 aircraft*
 USE **agricultural aircraft**
- snowplow effect*
 USE **plasma dynamics**
- snowstorms**
 GS storms
 . storms (meteorology)
 . . **snowstorms**
 RT climatology
 precipitation (meteorology)
 storm enhancement
 storm suppression
 weather forecasting
 weather modification
- SOAC (electronics)*
 (added May 2001)
 USE **systems-on-a-chip**
- ∞ **soaking**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT baths
 heat treatment
 heating
 submerging
 water immersion
 wetting
- soaps**
 RT detergents
 stearates
 surfactants
 wetting
- soaring**
 RT climbing flight
 coasting flight
 ∞ flight
 gliders
 gliding
 hang gliders
 horizontal flight
 man powered aircraft
- vertical air currents
- Sobolev space**
 DEF A Banach space whose elements are functions defined in a domain in Euclidean space and whose norm measures the size and smoothness of the functions.
 GS algebra
 . vector spaces
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 analysis (mathematics)
 . function space
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 . functional analysis
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 geometry
 . topology
 . . metric space
 . . . Hilbert space
 **Sobolev space**
 RT boundary value problems
 Euclidean geometry
- social factors**
 GS sociology
 . **social factors**
 . . ethnic factors
 RT anthropology
 crime
 culture (social sciences)
 police
 race factors
 space psychology
 Starsite program
 urban planning
 urban research
 ∞ variable
- social isolation**
 GS isolation
 . **social isolation**
 RT sociology
- social psychiatry**
 GS medical science
 . psychiatry
 . . **social psychiatry**
 RT sociology
- sociology**
 GS **sociology**
 . social factors
 . . ethnic factors
 RT anthropology
 case histories
 cities
 communities
 culture (social sciences)
 demography
 dependence
 group dynamics
 human relations
 minorities
 politics
 race factors
 retirement
 social isolation
 social psychiatry
 systems analysis
 urban planning
- socks**
 GS clothing
 . **socks**
 RT fabrics
 shoes
- sod**
 DEF The top stratum of soil usually containing grassy plants with their matted roots.
- GS soils
 . **sod**
 RT canopies (vegetation)
 farmlands
 grasses
 grasslands
 land
 plowing
- sodalite**
 RT chemical reactions
 photochemical reactions
 photochromism
- sodar**
 DEF Sound detector and ranging.
 RT acoustic scattering
 atmospheric temperature
 ∞ instruments
 measuring instruments
 meteorological instruments
 meteorology
 sound detecting and ranging
 temperature measurement
- sodium**
 GS chemical elements
 . alkali metals
 . . **sodium**
 . . . liquid sodium
 . . . sodium isotopes
 sodium 22
 sodium 24
 . . . sodium vapor
 metals
 . alkali metals
 . . **sodium**
 . . . liquid sodium
 . . . sodium isotopes
 sodium 22
 sodium 24
 . . . sodium vapor
 RT dawsonite
 electrolyte metabolism
 liquid metal cooled reactors
- sodium 22**
 GS chemical elements
 . alkali metals
 . . sodium
 . . . sodium isotopes
 **sodium 22**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 **sodium 22**
 . . . sodium isotopes
 **sodium 22**
 metals
 . alkali metals
 . . sodium
 . . . sodium isotopes
 **sodium 22**
- sodium 24**
 GS chemical elements
 . alkali metals
 . . sodium
 . . . sodium isotopes
 **sodium 24**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 **sodium 24**
 . . . sodium isotopes
 **sodium 24**
 metals
 . alkali metals
 . . sodium
 . . . sodium isotopes
 **sodium 24**
- sodium alloys**
 GS alloys

sodium azides

- . **sodium alloys**
- sodium azides**
 - GS nitrogen compounds
 - . azides (inorganic)
 - . . . **sodium azides**
 - . azides (organic)
 - . . . **sodium azides**
 - sodium compounds
 - . **sodium azides**
 - RT detonators
 - explosives
- sodium bromides**
 - GS halogen compounds
 - . bromine compounds
 - . . bromides
 - . . . **sodium bromides**
 - . halides
 - . . bromides
 - . . . **sodium bromides**
 - . . metal halides
 - . . . alkali halides
 - **sodium bromides**
 - sodium compounds
 - . **sodium bromides**
- sodium carbonates**
 - GS carbon compounds
 - . carbonates
 - . . **sodium carbonates**
 - sodium compounds
 - . **sodium carbonates**
 - RT dawsonite
- sodium channels (biology)*
(added August 2002)
- USE **ion channels (biology)**
- sodium chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **sodium chlorides**
 - . halides
 - . . chlorides
 - . . . **sodium chlorides**
 - . . metal halides
 - . . . alkali halides
 - **sodium chlorides**
 - sodium compounds
 - . **sodium chlorides**
 - RT molten salts
 - salt beds
 - ∞ salts
- sodium chlorodifluoroacetates**
 - GS acetates
 - . **sodium chlorodifluoroacetates**
 - esters
 - . **sodium chlorodifluoroacetates**
- sodium chromites**
 - GS chromium compounds
 - . **sodium chromites**
 - sodium compounds
 - . **sodium chromites**
- sodium compounds**
 - GS **sodium compounds**
 - . cryolite
 - . Nembutal (trademark)
 - . nepheline
 - . sodium azides
 - . sodium bromides
 - . sodium carbonates
 - . sodium chlorides
 - . sodium chromites
 - . sodium fluorides
 - . sodium gallates
 - . sodium hydrides
 - . sodium hydroxides
 - . sodium iodides
 - . sodium nitrates
 - . sodium peroxides
 - . sodium salicylates
- . sodium silicates
- . . spodumene
- . . talc
- . . tourmaline
- . sodium sulfates
- RT ∞ alkali metal compounds
- bloedite
- ∞ chemical compounds
- ∞ metal compounds
- sodium cooling**
 - SN (COOLING WITH SODIUM)
 - GS cooling
 - . **sodium cooling**
 - RT coolants
 - liquid cooled reactors
 - liquid cooling
- sodium fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **sodium fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **sodium fluorides**
 - . . metal halides
 - . . . alkali halides
 - **sodium fluorides**
 - . . metal fluorides
 - **sodium fluorides**
 - sodium compounds
 - . **sodium fluorides**
- sodium gallates**
 - GS gallium compounds
 - . gallates
 - . . **sodium gallates**
 - sodium compounds
 - . **sodium gallates**
- sodium graphite reactors**
 - UF *SGR (nuclear reactors)*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . liquid metal cooled reactors
 - . . . **sodium graphite reactors**
 - RT Hallam Nuclear Power Facility
 - nuclear power reactors
- sodium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . . metal hydrides
 - . . . **sodium hydrides**
 - sodium compounds
 - . **sodium hydrides**
- sodium hydroxides**
 - GS bases (chemical)
 - . alkalies
 - . . **sodium hydroxides**
 - hydroxides
 - . **sodium hydroxides**
 - sodium compounds
 - . **sodium hydroxides**
- sodium iodides**
 - GS halogen compounds
 - . halides
 - . . metal halides
 - . . . alkali halides
 - **sodium iodides**
 - . . iodine compounds
 - . . iodides
 - . . . **sodium iodides**
 - sodium compounds
 - . **sodium iodides**
- sodium isotopes**
 - GS chemical elements
 - . alkali metals
 - . . sodium
- . . . **sodium isotopes**
- sodium 22
- sodium 24
- . nuclides
- . . isotopes
- . . . **sodium isotopes**
- sodium 22
- sodium 24
- metals
- . alkali metals
- . . sodium
- . . . **sodium isotopes**
- sodium 22
- sodium 24
- sodium nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . . inorganic nitrates
 - . . . **sodium nitrates**
 - sodium compounds
 - . **sodium nitrates**
- sodium peroxides**
 - GS chalcogenides
 - . oxides
 - . . anhydrides
 - . . . peroxides
 - **sodium peroxides**
 - . . metal oxides
 - . . . **sodium peroxides**
 - sodium compounds
 - . **sodium peroxides**
- sodium reactor experiment**
 - UF *SRE reactor*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . liquid metal cooled reactors
 - . . . **sodium reactor experiment**
 - . nuclear research and test reactors
 - . . **sodium reactor experiment**
- sodium salicylates**
 - GS esters
 - . **sodium salicylates**
 - salicylates
 - . **sodium salicylates**
 - sodium compounds
 - . **sodium salicylates**
- sodium silicates**
 - GS silicon compounds
 - . silicates
 - . . **sodium silicates**
 - . . . spodumene
 - . . . talc
 - . . . tourmaline
 - sodium compounds
 - . **sodium silicates**
 - . . spodumene
 - . . talc
 - . . tourmaline
 - RT minerals
- sodium sulfates**
 - DEF Sodium compounds containing the -SO₄ group.
 - GS sodium compounds
 - . **sodium sulfates**
 - sulfur compounds
 - . sulfates
 - . . **sodium sulfates**
- sodium sulfites**
 - GS sodium compounds
 - . **sodium sulfites**
 - sulfur compounds
 - . sulfites
 - . . **sodium sulfites**
- sodium sulfur batteries**
 - DEF One of several types of rechargeable batteries under consideration as power sources for electrically actuated vehicles. This battery uses a solid electrolyte as well as a sodium

reservoir made of metal.

- GS electric generators
 - . direct power generators
 - . . primary batteries
 - . . . **sodium sulfur batteries**
- electrochemical cells
 - . electric batteries
 - . . primary batteries
 - . . . **sodium sulfur batteries**
- RT ∞ electric cells

sodium vapor

- GS chemical elements
 - . alkali metals
 - . . sodium
 - . . . **sodium vapor**
- metals
 - . alkali metals
 - . . sodium
 - . . . **sodium vapor**
- metal vapors
 - . . **sodium vapor**
- vapors
 - . metal vapors
 - . . **sodium vapor**
- RT mercury vapor

SOFAR

USE **sound fixing and ranging**

SOFIA (airborne observatory)

- (added March 1990)
- SN (STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY)
- UF *Stratospheric Observatory for IR Astronomy*
- GS observatories
 - . astronomical observatories
 - . . **SOFIA (airborne observatory)**
- RT airborne equipment
 - Boeing 747 aircraft
 - infrared astronomy
 - Kuiper Airborne Observatory
 - spaceborne astronomy

soft gamma repeaters

(added January 2000)

DEF A class of x-ray source which emits repeating bright bursts of "soft" or low-energy gamma rays, along with steady x-ray pulsations. By the end of 1999 only a handful of these sources had been identified in our galaxy and in the Large Magellanic Cloud. They are associated with supernova remnants and are thus apparently some kind of young neutron star. One theory holds that these stars are young magnetars (magnetically-powered neutron stars). Bright bursts occur when the evolving, ultra-strong magnetic field stresses the neutron star's solid crust to breaking, in a sudden star-quake. X-ray pulsations are due to the rotation of the star, with it's hot surface bright in x-rays.

- UF *SGR (astronomy)*
- GS celestial bodies
 - . stars
 - . . neutron stars
 - . . . **soft gamma repeaters**
 - . . x ray stars
 - . . . **soft gamma repeaters**
- gamma ray sources (astronomy)
 - . **soft gamma repeaters**
- x ray sources
 - . x ray stars
 - . . **soft gamma repeaters**
- RT gamma ray astronomy
 - gamma ray bursts
 - magnetars
 - supernova remnants

soft landing

- SN (SPACECRAFT OR AIRCRAFT)
- DEF The act of landing on the surface of a planet or natural satellite without damage to any portion of the vehicle or payload except possibly the landing gear. Used for soft recovery.
- UF *soft recovery*
- GS landing

- . **soft landing**
- RT aircraft landing
- ∞ astronautics
 - crash landing
 - glide landings
 - hard landing
 - horizontal spacecraft landing
 - lunar landing
 - Mars landing
 - planetary landing
 - spacecraft landing
 - Surveyor project
 - Viking 1975 entry vehicle
 - water landing

soft landing spacecraft

- UF *SLV (soft landing vehicles)*
- GS **soft landing spacecraft**
 - . aerospace planes
 - . . HOPE aerospace plane
 - . . HOTOL launch vehicle
 - . . VentureStar launch vehicle
 - . . X-30 vehicle
 - . . X-37 vehicle
 - . . X-40A vehicle
 - . Apollo spacecraft
 - . . Apollo lunar experiment module
 - . Astro vehicle
 - . Buran space shuttle
 - . Gemini B spacecraft
 - . Gemini spacecraft
 - . . Gemini 2 spacecraft
 - . . Gemini (GT-1) spacecraft
 - . Janus spacecraft
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - . . Mars Excursion Module
 - . Mercury spacecraft
 - . . Aurora 7
 - . . Faith 7
 - . . Friendship 7
 - . . SIGMA 7
 - . Surveyor lunar probes
 - . . Surveyor 1 lunar probe
 - . . Surveyor 2 lunar probe
 - . . Surveyor 3 lunar probe
 - . . Surveyor 4 lunar probe
 - . . Surveyor 5 lunar probe
 - . . Surveyor 6 lunar probe
 - . . Surveyor 7 lunar probe
 - . voskhod manned spacecraft
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
 - . Vostok spacecraft
 - . . Vostok 1 spacecraft
 - . . Vostok 2 spacecraft
 - . . Vostok 3 spacecraft
 - . . Vostok 4 spacecraft
 - . . Vostok 5 spacecraft
 - . . Vostok 6 spacecraft
- RT Apollo project
 - ferry spacecraft
 - hovering rocket vehicles
 - lunar probes
 - reusable spacecraft
 - space capsules
 - ∞ spacecraft
 - spacecraft landing
 - Surveyor project
 - X-20 aircraft

soft recovery

USE **soft landing**

softening

- SN (EXCLUDES WATER SOFTENING)
- GS **softening**
 - . work softening
- RT annealing
 - deionization
 - demineralizing
 - digesting

dissolving
hardening (materials)
ion exchanging

softness

- RT ductility
 - elastic properties
 - flexibility
 - hardness
 - stiffness

software (computers)

USE **computer programs**

software development tools

DEF Computer programs that aid in the specification, construction, testing, analysis, management, documentation, and maintenance of other computer programs.

UF *software tools*

GS computer programs

. **software development tools**
tools

. **software development tools**

- RT applications programs (computers)
 - architecture (computers)
 - computer systems design
 - object-oriented programming
 - program verification (computers)
 - programming environments
 - reverse engineering
 - scientific visualization
 - software engineering
 - software reuse

software engineering

DEF The systematic approach to the development, operation, maintenance, and retirement of software.

- RT computer programming
 - computer programs
 - computer systems design
 - computer systems programs
 - computer viruses
 - data bases

∞ engineering

- object-oriented programming
- open source licensing (computers)
- programming environments
- reverse engineering
- software development tools
- software reliability
- software reuse
- structured programming
- systems engineering
- UNIX (operating system)

software engineering environments

USE **programming environments**

software reliability

(added January 1993)

UF *computer program reliability*
program reliability (computers)

GS reliability

. **software reliability**

- . . computer program integrity
- RT computer programming
 - computer programs
 - computer systems performance
 - program verification (computers)
 - reliability analysis
 - software engineering
 - systems health monitoring

software reuse

(added May 1992)

GS utilization

. reuse

. . **software reuse**

- RT computer programming
 - computer programs
 - productivity
 - software development tools

SOHO Mission

software engineering

software tools

USE **software development tools**

SOHO Mission

(added September 1989)

DEF One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and solar wind and the structure and dynamics of the solar interior.

UF *Solar and Heliospheric Observatory*

space missions

GS . **SOHO Mission**

RT Cluster Mission

ESA satellites

European space programs

heliosphere

international cooperation

∞ missions

scientific satellites

solar corona

solar interior

solar observatories

solar wind

Transition Region and Coronal

Explorer

SOI (semiconductors)

DEF Semiconductor devices consisting of a silicon layer coupled to an electrically insulating layer. Used for silicon-on-insulator semiconductors.

UF *silicon-on-insulator semiconductors*

GS electronic equipment

. solid state devices

. . semiconductor devices

. . . **SOI (semiconductors)**

RT field effect transistors

metal oxide semiconductors

silicon films

silicon junctions

silicon transistors

SIS (semiconductors)

SOS (semiconductors)

soil contamination

USE **soil pollution**

soil erosion

GS erosion

. **soil erosion**

RT abrasion

atmospheric effects

deterioration

environment effects

hydrogeology

landslides

outliers (landforms)

rain erosion

rain impact damage

soils

water erosion

weathering

wind effects

soil mapping

GS mapping

. **soil mapping**

RT geographic applications program

ground penetrating radar

maps

photomapping

soils

SPOT (French satellite)

surveys

terrain analysis

soil mechanics

DEF Mechanical properties of unconsolidated accumulations of particles produced by the disintegration and chemical decomposition of rocks.

RT crustal fractures

fracture mechanics

geotechnical engineering

geotechnical fabrics

rock mechanics

soil moisture

GS moisture

. **soil moisture**

RT lysimeters

moisture content

plant stress

soil sampling

soils

vegetation growth

soil pollution

(added September 1995)

UF *soil contamination*

GS pollution

. environment pollution

. . **soil pollution**

RT contaminants

environmental cleanup

ground water

heavy metals

industrial wastes

pollution monitoring

radioactive wastes

sediments

toxicity and safety hazard

waste disposal

water pollution

soil sampling

(added March 1995)

GS sampling

. **soil sampling**

RT alkalinity

Mars surface samples

pH factor

salinity

soil moisture

terrain analysis

soil science

UF *pedology*

RT agriculture

conservation

erosion

soils

vegetation growth

soils

GS **soils**

. alluvium

. dirt

. gravels

. laterites

. lunar soil

. . lunar dust

. mud

. permafrost

. sands

. . monazite sands

. . tar sands

. sod

RT andesite

anorthosite

arid lands

ataxite

barren land

basalt

bedrock

bentonite

boreholes

breccia

carbonaceous rocks

clays

coal

conservation

cultivation

deltas

diorite

dunite

Earth resources

eclogite

enstatite

formations

geology

gneiss

granite

igneous rocks

illite

kaolinite

land

landslides

lava

limestone

lysimeters

magma

minerals

moldavite

muskegs

obsidian

olivine

peridotite

planting

polyurethane foam

porous materials

pumice

pyroxenes

quartz

rocks

sandstones

sedimentary rocks

serpentine

shales

soil erosion

soil mapping

soil moisture

soil science

strip mining

syenite

trachyte

tunneling (excavation)

vadose water

vegetation growth

solar activity

DEF Any type of variation in the appearance of energy output of the sun.

GS stellar activity

. **solar activity**

. . faculae

. . solar flares

. . solar prominences

. . solar storms

. . spicules

. . sunspots

RT ∞ activity

auroras

∞ disturbances

International Quiet Sun Year

IRIS satellites

magnetic disturbances

prominences

radio auroras

solar convection (astronomy)

solar interior

solar planetary interactions

starspots

sun

sunspot cycle

solar activity effects

RT blackout (propagation)

∞ effects

galactic cosmic rays

heliosphere

magnetic disturbances

secular variations

solar oscillations

solar planetary interactions

space weather

sudden ionospheric disturbances

sudden storm commencements

sun

Solar and Heliospheric Observatory

USE **SOHO Mission**

solar arrays

UF *rollup solar arrays*

- GS arrays
 . **solar arrays**
 . . solar blankets
- RT electrostatic bonding
 payload delivery (STS)
 photovoltaic conversion
 power modules (STS)
 satellite power transmission
 self shadowing
 solar atriums
 solar energy conversion
 space station power supplies
 sun
- solar atmosphere**
- GS environments
 . extraterrestrial environments
 . . stellar atmospheres
 . . . **solar atmosphere**
 solar transition region
- RT ∞ atmospheres
 chromosphere
 M region
 photosphere
 solar convection (astronomy)
 solar oscillations
 spicules
 stellar structure
 sun
 Transition Region and Coronal Explorer
- solar atriums**
- DEF Open courts within buildings designed for passive solar heating.
- RT solar arrays
 solar heating
 solar reflectors
 space heating (buildings)
 sun
- solar auxiliary power units**
- GS auxiliary power sources
 . **solar auxiliary power units**
 . . ASTEC solar turboelectric generator
 electric generators
 . solar generators
 . . **solar auxiliary power units**
 . . . ASTEC solar turboelectric generator
- RT sun
- solar azimuth*
- USE **azimuth**
solar position
- Solar Backscatter UV Spectrometer**
- DEF A spaceborne spectrometer that measures solar UV spectral irradiance incident on the Earth and backscattered radiance from the Earth and thereby estimates the total atmospheric ozone content of the atmosphere and the altitude distribution of ozone.
- GS measuring instruments
 . spectrometers
 . . **Solar Backscatter UV Spectrometer**
- RT irradiance
 NOAA 11 satellite
 NOAA 14 satellite
 satellite-borne instruments
- solar blankets**
- DEF Large, high-temperature, low-mass solar arrays consisting of ultrathin silicon solar cells interconnected, welded, and bonded to flexible substances.
- GS arrays
 . solar arrays
 . . **solar blankets**
 electric generators
 . direct power generators
 . . thermionic converters
 . . . **solar blankets**
- RT ∞ blankets
- ∞ converters
 sun
- Solar Cell Calibration Facility**
- DEF One of the spacelab payloads. Used for SCCF.
- UF *SCCF*
- GS payloads
 . Spacelab payloads
 . . **Solar Cell Calibration Facility**
- RT calibrating
- ∞ facilities
 Space Transportation System flights
- solar cells**
- DEF Photovoltaic cells that convert sunlight into electrical energy. Used for silicon solar cells and wraparound contact solar cells.
- UF *silicon solar cells*
wraparound contact solar cells
- GS electric generators
 . direct power generators
 . . photoelectric generators
 . . . photovoltaic cells
 **solar cells**
 vertical junction solar cells
 . solar generators
 . . **solar cells**
 . . . vertical junction solar cells
 electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . photovoltaic cells
 **solar cells**
 vertical junction solar cells
 photoelectric cells
 . photovoltaic cells
 . . **solar cells**
 . . . vertical junction solar cells
- RT amorphous silicon
 antireflection coatings
 carrier lifetime
 carrier transport (solid state)
- ∞ cells
 copper indium selenides
 diffusion length
- ∞ electric cells
 electrostatic bonding
 float zones
 fuel cells
 heterojunctions
 homojunctions
 indium selenides
 open circuit voltage
 photodiodes
 photovoltaic conversion
 p-i-n junctions
 quantum efficiency
 satellite power transmission
 satellite solar energy conversion
 satellite solar power stations
 short circuit currents
 SIS (semiconductors)
 solar energy conversion
 solar powered aircraft
 space station power supplies
 spectrophotovoltaics
 sun
 thermionic converters
 thermoelectric generators
 thermophotovoltaic conversion
 tunnel junctions
- solar collectors**
- DEF Devices designed to absorb incident solar radiation and transfer the energy to a fluid passing through it. Used for solar receivers.
- UF *solar receivers*
- GS accumulators
 . **solar collectors**
 reflectors
 . solar reflectors
 . . **solar collectors**
- RT concentrators
 mirrors
 photothermal conversion
 selective surfaces
- solar dynamic power systems
 solar energy conversion
 space cooling (buildings)
 spectrophotovoltaics
 sun
- solar companion star*
- USE **Nemesis (star)**
- solar compasses**
- GS measuring instruments
 . indicating instruments
 . . compasses
 . . . **solar compasses**
 navigation aids
 . navigation instruments
 . . compasses
 . . . **solar compasses**
- RT air navigation
 air traffic control
 aircraft safety
 airport beacons
 all-weather air navigation
 approach indicators
 automatic flight control
 automatic pilots
 beacons
 Decca navigation
 display devices
 distance measuring equipment
 flight control
 flight instruments
 flight paths
 gyrocompasses
 heliports
 homing devices
 landing aids
 loran
 magnetic compasses
 omnidirectional radio ranges
 position indicators
 radar beacons
 radio beacons
 radio navigation
 self calibrating omnirange
 Shoran
 sun
 Tacan
 VHF omnirange navigation
 weather
- solar constant**
- DEF The rate at which solar radiation is received outside the Earth's atmosphere on a surface normal to the incident radiation and at the Earth's mean distance from the sun.
- GS constants
 . **solar constant**
 rates (per time)
 . flux density
 . . radiant flux density
 . . . irradiance
 **solar constant**
 solar flux density
 **solar constant**
 solar energy
 . solar flux density
 . . **solar constant**
- RT illuminance
 particle flux density
 sun
- solar convection (astronomy)**
(added June 1992)
- SN (LIMITED TO CONVECTION PHENOMENA OF THE SOLAR ATMOSPHERE AND INTERIOR)
- GS convection
 . stellar convection
 . . **solar convection (astronomy)**
- RT Benard cells
 convection currents
 convective flow
 dynamo theory
 fluid flow
 free convection
 Rayleigh-Benard convection

solar cooling

solar activity
solar atmosphere
solar interior
solar magnetic field
solar physics

solar converters

USE **solar generators**

solar cooling

DEF Conversion of solar energy into refrigeration energy.

GS cooling

. **solar cooling**

RT cooling systems
domestic energy
energy technology
residential energy
solar energy conversion
space cooling (buildings)
sun

solar corona

GS coronas

. stellar coronas

. . **solar corona**

. . . coronal holes

. . . coronal loops

RT

chromosphere
coronal mass ejection
electric corona
magnetic clouds
nebulae
SOHO Mission
solar transition region
stellar structure
sun
Transition Region and Coronal Explorer

solar corpuscular radiation

UF *solar streams*

GS extraterrestrial radiation

. solar radiation

. . **solar corpuscular radiation**

. . . solar electrons

. . . solar neutrinos

. . . solar neutrons

. . . solar protons

particles

. corpuscular radiation

. . **solar corpuscular radiation**

. . . solar electrons

. . . solar neutrinos

. . . solar neutrons

. . . solar protons

RT

Advanced Composition Explorer

M region

∞

radiation

solar planetary interactions

sudden storm commencements

sun

Wind/GGS spacecraft

solar cosmic rays

DEF Cosmic rays supposedly originating in the sun.

GS extraterrestrial radiation

. primary cosmic rays

. . **solar cosmic rays**

. solar radiation

. . **solar cosmic rays**

ionizing radiation

. cosmic rays

. . primary cosmic rays

. . . **solar cosmic rays**

particles

. corpuscular radiation

. . primary cosmic rays

. . . **solar cosmic rays**

RT

Advanced Composition Explorer

electron acceleration

energetic particles

GRIST (telescope)

sun

solar cycles

GS cycles

. **solar cycles**

. . sunspot cycle

RT

International Quiet Sun Year

IRIS satellites

secular variations

sun

sunspots

twenty-seven day variation

solar diameter

DEF Observable dimension of the sun.

RT astrometry

∞ science

solar eclipses

solar disk

USE **sun**

solar dynamic power systems

DEF Electric power systems using a solar heated working fluid to drive a turboalternator. Primary applications are for space stations and spacecraft.

GS electric generators

. solar generators

. . **solar dynamic power systems**

electric power supplies

. **solar dynamic power systems**

RT

Brayton cycle

heat storage

photothermal conversion

Rankine cycle

solar collectors

solar energy conversion

solar thermal electric power plants

space station power supplies

spacecraft power supplies

Stirling cycle

solar dynamics

USE **heliogeismology**

solar eclipses

DEF Obscurations of the light of the sun by the moon.

GS eclipses

. **solar eclipses**

occultation

. lunar occultation

. . **solar eclipses**

RT

lunar shadow

solar diameter

sun

solar electric propulsion

GS propulsion

. electric propulsion

. . **solar electric propulsion**

. low thrust propulsion

. . solar propulsion

. . . **solar electric propulsion**

. spacecraft propulsion

. . solar propulsion

. . . **solar electric propulsion**

RT

Deep Space 1 Mission

solar powered aircraft

solar thermal propulsion

space station propulsion

sun

solar electrons

GS extraterrestrial radiation

. solar radiation

. . solar corpuscular radiation

. . . **solar electrons**

particles

. charged particles

. . energetic particles

. . . electrons

. . . . **solar electrons**

. corpuscular radiation

. . energetic particles

. . . electrons

. . . . **solar electrons**

. solar corpuscular radiation

. . **solar electrons**

. elementary particles

. . fermions

. . . leptons

. . . . electrons

. **solar electrons**

RT

sun

solar energy

SN (LIMITED TO DISCUSSIONS OF THE RADIANT ENERGY ORIGINATING FROM THE SUN. FOR SOLAR ENERGY TECHNOLOGIES REFER TO 'SOLAR ENERGY CONVERSION' AND ITS ASSOCIATED TERMS)

DEF The radiant energy originating from the sun. Approximately 998 of solar energy lies between the wavelengths of 300 to 3,500 nm.

GS **solar energy**

. solar flux

. solar flux density

. . solar constant

. insolation

RT

∞ energy

IRIS satellites

solar radiation

sun

sunlight

solar energy absorbers

GS absorbers (materials)

. **solar energy absorbers**

RT

electromagnetic absorption

photothermal conversion

selective surfaces

sun

Trombe walls

solar energy conversion

GS energy conversion

. **solar energy conversion**

. . photothermal conversion

. . . thermophotovoltaic conversion

. . photovoltaic conversion

. . . thermophotovoltaic conversion

. . solar total energy systems

RT

cogeneration

∞

conversion

energy technology

heterojunction devices

hydrogen production

phase change materials

photoelectric generators

photoelectrochemical devices

renewable energy

solar arrays

solar cells

solar collectors

solar cooling

solar dynamic power systems

solar generators

solar heating

solar-pumped lasers

space cooling (buildings)

sun

solar faculae

USE **faculae**

solar flares

DEF A rapid release of electromagnetic (visible, radio, ultraviolet, x ray) and particulate (protons, electrons) energy from the sun. Flares are classified according to the optically observed area of the solar surface covered, ranging from zero for the smallest to 3 for the largest, and their intensity, either faint, normal, or brilliant.

GS

stellar activity

. solar activity

. . **solar flares**

. stellar flares

. . **solar flares**

RT

coronal loops

coronal mass ejection

- flare stars
 - ∞ flares
 - ∞ flash
 - Forbush decreases
 - force-free magnetic fields
 - IRIS satellites
 - magnetic disturbances
 - Solar Maximum Mission
 - solar neutrons
 - sudden storm commencements
 - sun
 - sunspots
- solar flux**
- SN (LIMITED TO ENERGY OR PARTICLES EMITTED FROM THE SUN PER UNIT TIME--SEE SOLAR FLUX DENSITY FOR ENERGY OR PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
 - GS rates (per time)
 - . flux (rate)
 - . . **solar flux**
 - solar energy
 - . **solar flux**
 - RT heat flux
 - limb brightening
 - sun
- solar flux density**
- SN (LIMITED TO SOLAR ENERGY OR PARTICLE EMISSION OR DETECTION RATE UNIT AREA--SEE SOLAR FLUX FOR EMISSION RATE PER UNIT TIME)
 - GS rates (per time)
 - . flux density
 - . . radiant flux density
 - . . . **solar flux density**
 - solar constant
 - solar energy
 - . **solar flux density**
 - . . solar constant
 - RT electron flux density
 - Helios satellites
 - illuminance
 - irradiance
 - limb brightening
 - luminance
 - luminous intensity
 - particle flux density
 - proton flux density
 - radiance
 - radiancy
 - radiation pressure
 - sun
- solar furnaces**
- GS heating equipment
 - . furnaces
 - . . **solar furnaces**
 - RT Forbush decreases
 - melting
 - sun
 - vacuum furnaces
- solar generators**
- UF *solar converters*
 - solar power generation*
 - solar power sources*
 - GS electric generators
 - . **solar generators**
 - . . solar auxiliary power units
 - . . . ASTEC solar turboelectric generator
 - . . solar cells
 - . . . vertical junction solar cells
 - . . solar dynamic power systems
 - RT direct power generators
 - fuel cells
 - paddles
 - photoelectric cells
 - photoelectric generators
 - photovoltaic cells
 - ∞ power supplies
 - Rankine cycle
 - solar energy conversion
 - solar sea power plants
 - sun
 - thermoelectric generators
- turbogenerators
- solar granulation**
- GS photosphere
 - . **solar granulation**
 - RT Benard cells
 - brightness distribution
 - convection currents
 - limb brightening
 - sun
 - surface layers
 - temperature effects
- solar gravitation**
- UF *evection*
 - GS gravitation
 - . stellar gravitation
 - . . **solar gravitation**
 - RT sun
- solar heating**
- GS heating
 - . **solar heating**
 - RT bioconversion
 - hydrothermal systems
 - insolation
 - phase change materials
 - radiant heating
 - residential energy
 - solar atriums
 - solar energy conversion
 - space heating (buildings)
 - sun
 - sunlight
 - Trombe walls
- solar houses**
- DEF Habitable buildings designed with large expanses of glass or other transparent materials to collect solar radiation for heating.
 - RT buildings
 - domestic energy
 - energy technology
 - heat storage
 - residential energy
 - space heating (buildings)
 - sun
 - Trombe walls
- solar instruments**
- GS **solar instruments**
 - . spectroheliographs
 - RT telescopes
 - filtergrams
 - optical measuring instruments
 - radiation measuring instruments
 - solar optical telescope
 - spectrometers
 - sun
 - telescopes
- solar interior**
- GS stellar interiors
 - . **solar interior**
 - RT helioseismology
 - SOHO Mission
 - solar activity
 - solar convection (astronomy)
 - solar physics
 - stellar cores
 - stellar structure
 - sun
- solar lasers*
- USE **solar-pumped lasers**
- solar limb**
- RT coronal loops
 - limb brightening
 - limb darkening
 - ∞ limbs
 - planetary limb
 - sun
- solar longitude**
- GS longitude
 - . **solar longitude**
 - RT astronomical coordinates
 - celestial reference systems
 - sun
- solar magnetic field**
- UF *helio magnetism*
 - GS magnetic fields
 - . stellar magnetic fields
 - . . **solar magnetic field**
 - RT electromagnetic fields
 - force-free magnetic fields
 - interplanetary magnetic fields
 - magnetic field reconnection
 - solar convection (astronomy)
 - sun
 - Transition Region and Coronal Explorer
- Solar Maximum Mission**
- DEF Use of the multimission modular spacecraft for the study of solar particles, emissions, and flares.
 - GS space missions
 - . **Solar Maximum Mission**
 - . . Solar Maximum Mission-A
 - RT ∞ flares
 - flux density
 - gamma ray spectrometers
 - ∞ missions
 - multimission modular spacecraft
 - polarimeters
 - programs
 - solar flares
 - space programs
 - sun
 - ultraviolet spectrometers
 - Ulysses mission
- Solar Maximum Mission-A**
- DEF The solar maximum mission spacecraft. Used for SMM-A.
 - UF *SMM-A*
 - GS space missions
 - . Solar Maximum Mission
 - . . **Solar Maximum Mission-A**
 - RT ∞ missions
 - space exploration
 - ∞ spacecraft
 - sun
- Solar Mesosphere Explorer**
- DEF A satellite whose experiments provided a comprehensive study of atmospheric ozone and the processes which form and destroy it. The satellite was launched in October of 1981. On May 15, 1989, the mission was terminated due to battery problems.
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Solar Mesosphere Explorer**
 - RT atmospheric composition
 - mesosphere
 - ozone
 - sun
- solar nebula**
- (added June 2001)
 - DEF Clouds of gas and dust from which the Sun, planets, and other solar system bodies formed.
 - UF *protosolar nebula*
 - GS celestial bodies
 - . nebulae
 - . . **solar nebula**
 - RT meteoritic composition
 - planetary evolution
 - protoplanets
 - protostars
 - solar system
 - solar system evolution
 - star formation
 - stellar evolution

solar neighborhood

sun

solar neighborhood

DEF The portion of the Milky Way Galaxy centering around the sun and containing the nearest neighboring stars.

RT astronomy
celestial bodies
local group (astronomy)
Milky Way Galaxy
Nemesis (star)
solar system
star clusters
stars
sun

solar neutrinos

DEF Neutral particles originating from nuclear reactions in the core of the sun.

GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
. elementary particles
. . fermions
. . . leptons
. . . . neutrinos
. **solar neutrinos**
RT astronomical models
astrophysics
nuclear reactions
stellar models
sun
weakly interacting massive particles

solar neutrons

GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrons**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrons**
. elementary particles
. . fermions
. . . neutrons
. . . . **solar neutrons**
. neutral particles
. . neutrons
. . . **solar neutrons**
RT neutron flux density
solar flares

solar noise

USE **solar radio emission**

solar oblateness

RT oblate spheroids
sun

solar observatories

GS observatories
. astronomical observatories
. . **solar observatories**
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Pinhole Occulter Facility
RT coronagraphs
SOHO Mission
sun

Transition Region and Coronal Explorer

solar optical telescope

DEF A 1-M class, high resolution solar telescope which NASA had planned to operate on the Shuttle Spacelab during the mid and late 1980s. Used for SOT.

UF *SOT*
GS telescopes
. spaceborne telescopes
. . **solar optical telescope**
RT solar instruments
solar physics

solar orbits

SN (RESTRICTED TO ORBITS AROUND THE SUN)
UF *heliocentric orbits*
planetary motion
GS orbits
. **solar orbits**
RT aphelions
circular orbits
∞ Earth motion
ecliptic
elliptical orbits
HEOS satellites
interplanetary trajectories
∞ motion
orbital resonances (celestial mechanics)
perihelions
protoplanets
spacecraft orbits
sun
transfer orbits

solar oscillations

DEF Irregular oscillations in the solar atmosphere.
GS oscillations
. stellar oscillations
. . **solar oscillations**
stellar motions
. stellar oscillations
. . **solar oscillations**
RT astronomical models
atmospheric models
cataclysmic variables
solar activity effects
solar atmosphere
stellar models
sun
variable stars

solar parallax

DEF The angle at the sun subtended by the equatorial diameter of the Earth.

GS parallax
. **solar parallax**
RT astronomy
stellar parallax
sun

solar physics

DEF The study of the structure and activities of the Sun.

GS astrophysics
. stellar physics
. . **solar physics**
RT filtergrams
heliophysics
International Quiet Sun Year
photosphere
∞ physics
plasmas (physics)
∞ science
solar convection (astronomy)
solar interior
solar optical telescope
Spartan satellites
sun

Transition Region and Coronal Explorer

solar planetary interactions

DEF The interactions and subsequent effects caused by the interactions of solar activity and/or wind with a planet, its magnetic field, its atmosphere, or natural satellites.

GS **solar planetary interactions**
. solar terrestrial interactions
RT Earth magnetosphere
magnetic disturbances
magnetosheath
Nozomi Mars Orbiter
planetary atmospheres
planetary magnetic fields
planetary magnetospheres
planetary magnetotails
plasma interactions
solar activity
solar activity effects
solar corpuscular radiation
solar wind
solar wind velocity

solar plasma (radiation)

USE **solar wind**

solar ponds (heat storage)

DEF Large, shallow ponds covered with thin, transparent plastic shields and used for collecting and storing solar heat for conversion to electric power.

RT electric generators
energy conversion
ponds
reservoirs
sun

solar position

UF *solar azimuth*
GS position (location)
. **solar position**
RT astrolabes
celestial navigation
equinoxes
seasons
solstices
sun
zenith

solar power generation

USE **solar generators**

solar power satellites

DEF Proposed very large space structures consisting of hundreds of square miles of solar thermal collectors and/or photovoltaic converters constructed or assembled in space. Power would be transmitted to Earth in microwave form.

GS artificial satellites
. **solar power satellites**
RT large space structures
power beaming
satellite power transmission
sun

solar power sources

USE **solar generators**

solar powered aircraft

DEF Aircraft powered by solar energy.

RT ∞ aircraft
solar cells
solar electric propulsion
solar propulsion
sun

solar probes

GS unmanned spacecraft
. space probes
. . **solar probes**
. . . Helios 1
. . . Helios 2
. . . Helios A

solar reflectors

. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
RT coronal holes
cosmic noise
decimeter waves
electromagnetic noise
millimeter waves
radio bursts

solar radio waves

USE **solar radio emission**

solar receivers

USE **solar collectors**

solar reflectors

GS reflectors
. **solar reflectors**
. . solar collectors
. . solettas
RT focusing
heat shielding
heliostats
mirrors
parabolic reflectors
paraboloid mirrors
photothermal conversion
radiant flux density
solar atriums
spacecraft radiators
sun

solar rotation

UF *Carrington rotation*
GS gyration
. rotation
. . stellar rotation
. . . **solar rotation**
stellar motions
. stellar rotation
. . **solar rotation**
RT sun
twenty-seven day variation

solar sails

GS sails
. **solar sails**
RT propulsion
space flight
spacecraft propulsion
sun

solar sea power plants

GS electric generators
. direct power generators
. . thermoelectric generators
. . . **solar sea power plants**
RT electric power plants
energy conversion
∞ generators
ocean temperature
ocean thermal energy conversion
∞ power plants
solar generators
sun

solar seismology

USE **helioseismology**

solar selective coatings

USE **selective surfaces**

solar sensors

UF *sun sensors*
RT attitude control
guidance sensors
IRIS satellites
navigation aids
navigation instruments
star trackers
sun

tracking (position)

solar simulation

GS simulation
. **solar simulation**
RT space environment simulation
sun
thermal simulation

solar simulators

DEF Devices which produce thermal energy, equivalent in intensity and spectral distribution to that from the sun, used in testing materials and space vehicles.

GS simulators
. environment simulators
. . **solar simulators**
RT space simulators
sun
test facilities

solar spectra

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . stellar spectra
. . . . **solar spectra**
RT absorption spectra
astronomical spectroscopy
continuous spectra
coronas
D lines
emission spectra
filtergrams
Fraunhofer lines
H alpha line
H beta line
H gamma line
H lines
infrared spectra
line spectra
Lyman spectra
molecular spectra
oxygen spectra
sun
ultraviolet spectra
visible spectrum
x ray spectra

solar spectrometers

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **solar spectrometers**
. spectrometers
. . **solar spectrometers**
RT absorption spectra
emission spectra
filter wheel infrared spectrometers
infrared spectrometers
spectroheliographs
sun
ultraviolet spectrometers

solar storms

GS stellar activity
. solar activity
. . **solar storms**
storms
. **solar storms**
RT Forbush decreases
ionospheric storms
magnetic storms
noise storms
sun

solar streams

USE **solar corpuscular radiation**

solar system

DEF The sun and other celestial bodies within its gravitational influence, including planets, asteroids, satellites, comets, and meteors.

GS celestial bodies
. **solar system**
planetary systems

. solar system

RT Amalthea
Amor asteroid
Apollo asteroids
Arend-Roland comet
asteroid belts
asteroid capture
asteroids
Brorsen-Metcalf comet
celestial mechanics
Charon
Chiron
comet heads
comet nuclei
comet tails
comets
Earth-Moon system
gas giant planets
Giacobini-Zinner comet
Grigg-Skjellerup comet
Halley's comet
Humason comet
IRAS-Araki-Alcock comet
Jupiter satellites
Kohoutek comet
Kuiper belt
Mercury surface
meteoroids
Morehouse comet
Mrkos comet
natural satellites
Oort cloud
planetary geology
planets
protoplanets
Quaoar
Rhea (astronomy)
Saturn rings
Schwassmann-Wachmann comet
solar nebula
solar neighborhood
solar system evolution
sun
∞ systems
Tempel 2 comet
terrestrial planets
Toro asteroid
Venus surface
Vesta asteroid
Voyager 1977 mission
West comet

solar system evolution

(added January 1991)

DEF The origin and development of the solar system.

GS evolution (development)
. **solar system evolution**
RT Genesis mission
Kuiper belt
lunar evolution
planetary evolution
planetary systems
planets
protoplanetary disks
solar nebula
solar system
stellar evolution
sun

solar temperature

GS temperature
. **solar temperature**
RT solar transition region
sun

solar terrestrial interactions

GS solar planetary interactions
. **solar terrestrial interactions**
RT Cluster Mission
corpuscular radiation
Earth magnetosphere
∞ flares
∞ interactions
International Geosphere-Biosphere program
magnetic disturbances

- magnetic storms
 - magnetosheath
 - Polar/GGS spacecraft
 - space weather
 - storms
 - sun
 - sunspots
 - weather
 - Wind/GGS spacecraft
- solar thermal electric power plants**
- DEF The use of solar energy to generate steam for producing electricity.
 - GS electric power plants
 - . **solar thermal electric power plants**
 - RT photothermal conversion
 - ∞ power plants
 - solar dynamic power systems
 - thermal energy
- solar thermal propulsion**
- DEF Proposed energy source for spacecraft propulsion by passing hydrogen through a heat exchanger placed at the focal point of a large parabolic dish solar concentrator mirror.
 - GS propulsion
 - . low thrust propulsion
 - . . solar propulsion
 - . . . **solar thermal propulsion**
 - . spacecraft propulsion
 - . . solar propulsion
 - . . . **solar thermal propulsion**
 - RT propulsion system performance
 - solar electric propulsion
 - sun
- solar total energy systems**
- DEF Systems for converting solar energy directly into electrical and thermal energy.
 - GS energy conversion
 - . solar energy conversion
 - . . **solar total energy systems**
 - total energy systems
 - . **solar total energy systems**
 - RT ∞ conversion
 - direct power generators
 - ∞ energy
 - sun
 - ∞ systems
- solar transition region**
(added September 1993)
- DEF A layer of the solar atmosphere only a few hundred miles thick between the chromosphere and the corona across which the temperature rises rapidly from a few times 10(exp 4) K to the order of 10(exp 6) K.
 - GS environments
 - . extraterrestrial environments
 - . . stellar atmospheres
 - . . . solar atmosphere
 - **solar transition region**
 - RT chromosphere
 - solar corona
 - solar temperature
 - Transition Region and Coronal Explorer
- solar velocity**
- GS rates (per time)
 - . **solar velocity**
 - velocity
 - . **solar velocity**
 - RT sun
- solar wind**
- DEF Streams of plasma flowing approximately radially outward from the sun. Used for solar plasma (radiation).
 - UF *solar plasma (radiation)*
 - GS extraterrestrial radiation
 - . solar radiation
 - . . **solar wind**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - space plasmas
 - **solar wind**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - space plasmas
 - **solar wind**
 - RT Advanced Composition Explorer
 - AMPTE (satellites)
 - Chapman-Ferraro problem
 - Cluster Mission
 - comet tails
 - coronal holes
 - coronal mass ejection
 - cosmic plasma
 - galactic cosmic rays
 - Genesis mission
 - Grigg-Skjellerup comet
 - heliosphere
 - hydrogen plasma
 - interplanetary gas
 - interplanetary medium
 - M region
 - magnetic clouds
 - magnetic sails
 - magnetopause
 - magnetosheath
 - planetary magnetotails
 - plasmopause
 - Polar/GGS spacecraft
 - ∞ radiation
 - radiation pressure
 - SOHO Mission
 - solar planetary interactions
 - stellar winds
 - sun
 - Wind/GGS spacecraft
- solar wind velocity**
- GS dynamic characteristics
 - . flow characteristics
 - . . flow velocity
 - . . . **solar wind velocity**
 - rates (per time)
 - . flow velocity
 - . . **solar wind velocity**
 - . wind velocity
 - . . **solar wind velocity**
 - velocity
 - . flow velocity
 - . . **solar wind velocity**
 - . wind velocity
 - . . **solar wind velocity**
 - RT alpha particles
 - Earth magnetosphere
 - magnetic disturbances
 - magnetohydrodynamic flow
 - solar planetary interactions
 - stellar winds
 - sun
 - velocity measurement
- solar x-rays**
- GS electromagnetic radiation
 - . x rays
 - . . **solar x-rays**
 - extraterrestrial radiation
 - . solar radiation
 - . . **solar x-rays**
 - ionizing radiation
 - . x rays
 - . . **solar x-rays**
 - RT coronal holes
 - sun
- solar-pumped lasers**
- UF *solar lasers*
 - GS stimulated emission devices
 - . lasers
 - . . **solar-pumped lasers**
 - RT laser pumping
 - optical pumping
 - solar energy conversion
- solar radiation
- soldered joints**
- GS joints (junctions)
 - . metal joints
 - . . **soldered joints**
 - RT beam leads
 - bonded joints
 - butt joints
 - lap joints
 - soldering
- soldering**
- GS **soldering**
 - . ultrasonic soldering
 - RT bonding
 - brazing
 - fluxes
 - heat affected zone
 - ∞ joining
 - laser welding
 - low temperature brazing
 - metal bonding
 - metal-metal bonding
 - sealing
 - soldered joints
 - solders
 - welding
- solders**
- GS alloys
 - . **solders**
 - RT lead alloys
 - sealers
 - soldering
 - tin alloys
 - zinc alloys
- solenoid valves**
- GS valves
 - . **solenoid valves**
 - RT automatic control valves
 - electric control
 - ∞ electric equipment
 - electric relays
 - electric switches
 - hydraulic control
 - off-on control
 - solenoids
- solenoids**
- SN (EXCLUDES METEOROLOGICAL SOLENOIDS)
 - RT actuators
 - electric relays
 - electromagnets
 - magnet coils
 - solenoid valves
 - toroidal plasmas
- solettas**
- DEF Orbiting solar mirrors (reflectors).
 - GS mirrors
 - . **solettas**
 - reflectors
 - . solar reflectors
 - . . **solettas**
 - RT ∞ platforms
 - ∞ spacecraft
- sol-gel processes**
- RT alkoxides
 - ceramic nuclear fuels
 - nuclear fuels
 - ∞ processes
 - xerogels
- solid argon*
- USE **solidified gases**
- solid cryogen cooling**
- DEF Cooling with solidified cryogenic fluids.
 - GS cooling
 - . **solid cryogen cooling**
 - RT cryogenic fluids
 - cryogenics

solid cryogenics

- liquefied gases
- solid cryogenics**
 - DEF Solidified cryogenic fluids.
 - GS gases
 - . solidified gases
 - . . . **solid cryogenics**
 - . . . solid nitrogen
 - solids
 - . solidified gases
 - . . . **solid cryogenics**
 - . . . solid nitrogen
 - RT cooling systems
 - cryogenic equipment
 - cryogenics
 - liquid nitrogen
- solid electrodes**
 - GS electrodes
 - . **solid electrodes**
 - RT transconductance
- solid electrolytes**
 - DEF Single crystals, certain alloys, alkaline metals, and other compact compounds used in galvanic cells (batteries).
 - GS conductors
 - . electrolytes
 - . . . **solid electrolytes**
 - RT solid oxide fuel cells
- solid lubricants**
 - SN (EXCLUDES SEMISOLIDS SUCH AS GREASES)
 - GS lubricants
 - . **solid lubricants**
 - RT binders (materials)
 - gas lubricants
 - graphite
 - self lubricating materials
- solid mechanics**
 - RT continuum mechanics
 - finite element method
 - mechanical properties
 - ∞ mechanics (physics)
 - ∞ science
 - solids
 - structural analysis
- solid nitrogen**
 - GS chemical elements
 - . nitrogen
 - . . . **solid nitrogen**
 - gases
 - . nitrogen
 - . . . **solid nitrogen**
 - . solidified gases
 - . . . solid cryogenics
 - **solid nitrogen**
 - solids
 - . solidified gases
 - . . solid cryogenics
 - . . . **solid nitrogen**
 - RT cryogenics
 - refrigerants
- solid oxide fuel cells**
 - (added December 1995)
 - GS electric generators
 - . direct power generators
 - . . fuel cells
 - . . . **solid oxide fuel cells**
 - electrochemical cells
 - . fuel cells
 - . . . **solid oxide fuel cells**
 - RT oxides
 - solid electrolytes
- solid phases**
 - GS **solid phases**
 - . Laves phases
 - RT eutectics
 - gas-metal interactions
 - gas-solid interfaces
 - liquid phases
- liquid-solid interfaces
- liquidus
- metallic hydrogen
- phase diagrams
- phase separation (materials)
- ∞ phases
- solidified gases
- solidus
- syntectic alloys
- solid propellant combustion**
 - DEF The burning of solid propellants by rapid oxidation and production of expanding gases, heat, and light.
 - GS combustion
 - . propellant combustion
 - . . **solid propellant combustion**
 - . . . solid propellant ignition
 - RT burning rate
 - combustion stability
 - erosive burning
 - fuel combustion
 - heat generation
 - metal combustion
 - propellant chemistry
 - propellant consumption
- solid propellant ignition**
 - GS combustion
 - . propellant combustion
 - . . solid propellant combustion
 - . . . **solid propellant ignition**
 - ignition
 - RT hybrid propellants
 - hypergolic rocket propellants
 - igniters
 - ignition temperature
 - inhibitors
 - metal combustion
 - pyrophoric materials
 - squibs
- solid propellant rocket engines**
 - DEF Rocket engines fueled with solid propellants. Such motors consist essentially of a combustion chamber containing the propellant, and a nozzle for the exhaust jet, although they often contain other components, such as grids or liners.
 - GS engines
 - . rocket engines
 - . . **solid propellant rocket engines**
 - . . . Algol engine
 - . . . apogee boost motors
 - . . . ASROC engine
 - . . . Hercules engine
 - . . . M-46 engine
 - . . . M-55 engine
 - . . . M-56 engine
 - . . . M-57 engine
 - . . . Nike booster rocket engines
 - . . . P-1 engine
 - . . . SL-3 rocket engine
 - . . . Space Shuttle Boosters
 - Advanced Solid Rocket Motor (STS)
 - . . . SYNCOM apogee engines
 - . . . TX-77 engine
 - . . . TX-354 engine
 - . . . X-248 engine
 - . . . X-254 engine
 - . . . X-258 engines
 - X-258-B1 engine
 - . . . X-259 engine
 - . . . XM-33 engine
 - RT air slew missiles
 - Antares rocket vehicle
 - Arcas rocket vehicles
 - Argo rocket vehicles
 - Astrobee 1500 rocket vehicle
 - Astrobee rocket vehicles
 - Athena rocket vehicle
 - BE-3 engine
 - Berenice rocket vehicle
 - Black Brant 1 sounding rocket
 - Black Brant 2 sounding rocket
 - Black Brant 3 sounding rocket
 - Black Brant 4 sounding rocket
 - Black Brant 5 sounding rocket
 - Black Brant sounding rockets
 - Blue Goose missile
 - Blue Scout rocket vehicle
 - BOMARC A missile
 - BOMARC B missile
 - bonded joints
 - booster rocket engines
 - burning rate
 - burnout
 - Cajun rocket vehicle
 - Diamant launch vehicle
 - ducted rocket engines
 - EXOS sounding rocket
 - Falcon missile
 - Folding Fin aircraft rocket vehicle
 - Genie rocket vehicle
 - Hawk missile
 - Honest John rocket vehicle
 - hybrid propellant rocket engines
 - ∞ hybrid rocket engines
 - integral rocket ramjets
 - internal combustion engines
 - Jaguar rocket vehicle
 - JATO engines
 - Javelin rocket vehicle
 - Juno 1 launch vehicle
 - Juno 2 launch vehicle
 - Juno launch vehicles
 - Jupiter C rocket vehicle
 - Kappa 8 rocket vehicle
 - Kappa 9 rocket vehicle
 - Kappa rocket vehicles
 - Lambda rocket vehicles
 - liquid propellant rocket engines
 - Little Joe 2 launch vehicle
 - Little John rocket vehicle
 - Loki rocket vehicle
 - Mace missiles
 - Matra missile
 - Mauler missile
 - Meteor 1 rocket vehicle
 - Minuteman ICBM
 - Nike-Ajax missile
 - Nike-Apache rocket vehicle
 - Nike-Cajun rocket vehicle
 - Nike-Hercules missile
 - Nike-Javelin rocket vehicle
 - Nike-Tomahawk rocket vehicle
 - Nike-Zeus missile
 - Pershing missile
 - Phoenix sounding rocket
 - polaris missiles
 - RAM B launch vehicle
 - Redeye missile
 - Regulus missile
 - restartable rocket engines
 - retrorocket engines
 - Rubis rocket vehicle
 - Scout launch vehicle
 - sergeant missiles
 - Shrike missile
 - Skua rocket vehicles
 - Skybolt missile
 - Skylark rocket vehicle
 - Space Shuttle upper stage D
 - Sparrow 2 missile
 - Sparrow missiles
 - Sprint missile
 - SS-11 missile
 - Sunblazer space probe
 - sustainer rocket engines
 - Talos missile
 - tartar missile
 - terrier missile
 - Thor Able rocket vehicle
 - Thor Delta launch vehicle
 - Thor launch vehicles
 - Titan launch vehicles
 - Trailblazer 1 reentry vehicle
 - Trailblazer 2 reentry vehicle
 - ullage rocket engines
 - vanguard 2 launch vehicle
 - Vernier engines
 - WASP sounding rocket

X-17 reentry vehicle
Zuni rocket vehicle

solid propellants

DEF Specifically, a rocket propellant in the solid form, usually containing both fuel and oxidizer combined or mixed, and formed into a monolithic (not powdered or granulated) grain.

GS propellants

. **solid propellants**

. . . case bonded propellants
. . . composite propellants
. . . nitramine propellants
. . . plastic propellants
. . . solid rocket propellants
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants

RT

aircraft fuels
chemical fuels
colloidal propellants
gelled propellants
high temperature propellants
hybrid propellants
inhibitors
metal fuels
nitroguanidine
plasticizers
propellant binders
propellant grains
RDX
rocket propellants
storable propellants

solid rocket binders

GS

additives
. propellant additives
. propellant binders
. . . **solid rocket binders**
binders (materials)
. propellant binders
. . . **solid rocket binders**

RT

glycidyl azide polymer

plasticizers

Solid Rocket Boosters (Space Shuttle)

USE **Space Shuttle Boosters**

solid rocket propellants

GS

propellants
. rocket propellants
. . . **solid rocket propellants**
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants
. solid propellants
. . . **solid rocket propellants**
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants

RT ammonium perchlorates
burning rate
case bonded propellants
composite propellants
Domino propellants
gelled rocket propellants
hybrid propellants
liquid rocket propellants
monopropellants
potassium perchlorates
propellant grains
RDX
rocket engines
slurry propellants

solid rotation

USE **rotating bodies**

solid solutions

GS mixtures

. solutions
. . **solid solutions**
solids

. **solid solutions**

RT aging (metallurgy)
alloying
alloys
antiphase boundaries
cluster variation method
liquid phases
liquidus
melting points
order-disorder transformations
Ostwald ripening
phase diagrams
precipitation hardening
supersaturation
ternary systems

solid state

RT

crystallization
energy gaps (solid state)
melting points
metallic hydrogen
solids

solid state devices

DEF Devices which utilize the electric, magnetic, and photic properties of the solid materials, e. g. , binary magnetic cores or transistors.

GS

electronic equipment
. **solid state devices**
. . cryotrons
. . crystal rectifiers
. . metal-nitride-oxide-semiconductors
. . multispectral linear arrays
. . semiconductor devices
. . . avalanche diodes
. . . cryosar
. . . Barritt diodes
. . . charge transfer devices
. . . bucket brigade devices
. . . charge coupled devices
. . . charge injection devices
. . . germanium diodes
. . . heterojunction devices
. . . high electron mobility transistors
. . . . MODFETS
. . . junction diodes
. . . MIM diodes
. . . step recovery diodes
. . . light emitting diodes
. . . metal oxide semiconductors
. . . CMOS
. . . ITO (semiconductors)
. . . SOS (semiconductors)
. . . MIM (semiconductors)
. . . MIS (semiconductors)
. . . MOM (semiconductors)
. . . MSM (semiconductors)
. . . NDM semiconductor devices
. . . neuristors
. . . parametric diodes
. . . photodiodes
. . . photovoltaic cells
. . . solar cells
. . . . vertical junction solar cells
. . . Schottky diodes
. . . semiconductor lasers
. . . aluminum gallium arsenide lasers
. . . . gallium arsenide lasers
. . . . quantum cascade lasers
. . . . quantum well lasers
. . . . YLF lasers
. . . SOI (semiconductors)
. . . thermistors
. . . thyristors
. . . . silicon controlled rectifiers
. . . transferred electron devices
. . . transistor amplifiers
. . . transistors
. . . . bipolar transistors
. . . . field effect transistors
. charge flow devices
. JFET
. MODFETS
. . . . high electron mobility transistors
. MODFETS
. . . junction transistors

. JFET
. . . . phototransistors
. . . . silicon transistors
. SOS (semiconductors)
. . . . cascode devices
. . . TRAPATT devices
. . . varactor diodes
. . . varistors
. . SIS (semiconductors)
. . SIS (superconductors)
. . solid state lasers
. . . aluminum gallium arsenide lasers
. . . DBR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum cascade lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers

RT

amplifiers
bubble technique
capacitors
circuits
∞ devices
electric bridges
laser cavities
lasers
MBM junctions
miniature electronic equipment
oscillators
photomasks
rectifiers
resistors
signal generators
superconductors (materials)
thin films
threshold voltage
transformers
wafers

solid state lasers

GS

electronic equipment
. solid state devices
. . **solid state lasers**
. . . aluminum gallium arsenide lasers
. . . DBR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum cascade lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers
stimulated emission devices
. lasers
. . **solid state lasers**
. . . aluminum gallium arsenide lasers
. . . DBR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum cascade lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers

RT

continuous wave lasers
distributed feedback lasers
infrared lasers
laser cavities
Q switched lasers
semiconductor lasers
surface emitting lasers

∞ **solid state physics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The study of the physical structure and properties of solid matter, including electrical conduction in metal crystals and semiconductors, superconductivity, and photoconductivity.

RT

condensed matter physics
crystallography
electrical properties
electron mobility
energy gaps (solid state)

solid surfaces

forbidden transitions
hole mobility
magnetic properties
optical properties
∞ physics
∞ science
semiconductors (materials)
superconductivity
theoretical physics
thin films
transport properties

solid surfaces

GS **solid surfaces**
. crystal surfaces
RT liquid surfaces
metal surfaces
surface cracks
surface finishing
surface properties
∞ surfaces

solid suspensions

GS mixtures
. **solid suspensions**
RT colloidal propellants
composite materials
metallography
particulates
phase diagrams
∞ suspensions

solid wastes

GS wastes
. **solid wastes**
RT composting
garbage
human wastes
industrial wastes
landfills
liquid wastes
metabolic wastes
pollution
radioactive wastes
residues
sewage
sludge
waste disposal
waste energy utilization
waste utilization

solidification

UF *rapid solidification*
GS **solidification**
. directional solidification (crystals)
. melt spinning
RT casting
castings
coagulation
crystallization
freezing
gelation
ingots
melting points
mushy zones
occlusion
Ostwald ripening
phase transformations
rheocasting
∞ setting
solidified gases
transition temperature
vitrification

solidified gases

UF *solid argon*
GS gases
. **solidified gases**
. . solid cryogenes
. . . solid nitrogen
solids
. **solidified gases**
. . solid cryogenes
. . . solid nitrogen
RT cryogenic fluids
cryogenic temperature

cryogenics
freezing
low temperature physics
melting points
metallic hydrogen
solid phases
solidification

solids

GS **solids**
. organic solids
. solid solutions
. solidified gases
. . solid cryogenes
. . . solid nitrogen
RT ∞ bodies
∞ fluids
∞ materials
metallic hydrogen
phase transformations
semisolids
solid mechanics
solid state
thermochromatic materials
vapor phases

solids flow

GS fluid flow
. **solids flow**
RT ∞ flow
flow measurement
flow theory
mass flow
multiphase flow
particle size distribution
steady flow
two phase flow
uniform flow
unsteady flow

solid-solid interfaces

GS interfaces
. **solid-solid interfaces**
RT antiphase boundaries
gas-solid interfaces
liquid-solid interfaces
surface properties

solidus

RT binary systems (materials)
liquid phases
liquidus
solid phases

solions

RT circuits
diodes
integrators
ion currents

solitary waves

DEF Nonlinear waves capable of propagation without spreading out, breaking up, or dissipating their strength over distance. Used for Solitrons.

UF *solitons*
GS traveling waves
. **solitary waves**
RT backward waves
cnoidal waves
elastic waves
electromagnetic radiation
plane waves
pulses
radio waves
rates (per time)
velocity

solithanes

RT elastomers
∞ polymers

synthetic rubbers

solitons

USE **solitary waves**

Solomon computers

GS data processing equipment
. computers
. . digital computers
. . . **Solomon computers**

Solrad 10 satellite

USE **Explorer 44 satellite**

solstices

DEF The two points of the ecliptic farthest from the celestial equator; two points on the celestial sphere occupied by the sun at maximum declination.

RT equinoxes
seasons
solar position
summer
winter

solubility

UF *immiscibility*
miscibility
RT clarity
concentration (composition)
diffusivity
dissolved gases
dissolving
gas-solid interfaces
Henry law
hydrophobicity
hygroscopicity
incompatibility
liquid phases
liquid-gas mixtures
liquid-liquid interfaces
liquid-vapor interfaces
miscibility gap
mixtures
phase diagrams
phase separation (materials)
precipitation (chemistry)
solutions
supercritical fluids
thermodynamic properties
thixotropy
turbidity
viscosity

solutes

RT dissolved organic matter
dissolving
solutions

∞ solution

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT dissolving
problem solving
solutions

solutions

GS mixtures
. **solutions**
. . aqueous solutions
. . gas mixtures
. . . air
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . . detonable gas mixtures
. . photographic emulsions
. . . nuclear emulsions
. . solid solutions
RT azeotropes
composition (property)
dissolved gases
emulsions
eutectics

- Henry law
Raoult law
solubility
solutes
∞ solution
solvents
titration
- solvation**
DEF The process of swelling, getting, or dissolving of a material by a solvent; for resins, the solvent can be plasticized.
RT aqueous solutions
chemical reactions
reaction kinetics
solvents
- solvent extraction**
GS extraction
. **solvent extraction**
RT ion extraction
purification
∞ separation
- solvent refined coal**
DEF Low-sulfur distillate fuels from coal, plus the byproducts of methane, light hydrocarbons, and naphtha, all useful for making pipeline gas, ethylene, and high-octane unleaded gasoline.
GS fuels
. chemical fuels
. hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . **solvent refined coal**
resources
. Earth resources
. . fossil fuels
. . . coal
. . . . **solvent refined coal**
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . **solvent refined coal**
RT benzene
bitumens
carbonaceous materials
coal liquefaction
coal utilization
fractionation
fuel oils
gasoline
hydrocarbon fuel production
methane
product development
- solvent retention**
DEF The occurrence of solvent residues in chemical or material end products or intermediates.
RT dissolving
solvents
- solvents**
DEF The liquid part of an aerosol formulation used to dissolve solid or other liquid parts. Used for thinners.
UF *thinners*
GS **solvents**
. tetrahydrofuran
. turpentine
RT additives
coatings
diluent
dissolving
extraction
furans
paint removal
solutions
solvation
solvent retention
solvolysis
toluene
triacetin
- trichloroethylene
- solvolysis**
GS reclamation
. materials recovery
. . **solvolysis**
RT recycling
solvents
- Somalia**
GS nations
. **Somalia**
RT Africa
- Sommerfeld approximation**
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Sommerfeld approximation**
RT antenna radiation patterns
directional antennas
electromagnetic fields
radio transmission
- Sommerfeld waves**
GS electromagnetic radiation
. **Sommerfeld waves**
surface waves
. **Sommerfeld waves**
RT dielectric properties
electric conductors
- sonar**
DEF A method or system, analogous to radar used under water, in which high frequency sound waves are emitted so as to be reflected back from objects, and used to detect the objects of interest. Called asdic by the British. (From SOund, NAvigation, and Ranging.)
GS **sonar**
. sonobuoys
RT distance measuring equipment
echo sounding
echo suppressors
hydrophones
LOFAR
navigation aids
sound localization
sound ranging
ultrasonic wave transducers
underwater acoustics
underwater communication
- sondes**
UF *meteorological probes*
GS measuring instruments
. **sondes**
. . dropsondes
. . Judi-Dart rocket
. . radiosondes
. . . ionosondes
. . . rawinsondes
RT Apache rocket vehicle
Cajun rocket vehicle
∞ probes
sounding
sounding rockets
- sonic anemometers**
GS measuring instruments
. anemometers
. . **sonic anemometers**
RT acoustics
flowmeters
hot-film anemometers
velocity measurement
- sonic booms**
DEF Noises created by shock waves that emanate from aircraft or other objects traveling at or above sonic velocity.
GS elastic waves
. shock waves
. . **sonic booms**
. sound waves
. . noise (sound)
- . . . aircraft noise
. . . . **sonic booms**
RT acoustic velocity
aerodynamic noise
∞ boom
caustic lines
jet aircraft noise
supersonic flight
transonic flight
- sonic fatigue*
USE **acoustic fatigue**
- sonic flow*
USE **transonic flow**
- sonic nozzles**
RT acoustic nozzles
conical nozzles
∞ nozzles
supersonic nozzles
transonic flow
transonic nozzles
- sonic soldering*
USE **ultrasonic soldering**
- sonic speed*
USE **acoustic velocity**
- sonic waveguides*
USE **acoustic delay lines**
- sonobuoys**
GS radio equipment
. radio transmitters
. . **sonobuoys**
sonar
. **sonobuoys**
transmitters
. radio transmitters
. . **sonobuoys**
RT antisubmarine warfare
hydrophones
underwater acoustics
underwater communication
- sonochemistry*
(added June 1998)
USE **ultrasonic processing**
- sonograms**
RT recording instruments
sound waves
whistler recorders
whistlers
- sonoholography*
USE **acoustical holography**
- sonoluminescence**
GS emission
. light emission
. . luminescence
. . . **sonoluminescence**
- soot**
GS particles
. particulates
. . **soot**
RT air pollution
carbon
combustion products
fire damage
smoke
smoke abatement
- sorbates**
DEF Gas taken up by sorbents.
RT sorbents

sorbents

sorption

sorbents

DEF The materials which take up gas by sorption.

GS **sorbents**

. adsorbents
. adsorbents

RT

sorbates
sorption

Soret coefficient

GS coefficients

. diffusion coefficient
. . **Soret coefficient**
transport properties
. diffusion coefficient
. . **Soret coefficient**

RT

liquid flow
thermal diffusion

sorghum

DEF Any of a number of related cereal grasses with sweet juicy stalks cultivated as farm crops for grain, fodder, syrup, etc.

GS

farm crops
. grains (food)
. . **sorghum**
plants (botany)
. grasses
. . **sorghum**

RT

agriculture
crop identification
∞ crops
Earth resources

sorption

DEF The taking up of gas by absorption, adsorption, chemisorption, or any combination of these processes. Used for cryosorption.

UF *cryosorption*

GS **sorption**

. adsorption
. . chemisorption

RT ∞

absorption
bioavailability
chromatography
concentrating
extraction
gas chromatography
hydrophobicity
liquid chromatography
material absorption
permeating
∞ separation
sorbates
sorbents
surface properties

sortie can

USE **sortie systems**

sortie lab

USE **sortie systems**

sortie systems

UF *sortie can*

sortie lab

GS

payloads
. **sortie systems**

RT

space laboratories
Space Shuttle payloads
space shuttles
space stations
Spacelab payloads

sorting

USE **classifying**

sorting algorithms

(added November 1994)

DEF An algorithm that finds the most significant element in a set which is then compared to each element in succession to achieve an efficient sorting process.

GS mathematical logic

. algorithms

. . **sorting algorithms**

RT ∞ classifying

computer techniques
heuristic methods
hypercube multiprocessors
iterative solution
parallel processing (computers)
Poisson density functions
selection
sequential analysis

SOS (semiconductors)

UF *silicon-on-sapphire junctions*

silicon-on-sapphire semiconductors

silicon-on-sapphire transistors

GS

electronic equipment
. solid state devices
. . semiconductor devices
. . . metal oxide semiconductors
. . . . **SOS (semiconductors)**
. . . transistors
. . . . silicon transistors
. **SOS (semiconductors)**
semiconductors (materials)
. metal oxide semiconductors
. . **SOS (semiconductors)**

RT

ITO (semiconductors)
SIS (semiconductors)
SOI (semiconductors)

SOT

USE **solar optical telescope**

sound

USE **acoustics**

sound absorption

USE **sound transmission**

sound amplification

GS amplification

. **sound amplification**

RT

acoustic attenuation
acoustic excitation
acoustics

sound barrier

USE **acoustic velocity**

sound detecting and ranging

(added February 1993)

UF *acoustic detection*

RT acoustic scattering

atmospheric temperature

∞ instruments

measuring instruments
meteorological instruments
meteorology
sodar
temperature measurement

sound detectors

USE **sound transducers**

sound fields

DEF Regions containing sound waves.

RT acoustics

field theory (physics)
microsonics
propeller noise

sound fixing and ranging

DEF A method for acoustically tracking submerged bodies or floats utilizing fixed hydrophones. Used for SFAR and SOFAR.

UF *SFAR*

SOFAR

RT

sound ranging
sound transmission

underwater acoustics

sound frequencies

USE **acoustic frequencies**

sound generators

DEF Transducers which convert electrical, mechanical or other forms of energy into sound. Used for acoustic generators.

UF *acoustic generators*

RT

acoustic nozzles
audio frequencies
auditory stimuli
bells
continuous noise
∞ generators
horns
loudspeakers
noise generators
radiation sources
signal generators
∞ signals
sirens
warning systems

sound holography

USE **acoustical holography**

sound intensity

DEF In a specified direction at a point, the average rate of sound energy transmitted in the specified direction through a unit area normal to this direction at the point considered.

GS acoustic properties

. **sound intensity**

. . zero sound

rates (per time)

. flux density

. . **sound intensity**

. . . zero sound

RT

auditory stimuli
bioacoustics
effective perceived noise levels
loudness
noise intensity
noise measurement
radiant flux density
signal fading
signal fading rate
sirens

sound localization

GS perception

. **sound localization**

RT

auditory perception
bearing (direction)
binaural hearing
detection
echo sounding
∞ orientation
position indicators
range finders
sonar
space perception
tracking (position)

sound measurement

USE **acoustic measurement**

sound perception

USE **auditory perception**

sound pressure

DEF At a point, the total instantaneous pressure at that point in the presence of a sound wave minus the static pressure at that point.

GS pressure

. radiation pressure

. . **sound pressure**

RT

acoustic measurement
acoustic velocity
explosions
flux density
loudness
noise (sound)
shock waves

static pressure

sound propagation

GS transmission
 . wave propagation
 . . acoustic propagation
 . . . **sound propagation**

RT acoustics
 attenuation
 ∞ conduction
 diffusion
 noise generators
 noise propagation
 shock wave propagation

sound ranging

GS rangefinding
 . **sound ranging**

RT detection
 distance measuring equipment
 echo sounding
 position (location)
 sonar
 sound fixing and ranging
 target acquisition
 tracking (position)

sound transducers

UF *sound detectors*
 GS transducers
 . **sound transducers**
 . . electroacoustic transducers
 . . . hydrophones
 . . . loudspeakers
 . . . microphones

RT electroacoustics
 ∞ radiators
 signal detection
 signal detectors
 underwater acoustics
 underwater communication

sound transmission

UF *sound absorption*
 GS transmission
 . **sound transmission**

RT ∞ absorption
 acoustics
 attenuation
 audio frequencies
 ∞ conduction
 earphones
 elastic waves
 energy absorption
 monaural signals
 multipath transmission
 ∞ paths
 propeller noise
 signal transmission
 sirens
 sound fixing and ranging
 telephony
 thermoclines
 wave propagation

sound velocity
 USE **acoustic velocity**

sound waves

SN (ELASTIC WAVES IN THE AUDIBLE RANGE)
 DEF Mechanical disturbances advancing with infinite velocity through an elastic medium, and consisting of longitudinal displacements of the medium, i. e. , consisting of compressional and rarefactional displacements parallel to the direction of advance of the disturbance; a longitudinal wave. Sound waves are small amplitude adiabatic oscillations. Used for acoustic radiation and acoustic vibrations.

UF *acoustic radiation*
acoustic vibrations

GS elastic waves
 . **sound waves**
 . . electroacoustic waves
 . . ion acoustic waves
 . . Lamb waves

. . noise (sound)
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . . engine noise
 rocket engine noise
 . . . flow noise
 . . . thermal noise
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones

RT acoustic coupling
 acoustic frequencies
 acoustic measurement
 acoustic properties
 acoustic streaming
 acoustical holography
 acoustics
 aeolian tones
 audio frequencies
 auditory perception
 ∞ blasts
 deep scattering layers
 detonation waves
 diffusion
 longitudinal waves
 loudness
 Mach cones
 magnetoelastic waves
 microsonics
 noise pollution
 noise prediction (aircraft)
 phonons
 plane waves
 polarized elastic waves
 ∞ radiation
 reverberation
 shock waves
 sonograms
 surface acoustic wave devices
 thermoacoustic effects
 ultrasonic radiation
 ∞ waves

sounders
 USE **sounding**

sounding

DEF Any penetration of the natural environment for scientific observation usually by sounding rockets or balloons. Used for sounders.

UF *sounders*
 GS **sounding**
 . acoustic sounding
 . atmospheric sounding
 . balloon sounding
 . echo sounding
 . ionospheric sounding
 . microwave sounding
 . rocket sounding
 . satellite sounding

RT bathymeters
 depth measurement
 ∞ measurement
 meteorological balloons
 meteorological flight
 ROBIN balloons
 sondes

sounding rockets

DEF Rockets designed primarily for routine upper air observation (as opposed to research) in the lower 250,000 feet of the atmosphere, especially that portion inaccessible to balloons, i. e. , above 100,000. Used for meteorological rockets and rocket sondes.

UF *meteorological rockets*
rocket sondes

GS rocket vehicles
 . **sounding rockets**
 . . Aerobee rocket vehicle
 . . Antares rocket vehicle
 . . Apache rocket vehicle
 . . Arcas rocket vehicles

. . Aries sounding rocket
 . . Astrobee rocket vehicles
 . . . Astrobee 1500 rocket vehicle
 . . Black Brant sounding rockets
 . . . Black Brant 1 sounding rocket
 . . . Black Brant 2 sounding rocket
 . . . Black Brant 3 sounding rocket
 . . . Black Brant 4 sounding rocket
 . . . Black Brant 5 sounding rocket
 . . Cajun rocket vehicle
 . . Dornier paraglider rocket vehicle
 . . EXOS sounding rocket
 . . Jaguar rocket vehicle
 . . Judi-Dart rocket
 . . Kappa rocket vehicles
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 . . Lambda rocket vehicles
 . . Loki rocket vehicle
 . . Petrel sounding rocket
 . . Phoenix sounding rocket
 . . Skua rocket vehicles
 . . Skylark rocket vehicle
 . . Venus fly trap rocket vehicle
 . . Veronique rocket vehicles
 . . Vertikal rockets
 . . WASP sounding rocket

RT acoustic sounding
 Argo rocket vehicles
 ionosondes
 Javelin rocket vehicle
 meteorological instruments
 meteorological satellites
 Nike-Javelin rocket vehicle
 payload control
 radiosondes
 rocket sounding
 sondes
 Viking rocket vehicle

sounds (topographic features)

GS **sounds (topographic features)**
 . Block Island Sound (RI)
 . McMurdo sound
 . Prince William Sound (AK)

RT Chesapeake Bay (US)
 inlets (topography)
 oceans
 rivers
 water

sound-sound interactions

RT harmonics
 ∞ interactions
 intermodulation
 wave dispersion

source programs

GS computer programs
 . **source programs**

RT open source licensing (computers)

∞ **sources**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT causes
 derivation
 electron sources
 extragalactic radio sources
 ion sources
 nonpoint sources
 radiation sources
 radio sources (astronomy)
 sinks

South Africa
 USE **Republic of South Africa**

South America

GS continents
 . **South America**

RT Andes Mountains (South America)
 Argentina
 Bolivia
 Brazil
 Central America

South Carolina

Chile
Colombia
Ecuador
French Guiana
Guyana
Magdalena-Cauca Valley (Colombia)
Paraguay
Peru
Surinam
Trinidad and Tobago
Uruguay
Venezuela

South Carolina

GS nations
. United States
. **South Carolina**
RT Sand Hills Region (GA-NC-SC)

South Dakota

GS nations
. United States
. **South Dakota**
RT Black Hills (SD-WY)
Missouri River (US)

South Korea

UF *Republic of Korea*
GS nations
. **South Korea**
RT Asia
∞ Korea
North Korea

South Vietnam

USE **Vietnam**

South West Africa

USE **Namibia**

Southeast Asia

GS regions
. **Southeast Asia**
RT Asia
Vietnam

Southern California

GS regions
. **Southern California**
RT California
Mexico
Nevada
Pacific Ocean
United States

Southern Hemisphere

GS **Southern Hemisphere**
. Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
RT ∞ hemispheres
Northern Hemisphere
Southern Oscillation
Southern sky

Southern Oscillation

GS oscillations
. **Southern Oscillation**
RT anomalies
atmospheric circulation
atmospheric pressure
climate
el Nino
Madden-Julian Oscillation
periodic variations
pressure oscillations
quasi-biennial oscillation
Southern Hemisphere

Southern sky

DEF That portion of the celestial sphere between the celestial equator and the celestial south pole (and generally visible from areas in the Earth's southern hemisphere).

RT astronomical catalogs
astronomical observatories

astronomical photography
astronomical spectroscopy
astronomy
northern sky
sky surveys (astronomy)
Southern Hemisphere

Southern Yemen

UF *Aden*
GS nations
. **Southern Yemen**
regions
. **Southern Yemen**
RT Asia

sovereignty

RT international cooperation
international law
politics
voting

Soviet satellites

GS artificial satellites
. **Soviet satellites**
. . . Cosmos 782 satellite
. . . Cosmos 936 satellite
. . . Cosmos satellites
. Cosmos 2 satellite
. Cosmos 3 satellite
. Cosmos 5 satellite
. Cosmos 6 satellite
. Cosmos 14 satellite
. Cosmos 44 satellite
. Cosmos 54 satellite
. Cosmos 71 satellite
. Cosmos 110 satellite
. Cosmos 137 satellite
. Cosmos 144 satellite
. Cosmos 149 satellite
. Cosmos 166 satellite
. Cosmos 186 satellite
. Cosmos 188 satellite
. Cosmos 206 satellite
. Cosmos 213 satellite
. Cosmos 224 satellite
. Cosmos 225 satellite
. Cosmos 381 satellite
. Cosmos 954 satellite
. Cosmos 1129 satellite
. Intercosmos satellites
. Granat satellite
. Molniya satellites
. Prognoz satellites
. Proton satellites
. Proton 1 satellite
. Proton 2 satellite
. Proton 3 satellite
. Proton 4 satellite
. Raduga satellite
. Sputnik satellites
. Sputnik 1 satellite
. Sputnik 2 satellite
. Sputnik 3 satellite
. Sputnik 4 satellite
. Sputnik 5 satellite
. Venera satellites
. Venera 2 satellite
. Venera 3 satellite
. Venera 4 satellite
. Venera 5 satellite
. Venera 6 satellite
. Venera 7 satellite
. Venera 8 satellite
. Venera 9 satellite
. Venera 10 satellite
. Venera 11 satellite
. Venera 12 satellite
RT Russian Space Program

Soviet spacecraft

GS **Soviet spacecraft**
. Buran space shuttle
. Lunik lunar probes
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe

. . Lunik 10 lunar probe
. . Lunik 11 lunar probe
. . Lunik 12 lunar probe
. . Lunik 13 lunar probe
. . Lunik 14 lunar probe
. . Lunik 16 lunar probe
. . Lunik 17 lunar probe
. . Lunik 19 lunar probe
. . Lunik 20 lunar probe
. . Lunik 22 lunar probe
. Mars 1 spacecraft
. Mars 2 spacecraft
. Mars 3 spacecraft
. Mars 4 Spacecraft
. Mars 5 spacecraft
. Mars 6 spacecraft
. Mars 7 spacecraft
. Mir space station
. Salyut space station
. Soyuz spacecraft
. Sputnik satellites
. . . Sputnik 1 satellite
. . . Sputnik 2 satellite
. . . Sputnik 3 satellite
. . . Sputnik 4 satellite
. . . Sputnik 5 satellite
. Venera satellites
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
. Zond space probes
. . . Zond 1 space probe
. . . Zond 2 space probe
. . . Zond 3 space probe
. . . Zond 4 space probe
. . . Zond 5 space probe
. . . Zond 6 space probe
. . . Zond 7 space probe
. . . Zond 8 space probe
. Phobos spacecraft
RT Russian Space Program
∞ spacecraft

Soviet Union

USE **U. S. S. R.**

soybeans

GS farm crops
. leguminous plants
. **soybeans**
plants (botany)
. leguminous plants
. **soybeans**
RT ∞ food

Soyuz spacecraft

GS manned spacecraft
. **Soyuz spacecraft**
Soviet spacecraft
. **Soyuz spacecraft**
RT Apollo Soyuz test project
Assured Crew Return Vehicle
Kvant modules
Salyut space station
U. S. S. R. space program

∞ space

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT algebra
analysis (mathematics)
Cartan space
cislunar space
deep space
fractals
function space
hyperspaces
set theory

spatial dependencies

space adaptation syndrome

RT aerospace medicine
 bioastronautics
 biological effects
 long duration space flight
 manned space flight
 motion sickness
 physiological effects
 psychological effects
 space flight stress
 space psychology
 weightlessness

Space Arrow satellite

USE **Cosmos 149 satellite**

space based radar

DEF Radar systems installed on large space structures.

GS radar
 . **space based radar**
 . . Shuttle Imaging Radar
 RT airborne radar
 antenna arrays
 radiation effects
 radiation shielding

space bases

GS **space bases**
 . lunar bases
 . planetary bases
 . space colonies
 . . Mars bases
 RT ∞ bases
 Mir space station
 Salyut space station
 space stations
 stations

space biology

USE **exobiology**

space buses

USE **ferry spacecraft**

space capsules

DEF Containers used for carrying out experiments in space. Used for capsules (spacecraft).

UF *capsules (spacecraft)*
 GS **space capsules**
 . Discoverer recovery capsules
 . escape capsules
 . Mercury spacecraft
 . . Aurora 7
 . . Faith 7
 . . Friendship 7
 . . SIGMA 7
 RT artificial satellites
 biosatellites
 cabin atmospheres
 ∞ capsules
 cockpits
 Gemini spacecraft
 interplanetary spacecraft
 landing modules
 lunar spacecraft
 manned spacecraft
 Mercury flights
 recoverable spacecraft
 reentry vehicles
 rendezvous spacecraft
 soft landing spacecraft
 ∞ spacecraft
 spacecraft cabins
 spacecraft modules
 unmanned spacecraft
 voskhod manned spacecraft
 Vostok spacecraft

space charge

DEF The electric charge carries by a cloud or stream of electrons or ions in a vacuum or a region of low gas pressure when the charge is

sufficient to produce local changes in the potential distribution. The net electric charge within a given volume.

GS electric charge
 . **space charge**
 RT bunching
 Child-Langmuir law
 electric discharges
 electron clouds
 Landau damping
 magnetohydrodynamics
 nonohmic effect
 orbitrons
 perveance
 plasmas (physics)
 static electricity

space colonies

GS communities
 . **space colonies**
 space bases
 . **space colonies**
 RT lunar bases
 lunar shelters
 Mars bases
 Mars exploration
 space habitats
 space stations
 terraforming

space commercialization

DEF For profit activities in space or preactivity to space activity.

GS commercialization
 . **space commercialization**
 RT aerospace industry
 Ariane 4 launch vehicle
 Ariane 5 launch vehicle
 commerce lab
 commercial spacecraft
 communication satellites
 direct broadcast satellites
 Energiya launch vehicle
 insurance (contracts)
 lunar mining
 ∞ microgravity applications
 Proton launch vehicle
 space industrialization
 space manufacturing
 space processing
 space tourism
 spacecraft launching
 technology transfer

space communication

DEF The act of, or methods for, conveying information to, from, or through outer space.

GS telecommunication
 . **space communication**
 . . extraterrestrial communication
 . . interplanetary communication
 . . lunar communication
 . . . circumlunar communication
 . . spacecraft communication
 . . . reentry communication
 . . . satellite communication
 RT communication satellites
 Defense Communications Satellite System
 extraterrestrial intelligence
 free-space optical communication
 furlable antennas
 interstellar communication
 lasers
 line of sight communication
 manned space flight
 optical communication
 pulse communication
 radio communication
 radio telemetry
 television systems
 wireless communication

space cooling (buildings)

DEF The cooling of buildings with a solar energy system which incorporates water chillers

controlled by thermostats and other devices to provide a comfortable living environment.

GS cooling
 . **space cooling (buildings)**
 RT cooling systems
 energy technology
 heat exchangers
 heat pumps
 liquid cooling
 residential energy
 solar collectors
 solar cooling
 solar energy conversion
 temperature control

space debris

GS debris
 . **space debris**
 RT asteroid belts
 asteroids
 Chiron
 cosmic dust
 dust
 meteoroids
 micrometeoroids
 near Earth objects
 ∞ spacecraft
 spacecraft breakup
 spacecraft design
 Toro asteroid
 Vesta asteroid

space density

GS density (mass/volume)
 . **space density**
 density (number/volume)
 . **space density**
 RT atmospheric density
 electron density (concentration)
 ion density (concentration)
 particle density (concentration)
 plasma density
 plasma interaction experiment
 proton density (concentration)

space detection and tracking system

UF *SPADATS (tracking system)*
 GS networks
 . tracking networks
 . . **space detection and tracking system**
 tracking (position)
 . **space detection and tracking system**
 RT minitrack system
 missile tracking
 optical tracking
 photographic tracking
 polystation doppler tracking system
 spacecraft tracking
 STDN (network)
 ∞ systems
 tracking stations

space diversity

USE **reception diversity**

space electric rocket tests

UF *SERT (rocket tests)*
 GS engine tests
 . **space electric rocket tests**
 RT electric rocket engines
 flight tests
 ground tests
 SERT 1 spacecraft
 SERT 2 spacecraft
 ∞ tests

space environment

USE **aerospace environments**

space environment simulation

GS simulation
 . environment simulation
 . . **space environment simulation**
 . . . weightlessness simulation

space erectable structures

RT . . . neutral buoyancy simulation
altitude simulation
atmospheric entry simulation
clinorotation
clinostats
flight simulation
flight simulators
High Vacuum Orbital Simulator
Langley complex coordinator
motion simulators
solar simulation
thermal simulation
vacuum chambers
virtual reality

space environmental lubrication

USE **spacecraft lubrication**

space erectable structures

GS **space erectable structures**

. inflatable spacecraft
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT expandable structures
folding structures
inflatable space structures
inflatable structures
Large Deployable Reflector
large space structures
maypole antennas
orbital assembly
rigid structures
self erecting devices
space station modules
space station structures
space technology experiments
spacecraft modules
spacecraft structures
∞ structures

Space Exper with Particle Accelerators

USE **SEPAC (payload)**

space exploration

UF *planetary exploration*

GS exploration

. **space exploration**

. . lunar exploration

. . Mars exploration

RT aerospace environments

asteroid missions

astrodynamics

∞ astronautics

bioastronautics

Cassini mission

extraterrestrial environments

extraterrestrial resources

French space program

International Space Year

interplanetary flight

interplanetary spacecraft

interstellar spacecraft

Jupiter rings

Magellan project (NASA)

manned Mars missions

manned space flight

Mars 69 project

Mars 71 project

Mars sample return missions

planetary bases

planetary composition

planetary geology

sample return missions

Solar Maximum Mission-A

TOPS (spacecraft)

Viking 1 spacecraft

Viking 2 spacecraft

Viking lander 1

Viking lander 2

Viking lander spacecraft

Viking Mars program

Viking orbiter 1

Viking orbiter 2

Viking orbiter spacecraft

space flight

GS **space flight**

. interplanetary flight

. interstellar travel

. long duration space flight

. lunar flight

. manned space flight

. . Apollo flights

. . . Apollo 5 flight

. . . Apollo 6 flight

. . . Apollo 7 flight

. . . Apollo 8 flight

. . . Apollo 9 flight

. . . Apollo 10 flight

. . . Apollo 11 flight

. . . Apollo 12 flight

. . . Apollo 13 flight

. . . Apollo 14 flight

. . . Apollo 15 flight

. . . Apollo 16 flight

. . . Apollo 17 flight

. . Gemini flights

. . . Gemini 3 flight

. . . Gemini 4 flight

. . . Gemini 5 flight

. . . Gemini 6 flight

. . . Gemini 7 flight

. . . Gemini 8 flight

. . . Gemini 9 flight

. . . Gemini 10 flight

. . . Gemini 11 flight

. . . Gemini 12 flight

. . manned reentry

. . Mercury flights

. . . Mercury MA-1 flight

. . . Mercury MA-2 flight

. . . Mercury MA-3 flight

. . . Mercury MA-4 flight

. . . Mercury MA-5 flight

. . . Mercury MA-6 flight

. . . Mercury MA-7 flight

. . . Mercury MA-8 flight

. . . Mercury MA-9 flight

. . . Mercury MR-1 flight

. . . Mercury MR-2 flight

. . . Mercury MR-3 flight

. . . Mercury MR-4 flight

. . Space Shuttle missions

. . . Space Shuttle mission 31-A

. . . Space Shuttle mission 31-B

. . . Space Shuttle mission 31-C

. . . Space Shuttle mission 31-D

. . . Space Shuttle mission 41-A

. . . Space Shuttle mission 41-B

. . . Space Shuttle mission 41-C

. . . Space Shuttle mission 41-D

. . . Space Shuttle mission 41-G

. . . Space Shuttle mission 51-A

. . . Space Shuttle mission 51-B

. . . Space Shuttle mission 51-C

. . . Space Shuttle mission 51-D

. . . Space Shuttle mission 51-E

. . . Space Shuttle mission 51-F

. . . Space Shuttle mission 51-G

. . . Space Shuttle mission 51-H

. . . Space Shuttle mission 51-I

. . . Space Shuttle mission 51-J

. . . Space Shuttle mission 51-L

. . . Space Shuttle mission 61-A

. . . Space Shuttle mission 61-B

. . . Space Shuttle mission 61-C

. . . Space Shuttle mission 61-E

. . return to Earth space flight

RT aerospace environments

Apollo Soyuz test project

ascent propulsion systems

astrodynamics

∞ astronautics

atmospheric entry

auxiliary propulsion

bioastronautics

celestial bodies

expeditions

exploration

extravehicular activity

∞ flight

flight mechanics

flight optimization

flight simulation

flyby missions

Grand Tours

Mariner Jupiter-Saturn flyby

Mariner Jupiter-Uranus flyby

meteorological flight

∞ missions

orbits

Physics and Chemistry Experiment in Space

pointing control systems

propulsion

reentry

rocket flight

∞ rockets

solar sails

Space Transportation System flights

spacecraft guidance

spacecraft maneuvers

spacecraft propulsion

suborbital flight

trajectories

Viking 1 spacecraft

Viking 2 spacecraft

Viking lander 1

Viking lander 2

Viking lander spacecraft

Viking orbiter 1

Viking orbiter 2

Viking orbiter spacecraft

space flight feeding

RT consumables (spacecrew supplies)

dehydrated food

diets

eating

∞ food

food intake

food production (in space)

life support systems

nutrition

nutritional requirements

waste disposal

space flight stress

GS stress (biology)

. flight stress (biology)

. . **space flight stress**

RT boredom

∞ flight stress

gravitational physiology

lower body negative pressure

manned space flight

space adaptation syndrome

space psychology

stress (physiology)

stress (psychology)

weightlessness

Space Flight Tracking and Data Network

GS networks

. tracking networks

. . **Space Flight Tracking and Data Network**

RT ∞ data

data acquisition

Global Tracking Network

ground stations

satellite tracking

stations

STDN (network)

tracking stations

space flight training

GS education

. flight training

. . **space flight training**

. . . astronaut training

RT pilot training

spacecraft cabin simulators

- training simulators
- space gliders*
- USE **lifting reentry vehicles**
- space glossaries**
 - RT bibliographies
 - dictionaries
 - documentation
 - indexes (documentation)
 - information retrieval
 - thesauri
- space habitats**
 - RT aerospace environments
 - closed ecological systems
 - life support systems
 - Mars bases
 - space colonies
 - space stations
 - spacecrews
 - terraforming
- space heating (buildings)**
 - DEF Heating of living areas for the comfort of occupants (human and/ or animal) by any means (electricity, fuels, solar radiation, etc.).
 - GS heating
 - . **space heating (buildings)**
 - RT air conditioning
 - environmental engineering
 - heating equipment
 - residential energy
 - solar atriums
 - solar heating
 - solar houses
 - temperature control
 - waste energy utilization
- space industrialization**
 - GS **space industrialization**
 - . space manufacturing
 - . space processing
 - . space tourism
 - RT commercial spacecraft
 - economic development
 - energy conversion
 - industries
 - lunar mining
 - manufacturing
 - ∞ processes
 - product development
 - products
 - research facilities
 - space commercialization
- Space Infrared Telescope Facility**
 - UF *SIRTF*
 - Spitzer Space Telescope*
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Space Infrared Telescope Facility**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Space Infrared Telescope Facility**
 - telescopes
 - . infrared telescopes
 - . . **Space Infrared Telescope Facility**
 - . . . **Space Infrared Telescope Facility**
 - RT infrared astronomy
 - spaceborne astronomy
 - space laboratories**
 - GS laboratories
 - . **space laboratories**
 - . . Advanced Technology Laboratory
 - . . Atmospheric Cloud Physics Lab (Spacelab)
 - . . Earth Viewing Applications Laboratory
 - . . Long Duration Exposure Facility
 - . . . manned orbital laboratories
 - Destiny Laboratory Module
 - Skylab 1
 - Skylab 2
 - Skylab 3
 - Skylab 4
 - Spacelab
 - RT ∞ aerospace sciences
 - artificial satellites
 - geophysical satellites
 - lunar laboratories
 - Mir space station
 - orbital workshops
 - research facilities
 - research vehicles
 - SAIL project
 - Salyut space station
 - sortie systems
 - Space Station Freedom
 - space stations
 - spaceborne experiments
 - ∞ spacecraft
 - space law**
 - GS law (jurisprudence)
 - . international law
 - . . **space law**
 - RT air law
 - direct broadcast satellites
 - insurance (contracts)
 - outer space treaty
 - planetary protection
 - sabotage
 - space logistics**
 - GS logistics
 - . **space logistics**
 - RT Automated Transfer Vehicle
 - consumables (spacecraft)
 - consumables (spacecrew supplies)
 - extraterrestrial resources
 - manned space flight
 - spacecraft cabin simulators
 - spacecrew transfer
 - stowage (onboard equipment)
 - space maintenance**
 - GS maintenance
 - . **space maintenance**
 - RT astronaut training
 - ∞ astronautics
 - extravehicular activity
 - orbital workers
 - payload transfer
 - remote manipulator system
 - Space Station Mobile Servicing System
 - space manufacturing**
 - GS fabrication
 - . **space manufacturing**
 - manufacturing
 - . **space manufacturing**
 - space industrialization
 - . **space manufacturing**
 - RT aerospace environments
 - assembling
 - commercial spacecraft
 - construction
 - high vacuum
 - industries
 - levitation melting
 - liquid bridges
 - low gravity manufacturing
 - ∞ microgravity applications
 - space commercialization
 - space processing
 - spaceborne experiments
 - technologies
 - vacuum effects
 - weightlessness
 - space mechanics**
 - GS classical mechanics
 - . **space mechanics**
 - . . astrodynamics
 - . . celestial mechanics
 - . . orbital mechanics
 - . . . Kepler laws
 - . . . minimum variance orbit determination
 - RT flight mechanics
 - magnetohydrodynamics
 - orbital space tests
 - quadratures
 - space medicine*
 - USE **aerospace medicine**
 - space missions**
 - GS **space missions**
 - . Cassini mission
 - . Cluster Mission
 - . flyby missions
 - . . Giotto mission
 - . . Grand Tours
 - . . . Mariner Jupiter-Saturn flyby
 - . . . Mariner Jupiter-Uranus flyby
 - . . . Voyager 1977 mission
 - . . Comet Nucleus Tour
 - . . Comet Rendezvous Asteroid Flyby Mission
 - . . . Mariner Venus-Mercury 1973
 - . . . Mariner-Mercury 1973
 - . . . Near Earth Asteroid Rendezvous Mission
 - . . . Stardust Mission
 - . . . SOHO Mission
 - . . . Solar Maximum Mission
 - . . . Solar Maximum Mission-A
 - . . asteroid missions
 - . . Starprobe mission
 - . . Ulysses mission
 - . . Comet Rendezvous Asteroid Flyby Mission
 - . . . Near Earth Asteroid Rendezvous Mission
 - . . . Rosetta mission
 - . . . Deep Space 1 Mission
 - . . Genesis mission
 - . . Mars missions
 - . . . 2001 Mars Odyssey
 - . . . manned Mars missions
 - . . . Mars sample return missions
 - . . . Mars Surveyor 2001 Mission
 - . . . sample return missions
 - . . . Mars sample return missions
 - . . . Stardust Mission
 - RT Apollo Soyuz test project
 - Chinese space program
 - Earth-Venus trajectories
 - European space programs
 - French space program
 - Indian space program
 - Japanese space program
 - Magellan project (NASA)
 - ∞ missions
 - Skylab 1
 - Skylab 2
 - Skylab 3
 - Skylab 4
 - space programs
 - Space Shuttle missions
 - ∞ spacecraft
 - TOPS (spacecraft)
 - space navigation**
 - GS navigation
 - . **space navigation**
 - . . interplanetary navigation
 - RT air navigation
 - astrodynamics
 - ∞ astronautics
 - astronautics
 - autonomous navigation
 - celestial navigation

space observations (from Earth)

digital navigation
Earth-Venus trajectories
formation flying
Global Positioning System
inertial navigation
interplanetary flight
interplanetary trajectories
manned spacecraft
orbit determination
orbital maneuvers
orbital mechanics
orbits
radar navigation
radio navigation
reference stars
satellite guidance
satellite navigation systems
spacecraft guidance
spacecraft position indicators
standardized space guidance

space observations (from Earth)

DEF Surveillance of extraterrestrial phenomena from the Earth's surface.
GS observation
 . **space observations (from Earth)**
RT asteroid detection
astronomical interferometry
detection
observation scheduling
radio observation
reconnaissance
seeing (astronomy)
space surveillance (ground based)

Space Operations Center (NASA)

DEF A proposed NASA space station to be assembled in space that is designed for conducting space based operations such as satellite servicing, orbit transfer vehicle launch and recovery, and assembly of large space structures. Onboard capabilities could include space manufacturing and research experiments. When fully assembled it will be larger in size than the Space Shuttle.
GS artificial satellites
 . space stations
 . . **Space Operations Center (NASA)**
 . manned spacecraft
 . **Space Operations Center (NASA)**
 . stations
 . space stations
 . . **Space Operations Center (NASA)**
RT large space structures
orbital assembly
orbital servicing

∞ space orientation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
bearing (direction)
vertical perception
visual perception

space perception

DEF The ability to estimate depth or distance between points in the field of vision. Used for depth perception, distance perception, form perception, and slant perception.
UF *depth perception*
distance perception
form perception
slant perception
GS perception
 . sensory perception
 . . visual perception
 . . . **space perception**
 autokinesis
RT binocular vision
monocular vision
peripheral vision
range finders
sound localization

visual fields

space photography

USE **spaceborne photography**

space plasma H/V interaction experiments

USE **SPHINX**

space plasmas

DEF Concentrations of free electrons and protons in the ionosphere, plasmasphere, and beyond.
GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **space plasmas**
 solar wind
 stellar winds
 corpuscular radiation
 energetic particles
 plasmas (physics)
 **space plasmas**
 solar wind
 stellar winds
RT AMPTE (satellites)
Cluster Mission
CRRES (satellite)
dusty plasmas
Earth magnetosphere
flux transfer events
galactic winds
geomagnetism
IMAGE satellite
ionopause
magnetic field reconnection
magnetohydrodynamic stability
magnetohydrodynamics
OPEN Project
plasma density
plasma diagnostics
plasma interactions
plasma layers
plasma physics
plasma waves
plasma-electromagnetic interaction
polar cusps
Polar/GGS spacecraft
space weather
SPHINX
wave-particle interactions
Wind/GGS spacecraft

space platforms

DEF Gimbal-mounted platforms equipped with gyros and accelerometers for maintaining a desired orientation in inertial space independent of spacecraft motion.
GS **space platforms**
 . Columbus space station
 . Eureka (ESA)
 . Long Duration Exposure Facility
 . man tended free flyers
 . space station polar platforms
 . . synchronous platforms
RT Earth Observing System (EOS)
intraorbit transfer vehicles
orbital servicing
∞ platforms
shape control
Space Station Freedom
space stations

space power reactors

GS auxiliary power sources
 . nuclear auxiliary power units
 . . **space power reactors**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
nuclear electric power generation
 . nuclear auxiliary power units

. . **space power reactors**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
nuclear power reactors
 . **space power reactors**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
nuclear reactors
 . nuclear power reactors
 . . **space power reactors**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
RT heat exchangers
space station power supplies
turbogenerators

space power unit reactors

UF *SPUR (reactors)*
GS auxiliary power sources
 . nuclear auxiliary power units
 . . space power reactors
 . . . **space power unit reactors**
nuclear electric power generation
 . nuclear auxiliary power units
 . . space power reactors
 . . . **space power unit reactors**
nuclear power reactors
 . nuclear power reactors
 . . space power reactors
 . . . **space power unit reactors**
nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . **space power unit reactors**
RT fission electric cells
heat exchangers
SNAP
SNAP 2
SNAP 4
SNAP 8
SNAP 50
turbogenerators

space probes

GS unmanned spacecraft
 . **space probes**
 . . Explorer 18 satellite
 . . . Giotto mission
 . . . Jupiter probes
 Galileo probe
 Galileo spacecraft
 . . . lunar probes
 Lunik lunar probes
 Lunik 2 lunar probe
 Lunik 3 lunar probe
 Lunik 9 lunar probe
 Lunik 10 lunar probe
 Lunik 11 lunar probe
 Lunik 12 lunar probe
 Lunik 13 lunar probe
 Lunik 14 lunar probe
 Lunik 16 lunar probe
 Lunik 17 lunar probe
 Lunik 19 lunar probe
 Lunik 20 lunar probe
 Lunik 22 lunar probe
 . . . Ranger lunar probes
 Ranger 1 lunar probe
 Ranger 2 lunar probe
 Ranger 3 lunar probe
 Ranger 4 lunar probe
 Ranger 5 lunar probe
 Ranger 6 lunar probe

- ... Ranger 7 lunar probe
- ... Ranger 8 lunar probe
- ... Ranger 9 lunar probe
- ... Ranger lunar landing vehicles
- ... Surveyor lunar probes
- ... Surveyor 1 lunar probe
- ... Surveyor 2 lunar probe
- ... Surveyor 3 lunar probe
- ... Surveyor 4 lunar probe
- ... Surveyor 5 lunar probe
- ... Surveyor 6 lunar probe
- ... Surveyor 7 lunar probe
- .. Mariner space probes
- ... Mariner 1 space probe
- ... Mariner 2 space probe
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 5 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mariner 10 space probe
- ... Mariner 11 space probe
- ... Mariner R 2 space probe
- .. Mariner spacecraft
- ... Mariner C spacecraft
- ... Mariner Venus 67 spacecraft
- .. Mars probes
- ... Advanced Recon Electric Spacecraft
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mars 1 spacecraft
- ... Mars 2 spacecraft
- ... Mars 3 spacecraft
- ... Mars 4 spacecraft
- ... Mars 5 spacecraft
- ... Mars 6 spacecraft
- ... Mars 7 spacecraft
- ... Mars Observer
- ... Mars Pathfinder
- ... Viking 1975 entry vehicle
- ... Viking spacecraft
- ... Viking 1 spacecraft
- ... Viking lander 1
- ... Viking orbiter 1
- ... Viking 2 spacecraft
- ... Viking lander 2
- ... Viking orbiter 2
- ... Viking lander spacecraft
- ... Viking lander 1
- ... Viking lander 2
- ... Viking orbiter spacecraft
- ... Viking orbiter 1
- ... Viking orbiter 2
- ... Viking orbiter 1975
- ... Mars Climate Orbiter
- ... Mars Express
- ... Mars Global Surveyor
- ... Mars Polar Lander
- ... Nozomi Mars Orbiter
- ... Phobos spacecraft
- ... Zond 2 space probe
- .. Pioneer space probes
- ... Pioneer 1 space probe
- ... Pioneer 2 space probe
- ... Pioneer 3 space probe
- ... Pioneer 4 space probe
- ... Pioneer 5 space probe
- ... Pioneer 6 space probe
- ... Pioneer 7 space probe
- ... Pioneer 8 space probe
- ... Pioneer 9 space probe
- ... Pioneer 10 space probe
- ... Pioneer 11 space probe
- ... Pioneer Venus 2 entry probes
- ... Pioneer Venus 2 night probe
- ... Pioneer Venus 2 sounder probe
- .. solar probes
- ... Helios 1
- ... Helios 2
- ... Helios A

- ... Helios B
- ... Starprobe spacecraft
- ... Sunblazer space probe
- .. Venus probes
- ... Magellan spacecraft (NASA)
- ... Mariner 1 space probe
- ... Mariner 2 space probe
- ... Mariner 5 space probe
- ... Mariner 10 space probe
- ... Pioneer Venus 2 spacecraft
- ... Pioneer Venus 2 entry probes
- ... Pioneer Venus 2 night probe
- ... Pioneer Venus 2 sounder probe
- ... Pioneer Venus 2 transporter bus
- ... Venera satellites
- ... Venera 2 satellite
- ... Venera 3 satellite
- ... Venera 4 satellite
- ... Venera 5 satellite
- ... Venera 6 satellite
- ... Venera 7 satellite
- ... Venera 8 satellite
- ... Venera 9 satellite
- ... Venera 10 satellite
- ... Venera 11 satellite
- ... Venera 12 satellite
- ... Zond 1 space probe
- ... Zond 3 space probe
- ... Zond 4 space probe
- ... Zond 5 space probe
- ... Zond 6 space probe
- ... Zond 7 space probe
- ... Zond 8 space probe
- .. Huygens probe
- .. Microwave Anisotropy Probe
- .. Voyager 1 spacecraft
- .. Voyager 2 spacecraft
- RT Atlas Able 5 launch vehicle
- Cassini mission
- interplanetary spacecraft
- magnetic probes
- maneuverable spacecraft
- Mariner program
- meteorological satellites
- Pioneer project
- Pioneer Venus 1 spacecraft
- Pioneer Venus spacecraft
- ∞ probes
- radio occultation
- satellite television
- Voyager 1977 mission
- Voyager project

space processing

DEF Synthesis, processing, forming, and fabrication of compounds or materials in space or in a simulated space environment; normally involving techniques that exploit low-gravity or high-vacuum conditions.

GS space industrialization

.. **space processing**

RT acoustic levitation

- bioprocessing
- commercial spacecraft
- containerless melts
- crystal growth
- diamond films
- electric furnaces
- float zones
- levitation melting
- liquid bridges
- low gravity manufacturing
- Marangoni convection
- metalorganic chemical vapor deposition
- microgravity
- ∞ microgravity applications
- miscibility gap
- orbital workshops
- protein crystal growth
- single crystals
- space commercialization
- space manufacturing
- spaceborne experiments
- thermocapillary migration

ultrapure metals

Space Processing Applications Rocket

DEF Sounding rocket used for space processing experiments by NASA. Used for SPAR (rocket).

UF *SPAR (rocket)*

RT launch vehicles
metal foams
payloads
rocket vehicles
weightlessness

space programs

GS programs

.. **space programs**

- .. Argentine space program
- .. Australian space program
- .. Brazilian space program
- .. Canadian space program
- .. Alouette project
- .. Chinese space program
- .. European space programs
- .. Austrian space program
- .. Belgian space program
- .. Czechoslovakian space program
- .. Danish space program
- .. Finnish space program
- .. French space program
- .. German space program
- .. Greek space program
- .. Hungarian space program
- .. Icelandic space program
- .. Italian space program
- .. Luxembourg space program
- .. Netherlands space program
- .. Norwegian space program
- .. Portuguese space program
- .. Spanish space program
- .. Swedish space program
- .. Swiss space program
- .. Turkish space program
- .. UK space program
- .. geographic applications program
- .. Indian space program
- .. Indonesian space program
- .. Israeli space program
- .. Japanese space program
- .. Mexican space program
- .. NASA space programs
- .. Apollo applications program
- .. Apollo project
- .. Bioastronautical Orbital Space System
- .. Centaur project
- .. Earth & Ocean Physics Applications Program
- .. Earth Resources Program
- .. Earth Resources Survey Program
- ... SEASAT program
- .. Echo project
- .. Galileo project
- .. Gemini project
- .. Helios Project
- .. Jupiter project
- .. Magellan project (NASA)
- ... Mariner program
- ... Mariner Venus-Mercury 1973
- ... Mariner-Mercury 1973
- ... Mars 69 project
- ... Mars 71 project
- ... Mercury project
- ... National Launch Vehicle Program
- ... NEW MOONS project
- ... Nimbus project
- ... OPEN Project
- ... Pioneer project
- ... Project SETI
- ... Ranger project
- ... Agena B Ranger Program
- ... Mars Surveyor 98 Program
- ... Rover project
- ... SAIL project
- ... Saturn project
- ... Scout project
- ... Skylab program

space psychology

- ... Starprobe mission
- ... Surveyor project
- ... Synchronous Communications Satellite Proj
- ... Tektite project
- ... TIROS project
- ... Titan project
- ... Vanguard project
- ... Viking Mars program
- ... Voyager project
- .. New Zealand space program
- .. Pakistan space program
- .. Russian Space Program
- .. Saudi Arabian space program
- .. U. S. S. R. space program
- .. Ukrainian space program
- RT Apollo Soyuz test project
- European Space Agency
- International Space Year
- ISRO
- manned space flight
- NASA programs
- ∞ research projects
- Solar Maximum Mission
- space missions

space psychology

- GS medical science
 - . aerospace medicine
 - . **space psychology**
 - psychology
 - . **space psychology**
- RT astronaut performance
- astronaut training
- aviation psychology
- manned space flight
- military psychology
- psychological effects
- psychological factors
- social factors
- space adaptation syndrome
- space flight stress
- stress (psychology)

space radiation

USE **extraterrestrial radiation**

space radiators

USE **spacecraft radiators**

space rations

- GS consumables (spacecrew supplies)
 - . **space rations**
 - rations
 - . **space rations**
- RT ∞ food
- food production (in space)
- provisioning
- stowage (onboard equipment)

space rendezvous

- UF *spacecraft rendezvous*
- GS rendezvous
 - . **space rendezvous**
 - . . orbital rendezvous
 - . . . Earth orbital rendezvous
 - . . . lunar orbital rendezvous
- RT Apollo Soyuz test project
- rendezvous trajectories
- spacecraft docking
- transfer orbits

space sciences

USE **aerospace sciences**

space self maneuvering units

USE **self maneuvering units**

Space Shuttle Ascent Stage

DEF Shuttle take-off configuration comprising the orbiter, solid rocket boosters, and external tank.

- GS spacecraft configurations
 - . **Space Shuttle Ascent Stage**
- RT Advanced Solid Rocket Motor (STS)
- ascent propulsion systems

- external tanks
- Space Shuttle Boosters
- Space Shuttle orbiters
- Space Shuttle upper stages
- space shuttles
- stage separation

Space Shuttle Boosters

- UF *Shuttle Boosters*
- Solid Rocket Boosters (Space Shuttle)*
- Space Shuttle Solid Rocket Motors*
- SRB (Solid Rocket Boosters)*
- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **Space Shuttle Boosters**
 - Advanced Solid Rocket Motor (STS)
 - . . solid propellant rocket engines
 - . . . **Space Shuttle Boosters**
 - Advanced Solid Rocket Motor (STS)
- RT ∞ boosters
- manned spacecraft
- O ring seals
- reusable spacecraft
- Space Shuttle Ascent Stage

Space Shuttle Main Engine

DEF Liquid propellant propulsion system using fuel drawn from external tanks to provide power for the orbiter to attain orbital speed.

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **Space Shuttle Main Engine**
- RT propulsion
- space transportation system
- Space Transportation System flights

Space Shuttle mission 31-A

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 31-A**
- RT Columbia (Orbiter)

Space Shuttle mission 31-B

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 31-B**
- RT Challenger (Orbiter)

Space Shuttle mission 31-C

- UF *Space Shuttle Orbital Flight 7*
- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 31-C**
- RT Challenger (Orbiter)

Space Shuttle mission 31-D

- UF *Space Shuttle Orbital Flight 8*
- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 31-D**
- RT Challenger (Orbiter)

Space Shuttle mission 41-A

- UF *Space Shuttle Orbital Flight 9*
- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 41-A**
- RT Columbia (Orbiter)

Space Shuttle mission 41-B

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 41-B**

RT Challenger (Orbiter)

Space Shuttle mission 41-C

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 41-C**
- RT Challenger (Orbiter)

Space Shuttle mission 41-D

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 41-D**
- RT Discovery (Orbiter)

Space Shuttle mission 41-G

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 41-G**
- RT Challenger (Orbiter)

Space Shuttle mission 51-A

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-A**
- RT Discovery (Orbiter)

Space Shuttle mission 51-B

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-B**
- RT Challenger (Orbiter)

Space Shuttle mission 51-C

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-C**
- RT Discovery (Orbiter)

Space Shuttle mission 51-D

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-D**
- RT Discovery (Orbiter)

Space Shuttle mission 51-E

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-E**
- RT Challenger (Orbiter)

Space Shuttle mission 51-F

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-F**
- RT Challenger (Orbiter)

Space Shuttle mission 51-G

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-G**
- RT Discovery (Orbiter)
- Saudi Arabian space program

Space Shuttle mission 51-H

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-H**
- RT Atlantis (orbiter)

Space Shuttle mission 51-I

- GS space flight
 - . manned space flight
 - . . Space Shuttle missions
 - . . . **Space Shuttle mission 51-I**

RT	Discovery (Orbiter)	space transportation system	terminal area energy management
Space Shuttle mission 51-J		<i>Space Shuttle Orbital Flight 7</i> USE Space Shuttle mission 31-C	Space Shuttle payloads
GS	space flight		GS payloads
	. manned space flight		. Space Shuttle payloads
	.. Space Shuttle missions	<i>Space Shuttle Orbital Flight 8</i> USE Space Shuttle mission 31-D	.. Advanced Technology Laboratory
	... Space Shuttle mission 51-J		.. Astro missions (STS)
RT	Atlantis (orbiter)	<i>Space Shuttle Orbital Flight 9</i> USE Space Shuttle mission 41-A	.. Atmospheric General Circulation Experiment
Space Shuttle mission 51-L		<i>Space Shuttle Orbital Flight Test 1</i> USE Space Transportation System 1 flight	.. Earth radiation budget experiment
GS	space flight		.. Earth Viewing Applications Laboratory
	. manned space flight	<i>Space Shuttle Orbital Flight Test 2</i> USE Space Transportation System 2 flight	.. electromagnetic environment experiment
	.. Space Shuttle missions		.. Get Away Specials (STS)
	... Space Shuttle mission 51-L	<i>Space Shuttle Orbital Flight Test 3</i> USE Space Transportation System 3 flight	.. Halogen Occultation Experiment
RT	Challenger (Orbiter)	<i>Space Shuttle Orbital Flight Test 4</i> USE Space Transportation System 4 flight	.. OSS-1 payload
Space Shuttle mission 61-A		<i>Space Shuttle Orbital Flight Tests</i> USE Space Transportation System flights	.. OSTA-1 payload
GS	space flight		.. OSTA-3 payload
	. manned space flight	<i>Space Shuttle Orbital Flight Test 4</i> USE Space Transportation System 4 flight	.. Physics and Chemistry Experiment in Space
	.. Space Shuttle missions		.. plasma interaction experiment
	... Space Shuttle mission 61-A	<i>Space Shuttle Orbital Flight Tests</i> USE Space Transportation System flights	.. Spacelab
RT	Challenger (Orbiter)		.. X Ray Astrophysics Facility
	Columbia (Orbiter)	<i>Space Shuttle Orbital Flights</i> USE Space Transportation System flights	RT commerce lab
Space Shuttle mission 61-B		<i>Space Shuttle Orbiter 099</i> USE Challenger (Orbiter)	extravehicular activity
GS	space flight		Feature Identification and Location Exper
	. manned space flight	<i>Space Shuttle Orbiter 101</i> USE Enterprise (Orbiter)	Hubble Space Telescope orbital servicing
	.. Space Shuttle missions		payload assist module
	... Space Shuttle mission 61-B	<i>Space Shuttle Orbiter 102</i> USE Columbia (Orbiter)	payload integration
RT	Atlantis (orbiter)		payload integration plan
Space Shuttle mission 61-C		<i>Space Shuttle Orbiter 103</i> USE Discovery (Orbiter)	Shuttle Imaging Radar
GS	space flight		sortie systems
	. manned space flight	<i>Space Shuttle Orbiter 104</i> USE Atlantis (orbiter)	space station payloads
	.. Space Shuttle missions		space technology experiments
	... Space Shuttle mission 61-C	<i>Space Shuttle Orbiter 105</i> USE Endeavour (orbiter)	space transportation system
RT	Columbia (Orbiter)		spaceborne experiments
Space Shuttle mission 61-E		<i>Space Shuttle Orbiter 105</i> USE Endeavour (orbiter)	Starlab
GS	space flight		<i>Space Shuttle Solid Rocket Motors</i> USE Space Shuttle Boosters
	. manned space flight	Space Shuttle upper stage A	DEF A version of a spinning solid upper stage centered around an Atlas Centaur launch vehicle. Used for SSUS-A.
	.. Space Shuttle missions	UF <i>SSUS-A</i>	GS Space Shuttle upper stages
	... Space Shuttle mission 61-C	GS Space Shuttle upper stage A	RT Atlas Centaur launch vehicle
RT	Columbia (Orbiter)		Space Shuttle upper stage D
Space Shuttle mission 61-E		<i>Space Shuttle Orbiter 105</i> USE Endeavour (orbiter)	DEF A version of a spinning solid upper stage centered around a Delta launch vehicle. Used for SSUS-D.
GS	space flight		UF <i>SSUS-D</i>
	. manned space flight	Space Shuttle orbiters	GS Space Shuttle upper stages
	.. Space Shuttle missions	GS manned spacecraft	. Space Shuttle upper stage D
	... Space Shuttle missions	.. space shuttles	RT Delta launch vehicle
	... Space Shuttle mission 31-A	.. Space Shuttle orbiters	solid propellant rocket engines
	... Space Shuttle mission 31-B	... Atlantis (orbiter)	spin stabilization
	... Space Shuttle mission 31-C	... Challenger (Orbiter)	Space Shuttle upper stages
	... Space Shuttle mission 31-D	... Columbia (Orbiter)	DEF A collective term for the various types of upper stages planned for the Space Shuttle.
	... Space Shuttle mission 41-A	... Discovery (Orbiter)	UF <i>SSUS-D</i>
	... Space Shuttle mission 41-B	... Endeavour (orbiter)	GS Space Shuttle upper stages
	... Space Shuttle mission 41-C	... Enterprise (Orbiter)	. Space Shuttle upper stage A
	... Space Shuttle mission 41-D	reentry vehicles	. Space Shuttle upper stage D
	... Space Shuttle mission 41-G	. recoverable spacecraft	. spinning solid upper stage
	... Space Shuttle mission 51-A	. reusable spacecraft	RT Space Shuttle Ascent Stage
	... Space Shuttle mission 51-B	... space shuttles	
	... Space Shuttle mission 51-C	... Space Shuttle orbiters	
	... Space Shuttle mission 51-D Atlantis (orbiter)	
	... Space Shuttle mission 51-E Challenger (Orbiter)	
	... Space Shuttle mission 51-F Columbia (Orbiter)	
	... Space Shuttle mission 51-G Discovery (Orbiter)	
	... Space Shuttle mission 51-H Endeavour (orbiter)	
	... Space Shuttle mission 51-I Enterprise (Orbiter)	
	... Space Shuttle mission 51-J	RT Inertial Upper Stage	
	... Space Shuttle mission 51-L	manned space flight	
	... Space Shuttle mission 61-A	microwave scanning beam landing system	
	... Space Shuttle mission 61-B	payload integration plan	
	... Space Shuttle mission 61-C	Shuttle Derived Vehicles	
	... Space Shuttle mission 61-E	Space Shuttle Ascent Stage	
RT	Get Away Specials (STS)	space transportation system	
	∞ missions	spacecraft recovery	
	space missions		

space simulators

- . recoverable spacecraft
- . . reusable spacecraft
- . . . **space shuttles**
- Buran space shuttle
- Hermes manned spaceplane
- Space Shuttle orbiters
- Atlantis (orbiter)
- Challenger (Orbiter)
- Columbia (Orbiter)
- Discovery (Orbiter)
- Endeavour (orbiter)
- Enterprise (Orbiter)
- RT Advanced Launch System (STS)
- AEPS
- Aeromaneuvering Orbit to Orbit Shuttle
- annular suspension and pointing system
- approach and landing tests (STS)
- Assess program
- auxiliary propulsion
- BESS (satellite)
- Columbus space station
- entry guidance (STS)
- Eureca (ESA)
- expendable stages (spacecraft)
- German Infrared Laboratory
- HOTOL launch vehicle
- Inertial Upper Stage
- interim stages (spacecraft)
- International Space Station
- intraorbit transfer vehicles
- LIRTS (telescope)
- manned space flight
- Orbit Maneuvering Engine (Space Shuttle)
- orbit transfer vehicles
- orbital maneuvers
- payload control
- payload deployment & retrieval system
- payload retrieval (STS)
- SAIL project
- Shuttle Derived Vehicles
- Shuttle Engineering Simulator
- Shuttle pallet satellites
- single stage to orbit vehicles
- sortie systems
- Space Shuttle Ascent Stage
- space transportation system
- Space Transportation System flights
- ∞ spacecraft
- spacecraft recovery
- Spacelab

space simulators

DEF Devices used to simulate one or more parameters of the space environment used for testing space systems or components. Specifically, a closed chamber capable of approximating the vacuum and normal environments of space. Used for orbital simulators.

UF *orbital simulators*

GS simulators

- . environment simulators

- . . **space simulators**

- . . . clinostats

- . . . High Vacuum Orbital Simulator

- . . . Langley complex coordinator

RT centrifuges

- flight simulators

- neutral buoyancy simulation

- solar simulators

- spacecraft environments

- vacuum chambers

Space Station Freedom

(added August 1991)

UF *Freedom Space Station*

GS artificial satellites

- . space stations

- . . **Space Station Freedom**

- stations

- . space stations

- . . **Space Station Freedom**

RT Columbus space station

- International Space Station

- large space structures
- NASA space programs
- orbital servicing
- space laboratories
- space platforms
- space station payloads
- space station polar platforms
- space station power supplies
- space station propulsion
- space station structures

Space Station Mobile Servicing System

(added September 2001)

DEF Canadian robotic arm system for the International Space Station (ISS), used for ISS assembly, maintenance and payload servicing. Includes three primary components: the Space Station Remote Manipulator System, Mobile Base System, and Special Purpose Dexterous Manipulator.

UF *Canadarm (ISS)*

- Mobile Servicing System (ISS)*

- MSS (International Space Station)*

- Space Station Remote Manipulator System*

GS manipulators

- . remote manipulator system

- . . **Space Station Mobile Servicing System**

- robot arms

- . **Space Station Mobile Servicing System**

RT Canadian space program

- International Space Station

- orbital assembly

- payload deployment & retrieval

- system

- remote handling

- robots

- space maintenance

- space station modules

space station modules

(added November 1998)

GS modules

- . **space station modules**

- . . Destiny Laboratory Module

- . . Kvant modules

- . . Priroda module

- . . Service Module (ISS)

- . . Unity connecting module

- . . Zarya control module

RT airlock modules

- compartments

- International Space Station

- Mir space station

- orbital assembly

- space erectable structures

- Space Station Mobile Servicing

- System

- space station structures

- spacecraft docking modules

- spacecraft modules

space station payloads

GS payloads

- . **space station payloads**

RT Alpha Magnetic Spectrometer

- Earth Observing System (EOS)

- man tended free flyers

- Space Shuttle payloads

- Space Station Freedom

- space station polar platforms

- space stations

- Spacelab payloads

space station polar platforms

UF *polar platforms (space stations)*

GS artificial satellites

- . space stations

- . . **space station polar platforms**

- space platforms

- . **space station polar platforms**

- stations

- . space stations

- . . **space station polar platforms**

RT Columbus space station

- Earth Observing System (EOS)
- polar orbits
- remote sensing
- Space Station Freedom
- space station payloads

space station power supplies

GS electric power supplies

- . **space station power supplies**

RT electric batteries

- energy storage

- solar arrays

- solar cells

- solar dynamic power systems

- space power reactors

- Space Station Freedom

- space stations

- spacecraft power supplies

- thermoelectric generators

space station propulsion

GS propulsion

- . **space station propulsion**

RT auxiliary propulsion

- electric propulsion

- hydrogen oxygen engines

- ion engines

- low thrust propulsion

- propulsion system configurations

- resistojet engines

- solar electric propulsion

- Space Station Freedom

- space stations

- spacecraft propulsion

Space Station Remote Manipulator System
(added September 2001)

USE **Space Station Mobile Servicing System**

space station structures

GS **space station structures**

- . Integrated Truss Structure P1

- . Integrated Truss Structure S1

- . Integrated Truss Structure Z1

RT Kvant modules

- large space structures

- orbital assembly

- Priroda module

- smart structures

- space erectable structures

- Space Station Freedom

- space station modules

- space stations

- spacecraft structures

- structural design

- ∞ structures

space stations

UF *Earth orbiting space stations*

- manned orbital space stations*

- MOSS (space stations)*

- self deploying space stations*

GS artificial satellites

- . **space stations**

- . . Automatic Universal Orbiting

- Stations

- . . Columbus space station

- . . Halo Orbit space station

- . . International Space Station

- . . man tended free flyers

- . . Mir space station

- . . orbiting lunar stations

- . . Salyut space station

- . . Skylab 1

- . . Skylab 2

- . . Skylab 3

- . . Skylab 4

- . . Space Operations Center (NASA)

- . . Space Station Freedom

- . . space station polar platforms

- stations

- . **space stations**

- . . Automatic Universal Orbiting

- Stations

- .. Columbus space station
- .. Halo Orbit space station
- .. International Space Station
- .. man tended free flyers
- .. Mir space station
- .. orbiting lunar stations
- .. Salyut space station
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Space Operations Center (NASA)
- .. Space Station Freedom
- .. space station polar platforms
- RT AEPS
- bioastronautics
- ferry spacecraft
- inflatable structures
- large space structures
- manned orbital laboratories
- manned spacecraft
- military spacecraft
- orbital servicing
- orbital space tests
- orbital workshops
- ∞ platforms
- rendezvous spacecraft
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn workshops
- sortie systems
- space bases
- space colonies
- space habitats
- space laboratories
- space platforms
- space station payloads
- space station power supplies
- space station propulsion
- space station structures
- spacecraft docking
- spin stabilization
- X-38 crew return vehicle

space storage

- RT cryogenic fluid storage
- cryogenic rocket propellants
- cryogenic tanks
- propellant storage
- storable propellants
- ∞ storage
- storage tanks

space suits

DEF Pressure suits for wear in space or at very low ambient pressures within the atmosphere, designed to permit the wearer to leave the protection of a pressurized cabin.

- GS clothing
- . protective clothing
- .. pressure suits
- ... **space suits**
- ... extravehicular mobility units
- . suits
- .. pressure suits
- ... **space suits**
- ... extravehicular mobility units
- RT safety devices

∞ **space surveillance**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT space surveillance (ground based)
- space surveillance (spaceborne)

space surveillance (ground based)

- GS surveillance
- . **space surveillance (ground based)**
- RT air defense
- antimissile defense
- asteroid detection
- minitrack system
- space observations (from Earth)
- ∞ space surveillance

spacecraft tracking

space surveillance (spaceborne)

- GS surveillance
- . **space surveillance (spaceborne)**
- RT air defense
- antimissile defense
- high altitude nuclear detection
- ice mapping
- ice reporting
- military spacecraft
- optical countermeasures
- reconnaissance
- satellite-borne photography
- satellite-to-satellite tracking
- ∞ space surveillance
- spacecraft tracking

space systems engineering

USE **aerospace engineering**

space technology experiments

- RT antenna design
- antennas
- large space structures
- space erectable structures
- Space Shuttle payloads
- spaceborne experiments

space temperature

- GS temperature
- . **space temperature**
- RT cryogenic temperature
- electron energy
- ion temperature

space tools

- GS tools
- . **space tools**
- RT low gravity manufacturing
- orbital workers
- telerobotics

space tourism

(added April 1999)

- GS space industrialization
- . **space tourism**
- tourism
- . **space tourism**
- RT space commercialization
- space transportation

space transportation

DEF The conveyance of payloads or personnel to, through, or from outer space.

- GS transportation
- . **space transportation**
- .. space transportation system
- ... Advanced Launch System (STS)
- ... Saenger space transportation system
- RT Delta Clipper
- HOPE aerospace plane
- HOTOL launch vehicle
- Inertial Upper Stage
- Japanese space program
- orbit transfer vehicles
- payload stations
- payloads
- single stage to orbit vehicles
- space tourism
- terminal area energy management

space transportation system

DEF A joint NASA-DOD advanced space transportation concept for the 1980s. The main element of the STS is the Space Shuttle. Another element is the orbit transfer vehicles-OTV. A third element called Spacelab is designed and manufactured by the European Space Agency, has no propulsive capability and is carried by the Space Shuttle. Used for STS.

- UF STS
- GS transportation
- . space transportation
- .. **space transportation system**

... Advanced Launch System (STS)

- ... Saenger space transportation system
- RT Advanced Solid Rocket Motor (STS)
- annular suspension and pointing system
- approach and landing tests (STS)
- Atmospheric General Circulation Experiment
- defense program
- extravehicular mobility units
- Hermes manned spaceplane
- Inertial Upper Stage
- manned maneuvering units
- NASA programs
- orbital servicing
- OSS-1 payload
- OSTA-1 payload
- OSTA-2 payload
- OSTA-3 payload
- payload assist module
- payload delivery (STS)
- payload integration plan
- payload retrieval (STS)
- power modules (STS)
- remote manipulator system
- Space Shuttle Main Engine
- Space Shuttle missions
- Space Shuttle orbiters
- Space Shuttle payloads
- space shuttles
- Space Transportation System flights
- space tugs
- Spacelab
- ∞ systems

Space Transportation System 1 flight

- UF *OFT 1*
- Orbital Flight Test 1 (shuttle)*
- Space Shuttle Orbital Flight Test 1 STS-1*
- GS Space Transportation System flights
- . **Space Transportation System 1 flight**

Space Transportation System 2 flight

- UF *OFT 2*
- Orbital Flight Test 2 (shuttle)*
- Space Shuttle Orbital Flight Test 2 STS-2*
- GS Space Transportation System flights
- . **Space Transportation System 2 flight**

Space Transportation System 3 flight

- UF *OFT 3*
- Orbital Flight Test 3 (shuttle)*
- Space Shuttle Orbital Flight Test 3 STS-3*
- GS Space Transportation System flights
- . **Space Transportation System 3 flight**

Space Transportation System 4 flight

- UF *OFT 4*
- Orbital Flight Test 4 (shuttle)*
- Space Shuttle Orbital Flight Test 4 STS-4*
- GS Space Transportation System flights
- . **Space Transportation System 4 flight**

Space Transportation System flights

DEF Revised collective designation for all Space Shuttle flights. Used for OFT, orbital flight tests (shuttle), Space Shuttle orbital flight tests, and Space Shuttle orbital flights.

- UF *OFT*
- orbital flight tests (shuttle)*
- Space Shuttle Orbital Flight Tests*
- Space Shuttle Orbital Flights*
- GS **Space Transportation System flights**
- . Space Transportation System 1 flight

space tugs

- . Space Transportation System 2 flight
- . Space Transportation System 3 flight
- . Space Transportation System 4 flight
- RT entry guidance (STS)
- geophysical fluid flow cells
- Solar Cell Calibration Facility
- space flight
- Space Shuttle Main Engine
- space shuttles
- space transportation system
- ∞ systems
- ∞ tests

space tugs

- RT Inertial Upper Stage
- modules
- orbit transfer vehicles
- orbital servicing
- payloads
- propulsion
- space transportation system
- spacecraft propulsion

space vehicle checkout program

- UF *spacecraft prelaunch tests*
- RT checkout
- countdown
- performance tests
- prefiring tests
- spacecraft maintenance
- ∞ tests

space vehicle control

- USE **spacecraft control**

space vehicles

- USE **spacecraft**

space weapons

- GS weapons
- . **space weapons**
- RT air to air missiles
- antimissile missiles
- Chaparral missile
- laser weapons
- Minuteman ICBM
- nuclear weapons
- surface to air missiles
- weapon systems
- weapons delivery

space weather

(added June 1999)

- SN (FOR METEOROLOGICAL CONDITIONS RELATED TO THE MIDDLE AND LOWER ATMOSPHERES OF NON-EARTH PLANETS USE "PLANETARY METEOROLOGY".)
- DEF The dynamic, highly variable conditions of the geospace environment that encompasses the sun, the interplanetary medium, and the Earth magnetosphere-ionosphere-thermosphere system. Major contributing factors include variations in the solar wind, solar flares, and solar mass ejections. Effects of space weather phenomena include performance degradation of communication, navigation, and power systems on both spacecraft and ground-based systems; and potential health hazards during extravehicular activity.
- RT Advanced Composition Explorer
- aerospace environments
- aerospace safety
- Earth ionosphere
- Earth magnetosphere
- Earth orbital environments
- geomagnetism
- ionospheric disturbances
- magnetic disturbances
- magnetic storms
- Polar/GGS spacecraft
- radiation hazards
- solar activity effects
- solar terrestrial interactions

- space plasmas
- weather

space weathering

(added July 2001)

- DEF All processes that act on material exposed to the space environment including micrometeorite impacts and interactions with solar wind, cosmic rays, and ambient plasma. Includes processes associated with exposure at the surface of airless planets or small bodies.
- GS exposure
- . weathering
- . . **space weathering**
- RT aerospace environments
- damage
- erosion
- extraterrestrial environments
- Long Duration Exposure Facility
- lunar soil
- micrometeorites

spaceborne astronomy

- GS astronomy
- . **spaceborne astronomy**
- RT Alpha Magnetic Spectrometer
- Astro missions (STS)
- astronomical interferometry
- astronomical satellites
- Cosmic Background Explorer satellite
- faint object camera
- Gamma Ray Observatory
- Granat satellite
- Hipparcos satellite
- Hubble Space Telescope
- Infrared Space Observatory (ISO)
- IUE
- James Webb Space Telescope
- LISA (observatory)
- Magellan ultraviolet astronomy
- satellite
- Microwave Anisotropy Probe
- Pinhole Occulter Facility
- Quasat
- ROSAT mission
- SAS-2
- SAS-3
- SOFIA (airborne observatory)
- Space Infrared Telescope Facility
- Starsat telescope
- Submillimeter Wave Astronomy
- Satellite
- telescopes
- ultraviolet telescopes
- X Ray Astrophysics Facility

spaceborne experiments

- DEF A collective term designating the various experiments performed or planned in orbiting spacecraft and usually involving physical phenomena in space environments.

- GS **spaceborne experiments**
- . Orbiting Frog Otolith
- . Physics and Chemistry Experiment in Space
- . plasma interaction experiment
- RT aerospace environments
- AMPTE (satellites)
- bioprocessing
- CRRES (satellite)
- Destiny Laboratory Module
- experimentation
- geophysical fluid flow cells
- Get Away Specials (STS)
- International Space Station
- Long Duration Exposure Facility
- man tended free flyers
- molecular shields
- OSS-1 payload
- OSTA-1 payload
- OSTA-3 payload
- payload assist module
- payload integration plan
- payloads
- space laboratories
- space manufacturing
- space processing

- Space Shuttle payloads
- space technology experiments
- Spacelab
- weightlessness

spaceborne lasers

- GS stimulated emission devices
- . lasers
- . . **spaceborne lasers**
- RT airborne lasers
- laser applications
- remote sensors

spaceborne photography

- UF *space photography*
- GS imagery
- . photography
- . . **spaceborne photography**
- . . . satellite-borne photography
- RT aerial photography
- astronomical photography
- black and white photography
- cloud photographs
- cloud photography
- diffraction limited cameras
- Earth resources
- lunar photographs
- lunar photography
- Mars photographs
- multispectral band scanners
- photomapping
- photomaps
- rocket-borne photography
- satellite observation

spaceborne telescopes

- GS telescopes
- . **spaceborne telescopes**
- . . German Infrared Laboratory
- . . Hubble Space Telescope
- . . Infrared Space Observatory (ISO)
- . . James Webb Space Telescope
- . . Large Deployable Reflector
- . . LIRTS (telescope)
- . . solar optical telescope
- . . Space Infrared Telescope Facility
- . . Starlab
- . . Starsat telescope
- . . X Ray Astrophysics Facility
- . . XMM-Newton telescope
- RT Astro missions (STS)
- astronomical observatories
- astronomical photography
- astronomy
- diffraction limited cameras
- faint object camera
- Gamma Ray Observatory
- multi-anode microchannel arrays
- Next Generation Space Telescope
- project
- optical transfer function
- ROSAT mission

∞ spacecraft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Devices, manned and unmanned, which are designed to be placed into an orbit about the Earth or into a trajectory to another celestial body. Used for space vehicles.
- UF *space vehicles*
- RT Advanced Reconnaissance Electric Spacecraft
- aerospace vehicles
- air data systems
- Astro vehicle
- astrodynamics
- Atlantis (orbiter)
- auxiliary propulsion
- biosatellites
- Canadian spacecraft
- cargo spacecraft
- Challenger (Orbiter)
- Chinese spacecraft
- Clementine spacecraft
- Columbia (Orbiter)
- Czechoslovakian spacecraft

- Discovery (Orbiter)
 - dual spin spacecraft
 - Endeavour (orbiter)
 - Enterprise (Orbiter)
 - ESA spacecraft
 - escape rockets
 - expandable structures
 - flexible spacecraft
 - flight test vehicles
 - French space program
 - Galileo probe
 - Galileo spacecraft
 - ground support equipment
 - hypersonic vehicles
 - Indian space program
 - Indian spacecraft
 - inflatable spacecraft
 - interplanetary spacecraft
 - Israeli spacecraft
 - Japanese space program
 - Japanese spacecraft
 - launch vehicles
 - lunar spacecraft
 - Magellan spacecraft (NASA)
 - maneuverable spacecraft
 - manned orbital laboratories
 - manned spacecraft
 - Mariner Mark 2 Spacecraft
 - Mark 1 spacecraft
 - military spacecraft
 - orbit transfer vehicles
 - orbital maneuvering vehicles
 - orbiting lunar stations
 - outer planets explorers
 - photo reconnaissance spacecraft
 - Pioneer Venus 2 spacecraft
 - power limited spacecraft
 - Radiation Meteoroid spacecraft
 - recoverable spacecraft
 - reentry vehicles
 - research vehicles
 - ∞ satellites
 - SERT 1 spacecraft
 - SERT 2 spacecraft
 - Shuttle Derived Vehicles
 - soft landing spacecraft
 - Solar Maximum Mission-A
 - solettas
 - Soviet spacecraft
 - space capsules
 - space debris
 - space laboratories
 - space missions
 - space shuttles
 - spacecraft cabin simulators
 - spacecraft modules
 - technology feasibility spacecraft
 - test vehicles
 - TOPS (spacecraft)
 - transatmospheric vehicles
 - unidentified flying objects
 - unmanned spacecraft
 - ∞ vehicles
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
 - Voyager 1 spacecraft
 - Voyager 2 spacecraft
 - X-30 vehicle
 - X-37 vehicle
- spacecraft antennas**
- GS antennas
 - . **spacecraft antennas**
 - radio equipment
 - . **spacecraft antennas**
 - telecommunication
 - . **spacecraft antennas**
 - RT furlable antennas
- spacecraft breakup**
(added August 1989)
- UF *breakup (spacecraft)*
 - orbital breakup
 - reentry breakup
 - satellite breakup
 - satellite fragmentation
- RT atmospheric entry
 - destruction
 - hazards
 - meteoroid hazards
 - orbit decay
 - reentry effects
 - space debris
 - spacecraft reentry
 - spacecraft survivability
 - uncontrolled reentry (spacecraft)
 - wreckage
- spacecraft cabin atmospheres**
- GS controlled atmospheres
 - . cabin atmospheres
 - . . **spacecraft cabin atmospheres**
 - RT carbon dioxide concentration
 - closed ecological systems
 - cockpits
 - environmental control
 - high pressure oxygen
 - pressurized cabins
 - rebreathing
- spacecraft cabin simulators**
- GS simulators
 - . training simulators
 - . . **spacecraft cabin simulators**
 - training devices
 - . training simulators
 - . . **spacecraft cabin simulators**
 - RT aerospace environments
 - cockpit simulators
 - manned spacecraft
 - simulation
 - space flight training
 - space logistics
 - ∞ spacecraft
 - test facilities
- spacecraft cabins**
- GS compartments
 - . **spacecraft cabins**
 - spacecraft components
 - . **spacecraft cabins**
 - RT ∞ cabins
 - cockpits
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - pressurized cabins
 - space capsules
- spacecraft charging**
- DEF Electric charge induction upon the surface of a spacecraft by magnetospheric plasmas or other ion sources.
 - RT electric fields
 - external surface currents
 - single event upsets
 - spacecraft glow
 - system generated electromagnetic pulses
- Spacecraft Charging at High Altitude*
- USE **SCATHA satellite**
- spacecraft communication**
- SN (COMMUNICATION OF SPACECRAFT WITH GROUND OR OTHER SPACECRAFT)
 - DEF The act of, or methods for, conveying information to or from manned or unmanned spacecraft.
 - GS telecommunication
 - . space communication
 - . . **spacecraft communication**
 - . . . reentry communication
 - . . . satellite communication
 - RT ARPA computer network
 - astrionics
 - circumlunar communication
 - Earth terminals
 - facsimile communication
 - ground-air-ground communication
 - hoop column antennas
 - interplanetary communication
- lunar communication
 - optical communication
 - packet transmission
 - plasma antennas
 - radio communication
 - satellite communications ships
 - satellite ground support
 - single channel per carrier
 - transmission
 - system generated electromagnetic pulses
 - unified S band
 - wireless communication
- spacecraft components**
- GS **spacecraft components**
 - . service modules
 - . spacecraft cabins
 - . spacecraft docking modules
 - . spacecraft modules
 - . . command modules
 - . . command service modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - . . . Mars Excursion Module
 - . . SIM
 - RT airborne/spaceborne computers
 - boron-epoxy composites
 - commonality
 - ∞ components
 - nose cones
 - rocket engines
- spacecraft computers*
- USE **airborne/spaceborne computers**
- spacecraft configurations**
- GS **spacecraft configurations**
 - . satellite configurations
 - . Space Shuttle Ascent Stage
 - RT aerodynamic configurations
 - aircraft configurations
 - Apollo short stack
 - ∞ configurations
 - flared bodies
 - launch vehicle configurations
 - propulsion system configurations
 - Radiation Meteoroid spacecraft
 - reentry vehicles
 - upper stage rocket engines
- spacecraft construction materials**
- RT ∞ construction materials
 - functionally gradient materials
 - Ludox (trademark)
 - ∞ materials
 - materials selection
- spacecraft contamination**
- GS contamination
 - . **spacecraft contamination**
 - RT decontamination
 - exobiology
- spacecraft control**
- UF *space vehicle control*
 - GS **spacecraft control**
 - . satellite control
 - . . satellite attitude control
 - RT attitude control
 - automatic control
 - ∞ control
 - control simulation
 - crew procedures (preflight)
 - engine control
 - flexible spacecraft
 - flight control
 - fly by wire control
 - formation flying
 - ground based control

spacecraft defense

manual control
Marquardt R4D engine
missile control
orbit determination
pointing control systems
radio control
remote control
rocket engine control
shape control
stationkeeping
thrust vector control
visual control

spacecraft defense

DEF The protection of spacecraft from undesirable external forces. Used for satellite defense.

UF *satellite defense*
RT spacecraft survivability
stealth technology
vulnerability

spacecraft design

DEF The act of conceiving and planning the structure, systems, and performance characteristics of any type of spacecraft including space probes, satellites, space platforms and space stations.

GS **spacecraft design**
. IPAD
. satellite design
RT Advanced Launch System (STS)
aeroshells
computer aided design
∞ design
engine design
Hermes manned spaceplane
Indian space program
Japanese space program
lofting
product development
satellite temperature
Shuttle Derived Vehicles
space debris
spacecraft temperature
structural design
systems engineering
transatmospheric vehicles
weight reduction

spacecraft docking

DEF The act of coupling two or more orbiting objects; the operation of mechanically connecting together, or in some manner bring together orbital payloads. Used for docking.

UF *docking*
GS maneuvers
. spacecraft maneuvers
. **spacecraft docking**
RT ∞ astronautics
interception
Mir space station
mooring
multiple docking adapters
orbital rendezvous
rendezvous trajectories
Salyut space station
space rendezvous
space stations
transfer orbits
Unity connecting module

spacecraft docking modules

GS modules
. **spacecraft docking modules**
spacecraft components
. **spacecraft docking modules**
RT airlock modules
command modules
command service modules
landing modules
service modules
space station modules

spacecraft electronic equipment

GS electronic equipment

. **spacecraft electronic equipment**
onboard equipment
. spacecraft equipment
. . **spacecraft electronic equipment**
RT airborne/spaceborne computers
astrionics
single event upsets

spacecraft environments

(added August 1989)

SN (LIMITED TO SPACECRAFT INTERNAL COMPARTMENTS AND CABINS; FOR SPACECRAFT EXTERNAL ENVIRONMENTS REFER TO 'EXTRATERRESTRIAL ENVIRONMENTS')
GS environments
. **spacecraft environments**
RT aerospace medicine
Automatic Universal Orbiting Stations
bioastronautics
closed ecological systems
controlled atmospheres
environmental control
exobiology
extraterrestrial environments
intravehicular activity
life support systems
rotating environments
satellite temperature
space simulators
thermal environments
weightlessness

spacecraft equipment

GS onboard equipment
. **spacecraft equipment**
. . spacecraft electronic equipment
RT ∞ equipment
OSTA-3 payload
spacecraft instruments

spacecraft glow

UF *shuttle glow*
GS decay
. **spacecraft glow**
emission
. light emission
. . luminescence
. . . **spacecraft glow**
RT Earth orbital environments
spacecraft charging
surface reactions

spacecraft guidance

GS guidance (motion)
. **spacecraft guidance**
. . satellite guidance
RT automatic control
autonomous navigation
CCD star tracker
celestial navigation
command guidance
formation flying
ground based control
inertial guidance
injection guidance
interplanetary flight
interplanetary trajectories
laser gyroscopes
manual control
midcourse guidance
orbits
reentry guidance
rendezvous guidance
space flight
space navigation
star trackers
terminal guidance

spacecraft instruments

DEF Electronic, optical, gyroscopic, and other instruments that play a role in the control of the spacecraft, or that function to measure, record, display, or process different values or quantities encountered in the flight of a spacecraft.

UF *spacecraft sensors*
GS **spacecraft instruments**
. satellite instruments
. . multispectral linear arrays
. spacecraft position indicators
RT astrionics
Atmospheric Cloud Physics Lab (Spacelab)
autonomous spacecraft clocks
bubble technique
flight instruments
flight test instruments
guidance sensors
I2S cameras
instrument packages
∞ instruments
laser altimeters
measuring instruments
onboard equipment
spacecraft equipment

spacecraft landing

GS landing
. **spacecraft landing**
. . horizontal spacecraft landing
. . lunar landing
. . planetary landing
. . . Mars landing
RT aircraft landing
approach and landing tests (STS)
crash landing
emergency landing
glide landings
hard landing
landing simulation
soft landing
soft landing spacecraft
terminal area energy management
touchdown
vertical landing
water landing

spacecraft launching

UF *satellite launching*
GS launching
. **spacecraft launching**
. . liftoff (launching)
RT countdown
heavy lift launch vehicles
HOTOL launch vehicle
launch costs
launch dates
launch vehicles
launch windows
launching pads
missiles
orbit insertion
orbital launching
orbital shots
postlaunch reports
prelaunch summaries
railgun accelerators
reusable launch vehicles
rocket launching
space commercialization

spacecraft lubrication

UF *space environmental lubrication*
GS lubrication
. **spacecraft lubrication**
RT self lubricating materials

spacecraft maintenance

GS maintenance
. **spacecraft maintenance**
RT checkout
prelaunch tests
space vehicle checkout program
spacecraft reliability
turnaround (STS)

spacecraft maneuvers

UF *satellite maneuvers*
GS maneuvers
. **spacecraft maneuvers**
. . spacecraft docking

- RT control simulation
- formation flying
- maneuverability
- maneuverable spacecraft
- orbit insertion
- space flight
- spacecraft models**
- GS models
 - . **spacecraft models**
- RT aircraft models
- dynamic models
- mathematical models
- scale models
- spacecraft modules**
- GS modules
 - . **spacecraft modules**
 - .. command modules
 - .. command service modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - ... Mars Excursion Module
 - .. SIM
 - spacecraft components
 - . **spacecraft modules**
 - .. command modules
 - .. command service modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - ... Mars Excursion Module
 - .. SIM
- RT compartments
- man tended free flyers
- orbital assembly
- service modules
- space capsules
- space erectable structures
- space station modules
- ∞ spacecraft
- spacecraft motion**
- SN (NONTRAJECTORY MOTION)
- RT aerodynamic balance
- aerodynamic stability
- attitude stability
- buffeting
- control stability
- dynamic stability
- flexible spacecraft
- flutter
- ∞ motion
- motion stability
- oscillations
- sideslip
- stability
- tumbling motion
- vibration
- spacecraft orbital assembly*
- USE **orbital assembly**
- spacecraft orbits**
- GS orbits
 - . **spacecraft orbits**
 - .. satellite orbits
 - ... geosynchronous orbits
 - ... parking orbits
 - ... stationary orbits
 - ... twenty-four hour orbits
 - .. transfer orbits
 - ... interplanetary transfer orbits
- RT circular orbits
- Earth orbits
- elliptical orbits
- equatorial orbits
- lunar orbits
- orbit insertion
- orbital mechanics
- orbital position estimation
- planetary orbits
- retrograde orbits
- solar orbits
- spacecraft performance**
- DEF The manner or effectiveness in which any space vehicle, space platform, or space station functions while in operation in space, or in a simulated space environment.
- RT astronaut performance
- ∞ performance
- postlaunch reports
- spacecraft position indicators**
- GS display devices
 - . position indicators
 - .. **spacecraft position indicators**
 - measuring instruments
 - . indicating instruments
 - .. position indicators
 - ... **spacecraft position indicators**
 - spacecraft instruments
 - . **spacecraft position indicators**
- RT flight instruments
- head-up displays
- orbit determination
- orbital position estimation
- space navigation
- spacecraft power supplies**
- DEF Sources of electrical energy, including batteries, generators, and energy conversion devices, that support the normal operation of spacecraft.
- GS electric power supplies
 - . **spacecraft power supplies**
- RT auxiliary power sources
- cryocycle principle
- direct power generators
- electric batteries
- ∞ energy sources
- free-piston engines
- laser power beaming
- microwave power beaming
- nickel hydrogen batteries
- nuclear auxiliary power units
- power beaming
- power modules (STS)
- ∞ power supplies
- propellants
- solar dynamic power systems
- space station power supplies
- thermophotovoltaic conversion
- spacecraft prelaunch tests*
- USE **space vehicle checkout program**
- spacecraft propulsion**
- DEF The action or process of imparting motion to a spacecraft by means of a force such as a thrust of air or energy released by burning fuel.
- GS propulsion
 - . **spacecraft propulsion**
 - .. electromagnetic propulsion
 - ... magnetic sails
 - .. electrostatic propulsion
 - ... ion propulsion
 - .. matter-antimatter propulsion
 - .. negative matter propulsion
 - .. photonic propulsion
 - ... laser propulsion
 - .. plasma propulsion
 - .. solar propulsion
 - ... solar electric propulsion
 - ... solar thermal propulsion
- RT chemical propulsion
- descent propulsion systems
- electric propulsion
- fusion propulsion
- Hall thrusters
- laser propulsion
- low thrust propulsion
- magnetic nozzles
- magnetoplasmadynamic thrusters
- magnetoplasmadynamics
- mass drivers
- nuclear electric propulsion
- nuclear propulsion
- oxygen-hydrocarbon rocket engines
- post boost propulsion system
- propellants
- pulsed inductive thrusters
- pulsed plasma thrusters
- rocket engines
- rocket-based combined-cycle engines
- Rover project
- solar sails
- space flight
- space station propulsion
- space tugs
- total impulse
- VASIMR (propulsion system)
- spacecraft radiators**
- UF *space radiators*
- GS heat radiators
 - . **spacecraft radiators**
- RT condensers (liquefiers)
- cooling
- cooling systems
- radiative heat transfer
- solar reflectors
- spacecraft recovery**
- UF *satellite capture*
- snatching*
- RT booster recovery
- Discoverer recovery capsules
- recoverable spacecraft
- ∞ recovery
- recovery parachutes
- recovery zones
- rescue operations
- reusable launch vehicles
- Space Shuttle orbiters
- space shuttles
- water landing
- spacecraft reentry**
- GS atmospheric entry
 - . reentry
 - .. **spacecraft reentry**
 - ... uncontrolled reentry (spacecraft)
- RT Earth-Venus trajectories
- entry guidance (STS)
- flight mechanics
- hypersonic reentry
- lifting reentry vehicles
- manned reentry
- return to Earth space flight
- satellite lifetime
- spacecraft breakup
- spacecraft reliability**
- GS reliability
 - . **spacecraft reliability**
- RT circuit reliability
- component reliability
- controllability
- prelaunch problems
- quality control
- spacecraft maintenance
- spacecraft rendezvous*
- USE **space rendezvous**
- spacecraft sensors*
- USE **spacecraft instruments**
- spacecraft shielding**
- GS shielding
 - . **spacecraft shielding**
- RT aeroshells
- heat shielding
- ∞ insulated structures

spacecraft stability

- meteoroid protection
- nose cones
- radiation shielding
- radio frequency shielding
- reentry shielding
- reusable heat shielding
- safety devices
- solar radiation shielding

spacecraft stability

- UF *satellite attitude disturbance*
- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
- stability
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
- RT aerodynamic balance
- aerodynamic stability
- attitude stability
- buffeting
- control stability
- counterbalances
- directional stability
- Discos (satellite attitude control)
- dual spin spacecraft
- lateral stability
- liquid sloshing
- longitudinal stability
- low speed stability
- nutation dampers
- satellite perturbation
- tumbling motion
- wind tunnel stability tests

spacecraft sterilization

- GS cleaning
 - . sterilization
 - . . **spacecraft sterilization**
- decontamination
- . **spacecraft sterilization**
- RT chemical sterilization
- ethylene oxide
- exobiology
- planetary protection
- planetary quarantine
- purification
- sterilization effects

spacecraft structures

- RT aeroshells
- aircraft structures
- folding structures
- fuel tanks
- large space structures
- meteoroid protection
- orbital assembly
- rocket engines
- satellite design
- smart structures
- space erectable structures
- space station structures
- structural design
- ∞ structures

spacecraft survivability

- DEF The ability of a spacecraft to survive adverse conditions including reentry problems.
- RT aircraft survivability
- spacecraft breakup
- spacecraft defense
- survival
- uncontrolled reentry (spacecraft)
- vulnerability

spacecraft television

- GS communication equipment
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
- telecommunication
- . **spacecraft television**
- . . digital spacecraft television

- . . Ranger block 3 television system
- . . satellite television
- television systems
- . **spacecraft television**
- . . digital spacecraft television
- . . Ranger block 3 television system
- . . satellite television
- RT color television
- satellite transmission
- stereotelevision
- television transmission

spacecraft temperature

- GS **spacecraft temperature**
 - . satellite temperature
- RT heat pipes
- spacecraft design
- temperature control

spacecraft tracking

- DEF The process of following the movements of a spacecraft or space platform by radar, optical, or other means.
- GS tracking (position)
 - . **spacecraft tracking**
 - . . satellite tracking
 - . . . satellite-to-satellite tracking
- RT Advanced Range Instrumentation Ship
- Deep Space Network
- minitrack system
- missile tracking
- optical tracking
- polystation doppler tracking system
- radar tracking
- radio tracking
- space detection and tracking system
- space surveillance (ground based)
- space surveillance (spaceborne)
- tracking networks
- tracking stations
- transponder control group
- unified S band

Spacecraft Tracking and Data Network

- USE **STDN (network)**

spacecraft trajectories

- GS trajectories
 - . **spacecraft trajectories**
 - . . interplanetary trajectories
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - . . lunar trajectories
 - . . . circumlunar trajectories
 - . . . Earth-Moon trajectories
 - . . . moon-Earth trajectories
- RT ascent trajectories
- descent trajectories
- Earth orbital rendezvous
- flight mechanics
- Goddard Trajectory Determination System
- hyperbolic trajectories
- interorbital trajectories
- lunar orbital rendezvous
- ∞ motion
- orbital rendezvous
- radio occultation
- reentry trajectories
- rendezvous trajectories
- round trip trajectories
- swingby technique

spacecrew transfer

- UF *intervehicle spacecrew transfer*
- RT Apollo Soyuz test project
- command modules
- manned space flight
- rendezvous spacecraft
- space logistics

spacecrews

- GS personnel
 - . crews

- . . flight crews
- . . . **spacecrews**
- . flying personnel
- . flight crews
- . . . **spacecrews**
- RT astronauts
- cosmonauts
- crew experiment stations
- crew observation stations
- crew procedures (inflight)
- crew procedures (preflight)
- crew workstations
- space habitats
- toilets

Spacelab

- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Spacelab**
- manned spacecraft
- . manned orbital laboratories
- . . **Spacelab**
- payloads
 - . Space Shuttle payloads
 - . . **Spacelab**
- RT Advanced Technology Laboratory
- annular suspension and pointing system
- EXPOS (Spacelab payload)
- geophysical fluid flow cells
- German Infrared Laboratory
- Get Away Specials (STS)
- GRIST (telescope)
- LIRTS (telescope)
- NASA programs
- OSTA-2 payload
- SEPAC (payload)
- Skylab program
- space shuttles
- space transportation system
- spaceborne experiments
- Starlab

Spacelab payloads

- DEF A general, collective term for the diverse and numerous ESA payloads planned for space experiments.
- GS payloads
 - . **Spacelab payloads**
 - . . AMPS (satellite payload)
 - . . Atmospheric Cloud Physics Lab (Spacelab)
 - . . Atmospheric General Circulation Experiment
 - . . geophysical fluid flow cells
 - . . Solar Cell Calibration Facility
- RT annular suspension and pointing system
- Astro missions (STS)
- Get Away Specials (STS)
- sortie systems
- space station payloads

Spacelab simulation flights

- USE **Assess program**

Spacelab UV-Optical Telescope Facility

- USE **Starlab**

spacers

- RT bushings
- dividers
- fasteners
- inserts
- isolators
- separators
- spacing
- washers (spacers)

spacetennas

- DEF The transmitting antennas of a solar power satellite transmission system which directs the high-power beam from space to a focus on the rectennas on Earth.
- GS antennas

. radio antennas
 . . microwave antennas
 . . . **spacetennas**
 microwave equipment
 . microwave antennas
 . . **spacetennas**
 radio equipment
 . radio antennas
 . . microwave antennas
 . . . **spacetennas**
 RT microwave transmission
 rectennas

space-time adaptive processing

(added November 2002)

DEF Multidimensional filtering technique that reduces the effects of airborne radar clutter and white noise jamming by using the input from a phased-array antenna to produce an adaptive weight vector which can then be applied to the signal.

UF *STAP (radar)*

GS data processing
 . signal processing

. . **space-time adaptive processing**

RT adaptive filters
 airborne radar clutter
 interference immunity
 jamming
 radar detection
 radar filters
 surveillance radar

space-time CE/SE method

(added June 2002)

DEF A numerical framework used for solving conservation laws in continuum mechanics, where both local and global flux conservations are enforced in space and time. The method is characterized by low dispersion errors and low dissipation.

UF *CE/SE method*
conservation element and solution element

GS analysis (mathematics)
 . numerical analysis

. . **space-time CE/SE method**

RT aeroacoustics
 computational fluid dynamics
 conservation equations
 conservation laws
 flow equations

space-time continuum

USE **relativity**

space-time functions

UF *space-time metric*

GS functions (mathematics)
 . **space-time functions**

RT light-cone expansion
 Minkowski space
 naked singularities
 relativity
 Yang-Mills theory

space-time metric

USE **space-time functions**

spacewalks

(added April 2001)

USE **extravehicular activity**

spacing

GS **spacing**

. aircraft approach spacing
 RT altitude control
 attitude control
 clearances
 intervals
 isolation
 positioning
 ∞ separation
 spacers

thickness

SPADATS (tracking system)

USE **space detection and tracking system**

Spain

GS nations
 . **Spain**
 . . Canary Islands
 RT Andorra
 Europe
 Gibraltar
 Pyrenees Mountains (Europe)
 Spanish Sahara
 Spanish space program

spallation

GS nuclear radiation
 . **spallation**
 nuclear reactions
 . **spallation**
 RT particle production

spalling

DEF Spontaneous separation of a surface layer from a metal.

RT chipping
 flaking
 fracturing
 fragmentation
 wear
 wear tests

∞ span

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aspect ratio
 dimensions
 life span
 width
 wing span

Spanish Sahara

RT Africa
 nations
 Spain

Spanish space program

(added March 1989)

GS programs
 . space programs
 . . European space programs
 . . . **Spanish space program**
 RT Spain

spanloader aircraft

DEF Advanced distributed-load cargo aircraft configurations in which the payloads are distributed across the span of the wing for a close match between aerodynamic and inertial loading for minimal bending stresses.

GS transport aircraft
 . cargo aircraft
 . . **spanloader aircraft**
 RT ∞ aircraft
 supercritical wings
 swept wings

spanwise blowing

GS blowing
 . **spanwise blowing**
 RT cross flow
 externally blown flaps
 jet flow
 lift augmentation
 pressure distribution
 tangential blowing

wing span

SPAR (rocket)

USE **Space Processing Applications Rocket**

spare parts

RT ∞ components
 damage assessment
 downtime
 engine parts
 inventory management
 logistics management
 maintenance
 modules
 redundant components
 retirement for cause

spark chambers

GS ionization chambers
 . **spark chambers**
 measuring instruments
 . counters
 . . radiation counters
 . . . **spark chambers**
 . radiation measuring instruments
 . . radiation counters
 . . . **spark chambers**
 RT bubble chambers
 ∞ chambers
 cloud chambers
 electric sparks
 neutron counters

spark discharges

USE **electric sparks**

spark gaps

GS gaps
 . **spark gaps**
 RT arc generators
 dielectrics
 electric fields
 electric sparks
 electrical faults
 multipactor discharges
 potential gradients
 trigatrons

spark ignition

GS ignition
 . **spark ignition**
 RT combustion
 electric ignition
 electric sparks
 eudiometers

spark machining

UF *electroerosion*
electrostatic erosion
 GS cutting
 . **spark machining**
 machining
 . **spark machining**
 RT electroforming
 erosion
 metal cutting
 piercing

spark plugs

RT arc generators
 combustion chambers
 electric sparks
 igniters
 ignition systems
 internal combustion engines

spark shadowgraph photography

USE **shadowgraph photography**

sparks

GS **sparks**
 . electric sparks

Sparrow 2 missile

RT ignition

Sparrow 2 missile

GS missiles

- . air to air missiles
- . . Sparrow missiles
- . . . **Sparrow 2 missile**

RT solid propellant rocket engines

Sparrow 3 missile

GS missiles

- . air to air missiles
- . . Sparrow missiles
- . . . **Sparrow 3 missile**

RT liquid propellant rocket engines

Sparrow missiles

GS missiles

- . air to air missiles
- . . **Sparrow missiles**
- . . . Sparrow 2 missile
- . . . Sparrow 3 missile

RT solid propellant rocket engines

Spartan missile

GS missiles

- . antimissile missiles
- . . **Spartan missile**

RT Nike-Zeus missile
Sentinel system
Sprint missile
surface to air missiles

Spartan satellites

GS artificial satellites

- . scientific satellites
- . . astronomical satellites
- . . . **Spartan satellites**

- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Spartan satellites**

RT astrophysics
solar physics
ultraviolet astronomy

SPAS (ESA platforms)

USE **Shuttle pallet satellites**

spasms

GS muscular function

- . **spasms**

RT contraction
involuntary actions
muscles

spatial dependencies

GS dependence

- . **spatial dependencies**

RT mathematical models

- ∞ space
- time dependence

spatial distribution

UF *Moliere formula*
spatial isotropy

GS distribution (property)

- . **spatial distribution**
- . . horizontal distribution
- . . vertical distribution
- . . . star distribution
- . . . geographic distribution

RT anisotropy
ion distribution
meteoroid concentration
particle density (concentration)
position (location)
satellite constellations
stereochemistry
teleconnections (meteorology)
temporal distribution
Voronoi diagrams

spatial filtering

GS filtration

- . **spatial filtering**

RT aberration
attenuation
augmentation
blurring

- ∞ filters
- Gabor filters
- holography
- images
- ∞ noise
- photographs
- photointerpretation
- plane waves
- resolution
- speckle holography

spatial isotropy

USE **isotropy**
spatial distribution

spatial marching

DEF Techniques for solving partial differential equations that move along in a space direction.

RT acoustic ducts
duct geometry
numerical analysis
time marching

spatial orientation

USE **attitude (inclination)**

spatial resolution

DEF The precision with which an optical instrument can produce separable images of different points on an object.

GS resolution

- . **spatial resolution**

RT atmospheric correction
high resolution
image processing
image resolution
imaging techniques
spectral resolution
temporal resolution

SPDL

USE **document markup languages**

species diffusion

GS diffusion

- . **species diffusion**

RT biological diversity
evolution (development)
genetics
geographic distribution

specific gravity

USE **density (mass/volume)**

specific heat

DEF The ratio of the heat absorbed (or released) by unit mass of a system to the corresponding temperature rise (or fall). Used for Debye temperature and heat capacity.

UF *Debye temperature*
heat capacity

GS heat

- . **specific heat**
- thermodynamic properties
- . thermophysical properties
- . . **specific heat**

RT enthalpy
equipartition theorem
Gruneisen constant
heat budget
heat of fusion
ion temperature
Lewis numbers
melting points
neel temperature
thermal conductivity
thermal resistance

specific impulse

GS impulses

- . **specific impulse**

RT mass flow rate
propellant mass ratio
propellants
propulsion system performance
propulsive efficiency
rocket propellants
rocket thrust
thermodynamic efficiency
thrust
total impulse

specifications

DEF Precise statements or sets of requirements to be satisfied by materials, products, systems, or services.

GS **specifications**

- . aircraft specifications
- . equipment specifications
- . functional design specifications

RT aircraft performance
commonality
drawings
inspection
maintenance

- ∞ materials tests
- mechanical properties
- naming
- performance tests
- process control (industry)
- procurement
- quality
- quality control
- reliability
- requirements
- standardization
- standards
- technical writing
- tolerances (mechanics)
- user requirements

specimen geometry

GS geometry

- . **specimen geometry**

RT fatigue tests
load tests
mechanical properties
tensile tests

specimens

RT Mars surface samples
samples
sampling

speckle holography

DEF An imaging technique whereby a speckle pattern results from laser illumination of a diffusely reflecting surface when interference occurs between the fields passing through the various portions of lens aperture. Information about the motion of an object can then be obtained from the imaged fringes resulting from the translation of two speckle patterns.

GS imagery

- . photography
- . . holography
- . . . **speckle holography**

- imaging techniques
- . **speckle holography**

RT coherent light
diffraction patterns
hologrammetry
holographic interferometry
image correlators
laser applications
scatter plates (optics)
spatial filtering
speckle interferometry
speckle patterns

speckle interferometry

DEF An imaging process whereby the pattern on the image plane of an interferometer is the result of interference between two mutually coherent, but randomly speckled, fields of two, lens formed images from laser illuminated, diffusely reflecting surfaces.

- GS interferometry
 . **speckle interferometry**
- RT diffraction patterns
 Fresnel diffraction
 Fresnel reflectors
 infrared interferometers
 isochromatics
 laser applications
 null zones
 plasma flux measurement
 Sagnac effect
 scatter plates (optics)
 speckle holography
- speckle patterns**
 RT diffraction patterns
 holography
 laser outputs
 light scattering
 ∞ patterns
 speckle holography
 surface roughness effects
- spectra**
 UF *optical spectrum*
 GS **spectra**
 . atomic spectra
 . continuous spectra
 . energy spectra
 . . . electronic spectra
 . . . neutron spectra
 . mass spectra
 . molecular spectra
 . . . electronic spectra
 . . . Raman spectra
 . . . rotational spectra
 . . . vibrational spectra
 . noise spectra
 . oxygen spectra
 . plasma spectra
 . power spectra
 . . cepstra
 . radiation spectra
 . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . electromagnetic spectra
 . . . gamma ray spectra
 . . . infrared spectra
 . . . line spectra
 Balmer series
 D lines
 electronic spectra
 Fraunhofer lines
 H lines
 H alpha line
 H beta line
 H gamma line
 K lines
 Lyman spectra
 Paschen series
 Rydberg series
 telluric lines
 . . . radio spectra
 microwave spectra
 . . . Raman spectra
 . . . stellar spectra
 solar spectra
 . . . UVB spectra
 . . . ultraviolet spectra
 . . . vibrational spectra
 . . . visible spectrum
 . . . x ray spectra
 . . emission spectra
 . shock spectra
 . spectral bands
 . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . diffuse interstellar bands
 . . photoluminescent bands
 . . Schumann-Runge bands
 . . Swan bands
 . . Vegard-Kaplan bands
 RT astronomical spectroscopy
- color
 excitons
 flux density
 gamma ray spectrometers
 isoelectronic sequence
 spectral sensitivity
 spectral shift control
 spectral theory
 spectrograms
 spectrographs
 spectrometers
 spectroscopy
 spectrum analysis
 transition probabilities
- spectral absorption*
 USE **absorption spectra**
- spectral analysis*
 USE **spectrum analysis**
- spectral bands**
 GS spectra
 . **spectral bands**
 . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . diffuse interstellar bands
 . . photoluminescent bands
 . . Schumann-Runge bands
 . . Swan bands
 . . Vegard-Kaplan bands
 RT band ratioing
 ∞ bands
 electronic spectra
 energy bands
 frequencies
 line spectra
 visible spectrum
 white noise
- spectral correlation**
 GS correlation
 . **spectral correlation**
 RT electromagnetic spectra
 spectrophotography
- spectral emission**
 GS emission
 . **spectral emission**
 RT continuous spectra
 electromagnetic radiation
 emittance
 incandescence
 light emission
 line spectra
 nongray gas
 ∞ radiation
 spectrograms
 spectroscopy
 spectrum analysis
 spontaneous emission
 ultraviolet emission
 wavelengths
- spectral energy distribution**
 GS distribution (property)
 . energy distribution
 . . **spectral energy distribution**
 RT ∞ distribution
 electromagnetic radiation
 energy spectra
 fine structure
 line spectra
- spectral line width**
 GS bandwidth
 . **spectral line width**
 RT line spectra
- oscillator strengths
- spectral lines*
 USE **line spectra**
- spectral methods**
 RT computational fluid dynamics
 differential equations
 ∞ methodology
 spectrum analysis
- spectral mixture analysis**
(added July 2000)
 DEF Linear algebraic method for defining subpixel fractions for each of the spectral end-members (e. g. , ground cover categories) that constitute a mixed-pixel spectral signature.
 UF *SMA (image analysis)*
 GS discrimination
 . **spectral mixture analysis**
 image analysis
 . **spectral mixture analysis**
 spectrum analysis
 . **spectral mixture analysis**
 RT image processing
 pixels
 principal components analysis
 remote sensing
 spectral reflectance
- spectral noise*
 USE **white noise**
- spectral reconnaissance**
 GS reconnaissance
 . **spectral reconnaissance**
 RT Earth resources
 electromagnetic spectra
 multispectral band scanners
 multispectral photography
 multispectral radar
 photoreconnaissance
 radar photography
 satellite-borne photography
 spectrophotography
- spectral reflectance**
 DEF The ratio of the reflected flux to the spectrally homogeneous incident flux.
 GS electromagnetic properties
 . optical properties
 . . reflectance
 . . . **spectral reflectance**
 surface properties
 . **spectral reflectance**
 RT bidirectional reflectance
 imaging spectrometers
 leaf area index
 plant stress
 spectral mixture analysis
 spectrometers
 spectroscopy
 spectrum analysis
 vegetative index
- spectral resolution**
 GS resolution
 . **spectral resolution**
 RT analog computers
 Landsat 6
 Landsat 7
 line spectra
 Q factors
 radar resolution
 radiometric resolution
 spatial resolution
 spectrum analysis
- spectral response*
(added August 2000)
 USE **spectral sensitivity**
- spectral sensitivity**
 DEF In electronics, radiant sensitivity considered as a function of wavelength, or in physics, the response of a device or material to

spectral shift control

monochromatic light as a function of wavelength; also known as spectral response.

UF *spectral response*

GS sensitivity

. **spectral sensitivity**

RT frequency response
instrument errors
photothermal conversion
spectra

spectral shift control

DEF Type of reactor moderator control in which the neutron spectrum is intentionally changed.

RT ∞ control
spectra

spectral shift control reactor

GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . pressurized water reactors
. . . . **spectral shift control reactor**

RT ∞ control

spectral signatures

GS signatures
. **spectral signatures**
. . microwave signatures

RT cepstral analysis
chemical analysis
chemical composition
crop identification
emission spectra
identifying
optical measurement
spectrum analysis

spectral theory

RT Lyman spectra
spectra
 ∞ theories

spectrograms

RT line spectra
spectra
spectral emission
spectrographs
spectrophotography
spectroscopy
spectrum analysis

spectrographs

GS **spectrographs**
. high dispersion spectrographs

RT spectra
spectrograms
spectrometers
spectroscopic analysis
spectroscopy

spectroheliographs

DEF Instruments for taking photographs (spectroheliograms) of the image of the sun in monochromatic light. The wavelength of light chosen for this purpose corresponds to one of the Fraunhofer lines, usually the light of hydrogen or ionized calcium. Used for heliographs, heliography, and spectrohelioscopes.

UF *heliographs*
heliography
spectrohelioscopes

GS imagery

. **spectroheliographs**
measuring instruments
. radiation measuring instruments
. . actinometers
. . . **spectroheliographs**
. spectrometers
. . **spectroheliographs**
optical equipment
. **spectroheliographs**
solar instruments
. **spectroheliographs**

RT black and white photography
coronagraphs

solar spectrometers
Starsat telescope

spectrohelioscopes

USE **spectroheliographs**

spectrometers

UF *spectroscopes*

GS measuring instruments
. **spectrometers**
. . Ebert spectrometers
. . Fabry-Perot spectrometers
. . gamma ray spectrometers
. . imaging spectrometers
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . laser spectrometers
. . mass spectrometers
. . microwave spectrometers
. . neutron spectrometers
. . Solar Backscatter UV Spectrometer
. . solar spectrometers
. . spectroheliographs
. . time of flight spectrometers
. . ultraviolet spectrometers
. . . high dispersion spectrographs
. . . Total Ozone Mapping Spectrometer
. . Alpha Magnetic Spectrometer
. . x ray spectrometers

RT actinometers
chemical analysis
diffractometers
electron probes
goniometers
infrared spectroscopy
Michelson interferometers
optical equipment
optical measurement
photogoniometers
photographic measurement
photometers
radiation counters
solar instruments
spectra
spectral reflectance
spectrographs
spectroradiometers
spectroscopic analysis
spectroscopy
spectrum analysis

spectrometry

USE **spectroscopy**

spectrophotography

GS imagery
. photography
. . **spectrophotography**
spectroscopy
. **spectrophotography**

RT black and white photography
ground truth
spectral correlation
spectral reconnaissance
spectrograms

spectrophotometers

GS measuring instruments
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . actinometers
. . . **spectrophotometers**
. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
optical equipment
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers

RT chemical analysis
duochromators

monochromators
optical measurement
photometers
radiometers
spectroradiometers
spectroscopic analysis
spectroscopy

spectrophotometry

GS optical measurement
. photometry
. . **spectrophotometry**
. . . stellar spectrophotometry
spectroscopy
. **spectrophotometry**
. . stellar spectrophotometry

RT astronomical photometry
colorimetry
imaging spectrometers
spectroscopic analysis

spectrophotovoltaics

DEF The enhancement of solar cell productivity by concentrating and subdividing the sunlight spectrum and focusing on specific spectrum efficient solar cells.

RT energy conversion efficiency
energy spectra
solar cells
solar collectors

spectropolarimeters

USE **polarimeters**

spectroradiometers

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **spectroradiometers**
. MODIS (radiometry)

RT spectrometers
spectrophotometers

spectroscopes

USE **spectrometers**

spectroscopic analysis

SN (FOR SPECTROSCOPIC TOOLS IN CHEMICAL ANALYSIS)
chemical tests
. chemical analysis
. . **spectroscopic analysis**
spectroscopy
. **spectroscopic analysis**

RT Auger spectroscopy
auroral spectroscopy
electrophotometry
flame spectroscopy
Fraunhofer line discriminators
gas spectroscopy
inductively coupled plasma mass spectrometry
infrared spectroscopy
laser spectroscopy
laser-induced breakdown spectroscopy
magnetic spectroscopy
mass spectroscopy
metallicity
microanalysis
molecular spectroscopy
neutron activation analysis
nuclear radiation spectroscopy
photoelectron spectroscopy
qualitative analysis
quantitative analysis
Raman spectroscopy
spectrographs
spectrometers
spectrophotometers
spectrophotometry
ultraviolet spectroscopy
vacuum spectroscopy

- x ray spectroscopy
- spectroscopic telescopes**
- UF *diffraction telescopes*
- GS telescopes
- . **spectroscopic telescopes**
 - . . multispectral tracking telescopes
 - . . stratoscope telescopes
- RT astronomical spectroscopy
- reflecting telescopes
- refracting telescopes
- stellar spectrophotometry
- spectroscopy**
- UF *spectrometry*
- GS **spectroscopy**
- . absorption spectroscopy
 - . . optogalvanic spectroscopy
 - . astronomical spectroscopy
 - . . stellar spectrophotometry
 - . Auger spectroscopy
 - . auroral spectroscopy
 - . electron spectroscopy
 - . flame spectroscopy
 - . gas spectroscopy
 - . holographic spectroscopy
 - . infrared spectroscopy
 - . ion mobility spectroscopy
 - . laser-induced breakdown spectroscopy
 - . magnetic spectroscopy
 - . mass spectroscopy
 - . . inductively coupled plasma mass spectrometry
 - . . secondary ion mass spectrometry
 - . molecular spectroscopy
 - . . Raman spectroscopy
 - . nuclear radiation spectroscopy
 - . optical emission spectroscopy
 - . . laser spectroscopy
 - . . . optogalvanic spectroscopy
 - . photoacoustic spectroscopy
 - . photoelectron spectroscopy
 - . radio spectroscopy
 - . spectrophotography
 - . spectrophotometry
 - . . stellar spectrophotometry
 - . photothermal deflection spectroscopy
 - . spectroscopic analysis
 - . ultrasonic spectroscopy
 - . ultraviolet spectroscopy
 - . vacuum spectroscopy
 - . x ray spectroscopy
- RT chemical analysis
- cinespectrographs
- colorimetry
- electrophotometry
- Fraunhofer line discriminators
- isoelectronic sequence
- Lallemand cameras
- ∞ optics
- photometry
- pressure broadening spectra
- spectral emission
- spectral reflectance
- spectrograms
- spectrographs
- spectrometers
- spectrophotometers
- spectrum analysis
- time of flight spectrometers
- visible spectrum
- x ray spectrometers
- Zeeman effect
- spectrum analysis**
- UF *spectral analysis*
- GS **spectrum analysis**
- . cepstral analysis
 - . flame spectroscopy
 - . maximum entropy method
 - . spectral mixture analysis
- RT absorption spectra
- ∞ analyzing
- emission spectra
- frequency analyzers
- frequency scanning
- gamma ray spectrometers
- holographic spectroscopy
- hyperfine structure
- Kramers-Kronig formula
- laser spectroscopy
- line spectra
- magnetic resonance
- optical resonance
- signal analysis
- spectra
- spectral emission
- spectral methods
- spectral reflectance
- spectral resolution
- spectral signatures
- spectrograms
- spectrometers
- spectroscopy
- Stark effect
- toroidal discharge
- ultrasonic spectroscopy
- ultraviolet spectroscopy
- Zeeman effect
- specular reflection**
- DEF Reflection in which the reflected radiation is not diffused; reflection as from a mirror.
- GS reflection
- . **specular reflection**
- RT diffuse radiation
- etalons
- glare
- mirrors
- speech**
- GS **speech**
- . articulation (speech)
 - . conversation
 - . phonemes
 - . phonetics
 - . talking
- RT acoustics
- auditory perception
- consonants (speech)
- English language
- languages
- lectures
- linguistics
- phonemics
- public speaking
- semantics
- sentences
- syntax
- voice
- voice communication
- words (language)
- speech baseband compression**
- DEF Technique for reducing the bandwidth required to represent the human voice waveform.
- GS compressing
- . **speech baseband compression**
- RT bandwidth
- vocoders
- voice communication
- waveforms
- speech defects**
- GS defects
- . **speech defects**
- RT articulation (speech)
- phonemics
- phonetics
- speech discrimination*
- USE **speech recognition**
- speech recognition**
- UF *speech discrimination*
- GS intelligibility
- . **speech recognition**
 - recognition
 - . **speech recognition**
- RT cepstral analysis
- linguistics
- phonemes
- phonemics
- phonetics
- sensory discrimination
- voice control
- speeches*
- USE **lectures**
- speed*
- USE **velocity**
- speed control**
- UF *speed regulation*
- RT automatic control
- ∞ control
- control equipment
- controllers
- engine control
- helicopter control
- manual control
- regulators
- speed indicators**
- UF *Preston tubes*
- speedometers*
- GS display devices
- . **speed indicators**
 - . . tachometers
 - measuring instruments
 - . indicating instruments
 - . . **speed indicators**
 - . . . tachometers
- RT accelerometers
- aircraft instruments
- anemometers
- approach indicators
- flight instruments
- flowmeters
- landing instruments
- pitot tubes
- velocity measurement
- speed regulation*
- USE **speed control**
- speed regulators**
- UF *governors*
- GS control equipment
- . regulators
 - . . **speed regulators**
- RT controllers
- engines
- speedometers*
- USE **speed indicators**
- spent fuels**
- DEF Nuclear reactor fuels irradiated to the extent that they no longer can effectively sustain a chain reaction.
- GS fuels
- . nuclear fuels
 - . . **spent fuels**
- RT fuel capsules
- neutron sources
- ∞ nuclear energy
- nuclear fuel reprocessing
- reactor materials
- recycling
- spermatocytes*
- USE **gametocytes**
- spermatogenesis**
- RT abiogenesis
- gametocytes
- spermatozoa
- spermatozoa**
- GS cells (biology)
- . gametocytes
 - . . **spermatozoa**
- RT fertilization

Spert reactors

spermatogenesis

Spert reactors

- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . boiling water reactors
 - **Spert reactors**
 - . nuclear research and test reactors
 - . . **Spert reactors**

SPF (materials)

- USE **superplastic forming**

sphalerite

- USE **zinblend**

spheres

- GS symmetrical bodies
 - . bodies of revolution
 - . . **spheres**
 - . . . celestial sphere
 - . . . concentric spheres
 - . . . falling spheres
 - . . . Poincare spheres
 - . . . rotating spheres
- RT aerodynamic configurations
 - asphericity
 - balls
 - circles (geometry)
 - Euclidean geometry
 - geometry
 - ∞ globes
 - globules
 - ∞ hemispheres
 - hemispherical shells
 - microballoons
 - nodules
 - ogives
 - spherical shells
 - spheroids
 - spherules

spherical antennas

- GS antennas
 - . **spherical antennas**
- RT communication equipment
- electronic equipment

spherical caps

- GS shells (structural forms)
 - . spherical shells
 - . . **spherical caps**
- RT ∞ caps
 - coverings
 - nose cones
 - seals (stoppers)

spherical coordinates

DEF A system of curvilinear coordinates in which the position of a point in space is designated by its distance from the origin or pole (the radius vector), the angle phi between the radius vector and a vertically directed polar axis (the cone angle or colatitude) and the angle theta between the plane of the phi and a fixed meridian plane through the polar axis (the polar angle or longitude). Used for curvilinear coordinates.

- UF *curvilinear coordinates*
- GS coordinates
 - . **spherical coordinates**
- RT astronomical coordinates
- celestial reference systems
- geocentric coordinates
- planetocentric coordinates
- polar coordinates
- position (location)
- ∞ reference systems

spherical harmonics

- GS analysis (mathematics)
 - . complex variables
 - . . **spherical harmonics**
 - functions (mathematics)
 - . **spherical harmonics**
 - harmonics

- . **spherical harmonics**
- RT Legendre functions

spherical plasmas

- DEF Confined circular plasmas.
- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **spherical plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **spherical plasmas**

spherical shells

- GS shells (structural forms)
 - . **spherical shells**
 - . . spherical caps
- RT bodies of revolution
 - circular shells
 - hemispherical shells
 - metal shells
 - reinforced shells
 - rotating spheres
 - spheres
 - stressed-skin structures
 - thin walled shells

spherical tanks

- GS tanks (containers)
 - . **spherical tanks**
- RT fuel tanks
- pressure vessels
- propellant tanks
- storage tanks

spherical waves

- RT cylindrical waves
- diffraction paths
- diffraction propagation
- elastic waves
- electromagnetic radiation
- Huygens principle
- plane waves
- point sources
- three dimensional flow
- ∞ waves

spheroids

- DEF Ellipsoids; figure resembling spheres.
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . **spheroids**
 - oblate spheroids
 - prolate spheroids
- RT falling spheres
- geoids
- spheres

spheromaks

- DEF Toroidal fusion reactors.
- GS nuclear reactors
 - . fusion reactors
 - . . **spheromaks**
- RT dense plasmas
- magnetic field configurations
- magnetic mirrors
- plasma control
- plasma currents
- ∞ reactors
- tokamak devices
- toroidal plasmas

spherules

- GS **spherules**
 - . spherulites
- RT crystals
- spheres

spherulites

- GS crystals
 - . crystallites
 - . . **spherulites**
- spherules

- . **spherulites**
- RT crystal structure
- microcrystals
- microstructure
- nodules
- rosette shapes

SPHINX

- SN (SPACE PLASMA HIGH VOLTAGE INTERACTION EXPERIMENTS)
- UF *space plasma H/V interaction experiments*
- RT NASA programs
- plasma interaction experiment
- plasma-particle interactions
- plasmas (physics)
- ∞ research projects
- space plasmas

sphygmography

- RT arteries
- bioinstrumentation
- blood pressure
- heart rate
- ∞ measurement
- recording instruments

spicules

- DEF Bright spikes extending into the chromosphere of the sun from below.
- GS stellar activity
 - . solar activity
 - . . **spicules**
- RT chromosphere
- photosphere
- solar atmosphere

spiders

- GS animals
 - . invertebrates
 - . . arthropods
 - . . . **spiders**

spike antennas

- USE **monopole antennas**

spike nozzles

- GS exhaust nozzles
 - . **spike nozzles**
- RT aerospike engines
- conical nozzles
- nozzle geometry
- ∞ nozzles
- plug nozzles
- rocket nozzles
- ∞ spikes

spike potentials

- GS potential energy
 - . electric potential
 - . . **spike potentials**
- RT bioelectricity
- depolarization
- ∞ spikes

∞ spikes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fasteners
- holders
- monopole antennas
- pins
- spike nozzles
- spike potentials
- spikes (aerodynamic configurations)

spikes (aerodynamic configurations)

- RT ∞ spikes
- wind tunnels

spiking

- RT electron beam welding
- melting

metal cutting

spilling
 RT dumping
 emptying
 jettisoning
 oil slicks
 releasing
 spreading

spin
 GS **spin**
 . metal spinning
 . . hydrospinning
 . particle spin
 . . electron spin
 . . isotopic spin
 . . nuclear spin
 . spin-orbit interactions
 . . electron capture
 . spin-spin coupling
 RT angular momentum
 nuclear capture
 ∞ spinners
 yo-yo devices

spin decoupling
 GS decoupling
 . **spin decoupling**
 RT photomagnetic effects

spin dynamics
 RT aircraft spin
 artificial gravity
 dynamic tests
 ∞ dynamics
 electron spin
 gyration
 lunar rotation
 rotating matter

spin exchange
 GS exchanging
 . **spin exchange**
 RT resonance charge exchange

spin forging
 USE **metal spinning**

spin glass
 DEF A magnetic alloy in which the concentration of magnetic atoms is such that below a certain temperature their magnetic moments are no longer able to fluctuate thermally in time but are still directed at random in loose analogy to the atoms of ordinary glass.
 GS glass
 . **spin glass**
 RT amorphous materials
 magnetic properties
 metallic glasses
 spin-lattice relaxation
 superconductivity

spin reduction
 UF *despinning*
jet damping
 GS rates (per time)
 . acceleration (physics)
 . . deceleration
 . . . **spin reduction**
 RT angular acceleration
 destabilization
 gravity gradient satellites
 ∞ reduction
 satellite rotation
 yo-yo devices

spin resonance
 GS resonance
 . **spin resonance**
 RT nuclear magnetic resonance
 particle spin

spin stabilization
 DEF Directional stability of a spacecraft ob-

tained by the action of gyroscopic forces which result from spinning the body about its axis of symmetry.

GS stabilization
 . **spin stabilization**
 RT attitude control
 coning motion
 dual spin spacecraft
 missiles
 OV-1 satellites
 OV-2 satellites
 OV-3 satellites
 OV-4 satellites
 OV-5 satellites
 satellite orientation
 satellite rotation
 Space Shuttle upper stage D
 space stations
 ∞ spinners

spin temperature
 SN (LIMITED TO ASTROPHYSICS)
 temperature
 GS **spin temperature**
 RT absorption spectra
 astrophysics
 hydrogen clouds
 interstellar gas
 interstellar matter

spin tests
 UF *whirling tests*
 RT angular momentum
 dynamic tests
 environmental tests
 load tests
 polarization (spin alignment)
 ∞ tests
 whirl towers

spin waves
 USE **magnons**

spinach
 GS farm crops
 . **spinach**
 plants (botany)
 . . **spinach**
 vegetables
 . **spinach**
 RT ∞ food

spinal cord
 GS anatomy
 . nervous system
 . . central nervous system
 . . . **spinal cord**
 RT bones
 brain
 neuroglia
 spine

spindles
 RT shafts (machine elements)
 spools
 winding

spine
 UF *vertebral column*
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **spine**
 vertebrae
 RT sciatic region
 spinal cord

spinel
 GS minerals
 . **spinel**
 RT aluminates
 ferrites
 igneous rocks

spin-lattice relaxation
 GS magnetic properties

. magnetic relaxation
 . . **spin-lattice relaxation**
 relaxation (mechanics)
 . **spin-lattice relaxation**
 RT lattice vibrations
 nuclear magnetic resonance
 relaxation time
 spin glass

∞ **spinners**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT antenna components
 fairings
 slewing
 spin
 spin stabilization

spinning (metallurgy)
 USE **metal spinning**

spinning solid upper stage
 DEF Space Shuttle upper stage designed for launching of satellites not requiring the full capacity of the interim upper stage; does not require inertial guidance system nor three-axis stabilization; can handle payloads of the class now launched by Delta or Atlas/ Centaur.
 GS Space Shuttle upper stages
 . **spinning solid upper stage**
 RT booster rocket engines
 upper stage rocket engines

spinning unguided rocket trajectory
 UF *SPURT (trajectories)*
 GS trajectories
 . **spinning unguided rocket trajectory**
 RT equations of motion
 missile trajectories
 rotating bodies
 symmetrical bodies

spinor groups
 GS algebra
 . lie groups
 . . **spinor groups**
 geometry
 . differential geometry
 . . lie groups
 . . . **spinor groups**

spin-orbit interactions
 GS nuclear reactions
 . nuclear interactions
 . . **spin-orbit interactions**
 . . . electron capture
 particle interactions
 . nuclear interactions
 . . **spin-orbit interactions**
 . . . electron capture
 spin
 . **spin-orbit interactions**
 . . electron capture
 RT ∞ interactions

spin-spin coupling
 GS coupling
 . **spin-spin coupling**
 spin
 . **spin-spin coupling**
 RT couples
 cross relaxation

spiral antennas
 GS antennas
 . **spiral antennas**
 . . log spiral antennas
 RT antenna design
 broadband
 telemetry

spiral bevel gears
(added May 1999)
 GS gears

spiral galaxies

- . bevel gears
- . . **spiral bevel gears**
- spiral galaxies**
 - GS celestial bodies
 - . galaxies
 - . . **spiral galaxies**
 - . . . Andromeda Galaxy
 - . . . barred galaxies
 - . . . Milky Way Galaxy
 - RT corotation
 - density wave model
 - disk galaxies
 - elliptical galaxies
 - galactic bulge
 - galactic halos
 - local group (astronomy)
 - Maffei galaxies
 - peculiar galaxies
 - ring galaxies
 - Seyfert galaxies
 - Virgo galactic cluster
- spiral wrapping**
 - RT composite materials
 - composite wrapping
 - isotensoid structures
 - packaging
 - ∞ spirals
 - winding
- ∞ **spirals**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT curves (geometry)
 - ∞ helices
 - spiral wrapping
 - spirals (concentrators)
- spirals (concentrators)**
 - GS concentrators
 - . **spirals (concentrators)**
 - separators
 - . **spirals (concentrators)**
 - RT classifiers
 - ∞ spirals
- spirometers**
 - RT heart minute volume
 - lungs
 - respiratory rate
- Spitsbergen (Norway)**
 - RT archipelagoes
 - Arctic Ocean
 - ocean currents
- Spitzer Space Telescope*
(added December 2003)
- USE **Space Infrared Telescope Facility**
- splashing**
 - UF *swash*
 - RT agitation
 - surface waves
 - ullage
 - water landing
- spleen**
 - GS anatomy
 - . immune systems
 - . . lymphatic system
 - . . . **spleen**
 - RT polycythemia
- splicing**
 - RT fasteners
 - ∞ joining
 - ∞ tapes
 - wiring
- spline functions**
 - GS functions (mathematics)
 - . **spline functions**
 - RT approximation
- matrix methods
- splines**
 - RT couplings
 - fasteners
 - holders
- splints**
 - RT bones
 - casts
 - first aid
- split flaps**
 - GS airfoils
 - . flaps (control surfaces)
 - . . **split flaps**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . **split flaps**
 - . . aircraft brakes
 - . . **split flaps**
 - control surfaces
 - . flaps (control surfaces)
 - . . **split flaps**
 - drag devices
 - . aerodynamic brakes
 - . . **split flaps**
 - RT jet flaps
 - leading edge slats
 - trailing edge flaps
 - wing flaps
- splits (geology)*
- USE **geological faults**
- splitting**
 - GS **splitting**
 - . flux difference splitting
 - . flux vector splitting
 - . water splitting
 - RT chipping
 - cutting
 - fission
 - flaking
 - fracturing
 - laser cutting
 - ∞ separation
 - slicing
- spodumene**
 - GS aluminum compounds
 - . **spodumene**
 - chalcogenides
 - . oxides
 - . . silicon oxides
 - . . . **spodumene**
 - lithium compounds
 - . **spodumene**
 - minerals
 - . **spodumene**
 - silicon compounds
 - . silicates
 - . . sodium silicates
 - . . . **spodumene**
 - . silicon oxides
 - . . **spodumene**
 - sodium compounds
 - . sodium silicates
 - . . **spodumene**
- spoiler slot ailerons**
 - GS airfoils
 - . ailerons
 - . . **spoiler slot ailerons**
 - control surfaces
 - . ailerons
 - . . **spoiler slot ailerons**
 - . . **spoiler slot ailerons**
 - RT spoilers
- spoilers**
 - DEF Plates, series of plates, combs, tubes, bars, or other devices that project into the air-stream about bodies to break up or spoil the smoothness of the flow, especially such devices that project from the upper surface of an airfoil, giving increased drag and decreased lift.
- GS airfoils
 - . **spoilers**
 - control surfaces
 - . **spoilers**
 - drag devices
 - . **spoilers**
 - RT aerodynamic brakes
 - boundary layer control
 - deflectors
 - flaps (control surfaces)
 - gust alleviators
 - leading edge slats
 - spoiler slot ailerons
 - vortex alleviation
 - wings
- spokes**
 - RT hubs
 - wheels
- sponges (materials)**
 - SN (ORGANIC OPEN-CELL STRUCTURES)
 - RT elastomers
 - ∞ materials
 - polyurethane foam
 - porous materials
- spontaneous combustion**
 - UF *autoignition*
 - self ignition*
 - GS combustion
 - . **spontaneous combustion**
 - RT combustion temperature
 - explosions
 - fire point
 - fire prevention
 - flammability
 - flash point
 - fuel combustion
 - hazards
 - hypergolic rocket propellants
 - ignition
 - ignition temperature
 - propellant sensitivity
 - pyrophoric materials
- spontaneous emission**
 - GS emission
 - . **spontaneous emission**
 - RT atomic energy levels
 - electromagnetic radiation
 - emission spectra
 - spectral emission
- spools**
 - RT ∞ containers
 - inserts
 - magazines (supply chambers)
 - reels
 - spindles
- sporadic E layer**
 - GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . E region
 - **sporadic E layer**
 - regions
 - . E region
 - . . **sporadic E layer**
 - RT E-1 layer
 - E-2 layer
 - midlatitude atmosphere
- sporadic meteoroids**
 - SN (METEORIDS NOT ASSOCIATED WITH A METEOROID SHOWER OR STREAM)
 - GS celestial bodies
 - . meteoroids
 - . . **sporadic meteoroids**
 - RT meteor trails
 - meteoroid concentration
- spores**
 - DEF The reproductive elements of the lower

forms of living organisms, usually unicellular.

- GS **spores**
 - . microspores
- RT biological weapons
 - fungi
 - microorganisms
 - plants (botany)
 - protozoa
 - tetrad theory

sports medicine

- GS medical science
 - . **sports medicine**
- RT aerospace medicine
 - athletes
 - clinical medicine
 - exercise physiology
 - physical fitness
 - physiological effects

SPOT (French satellite)

DEF French satellite with high visible resolution for observations of the Earth. It was launched in February 1986. The acronym is derived from the French, Satellite Pour Observation de la Terre.

- GS artificial satellites
 - . French satellites
 - . . **SPOT (French satellite)**
- RT crop identification
 - Earth observations (from space)
 - Earth resources
 - land use
 - mapping
 - soil mapping
 - stereophotography

spot welds

- GS joints (junctions)
 - . metal joints
 - . . welded joints
 - . . . **spot welds**
- RT arc welding
 - beads
 - electric welding
 - fusion welding
 - pressure welding
 - ultrasonic welding

spray characteristics

- RT ∞ characteristics
 - sprayers
 - spraying

spray condensers

- RT jet condensers
 - sprayers

spray ingestion

- RT gas turbines
 - landing gear
 - salt spray tests

spray nozzles

- RT annular nozzles
 - conical nozzles
 - fuel injection
 - fuel systems
 - injectors
- ∞ nozzles
 - orifices
 - sprayers

sprayed coatings

- UF *sprayed protective coatings*
- GS coatings
 - . **sprayed coatings**
- RT ceramic coatings
 - finishes
 - HVOF thermal spraying
 - lacquers
 - metal coatings
 - paints
 - plasma spraying
 - plastic coatings
 - primers (coatings)

protective coatings
varnishes

sprayed protective coatings

USE **protective coatings**
sprayed coatings

sprayers

- UF *spraying apparatus*
- sprays
- RT atomizers
 - blowers
 - colloidal generators
 - contactors
- ∞ containers
- ∞ diffusers
 - dispensers
 - distributors
 - drops (liquids)
 - ejectors
 - fuel sprays
- ∞ jets
 - materials handling
 - mixers
- ∞ nozzles
 - propellant sprays
 - spray characteristics
 - spray condensers
 - spray nozzles
 - spraying
 - vaporizers

spraying

- GS **spraying**
 - . arc spraying
 - . crop dusting
 - . flame spraying
 - . . HVOF thermal spraying
 - . metal spraying
 - . plasma spraying
- RT aeration
 - aerosols
 - atomizing
 - blowing
 - coating
 - coatings
 - diffusion
 - dispersing
 - entrainment
 - forming techniques
 - fumigation
 - liquid atomization
 - metallizing
 - mixing
 - premixing
 - sealing
 - spray characteristics
 - sprayers
 - sprinkling
 - vaporizing
 - wetting

spraying apparatus

USE **sprayers**

sprays

USE **sprayers**

spread F

- RT F 2 region
 - ionospheric storms
 - magnetic storms

spread reflection

DEF Reflection of electromagnetic radiation from a rough surface with large irregularities. Also known as mixed reflection.

- GS reflection
 - . **spread reflection**
- RT glare
 - infrared reflection
 - optical reflection
 - scattering
 - signal reflection
 - ultraviolet reflection

wave reflection

spread spectrum transmission

DEF Communications technique with many different signal waveforms transmitted in a wide band; power is spread thinly over the band so that narrow-band radios can operate within the band without interference.

- GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **spread spectrum transmission**
 - . signal transmission
 - . . radio transmission
 - . . . **spread spectrum transmission**
- RT communication
 - frequency hopping

spreading

- RT adhesion
 - cohesion
 - diffusion
 - dispersing
 - disposal
 - dumping
 - emptying
 - interfacial tension
 - internal pressure
 - materials handling
 - scattering
- ∞ separation
 - spilling
 - swelling
 - throwing
 - unloading

spreadsheets

(added March 2001)

DEF Software applications that present a display of multiple columns and rows, and allow a user to input and manipulate numerical data for planning, tracking, analysis, and financial calculations.

- GS computer programs
 - . applications programs (computers)
 - . . **spreadsheets**
- RT computer techniques
 - tables (data)

spring (season)

DEF The season of the year between winter and summer. Its beginning is the vernal equinox and its end the summer solstice.

- GS seasons
 - . **spring (season)**
- RT autumn
 - summer
 - winter

springs (elastic)

- RT ∞ coils
 - energy storage
 - frames
 - oscillation dampers
 - oscillations
 - resilience
 - shock absorbers
 - suspension systems (vehicles)
 - vibration isolators

springs (water)

DEF Places where ground water flows naturally from rocks onto the land surface or into a body of surface water. Their occurrence depends on the nature and relationship of rocks, especially permeable and impermeable strata, on the position of the water table, and on the topography.

- GS resources
 - . Earth resources
 - . . **springs (water)**
 - water
 - . **springs (water)**
- RT aquifers
 - fresh water
 - ground water

sprinkling

- inland waters
- lakes
- oases
- potable water
- water tables
- wells

sprinkling

- RT scattering
- spraying
- wetting

Sprint missile

- GS missiles
 - . antimissile missiles
 - . . . **Sprint missile**
 - . surface to air missiles
 - . . . **Sprint missile**
- RT Nike-Zeus missile
- Sentinel system
- solid propellant rocket engines
- Spartan missile

SPRITE detectors

(added January 2000)

- USE **infrared detectors**

sprites (atmospheric physics)

(added January 2000)

DEF Short-lived luminosities observed at high altitudes above thunderstorms, apparently associated with upward discharges of thunderstorm electricity. They appear as columnar diffuse reddish glows between 30 km and 80 km above ground, lasting tens of milliseconds, following large positive cloud-to-ground lightning strokes.

- UF *red sprites*
- GS atmospheric radiation
 - . sky radiation
 - . . **sprites (atmospheric physics)**
 - electromagnetic radiation
 - . light (visible radiation)
 - . . sky radiation
 - . . . **sprites (atmospheric physics)**
- RT atmospheric electricity
- atmospheric ionization
- cloud-to-ground discharges
- elves
- lightning
- thunderstorms

SPUR (reactors)

- USE **space power unit reactors**

SPURT (trajectories)

- USE **spinning unguided rocket trajectory**

Sputnik 1 satellite

- GS artificial satellites
 - . meteorological satellites
 - . . . **Sputnik 1 satellite**
 - . Soviet satellites
 - . . . Sputnik satellites
 - . . . **Sputnik 1 satellite**
- Soviet spacecraft
- . Sputnik satellites
- . . **Sputnik 1 satellite**

Sputnik 2 satellite

- GS artificial satellites
 - . biosatellites
 - . . **Sputnik 2 satellite**
 - . meteorological satellites
 - . . **Sputnik 2 satellite**
 - . Soviet satellites
 - . . . Sputnik satellites
 - . . . **Sputnik 2 satellite**
- Soviet spacecraft
- . Sputnik satellites
- . . **Sputnik 2 satellite**

Sputnik 3 satellite

- GS artificial satellites
 - . geophysical satellites

- . . **Sputnik 3 satellite**
- . meteorological satellites
- . . **Sputnik 3 satellite**
- . Soviet satellites
- . . . Sputnik satellites
- . . . **Sputnik 3 satellite**
- Soviet spacecraft
- . Sputnik satellites
- . . **Sputnik 3 satellite**

Sputnik 4 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . . Sputnik satellites
 - . . . **Sputnik 4 satellite**
- Soviet spacecraft
- . Sputnik satellites
- . . **Sputnik 4 satellite**

Sputnik 5 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . . Sputnik satellites
 - . . . **Sputnik 5 satellite**
- Soviet spacecraft
- . Sputnik satellites
- . . **Sputnik 5 satellite**

- RT Venus probes

Sputnik satellites

- GS artificial satellites
 - . Soviet satellites
 - . . **Sputnik satellites**
 - . . . Sputnik 1 satellite
 - . . . Sputnik 2 satellite
 - . . . Sputnik 3 satellite
 - . . . Sputnik 4 satellite
 - . . . Sputnik 5 satellite
- Soviet spacecraft
- . **Sputnik satellites**
- . . Sputnik 1 satellite
- . . Sputnik 2 satellite
- . . Sputnik 3 satellite
- . . Sputnik 4 satellite
- . . Sputnik 5 satellite

sputtering

DEF Dislocation of surface atoms of a material from bombardment of high energy atomic particles.

- GS **sputtering**
 - . magnetron sputtering
- RT arc welding
- ∞ bombardment
 - deposition
 - duoplasmatrons
 - electron bombardment
 - emission
 - ion plating
 - ion sources
 - metal particles
 - plasma etching
 - surface finishing
 - thermal instability

sputtering gages

- GS measuring instruments
 - . **sputtering gages**
- RT metal films
- thin films

squalls

- GS wind (meteorology)
 - . **squalls**
- RT ground wind
- storms (meteorology)

squama

DEF A scale or structure resembling a scale.

- RT fishes

square waves

DEF Oscillations, the amplitudes of which show periodic discontinuities between two values, remaining constant between jumps. Spe-

cifically, in radar pulses initiated by a rapid rise to peak power, maintained at a constant peak power over the finite pulse length, and terminated by rapid decrease from peak power.

- GS waveforms
 - . **square waves**
- RT form factors
- pulse amplitude
- pulse duration
- sawtooth waveforms
- time functions
- wave functions
- wave propagation
- ∞ waves

square wells

DEF The impurity potential areas which bound an electron or hole in semiconducting crystals such as silicon.

- RT electron mobility
- magnetic fields
- photoconductivity
- vacancies (crystal defects)
- wells

squares (mathematics)

- GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . tetragons
 - **squares (mathematics)**

squeeze casting

(added September 1993)

DEF The technique of working liquid metals under pressure into near net shapes; it includes the technique of forging metal compounds.

- GS forming techniques
 - . casting
 - . . **squeeze casting**
- RT cast alloys
- compressing
- extruding
- fabrication
- forging
- liquid metals
- metal matrix composites
- metal working

squeeze films

DEF Thin viscoelastic fluid films squeezed between two usually planar structures to serve as sealants, load dampers, lubricants, etc.

- GS fluid films
 - . **squeeze films**
- RT boundary lubrication
- elastohydrodynamics
- ∞ films
 - gas bearings
 - gas lubricants
 - liquid-solid interfaces
 - lubricants
 - thin films
 - vapor phase lubrication
- viscoelasticity
- viscous fluids

squeezed states (quantum theory)

DEF Single mode minimum uncertainty states for which the fluctuations in one quadrature phase of the field are smaller than would occur for a coherent state. Used for two photon coherent states.

- UF *two photon coherent states*
- RT coherent electromagnetic radiation
- coherent light
- electromagnetic fields
- fluctuation theory
- light transmission
- ∞ optics
 - photon density
 - quantum mechanics

quantum theory

squeezing
 USE **compressing**

snatch circuits
 GS circuits
 . **snatch circuits**
 RT background noise
 electromagnetic noise
 noise reduction
 silencers
 suppressors
 switching circuits

squibs
 DEF Various small explosive devices. Explosive devices used in the ignition of a rocket. Used for XM-6 squib and XM-8 squib.
 UF *XM-6 squib*
XM-8 squib
 GS igniters
 . **squibs**
 RT electric ignition
 ignition systems
 primers (explosives)
 solid propellant ignition
 starters

squid (detectors)
 DEF Superconducting quantum interference device magnetometers. Used for superconducting quantum interferometers.
 UF *superconducting quantum interferometers*
 GS superconducting devices
 . **squid (detectors)**
 RT ∞ detectors
 Josephson junctions
 magnetic measurement
 quantum counters
 SIS (superconductors)
 superconductors (materials)

SQUID project
 GS programs
 . projects
 . . **SQUID project**
 RT jet propulsion

squirrels
 GS animals
 . vertebrates
 . . mammals
 . . . rodents
 **squirrels**
 ground squirrels

SR (reactors)
 USE **saturable reactors**

SR-71 aircraft
(added March 1990)
 UF *Blackbird aircraft*
 GS Lockheed aircraft
 . **SR-71 aircraft**
 reconnaissance aircraft
 . **SR-71 aircraft**
 supersonic aircraft
 . **SR-71 aircraft**
 RT ∞ aircraft
 blended-wing-body configurations
 ∞ military aircraft

SRB (Solid Rocket Boosters)
 USE **Space Shuttle Boosters**

SRE reactor
 USE **sodium reactor experiment**

SRET 1 satellite
 GS artificial satellites
 . French satellites
 . . SRET satellites
 . . . **SRET 1 satellite**
 . meteorological satellites

. . SRET satellites
 . . . **SRET 1 satellite**
 RT French space program

SRET 2 satellite
 GS artificial satellites
 . French satellites
 . . SRET satellites
 . . . **SRET 2 satellite**
 . meteorological satellites
 . . SRET satellites
 . . . **SRET 2 satellite**

SRET satellites
 GS artificial satellites
 . French satellites
 . . **SRET satellites**
 . . . SRET 1 satellite
 . . . SRET 2 satellite
 . meteorological satellites
 . . **SRET satellites**
 . . . SRET 1 satellite
 . . . SRET 2 satellite
 RT French space program

Sri Lanka
 UF *Ceylon*
 GS nations
 . **Sri Lanka**
 RT Asia

SR-N2 ground effect machine
 USE **Westland ground effect machines**

SR-N3 ground effect machine
 USE **Westland ground effect machines**

SR-N5 ground effect machine
 USE **Westland ground effect machines**

SS-11 missile
 GS missiles
 . **SS-11 missile**
 RT multistage rocket vehicles
 solid propellant rocket engines

SSGS (standardized space guidance)
 USE **standardized space guidance**

SSTI
 USE **small satellite technology**

SSUS-A
 USE **Space Shuttle upper stage A**

SSUS-D
 USE **Space Shuttle upper stage D**

St Lawrence Valley (North America)
 GS landforms
 . **St Lawrence Valley (North America)**
 valleys
 . **St Lawrence Valley (North America)**
 RT Canada
 Maine
 New Hampshire
 New York
 Vermont

St Louis-Kansas City Corridor (MO)
 GS corridors
 . **St Louis-Kansas City Corridor (MO)**
 RT Missouri
 regional planning

St Venant flexure problem
 USE **Saint Venant principle**

stability
 DEF The property of a body, as an aircraft or rocket, to maintain its attitude or to resist displacement, and, if displaced to develop

forces and moments tending to restore the original condition. Of a fuel, the capability of a fuel to retain its characteristics in an adverse environment, e. g. extreme temperature. Used for instability.

UF *instability*
 GS **stability**
 . acoustic instability
 . baroclinic instability
 . dynamic stability
 . . combustion stability
 . . . flame stability
 . . control stability
 . . frequency stability
 . . motion stability
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 . . flow stability
 . . . boundary layer stability
 . . . flame stability
 . . . magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 . . . Taylor instability
 . . low speed stability
 . . rotary stability
 . . . gyroscopic stability
 . . spacecraft stability
 . . gravitational instability
 . interface stability
 . laser stability
 . magnetospheric instability
 . numerical stability
 . phase stability (materials)
 . static stability
 . . dimensional stability
 . . . structural stability
 . . . shell stability
 . storage stability
 . surface stability
 . systems stability
 . thermal stability
 RT amplification
 ballast (mass)
 chemical compatibility
 compatibility
 controllability
 ∞ drift
 drift rate
 durability
 dynamic characteristics
 equations of motion
 ∞ equilibrium
 metastable state
 quality
 reliability
 ∞ resistance
 safety factors
 spacecraft motion
 stabilizers (agents)
 steady state
 tolerances (mechanics)
 Tresca flow
 unity
 unsteady state
 variability
 vlasov equations
 vulnerability

stability augmentation
 DEF Maintenance of aircraft stability in flight by means of automatic control devices which supplement a pilot's manipulation of the aircraft controls. The automatic controls are used to modify inherent aircraft handling problems.
 GS augmentation
 . **stability augmentation**
 RT aerodynamic stability
 aircraft control
 attitude (inclination)
 automatic control

stability derivatives

control stability
directional stability
feedback control
flight control
lateral oscillation
pitch (inclination)

stability derivatives

UF *aerodynamic moments*
GS moments
. **stability derivatives**
. . . pitching moments
. . . rolling moments
. . . yawing moments
RT complex variables
damping
differential equations
moments of inertia
real variables
vector analysis

stability tests

GS **stability tests**
. flight stability tests
. wind tunnel stability tests
RT corrosion tests
damping tests
electronic equipment tests
flight tests
fuel tests
ground tests
missile tests
propellant tests
resonance testing
 ∞ tests
vibration tests

stabilization

UF *missile stabilization*
GS **stabilization**
. signal stabilization
. spin stabilization
. three axis stabilization
RT acid base equilibrium
balancing
consolidation
 ∞ control
 ∞ equilibrium
heat treatment
horizontal orientation
laser gyroscopes
phase stability (materials)
stabilizers (agents)
stress relieving
vertical orientation

stabilized platforms

RT gimbals
gyroscopic stability
gyrostabilizers
inertial guidance
 ∞ platforms
three axis stabilization

∞ stabilizers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gyroscopes
sea keeping
stabilizers (agents)
stabilizers (fluid dynamics)

stabilizers (agents)

RT additives
 ∞ agents
anticoagulants
antioxidants
neutralizers
preservatives
retardants
stability
stabilization
 ∞ stabilizers

stabilizers (fluid dynamics)

UF *horizontal stabilizers*

vertical stabilizers

vertical tails

GS stabilizers (fluid dynamics)

. horizontal tail surfaces
RT aerial rudders
airfoils
control surfaces
 ∞ dynamics
elevators (control surfaces)
fins
keels
rudders
 ∞ stabilizers
sweptback tail surfaces
T tail surfaces
tabs (control surfaces)
tail assemblies
tail surfaces
trapezoidal tail surfaces

stable oscillations

GS oscillations
. **stable oscillations**
RT dynamic stability
frequency pulling
frequency stability
gyroscopic stability
motion stability
nonstabilized oscillation
pilot induced oscillation
resonant vibration
transverse oscillation
undamped oscillations
wing oscillations

stacking fault energy

RT crystal defects
 ∞ energy
twinning

stacking faults

USE **crystal defects**

stacking sequence (composite materials)

(added June 1997)
RT composite materials
fiber composites
fiber orientation
laminates
lay-up
ply orientation

stacks

RT chimneys
crystal defects
materials handling

STADAN (satellite tracking network)

USE **STDN (network)**

stadimeters

DEF Instruments for determining the distance to an object of known dimension by measuring the angle subtended at the observer by the object. The instrument is graduated directly in distance.

GS measuring instruments
. distance measuring equipment
. . **stadimeters**

RT range finders
sextants

stage separation

UF *staging (rockets)*
RT booster rocket engines
expendable stages (spacecraft)
interim stages (spacecraft)
Lunar Module Ascent Stage
missiles
multistage rocket vehicles
propellant mass ratio
rocket vehicles
 ∞ separation
Space Shuttle Ascent Stage
sustainer rocket engines
thrust termination

upper stage rocket engines

staggering

RT ∞ configurations
disorientation

staging (rockets)

USE **stage separation**

stagnation flow

GS fluid flow
. inviscid flow
. . **stagnation flow**
RT boundary layer flow
boundary layer separation
compressible flow
stagnation point

stagnation point

DEF Point in a field of flow about a body where the fluid particles have zero velocity with respect to the body. Used for stagnation region.

UF *stagnation region*
RT blunt bodies
boundary layer flow
flow distribution
fluid dynamics
heat transfer
stagnation flow

stagnation pressure

GS pressure
. **stagnation pressure**
RT compressible flow
inlet pressure

stagnation region

USE **stagnation point**

stagnation temperature

GS temperature
. **stagnation temperature**
RT adiabatic flow
compressible flow
inviscid flow

staining

RT chemical tests
discoloration
marking
methylene
methylene blue

stainless steels

GS alloys
. iron alloys
. . steels
. . . **stainless steels**
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
RT chromium alloys
maraging steels
molybdenum alloys
nickel alloys
nickel steels

staircases

USE **stairways**

stairsteps

RT backward facing steps
formations
 ∞ steps
topography

stairways

UF *staircases*
RT buildings
escalators
ladders

- treads
- ∞ **stalling**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aerodynamic stalling
boundary layer separation
engine failure
rotating stalls
- stamping**
- SN (EXCLUDES IDENTIFICATION MARKING)
- GS forming techniques
. pressing (forming)
. . **stamping**
- RT ∞ blanking
blanking (cutting)
coining
cold working
dies
dimpling
forging
hot isostatic pressing
hot pressing
metal working
punches
shearing
swaging
upsetting
- standard atmospheres*
- USE **reference atmospheres**
- standard deviation**
- DEF A measure of the agreement between test results.
- GS moments
. distribution moments
. . **standard deviation**
statistical analysis
. **standard deviation**
- RT confidence limits
estimating
heterogeneity
quality control
range (extremes)
variability
variance (statistics)
- standard electroweak model*
- USE **electroweak model**
- standard launch vehicle 3*
- USE **Atlas SLV-3 launch vehicle**
- Standard Launch Vehicle 5**
- GS launch vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**
rocket vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**
- Standard Launch Vehicles**
- UF *SLV*
- GS launch vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
rocket vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
- RT Atlas D ICBM
- ∞ vehicles
- standard model (particle physics)**
(added April 1994)
- GS field theory (physics)
. gauge theory
. . unified field theory
. . . **standard model (particle physics)**
models
. **standard model (particle physics)**
- RT bosons
- CP violation
electroweak interactions (field theory)
electroweak model
elementary particles
particle theory
quantum chromodynamics
quantum theory
quark models
strong interactions (field theory)
weak interactions (field theory)
- standardization**
- DEF The act or process of reducing something to, or comparing it with, a standard. A measure of uniformity. A special case of calibration whereby a known input is applied to a device or system for the purpose of verifying the output of adjusting the output to a desired level or scale factor.
- GS **standardization**
. commonality
- RT calibrating
intercalibration
metrication
naming
numerical control
product development
production engineering
quality control
specifications
standards
variability
- standardized space guidance**
- UF *SSGS (standardized space guidance)*
- GS guidance (motion)
. **standardized space guidance**
- RT space navigation
- standards**
- DEF References used as a basis for comparison or calibration. Concepts that have been established by authority, custom, or agreement to serve as models or rules in the measurement of quantity of the establishment of a practice or a procedure. Used for references (standards).
- UF *references (standards)*
- GS **standards**
. frequency standards
. reference atmospheres
- RT acceptability
accuracy
calibrating
- ∞ codes
conventions
criteria
document markup languages
inspection
interoperability
- ∞ measurement
- ∞ measures
metrology
- ∞ performance
performance tests
quality control
reliability
sampling
specifications
standardization
temperature scales
tolerances (mechanics)
validity
value engineering
- standing wave ratios**
- GS ratios
. **standing wave ratios**
- RT amplitudes
electrical properties
Smith chart
transmission lines
- standing waves**
- DEF Periodic waves having fixed distribution in space which are the result of interference of progressive waves of the same frequency and
- kind. Such waves are characterized by the existence of nodes or partial nodes and antinodes that are fixed in space.
- RT antinodes
beat frequencies
frequencies
harmonics
nodes (standing waves)
- ∞ radiation
resonant frequencies
vibration
wavelengths
- ∞ waves
- stands*
- USE **supports**
- stannates**
- GS tin compounds
. **stannates**
- RT ∞ oxygen compounds
- stannides**
- GS tin compounds
. **stannides**
. . niobium stannides
- RT tin alloys
- Stanton number**
- GS dimensionless numbers
. **Stanton number**
ratios
. **Stanton number**
- RT forced convection
heat transfer
- STAP (radar)*
(added November 2002)
- USE **space-time adaptive processing**
- staphylococcus**
- GS microorganisms
. bacteria
. . **staphylococcus**
- RT pleurotin
- star catalogs*
- USE **astronomical catalogs**
- star clusters**
- DEF Groups of stars physically close together.
- GS celestial bodies
. **star clusters**
. . globular clusters
. . open clusters
. . . Pleiades cluster
. . . Praesepe star clusters
- RT barred galaxies
binary stars
- ∞ clusters
color-magnitude diagram
disk galaxies
elliptical galaxies
galactic clusters
galaxies
irregular galaxies
Magellanic clouds
metallicity
solar neighborhood
stars
stellar systems
Virgo galactic cluster
- star distribution**
- UF *star fields*
stellar fields
- GS distribution (property)
. spatial distribution
. . vertical distribution
. . . **star distribution**
- RT angular distribution
astrolabes
barred galaxies
cosmology
galactic clusters

star formation

- galactic evolution
- galactic halos
- globular clusters
- mass distribution
- radial distribution
- star formation
- stellar systems
- Virgo galactic cluster

star fields

USE **star distribution**

star formation

DEF The collapse under gravity of molecular clouds of interstellar matter to form clusters of protostars, and the continuing collapse of the protostars to form main-sequence stars.

GS evolution (development)
. stellar evolution
. . . **star formation**

RT astrophysics
cooling flows (astrophysics)
cosmology
early stars
hydrogen clouds
interstellar gas
interstellar matter
molecular clouds
nebulae
nuclear fusion
pre-main sequence stars
protogalaxies
protostars
solar nebula
star distribution
star formation rate
starburst galaxies
stars
stellar mass accretion
Submillimeter Wave Astronomy
Satellite
T Tauri stars

star formation rate

DEF The rate at which stars are formed within a specified region or galaxy; sometimes expressed as the number of solar masses per year.

GS rates (per time)
. **star formation rate**

RT galactic evolution
galaxies
star formation
starburst galaxies
stellar evolution

star trackers

DEF Telescopic instruments on rockets or other flight borne vehicles that lock onto a celestial body and give guidance reference to the vehicles during flight. Used for star tracking.

UF *star tracking*
GS tracking (position)
. **star trackers**
. . . CCD star tracker

RT Astroguidance Navigation System
astrolabes
attitude control
celestial navigation
charge injection devices
flight instruments
guidance sensors
inertial navigation
laser guide stars
missile control
navigation
navigation aids
navigation instruments
solar sensors
spacecraft guidance

star tracking

USE **star trackers**

starburst galaxies

GS celestial bodies

. galaxies
. . . **starburst galaxies**

RT galactic nuclei
star formation
star formation rate

starches

GS biopolymers
. polysaccharides
. . . **starches**
organic compounds
. carbohydrates
. . . polysaccharides
. . . **starches**

RT chitin

∞ food
sizing materials

Stardust Mission

(added March 1999)

DEF First U. S. mission launched to robotically obtain samples in deep space and return them to Earth. The NASA Discovery-class mission will return dust samples collected from the debris cloud surrounding the nucleus of Comet Wild 2. Interstellar dust will also be collected. The mission spacecraft takes advantage of an Earth gravity-assist maneuver to reach the comet, and uses an aerogel-based dust collector.

GS space missions
. flyby missions
. . . **Stardust Mission**
. sample return missions
. . . **Stardust Mission**

RT comet nuclei
interstellar matter
Wild 2 comet

Starfighter aircraft

USE **F-104 aircraft**

Stark effect

DEF The broadening or splitting of a spectral line observed when a luminous gas is acted upon by a strong electric field.

RT ∞ effects
electric fields
electro-optics
hydrogen plasma
line spectra
resolution
spectrum analysis
Zeeman effect

Starlab

DEF A proposed satellite ultraviolet telescope that was a joint project between the United States, Canada, and Australia. It is currently in abeyance. Used for Spacelab UV-Optical Telescope Facility.

UF *Spacelab UV-Optical Telescope Facility*

GS telescopes
. spaceborne telescopes
. . . **Starlab**
. ultraviolet telescopes
. . . **Starlab**

RT ∞ optics
Space Shuttle payloads
Spacelab

Starlifter aircraft

USE **C-141 aircraft**

Starprobe mission

GS programs
. NASA programs
. . . NASA space programs
. . . **Starprobe mission**
. space programs
. . . NASA space programs
. . . **Starprobe mission**
space missions
. **Starprobe mission**

RT Starprobe spacecraft

Starprobe spacecraft

GS unmanned spacecraft
. space probes
. . . solar probes
. . . **Starprobe spacecraft**

RT Starprobe mission

starquakes

(added July 1989)

RT asteroseismology
gamma ray bursts
neutron stars
pulsars
stars
stellar activity
stellar physics
stellar rotation
stellar structure

stars

DEF Self-luminous celestial bodies exclusive of nebulas, comets, and meteors; suns seen in the heavens. Distinguished from planets or natural satellites that shine by reflected light.

GS celestial bodies
. **stars**
. . . black holes (astronomy)
. . . brown dwarf stars
. . . double stars
. binary stars
. cataclysmic variables
. companion stars
. Nemesis (star)
. eclipsing binary stars
. dwarf novae
. Lambda Tauri stars
. Zeta Aurigae star
. Sigma Orionis
. symbiotic stars
. x ray binaries
. . . early stars
. . . hot stars
. A stars
. B stars
. shell stars
. Sigma Orionis
. blue stars
. O stars
. white dwarf stars
. Wolf-Rayet stars
. . . F stars
. . . G stars
. . . sun
. . . giant stars
. . . asymptotic giant branch stars
. . . Omicron Ceti star
. . . red giant stars
. carbon stars
. . . horizontal branch stars
. . . infrared stars
. . . late stars
. cool stars
. carbon stars
. flare stars
. K stars
. M stars
. Van Biesbroeck star
. Mira variables
. Omicron Ceti star
. S stars
. . . magnetic stars
. . . magnetars
. . . main sequence stars
. . . dwarf stars
. dwarf novae
. flare stars
. red dwarf stars
. . . sun
. . . massive stars
. . . metallic stars
. . . neutron stars
. . . magnetars
. . . pulsars
. . . soft gamma repeaters
. . . peculiar stars

- ... shell stars
- ... Sigma Orionis
- ... symbiotic stars
- .. Praesepe star clusters
- .. protostars
- ... pre-main sequence stars
- ... T Tauri stars
- .. radio stars
- ... pulsars
- .. reference stars
- .. subdwarf stars
- .. subgiant stars
- .. supergiant stars
- ... R Coronae Borealis stars
- .. supermassive stars
- .. triple stars
- .. variable stars
 - ... cataclysmic variables
 - ... cepheid variables
 - ... flare stars
 - ... irregular variable stars
 - ... R Coronae Borealis stars
 - ... Lambda Tauri stars
 - ... Mira variables
 - ... Omicron Ceti star
 - ... novae
 - ... dwarf novae
 - ... Hercules nova
 - ... semiregular variable stars
 - ... supernovae
 - ... supernova 1987A
 - ... symbiotic stars
 - ... T Tauri stars
- .. white holes (astronomy)
- .. x ray stars
- ... soft gamma repeaters
- ... x ray binaries
- .. Population I stars
- .. Population II stars
- .. Population III stars
- RT Aries constellation
- astrolabes
- barred galaxies
- Cassiopeia constellation
- celestial mechanics
- Centaurus constellation
- constellations
- Corona Borealis constellation
- Cygnus constellation
- faint objects
- galaxies
- irregular galaxies
- Lyra constellation
- Magellanic clouds
- metallicity
- Milky Way Galaxy
- quasars
- solar neighborhood
- star clusters
- star formation
- starquakes
- starspots
- stellar activity
- stellar composition
- stellar cores
- stellar gravitation
- stellar interiors
- stellar magnitude
- stellar oscillations
- Virgo galactic cluster
- stars (mathematics)**
- RT ∞ mathematics
- Starsat telescope**
- DEF An anastigmatic 3-mirror reflecting telescope for ultraviolet astronomy purposes aboard the Starsat satellite.
- GS telescopes
 - .. reflecting telescopes
 - ... **Starsat telescope**
 - .. spaceborne telescopes
 - ... **Starsat telescope**
- RT coronagraphs
- spaceborne astronomy
- spectroheliographs
- ultraviolet astronomy
- Starsite program**
- GS programs
 - .. **Starsite program**
- RT architecture
- buildings
- communities
- conferences
- construction
- decision making
- ∞ development
- environmental engineering
- information retrieval
- land use
- management methods
- NASA programs
- planning
- recreation
- shelters
- social factors
- technology transfer
- urban development
- urban planning
- starspots**
- DEF Temporary disturbed areas in the stellar photosphere that appear dark because they are colder than the surrounding areas.
- GS stellar activity
 - .. **starspots**
 - .. sunspots
- RT faculae
- magnetic disturbances
- photosphere
- solar activity
- stars
- stellar atmospheres
- stellar luminosity
- stellar magnetic fields
- stellar radiation
- sunspot cycle
- twenty-seven day variation
- starters**
- GS **starters**
 - .. engine starters
- RT actuators
- ignition systems
- squibs
- starting
- starting**
- GS **starting**
 - .. air start
- RT activation
- actuation
- cycles
- electric ignition
- engine primers
- excitation
- firing (igniting)
- ignition
- initiation
- launching
- ∞ priming
- reactor startup tests
- starters
- stimulation
- state equations*
- USE **equations of state**
- state estimation**
- RT algorithms
- Kalman filters
- linear systems
- orbital position estimation
- state vectors
- stochastic processes
- state vectors**
- GS algebra
 - .. vector spaces
 - .. vectors (mathematics)
 - ... **state vectors**
- observability (systems)
- phase-space integral
- state estimation
- steady state
- strange attractors
- static aerodynamic characteristics**
- GS aerodynamic characteristics
 - .. **static aerodynamic characteristics**
 - static characteristics
 - .. **static aerodynamic characteristics**
- RT aerodynamic balance
- aerodynamic stability
- ∞ characteristics
- static alternators**
- GS electric generators
 - .. AC generators
 - .. **static alternators**
- static characteristics**
- SN (EXCLUDES STATICS)
- GS **static characteristics**
 - .. static aerodynamic characteristics
- RT static loads
- static stability
- static tests
- static deformation**
- GS deformation
 - .. **static deformation**
- RT creep properties
- Maxwell-Mohr method
- Saint Venant principle
- static dischargers**
- UF *antistatic devices*
- GS dischargers
 - .. **static dischargers**
- static electricity**
- GS electricity
 - .. **static electricity**
- RT atmospheric electricity
- atmospherics
- electric corona
- electric fields
- electric potential
- electric sparks
- electrostatic charge
- electrostatics
- lightning
- open circuit voltage
- space charge
- static firing**
- DEF The firing of a rocket engine in a hold down position to measure thrust and accomplish other tests.
- GS captive tests
 - .. static tests
 - ... **static firing**
 - engine tests
 - .. **static firing**
 - firing (igniting)
 - .. test firing
 - .. **static firing**
 - ground tests
 - .. prelaunch tests
 - .. **static firing**
- RT rocket firing
- static friction**
- GS friction
 - .. **static friction**
- RT coefficient of friction
- dry friction
- friction measurement
- kinetic friction
- sliding
- sliding friction
- static inverters**
- GS inverters
 - .. **static inverters**

static loads

- RT electric generators
- static loads**
 - UF *deadweight*
 - GS loads (*forces*)
 - . **static loads**
 - RT aerodynamic loads
 - axial compression loads
 - axial loads
 - ballast (mass)
 - bending moments
 - compression loads
 - critical loading
 - dynamic loads
 - edge loading
 - flexural strength
 - loading moments
 - mass distribution
 - moment distribution
 - pressure distribution
 - random loads
 - Saint Venant principle
 - static characteristics
 - structural design criteria
 - transverse loads
 - wing loading
- static models**
 - DEF Sets of equations of physical laws to determine a balance of systems at rest.
 - GS models
 - . **static models**
 - RT approximation
 - dynamic models
 - optimization
- static pressure**
 - GS pressure
 - . **static pressure**
 - . . hydrostatic pressure
 - RT isostatic pressure
 - pitot tubes
 - sound pressure
- static stability**
 - GS stability
 - . **static stability**
 - . . dimensional stability
 - . . . structural stability
 - shell stability
 - RT aircraft stability
 - counterbalances
 - drift (instrumentation)
 - dynamic stability
 - magnetohydrostatics
 - static characteristics
 - storage stability
 - stratification
 - surface stability
- static tests**
 - SN (ENCOMPASSES MATERIALS, ENGINE, AND VEHICLE TESTS)
 - GS captive tests
 - . **static tests**
 - . . static firing
 - RT cold flow tests
 - compression tests
 - creep tests
 - dynamic tests
 - engine tests
 - fatigue tests
 - ground tests
 - hardness tests
 - inspection
 - load tests
 - ∞ materials tests
 - missile tests
 - nondestructive tests
 - prefiring tests
 - prelaunch tests
 - quality control
 - resonance testing
 - static characteristics
 - tensile tests
 - test firing
 - ∞ tests
- vibration tests
- wear tests
- static thrust**
 - GS thrust
 - . **static thrust**
 - RT jet thrust
 - rocket thrust
- statics**
 - GS **statics**
 - . aerostatics
 - . electrostatics
 - . hydrostatics
 - . . magnetohydrostatics
 - RT ∞ dynamics
 - elastostatics
 - ∞ equilibrium
 - fluid mechanics
 - ∞ mechanics (physics)
- stationary orbits**
 - DEF Orbits in which the satellite revolves about the primary at the angular rate at which the primary rotates on its axis. From the primary, the satellite thus appears to be stationary over a point on the primary.
 - GS orbits
 - . circular orbits
 - . . **stationary orbits**
 - . equatorial orbits
 - . . **stationary orbits**
 - . spacecraft orbits
 - . . satellite orbits
 - . . . **stationary orbits**
 - RT Earth orbits
 - geosynchronous orbits
 - synchronous satellites
 - twenty-four hour orbits
- stationkeeping**
 - DEF The sequence of maneuvers that maintains a vehicle in predetermined orbit.
 - GS positioning
 - . **stationkeeping**
 - RT formation flying
 - guidance (motion)
 - navigation
 - orbital mechanics
 - orbits
 - payload retrieval (STS)
 - satellite constellations
 - spacecraft control
- stations**
 - GS **stations**
 - . ground stations
 - . . Deep Space Instrumentation Facility
 - . . Earth terminals
 - . . integrated mission control center
 - . . polystation doppler tracking system
 - . hydroelectric power stations
 - . payload stations
 - . space stations
 - . . Automatic Universal Orbiting Stations
 - . . Columbus space station
 - . . Halo Orbit space station
 - . . International Space Station
 - . . man tended free flyers
 - . . Mir space station
 - . . orbiting lunar stations
 - . . Salyut space station
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - . . Space Operations Center (NASA)
 - . . Space Station Freedom
 - . . space station polar platforms
 - . . tracking stations
 - . . Deep Space Instrumentation Facility
 - . . Global Tracking Network
 - . . polystation doppler tracking system
 - . weather stations
 - . . automatic weather stations
 - . . workstations
 - . . crew workstations
 - . . . crew experiment stations
 - . . . crew observation stations
- RT ∞ bases
 - ∞ facilities
 - lunar bases
 - military air facilities
 - planetary bases
 - position (location)
 - space bases
 - Space Flight Tracking and Data Network
- statistical analysis**
 - GS **statistical analysis**
 - . amplitude distribution analysis
 - . correlation coefficients
 - . discriminant analysis (statistics)
 - . factor analysis
 - . goodness of fit
 - . likelihood ratio
 - . Maxwell-Boltzmann density function
 - . nonparametric statistics
 - . Poisson density functions
 - . probability density functions
 - . . normal density functions
 - . . Pearson distributions
 - . . Rayleigh distribution
 - . . Weibull density functions
 - . probability distribution functions
 - . quantiles
 - . sequential analysis
 - . standard deviation
 - . statistical correlation
 - . statistical decision theory
 - . statistical tests
 - . . Kolmogorov-Smirnov test
 - . . Mann-Whitney-Wilcoxon U test
 - . . rank tests
 - . variance (statistics)
 - . . analysis of variance
 - . . multivariate statistical analysis
 - . . . bivariate analysis
 - . . . covariance
 - . . . orthogonality
 - . . . regression analysis
 - regression coefficients
 - RT ∞ analyzing
 - ∞ applications of mathematics
 - approximation
 - autoregressive processes
 - binomial theorem
 - biometrics
 - censored data (mathematics)
 - charts
 - Chebyshev approximation
 - cluster analysis
 - coefficients
 - confidence
 - confidence limits
 - continuity (mathematics)
 - correlation
 - ∞ data
 - data correlation
 - decision theory
 - discrete functions
 - ∞ dispersion
 - economics
 - estimates
 - estimating
 - events
 - expectancy hypothesis
 - experiment design
 - exponential functions
 - extrapolation
 - factorial design
 - failure analysis
 - forecasting
 - game theory
 - Gauss-Markov theorem
 - graphs (charts)
 - information theory
 - inspection
 - interpolation

linear prediction
management
∞ mathematics
maximum entropy method
mean
median (statistics)
Mills ratio
minimum variance orbit determination
Monte Carlo method
MTBF
operations research
outliers (statistics)
parameter identification
probability theory
quality control
quartiles
queueing theory
random processes
reliability
root-mean-square errors
sampling
∞ statistics
stochastic processes
system identification
systems analysis
systems engineering
tables (data)
Taguchi methods
teleconnections (meteorology)
traveling salesman problem
trend analysis
Wiener filtering
Yang-Mills theory

statistical communication theory
USE **communication theory**

statistical correlation

GS correlation
. **statistical correlation**
statistical analysis
. **statistical correlation**
RT correlation coefficients
data correlation
econometrics
evaluation
quality control
∞ statistics
teleconnections (meteorology)

statistical decision theory

GS decision theory
. **statistical decision theory**
statistical analysis
. **statistical decision theory**
RT game theory
∞ theories

statistical distributions

UF *random distributions*
GS **statistical distributions**
. brightness distribution
. Pearson distributions
. probability distribution functions
. Rayleigh distribution
RT binomial theorem
censored data (mathematics)
complexity
curve fitting
∞ distribution
distribution (property)
distribution functions
distribution moments
error functions
events
expectancy hypothesis
forecasting
gamma function
goodness of fit
Kolmogorov-Smirnov test
kurtosis
mathematical models
outliers (statistics)
probability theory
quality control
quartiles

quantum theory
quartiles
reliability
scattering
size distribution

statistical mechanics

DEF Branch of physics concerned with predictions of the behavior of macroscopic systems based on the interactions of the microscopic constituents of the system, where the number of constituents is very large.
RT Boltzmann distribution
Boltzmann transport equation
classical mechanics
closure law
cluster variation method
continuum mechanics
energy distribution
fluctuation theory
function space
Ising model
Liouville equations
macroscopic equations
Malkus theory
many body problem
Maxwell-Boltzmann density function
∞ mechanics (physics)
molecular dynamics
Onsager phenomenological coefficient
quantum mechanics
quantum theory
renormalization group methods
thermodynamic equilibrium
weighting functions

statistical moments

USE **distribution moments**

statistical probability

USE **probability theory**

statistical tests

UF *Bruceton test*
GS statistical analysis
. **statistical tests**
. . Kolmogorov-Smirnov test
. . Mann-Whitney-Wilcoxon U test
. . rank tests
RT charts
confidence limits
curve fitting
∞ data
estimates
estimating
factor analysis
goodness of fit
heterogeneity
homogeneity
likelihood ratio
normality
null hypothesis
outliers (statistics)
quality control
range (extremes)
regression analysis
reliability
significance
∞ tests
validity

statistical weather forecasting

GS meteorology
. weather forecasting
. . **statistical weather forecasting**
predictions
. forecasting
. . weather forecasting
. . . **statistical weather forecasting**
RT long range weather forecasting
numerical weather forecasting

∞ **statistics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT arrays

biometrics
census
∞ data
demography
entropy (statistics)
estimates
estimating
Fermi-Dirac statistics
information theory
nonparametric statistics
populations
probability theory
quartiles
quantum statistics
random variables
reliability
sampling
statistical analysis
statistical correlation
stochastic processes
surveys
systems engineering
tables (data)
time series analysis

stator blades

GS turbomachine blades
. **stator blades**
RT ∞ blades
compressor blades
rotor blades (turbomachinery)
rotor stator interactions
stators
turbine blades
vanes

stators

DEF In machinery, parts or assemblies that remain stationary with respect to rotating or moving parts or assemblies such as the field frames of electric motors or generators, or the stationary casings and blades surrounding axial flow compressor rotors or turbine wheels.
RT compressors
electric motors
∞ generators
impellers
motors
pumps
∞ rotating electrical machines
rotors
stator blades
turbines

statutes

USE **law (jurisprudence)**

stays

USE **guy wires**

STDN (network)

DEF Spaceflight Tracking and Data Network. Name changed from Space Tracking and Data Acquisition Network (STDAN). Used for Satellite Tracking and Data Acq Network, Spacecraft Tracking and Data Network, and STADAN (satellite tracking network).
UF *Satellite Tracking and Data Acq Network*
Spacecraft Tracking and Data Network
STADAN (satellite tracking network)
GS networks
. tracking networks
. . **STDN (network)**
RT data acquisition
Global Tracking Network
minitrack system
optical tracking
range and range rate tracking
satellite tracking
space detection and tracking system
Space Flight Tracking and Data Network

steady flow

tracking stations

steady flow

GS fluid flow
 . **steady flow**
 . . Couette flow
 . . Hartmann flow
 . . Ringleb flow
RT Beltrami flow
continuity equation
critical flow
Crocco method
equilibrium flow
∞ flow
flow characteristics
flow geometry
flow stability
gas flow
heat transmission
hydrodynamic coefficients
laminar flow
liquid flow
low turbulence
mass flow
method of characteristics
multiphase flow
nonNewtonian flow
orifice flow
parallel flow
pipe flow
pressure gradients
quasi-steady states
single-phase flow
solids flow
steam flow
Stokes flow
subcritical flow
supercritical flow
turbulence
turbulent flow
two dimensional flow
uniform flow
unsteady flow

steady state

DEF The condition of a substance or system whose local physical and chemical properties do not vary with time.

RT ∞ equilibrium
fluid dynamics
metastable state
stability
state vectors
unsteady flow
unsteady state

steady state creep

GS mechanical properties
 . creep properties
 . . **steady state creep**
RT plastic flow
quasi-steady states

steady state flow

USE **equilibrium flow**

stealth bomber

USE **B-2 aircraft**

stealth technology

(added November 2001)

DEF Methods, materials, and designs for reducing the detectability of vehicles and other systems by radar or any other electronic or optical means.

UF *antidetection technology*
GS countermeasures
 . **stealth technology**
RT antiradar coatings
B-2 aircraft
camouflage
electronic countermeasures
electronic warfare
optical countermeasures
radar absorbers
radar cross sections

radar detection
radar signatures
spacecraft defense
target masking
target recognition
X-45 aircraft

steam

RT boilers
fog
superheating
thermodynamics
water
water vapor

steam flow

GS fluid flow
 . **steam flow**
RT critical flow
gas flow
laminar flow
mass flow
multiphase flow
orifice flow
pipe flow
pipelines
pressure gradients
single-phase flow
steady flow
subcritical flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

steam generators

USE **boilers**

steam turbines

GS turbomachinery
 . turbines
 . . **steam turbines**
RT axial flow turbines
combined cycle power generation
gas turbine engines
gas turbines
turbogenerators
two stage turbines

stearates

GS esters
 . **stearates**
RT soaps

stearothermophilus

GS microorganisms
 . bacteria
 . . Bacillus
 . . . **stearothermophilus**

steatite

USE **talc**

steel structures

GS welded structures
 . **steel structures**
RT composite structures
construction
rigid structures
∞ structures

steels

GS alloys
 . iron alloys
 . . **steels**
 . . . bainitic steel
 . . . carbon steels
 low carbon steels
 . . . chromium steels
 . . . Croloy
 . . . high strength steels
 maraging steels
 . . . nickel steels
 . . . stainless steels
 austenitic stainless steels
 ferritic stainless steels

. . . . martensitic stainless steels
RT austenite
bainite
cementite
ferrites
hydrogen embrittlement
martensite
mischmetal
pearlite

steep gradient aircraft

USE **V/STOL aircraft**

steepest ascent method

USE **steepest descent method**

steepest descent method

UF *steepest ascent method*
RT calculus of variations
dynamic programming
∞ methodology
minima
optimization
parameter identification
system identification

steepness

USE **slopes**

steerable antennas

DEF Directional antennas whose major lobe can be readily shifted in direction.

GS antennas
 . directional antennas
 . . **steerable antennas**
 . . . inertialess steerable antennas
arrays
 . antenna arrays
 . . **steerable antennas**
 . . . inertialess steerable antennas
RT beam steering
phased arrays
radar antennas

steering

GS **steering**
 . beam steering
RT ∞ control
control rockets
controllability
electron optics
∞ flight
focusing
suspension systems (vehicles)

steering rockets

USE **control rockets**

Stefan-Boltzmann law

DEF One of the radiation laws which states that the amount of energy radiated per unit time from a unit surface area of an ideal black body is proportional to the fourth power of the absolute temperature of the black body.

GS laws
 . radiation laws
 . . **Stefan-Boltzmann law**
RT electromagnetic radiation
emissivity
flux (rate)
heat radiators
Kirchhoff law of radiation
radiative heat transfer

steganography

(added April 2002)

DEF The art and science of communicating in a hidden manner, usually involving a message embedded in a carrier medium such as print, images, or computer files.

RT computer information security
cryptography

security

Stellar (star tracker)
USE **CCD star tracker**

stellar activity

DEF A general term encompassing stellar phenomena such as stellar flares, starspot activity, magnetic activity, nuclear fusion, etc.

- GS **stellar activity**
 - . solar activity
 - . . faculae
 - . . solar flares
 - . . solar prominences
 - . . solar storms
 - . . spicules
 - . . sunspots
 - . starspots
 - . . sunspots
 - . stellar flares
 - . . solar flares
- RT flare stars

- ∞ flares
 - magnetic disturbances
 - magnetohydrodynamics
 - photosphere
 - starquakes
 - stars
 - stellar convection
 - stellar interiors
 - stellar luminosity
 - stellar magnetic fields
 - stellar mass ejection
 - stellar oscillations
 - stellar physics
 - stellar radiation
 - sunspot cycle

stellar atmospheres

- GS environments
 - . extraterrestrial environments
 - . . **stellar atmospheres**
 - . . . chromosphere
 - . . . solar atmosphere
 - solar transition region
- RT ∞ atmospheres
 - cool stars
 - limb brightening
 - limb darkening
 - local thermodynamic equilibrium
 - metallic stars
 - pulsar magnetospheres
 - radiative transfer
 - satellite atmospheres
 - starspots
 - stellar convection
 - stellar coronas
 - stellar interiors
 - stellar magnetospheres

stellar color

- DEF The particular wavelengths of optical radiation emitted by a star.
- GS electromagnetic properties
 - . optical properties
 - . . color
 - . . . **stellar color**
- RT color-color diagram
 - color-magnitude diagram
 - stellar luminosity
 - stellar magnitude
 - stellar spectra
 - stellar spectrophotometry

stellar composition

- GS composition (property)
 - . chemical composition
 - . . **stellar composition**
- RT abundance
 - B stars
 - carbon stars
 - isotope ratios
 - stars
 - stellar models
 - stellar physics

stellar structure

stellar convection

- (added June 1992)
- GS convection
 - . **stellar convection**
 - . . solar convection (astronomy)
- RT Benard cells
 - convection currents
 - convective flow
 - dynamo theory
 - fluid flow
 - free convection
 - Rayleigh-Benard convection
 - stellar activity
 - stellar atmospheres
 - stellar interiors
 - stellar magnetic fields
 - stellar physics

stellar cores

- DEF The central portion of the interior of stars.
- GS cores
 - . **stellar cores**
 - stellar interiors
 - . **stellar cores**
- RT astrophysics
 - degenerate matter
 - gravitational collapse
 - planetary cores
 - solar interior
 - stars
 - stellar coronas
 - stellar structure

stellar coronas

- DEF Ionized regions about stars formed by x rays emitted during stellar flares. First discovery of a stellar corona was made aboard the Dutch ANS satellite (1975) when permanent x ray emission from the star SIRIUS was detected and measured.
- GS coronas
 - . **stellar coronas**
 - . . solar corona
 - . . . coronal holes
 - . . . coronal loops
- RT coronal mass ejection
 - ionization
 - Orion nebula
 - stellar atmospheres
 - stellar cores

stellar Doppler shift
USE **Doppler effect**

stellar envelopes

- UF *circumstellar matter*
- RT astrophysics
 - cool stars
- ∞ envelopes
 - interstellar matter
 - protoplanetary disks
 - R Coronae Borealis stars
 - shell stars
 - stellar mass accretion
 - stellar mass ejection
 - stellar structure
 - symbiotic stars
 - Wolf-Rayet stars

stellar evolution

- GS evolution (development)
 - . **stellar evolution**
 - . . star formation
 - . . stellar mass accretion
- RT asteroseismology
 - astrophysics
 - asymptotic giant branch stars
 - brown dwarf stars
 - color-magnitude diagram
 - cosmology
 - degenerate matter
 - galactic evolution
 - gravitational instability

- Hertzsprung-Russell diagram
- horizontal branch stars
- interstellar extinction
- late stars
- main sequence stars
- neutral currents
- planetary evolution
- Population III stars
- pre-main sequence stars
- protoplanetary disks
- protoplanets
- protostars
- red giant stars
- solar nebula
- solar system evolution
- star formation rate
- stellar interiors
- stellar physics
- subgiant stars

stellar fields

USE **star distribution**

stellar flares

- DEF Ejections of material from stars in eruptions that last from a few minutes to an hour or more.
- GS stellar activity
 - . **stellar flares**
 - . . solar flares
- RT cataclysmic variables
 - flare stars
- ∞ flares
 - stellar luminosity
 - stellar physics
 - stellar radiation

stellar gravitation

- GS gravitation
 - . **stellar gravitation**
 - . . solar gravitation
- RT gravitational binding energy
 - gravitational fields
 - gravitational instability
 - gravitational lenses
 - stars
 - stellar mass
 - stellar systems

stellar interiors

- DEF The subsurface portions of stars.
- GS **stellar interiors**
 - . solar interior
 - . stellar cores
- RT asteroseismology
 - astrophysics
 - convection
 - gravitational collapse
 - nuclear fusion
 - stars
 - stellar activity
 - stellar atmospheres
 - stellar convection
 - stellar evolution
 - stellar models
 - stellar physics
 - stellar structure

stellar luminosity

- GS electromagnetic properties
 - . optical properties
 - . . luminosity
 - . . . **stellar luminosity**
- RT brightness
 - brightness distribution
 - Hertzsprung-Russell diagram
 - horizontal branch stars
 - limb brightening
 - limb darkening
 - luminescence
 - mass to light ratios
 - red dwarf stars
 - red giant stars
 - starspots
 - stellar activity
 - stellar color

stellar magnetic fields

stellar flares
stellar parallax
stellar physics
Wolf-Rayet stars

stellar magnetic fields

GS magnetic fields
. **stellar magnetic fields**
. . solar magnetic field
RT electromagnetic fields
interstellar magnetic fields
magnetic field configurations
plasmas (physics)
pulsar magnetospheres
starspots
stellar activity
stellar convection
stellar magnetospheres

stellar magnetospheres

(added July 1988)
GS **stellar magnetospheres**
. pulsar magnetospheres
RT magnetic fields
∞ magnetospheres
stellar atmospheres
stellar magnetic fields

stellar magnitude

DEF The measure of the relative brightness of a star. Stellar magnitudes are expressed in a variety of ways, according to the method or process of observation or determination.
GS magnitude
. **stellar magnitude**
RT astronomy
color-magnitude diagram
∞ intensity
luminance
luminous intensity
red dwarf stars
stars
stellar color
stellar parallax

stellar mass

GS mass
. **stellar mass**
RT degenerate matter
galactic mass
main sequence stars
mass to light ratios
massive stars
novae
stellar gravitation
stellar temperature
supernovae
variable stars

stellar mass accretion

DEF Process by which a star accumulates matter as it moves through dense clouds of interstellar gas.
GS evolution (development)
. stellar evolution
. . **stellar mass accretion**
RT accretion disks
cosmology
dwarf novae
galactic evolution
gravitational effects
interstellar gas
interstellar matter
protostars
star formation
stellar envelopes
stellar physics
symbiotic stars
x ray binaries

stellar mass ejection

GS ejection
. **stellar mass ejection**
. . coronal mass ejection
RT asymptotic giant branch stars
cataclysmic variables

dwarf novae
magnetic clouds
novae
R Coronae Borealis stars
stellar activity
stellar envelopes
supernovae
variable stars
Wolf-Rayet stars

stellar models

GS models
. astronomical models
. . **stellar models**
RT astronomy
solar neutrinos
solar oscillations
stellar composition
stellar interiors
supermassive stars

stellar motions

GS **stellar motions**
. stellar orbits
. stellar oscillations
. . solar oscillations
. stellar rotation
. . solar rotation
RT companion stars
corotation
Doppler effect
Doppler-Fizeau effect
double stars
galactic rotation
Hipparcos satellite
∞ motion
sidereal time
stellar parallax
stellar systems

stellar occultation

GS occultation
. **stellar occultation**
RT asteroid detection
eclipsing binary stars
lunar occultation

stellar orbits

SN (EXCLUDES PLANETARY ORBITS)
GS orbits
. **stellar orbits**
stellar motions
. **stellar orbits**
RT celestial mechanics
Nemesis (star)
retrograde orbits

stellar oscillations

DEF Irregular fluctuations of the stellar atmospheres.
GS oscillations
. **stellar oscillations**
. . solar oscillations
stellar motions
. **stellar oscillations**
. . solar oscillations
RT asteroseismology
astronomical models
astronomy
astrophysics
atmospheric models
cataclysmic variables
Mira variables
stars
stellar activity
symbiotic stars
variable stars

stellar parallax

DEF The subtended angle at a star formed by the mean radius of the Earth's orbit; it indicates distance to a star.
GS parallax
. **stellar parallax**
RT astrometry
binary stars

Hipparcos satellite
solar parallax
stellar luminosity
stellar magnitude
stellar motions

stellar physics

DEF A term that encompasses the physical properties of stars, such as luminosity, size, mass, density, temperature, chemical composition, evolution, activity, etc.
GS astrophysics
. **stellar physics**
. . solar physics
RT asteroseismology
local thermodynamic equilibrium
nuclear astrophysics
nuclear fusion
∞ science
starquakes
stellar activity
stellar composition
stellar convection
stellar evolution
stellar flares
stellar interiors
stellar luminosity
stellar mass accretion
stellar radiation
stellar rotation
stellar structure
supernovae

stellar radiation

GS extraterrestrial radiation
. **stellar radiation**
. . stellar winds
RT cosmic rays
electromagnetic radiation
galactic radiation
gamma ray bursts
Herbig-Haro objects
interstellar extinction
interstellar radiation
light curve
microwave emission
polarized electromagnetic radiation
∞ radiation
radiative transfer
radio bursts
radio stars
solar radiation
starspots
stellar activity
stellar flares
stellar physics
x ray stars

stellar rotation

GS gyration
. rotation
. . **stellar rotation**
. . . solar rotation
stellar motions
. **stellar rotation**
. . solar rotation
RT angular momentum
corotation
planetary rotation
starquakes
stellar physics

stellar seismology

(added March 2001)
USE **asteroseismology**

stellar spectra

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **stellar spectra**
. . . . solar spectra
RT absorption spectra
astronomical spectroscopy
color-color diagram
continuous spectra

- cool stars
 - emission spectra
 - F stars
 - G stars
 - Herbig-Haro objects
 - Hertzsprung-Russell diagram
 - horizontal branch stars
 - infrared spectra
 - K stars
 - line spectra
 - molecular spectra
 - peculiar stars
 - Seyfert galaxies
 - stellar color
 - symbiotic stars
 - ultraviolet spectra
 - visible spectrum
 - x ray spectra
- stellar spectrophotometry**
- GS optical measurement
 - . photometry
 - .. astronomical photometry
 - ... **stellar spectrophotometry**
 - .. spectrophotometry
 - ... **stellar spectrophotometry**
 - spectroscopy
 - . astronomical spectroscopy
 - .. **stellar spectrophotometry**
 - . spectrophotometry
 - .. **stellar spectrophotometry**
 - RT color-color diagram
 - horizontal branch stars
 - infrared photometry
 - peculiar stars
 - spectroscopic telescopes
 - stellar color
 - superhumps (astronomy)
- stellar structure**
- RT chromosphere
 - coronal holes
 - dense plasmas
 - metallic stars
 - peculiar stars
 - solar atmosphere
 - solar corona
 - solar interior
 - starquakes
 - stellar composition
 - stellar cores
 - stellar envelopes
 - stellar interiors
 - stellar physics
 - ∞ structures
 - supermassive stars
- stellar systems**
- SN (EXCLUDES PLANETARY SYSTEMS)
 - DEF Gravitationally bound groups of stars.
 - SN (Excludes planetary systems).
 - GS celestial bodies
 - . **stellar systems**
 - RT binary stars
 - galactic clusters
 - galactic rotation
 - galactic structure
 - galaxies
 - gravitational collapse
 - gravitational effects
 - interacting galaxies
 - Nemesis (star)
 - Sigma Orionis
 - star clusters
 - star distribution
 - stellar gravitation
 - stellar motions
 - triple stars
- stellar temperature**
- GS temperature
 - . **stellar temperature**
 - RT cool stars
 - stellar mass
- symbiotic stars
- stellar winds**
- GS extraterrestrial radiation
 - . stellar radiation
 - .. **stellar winds**
 - particles
 - . charged particles
 - .. energetic particles
 - ... plasmas (physics)
 - space plasmas
 - **stellar winds**
 - . corpuscular radiation
 - .. energetic particles
 - ... plasmas (physics)
 - space plasmas
 - **stellar winds**
 - RT chromosphere
 - cosmic plasma
 - galactic winds
 - intergalactic media
 - interstellar gas
 - radiation pressure
 - solar wind
 - solar wind velocity
- stellators**
- DEF Experimental thermonuclear devices where containment in a magnetic field is achieved by closing the field upon itself and thus allowing the particles to perform endless spiral motion.
 - GS nuclear reactors
 - . fusion reactors
 - .. **stellators**
 - RT helical windings
 - heliotrons
 - magnetohydrodynamics
 - pinch effect
 - plasma control
 - thermal instability
 - thermonuclear power generation
 - thermonuclear reactions
 - toroidal plasmas
- Stellite (trademark)**
- UF *Haynes Stellite*
 - RT chromium alloys
 - cobalt alloys
 - tungsten alloys
- stems**
- RT plants (botany)
- stencil processes**
- RT printing
 - reproduction (copying)
- step faults*
- USE **geological faults**
- step functions**
- GS functions (mathematics)
 - . **step functions**
 - RT dynamic response
 - frequency response
 - intervals
 - ramp functions
 - reaction time
 - ∞ steps
- step recovery diodes**
- DEF Varactors in which forward voltage injects carriers across the junction, but before the carriers can combine, the voltage reverses and carriers return to their origin in a group. The result is an abrupt cessation of reverse current and a harmonic rich waveform.
 - GS electronic equipment
 - . diodes
 - .. semiconductor diodes
 - ... junction diodes
 - **step recovery diodes**
 - . solid state devices
 - .. semiconductor devices
 - ... junction diodes
- ... **step recovery diodes**
 - RT switching
- stepped leaders**
- (added August 1999)
 - GS electric current
 - . electric discharges
 - .. lightning
 - ... leaders (meteorology)
 - **stepped leaders**
- steppes**
- GS landforms
 - . **steppes**
 - RT arid lands
 - desertification
 - grasslands
 - plains
- stepping motors**
- DEF Motors whose rotations are in short and essentially uniform angular movements rather than a continuous motion.
 - GS electromechanical devices
 - . electric motors
 - .. **stepping motors**
 - motors
 - . electric motors
 - .. **stepping motors**
 - RT actuators
 - servocontrol
 - servomechanisms
- stepping switches**
- GS switches
 - . electric switches
 - .. **stepping switches**
- ∞ **steps**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT backward facing steps
 - programming (scheduling)
 - stairsteps
 - step functions
- stereochemistry**
- DEF Chemistry dealing with the arrangement of atoms and molecules in three dimensions.
 - RT carbohydrates
 - ∞ chemistry
 - enantiomers
 - isomers
 - optical activity
 - spatial distribution
 - x ray analysis
- stereography*
- USE **stereophotography**
- stereolithography*
- USE **lithography**
- stereophonics**
- DEF The use of two sound channels to mimic normal hearing. Stereophonic satellite broadcasting has now been developed.
 - RT acoustics
 - hearing
- stereophotography**
- UF *stereography*
 - stereoscopic photography*
 - GS imagery
 - . photography
 - .. stereoscopy
 - ... **stereophotography**
 - RT aerial photography
 - black and white photography
 - cinematography
 - color photography
 - Mapsat
 - photogrammetry

stereoscopic vision

SPOT (French satellite)

stereoscopic photography
USE **stereophotography**

stereoscopic vision
GS vision
. **stereoscopic vision**
RT binocular vision
stereoscopy

stereoscopy
GS imagery
. photography
. . **stereoscopy**
. . . stereophotography
RT stereoscopic vision

stereotelevision
GS communication equipment
. **stereotelevision**
telecommunication
. **stereotelevision**
television systems
. **stereotelevision**
RT closed circuit television
color television
communicating
educational television
satellite television
spacecraft television

sterilization
GS cleaning
. **sterilization**
. . chemical sterilization
. . spacecraft sterilization
RT air purification
antifouling
antiseptics
bactericides
baking
decontamination
fumigation
gnotobiotics
housekeeping (spacecraft)
ionizing radiation
mercury lamps
pasteurizing
purification
ultraviolet radiation

sterilization effects
RT chemical effects
corrosion
decontamination
degradation
∞ deoxygenation
∞ effects
radiation effects
spacecraft sterilization
temperature effects
thermal degradation

sterns
USE **afterbodies**

sternum
GS anatomy
. musculoskeletal system
. . bones
. . . **sternum**
RT thorax

steroids
GS organic compounds
. lipids
. . **steroids**
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydrocorticosteroid
. cortisone
. glucocorticoids
. estrogens
. prostaglandins

RT antibiotics
hormones

stethoscopes
GS medical equipment
. **stethoscopes**
RT physicians

stiction
(added May 2003)
DEF Adhesion between two bodies in contact due to surface forces.
GS surface properties
. adhesion
. . **stiction**
RT friction
interfacial energy

Stieltjes integral
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Stieltjes integral**
RT probability theory

stiff structures
USE **rigid structures**

stiffening
RT reinforcement (structures)
ribs (supports)
webs (supports)

stiffness
DEF The ratio of change of force (or torque) to the corresponding change in translational (or rotational) displacement of an elastic element.
GS mechanical properties
. **stiffness**
RT bending
deformation
flexibility
modulus of elasticity
∞ rigidity
softness
structural stability

stiffness matrix
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **stiffness matrix**
RT structural analysis
structural members

stigmatism
GS electromagnetic properties
. optical properties
. . **stigmatism**
RT astigmatism
focusing
lens design
lenses

stilbene
GS organic compounds
. hydrocarbons
. . **stilbene**
RT dyes
hexanitrostilbene

stills
GS separators
. **stills**
RT concentrators
distillation equipment

stimulants
GS drugs
. **stimulants**
. . atropine
. . caffeine
. . central nervous system stimulants
. . norepinephrine
RT aminophylline
epinephrine

strychnine

stimulated emission
GS emission
. **stimulated emission**
RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
coherent electromagnetic radiation
coherent light
electron emission
electron pumping
gallium arsenide lasers
gas lasers
gas masers
HCN lasers
interstellar masers
lasers
light emission
masers
nuclear pumping
optical pumping
particle emission
photoelectric emission
population inversion
rapid ballistics identification
rare gas-halide lasers
self sustained emission
surface emitting lasers
TEA lasers
two-wavelength lasers
ultrashort pulsed lasers
ultraviolet lasers

stimulated emission devices
UF *quantum generators*
GS **stimulated emission devices**
. lasers
. . airborne lasers
. . argon lasers
. . atmospheric lasers
. . carbon lasers
. . chemical lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . chemical oxygen-iodine lasers
. . continuous wave lasers
. . distributed feedback lasers
. . free electron lasers
. . gamma ray lasers
. . gas lasers
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium-neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas-halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
. . gasdynamic lasers
. . glass lasers
. . high power lasers
. . . Nova Laser System
. . . Shiva laser system
. . infrared lasers
. . injection lasers
. . . quantum cascade lasers
. . . iodine lasers
. . . chemical oxygen-iodine lasers
. . liquid lasers
. . metal vapor lasers
. . neodymium lasers
. . nuclear pumped lasers
. . organic lasers
. . . dye lasers
. . plasmadynamic lasers
. . pulsed lasers
. . . Q switched lasers

- . . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- . . Raman lasers
- . . ring lasers
- . . semiconductor lasers
- . . . aluminum gallium arsenide lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . YLF lasers
- . . solar-pumped lasers
- . . solid state lasers
- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- . . . YAG lasers
- . . . YLF lasers
- . . spaceborne lasers
- . . surface emitting lasers
- . . tunable lasers
- . . two-wavelength lasers
- . . waveguide lasers
- . . . fiber lasers
- . . x ray lasers
- . masers
- . . gas masers
- . . . hydrogen masers
- . . interstellar masers
- . . proton masers
- . . traveling wave masers
- . . water masers

- RT amplifiers
coherent electromagnetic radiation
diffraction radiation
electron pumping
∞ generators
laser arrays
laser cavities
laser pumping
laser weapons
lasing
light transmission
nuclear pumping
optical pumping
rapid ballistics identification
subharmonic generators
transient oscillations

stimulation

- GS **stimulation**
. auditory stimuli
. sensory stimulation
- RT activation
activation (biology)
actuation
cloud seeding
gas injection
initiation
pressurizing
starting

∞ **stimuli**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arousal
auditory stimuli
caloric stimuli
electric stimuli
motivation
psychological factors
subliminal stimuli
visual stimuli
zeitgebers

Stirling cycle

DEF A theoretical heat engine cycle in which heat is added at constant volume, followed by isothermal expansion with heat addition. The heat is then rejected at constant volume, followed by isothermal compression with heat rejection.

GS cycles

- . thermodynamic cycles
- . . **Stirling cycle**
- RT Carnot cycle
solar dynamic power systems
Stirling engines

Stirling engines

- GS engines
. external combustion engines
- . . **Stirling engines**
. piston engines
- RT . . **Stirling engines**
automobile engines
engine design
engine tests
free-piston engines
linear alternators
Stirling cycle

stirring

- RT aeration
dispersing
friction stir welding
mixers
suspending (mixing)
swirling

stishovite

- DEF A mineral consisting essentially of silicon trioxide.
- GS chalcogenides
. oxides
. . dioxides
. . . silicon dioxide
. . . . quartz
. . . . **stishovite**
. . silicon oxides
. . . silicon dioxide
. . . . quartz
. . . . **stishovite**
minerals
. quartz
. . **stishovite**
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . **stishovite**
- RT coesite
Earth crust
Earth mantle
rutile

stochastic processes

- DEF Ordered sets of observations in one or more dimensions, each being considered as a sample of one item from a probability distribution. Used for Poisson process.
- UF *poisson process*
- GS **stochastic processes**
. Markov processes
. . Markov chains
. random processes
. . random walk
- RT ∞ applications of mathematics
attractors (mathematics)
autoregressive moving average
chaos
coherence coefficient
decision theory
differential games
ergodic process
events
Fokker-Planck equation
game theory
information theory
Kakutani theorem
Kalman-Schmidt filtering
martingales
mathematical models
Monte Carlo method
operations research
probability theory
queueing theory
random errors
random noise

- random signals
- state estimation
- statistical analysis
- ∞ statistics
- time dependence
- time functions
- time series analysis

stockpiling

- RT accumulations
collection
inventory management
logistics
reserves
∞ storage
strategic materials

stoichiometry

- RT chemical reactions
- ∞ chemistry
∞ composition
composition (property)
formulations
material balance
phase diagrams

Stokes flow

- GS fluid flow
. incompressible flow
. . **Stokes flow**
. viscous flow
. . **Stokes flow**
- RT Oseen approximation
steady flow

∞ **Stokes law**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT laws
Maxwell equation
Stokes law (fluid mechanics)
Stokes theorem (vector calculus)

Stokes law (fluid mechanics)

- RT settling
∞ Stokes law
viscosity

Stokes law of radiation

- GS laws
. radiation laws
. . **Stokes law of radiation**
- RT incident radiation
luminescence
- ∞ radiation
wavelengths

Stokes theorem (vector calculus)

- GS algebra
. vector spaces
. . **Stokes theorem (vector calculus)**
theorems
. **Stokes theorem (vector calculus)**
- RT ∞ Stokes law

Stokes-Beltrami equation

- RT ∞ equations
Laplace equation
stream functions (fluids)

STOL aircraft

USE **short takeoff aircraft**

stomach

- GS anatomy
. digestive system
. . gastrointestinal system
. . . **stomach**
- RT abdomen

stones (rocks)

USE **rocks**

stony meteorites

- GS celestial bodies

stony-iron meteorites

- . meteorites
 - . . . **stony meteorites**
 - achondrites
 - Bondoc meteorite
 - chassignites
 - Kapoeta achondrite
 - nakhlites
 - Norton County achondrite
 - shergottites
 - SNC meteorites
 - ureilites
 - carbonaceous meteorites
 - carbonaceous chondrites
 - Alais meteorite
 - Allende meteorite
 - Cold Bokkeveld meteorite
 - Ivuna meteorite
 - Murchison meteorite
 - Murray meteorite
 - Orgueil meteorite
 - Tonk meteorite
 - ureilites
 - chondrites
 - Bruderheim meteorite
 - carbonaceous chondrites
 - Alais meteorite
 - Allende meteorite
 - Cold Bokkeveld meteorite
 - Ivuna meteorite
 - Murchison meteorite
 - Murray meteorite
 - Orgueil meteorite
 - Tonk meteorite
 - Harleton meteorite
 - Hvittis chondrite
 - Okhansk meteorite
 - Pantar chondrites
 - Pribram meteorite
 - tektites
 - australites
 - bediasites
 - Tungusk meteorite
 - RT coesite
 - iron meteorites
 - Lazarev meteorite
 - meteoritic composition
 - meteoritic microstructures
 - schreibersite
 - stony-iron meteorites
- stony-iron meteorites**
(added December 1988)
- GS celestial bodies
 - . meteorites
 - . . **stony-iron meteorites**
 - RT iron meteorites
 - stony meteorites
- stopcocks*
USE **cocks**
- stopping**
- UF *terminating*
 - GS **stopping**
 - . thrust termination
 - RT blocking
 - cancellation
 - closing
 - constrictions
 - containment
 - damping
 - deceleration
 - delay
 - elimination
 - ∞ holding
 - ∞ inhibition
 - optimization
 - plugs
 - prevention
 - ∞ reduction
 - retarding
 - sealing
- stopping power**
- RT absorbers (materials)
 - absorption cross sections
- ∞ cross sections
 - density (mass/volume)
 - neutron cross sections
 - radiation absorption
 - radiation shielding
 - scattering cross sections
- storable propellants**
- GS consumables (spacecraft)
 - . **storable propellants**
 - propellants
 - RT . **storable propellants**
 - cryogenic rocket propellants
 - gaseous rocket propellants
 - gelled rocket propellants
 - ground support equipment
 - high temperature propellants
 - hydrocarbon fuels
 - hypergolic rocket propellants
 - liquid rocket propellants
 - propellant additives
 - propellant decomposition
 - propellant evaporation
 - propellant sensitivity
 - propellant storability
 - propellant storage
 - rocket propellants
 - solid propellants
 - space storage
- ∞ **storage**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT buffer storage
 - computer storage devices
 - core storage
 - cryogenic fluid storage
 - data storage
 - disposal
 - document storage
 - energy storage
 - external store separation
 - external stores
 - fluid filled shells
 - handling equipment
 - inventories
 - inventory controls
 - inventory management
 - ion storage
 - liquid filled shells
 - logistics
 - logistics management
 - magnetic storage
 - materials handling
 - missile silos
 - missile storage
 - packaging
 - pipelines
 - preserving
 - propellant storage
 - racks (frames)
 - recording
 - reserves
 - retaining
 - safety
 - space storage
 - stockpiling
 - storage tanks
 - stowage (onboard equipment)
 - underground storage
 - waste disposal
 - wing-fuselage stores
- storage batteries**
- SN (RECHARGEABLE BATTERIES)
 - UF *secondary batteries*
 - GS electrochemical cells
 - . electric batteries
 - . . **storage batteries**
 - . . . lead acid batteries
 - . . . nickel cadmium batteries
 - . . . nickel hydrogen batteries
 - . . . nickel zinc batteries
 - . . . silver cadmium batteries
 - . . . silver hydrogen batteries
 - . . . silver zinc batteries
- . . . zinc-bromide batteries
 - . . . zinc-chlorine batteries
 - RT alkaline batteries
 - battery chargers
 - charge efficiency
 - dry cells
 - electrolytes
 - lithium batteries
 - metal air batteries
 - nickel iron batteries
 - nonaqueous electrolytes
 - primary batteries
 - pulse charging
 - regenerative fuel cells
- storage rings (particle accelerators)**
- UF *electron ring accelerators*
 - GS particle accelerators
 - . cyclic accelerators
 - . . synchrotrons
 - . . . **storage rings (particle accelerators)**
 - RT ∞ accelerators
 - Q values (nuclear physics)
 - ∞ rings
 - superconducting super collider
- storage stability**
- GS life (durability)
 - . **storage stability**
 - stability
 - . **storage stability**
 - RT decomposition
 - liquid sloshing
 - long term effects
 - static stability
 - surface stability
 - thermal stability
- storage tanks**
- GS tanks (containers)
 - . **storage tanks**
 - RT cryogenic fluid storage
 - cryogenic tanks
 - cylindrical tanks
 - expulsion bladders
 - external tanks
 - fuel tanks
 - pipelines
 - pressure vessels
 - propellant tanks
 - space storage
 - spherical tanks
 - ∞ storage
 - tank geometry
 - underground storage
 - wing-fuselage stores
- store release*
USE **external store separation**
- storm damage**
- GS damage
 - . **storm damage**
 - RT cyclones
 - flood control
 - floods
 - gusts
 - hailstorms
 - hurricanes
 - landslides
 - precipitation (meteorology)
 - rainstorms
 - snow cover
 - storm surges
 - storms
 - thunderstorms
 - tornadoes
 - tropical storms
 - typhoons
 - wind (meteorology)
- storm enhancement**
- GS weather modification
 - . **storm enhancement**
 - RT climatology

- hailstorms
- precipitation (meteorology)
- rainstorms
- snowstorms
- storms
- storms (meteorology)
- storm suppression**
 - GS weather modification
 - . **storm suppression**
 - RT climatology
 - hailstorms
 - ice prevention
 - precipitation (meteorology)
 - rainstorms
 - snowstorms
 - storms
- storm surges**
 - RT coasts
 - hurricanes
 - ocean surface
 - oceanography
 - storm damage
 - storms (meteorology)
 - surges
- storms**
 - GS **storms**
 - . ionospheric storms
 - . . . sudden ionospheric disturbances
 - . . . magnetic storms
 - . . . polar substorms
 - . . . noise storms
 - . . . solar storms
 - . . . storms (meteorology)
 - . . . cyclones
 - hurricanes
 - Anna hurricane
 - typhoons
 - downbursts
 - microbursts (meteorology)
 - dust storms
 - hailstorms
 - rainstorms
 - thunderstorms
 - snowstorms
 - tornadoes
 - tropical storms
 - hurricanes
 - Anna hurricane
 - typhoons
 - RT climatology
 - cold fronts
 - ∞ disturbances
 - flood damage
 - floods
 - fronts (meteorology)
 - gusts
 - precipitation (meteorology)
 - snow cover
 - solar terrestrial interactions
 - storm damage
 - storm enhancement
 - storm suppression
 - sudden storm commencements
 - warm fronts
 - weather forecasting
 - wind (meteorology)
- storms (meteorology)**
 - GS storms
 - . **storms (meteorology)**
 - . . . cyclones
 - hurricanes
 - Anna hurricane
 - typhoons
 - downbursts
 - microbursts (meteorology)
 - dust storms
 - hailstorms
 - rainstorms
 - thunderstorms
 - snowstorms
 - tornadoes
 - tropical storms
- . . . hurricanes
- Anna hurricane
- typhoons
- RT Alpine meteorology
- climatology
- cyclogenesis
- flight conditions
- flood control
- flood damage
- flood predictions
- floods
- ground wind
- gusts
- hail
- ice
- meteorological parameters
- meteorology
- precipitation (meteorology)
- snow
- snow cover
- squalls
- storm enhancement
- storm surges
- watersheds
- weather forecasting
- wind (meteorology)
- StormSat satellite**
 - DEF A synchronous Earth-pointing satellite for severe storms studies. Used for Severe Storms Observing Satellite.
 - UF *Severe Storms Observing Satellite*
 - GS artificial satellites
 - . synchronous satellites
 - . . **StormSat satellite**
 - RT NASA programs
- Stoss-and-Lee topography*
- USE **glacial drift**
- STOVL aircraft**
 - (added July 1991)
 - UF *short takeoff & vertical landing aircraft*
 - RT fighter aircraft
 - lift augmentation
 - powered lift aircraft
 - short takeoff aircraft
 - V/STOL aircraft
 - vertical landing
- stowage (onboard equipment)**
 - RT logistics
 - onboard equipment
 - portable equipment
 - provisioning
 - space logistics
 - space rations
 - ∞ storage
- straight wings*
- USE **rectangular wings**
- strain aging*
- USE **precipitation hardening**
- strain distribution**
 - GS distribution (property)
 - . **strain distribution**
 - RT crack propagation
 - deformation
 - elastic deformation
 - fracture mechanics
 - plastic deformation
 - strain measurement
 - strain rate
 - stress concentration
 - stress distribution
 - stress-strain relationships
- strain energy methods**
 - GS structural analysis
 - . energy methods
 - . . **strain energy methods**
 - RT ∞ energy
 - ∞ methodology
- seismic energy
- strain energy release rate**
 - GS rates (per time)
 - . **strain energy release rate**
 - RT elastic deformation
 - elastic properties
 - relaxation (mechanics)
 - strain rate
 - stress relaxation
- strain fatigue*
- USE **fatigue (materials)**
- strain gage accelerometers**
 - GS measuring instruments
 - . accelerometers
 - . . **strain gage accelerometers**
 - RT pressure gages
- strain gage balances**
 - GS measuring instruments
 - . indicating instruments
 - . . weight indicators
 - . . . **strain gage balances**
 - RT pressure gages
- strain gages**
 - DEF Instruments used to measure the strain of distortion in a member or test specimen (such as a structural part) subjected to a force.
 - GS measuring instruments
 - . **strain gages**
 - RT cable force recorders
 - deformeters
 - elastometers
 - extensometers
 - flight load recorders
 - mechanical measurement
 - piezoelectric gages
 - pressure gages
 - rosette shapes
 - shock measuring instruments
 - strain measurement
 - stress measurement
 - temperature inversions
 - tensometers
 - transducers
 - weight indicators
- strain hardening**
 - GS hardening (materials)
 - . work hardening
 - . . **strain hardening**
 - RT aging (materials)
 - aging (metallurgy)
 - precipitation hardening
 - residual stress
 - shot peening
 - stress relieving
 - temperature inversions
- strain measurement**
 - RT ∞ measurement
 - shearography
 - smart structures
 - strain distribution
 - strain gages
 - strain rate
 - stress-strain diagrams
 - stress-strain relationships
 - structural strain
- strain rate**
 - GS rates (per time)
 - . **strain rate**
 - RT impact tests
 - loading rate
 - mechanical properties
 - Portevin-le Chatelier effect
 - strain distribution
 - strain energy release rate
 - strain measurement

straits

temperature inversions

strain softening
USE **plastic deformation**

straits
DEF Relatively narrow waterways connecting two larger bodies of water.
GS passageways
. **straits**
. . . Torres Strait
RT canals
Gibraltar
lakes
seas
water
waterways

strakes
GS structural members
. **strakes**
RT aerodynamic configurations
hulls (structures)
longerons
metal strips
rectangular panels
reinforcement (structures)
water tunnel tests

strands
RT cables (ropes)
ceramic fibers
cordage
fibers
∞ filaments
mesh
yarns

strange attractors
DEF Abstract geometrical objects in theoretical physics that represent motion which is bounded but not periodic. Their detailed behavior is sensitive to external perturbations, but their overall qualitative behavior is stable. They are of particular interest in the study of turbulence.
GS attractors (mathematics)
. **strange attractors**
RT chaos
fractals
imbeddings (mathematics)
iterative solution
nonlinear systems
numerical stability
perturbation theory
∞ physics
recursive functions
state vectors
theoretical physics
turbulence

strangeness
RT hyperons
mesons
parity
quantum mechanics

strapdown inertial guidance
GS guidance (motion)
. inertial guidance
. . . **strapdown inertial guidance**
RT inertial navigation

straps
RT anchors (fasteners)
∞ bands
clamps
fasteners
holders

strata
UF *stratified layers*
GS **strata**
. substrates
RT anticlines
bedrock
beds (geology)

crossbedding (geology)
flat layers
folds (geology)
geosynclines
∞ layers
stratification
synclines
underground acoustics

strategic materials
DEF Critical raw materials whose foreign source of supply is uncertain and subject to potential cutoff. Examples of such materials are chromium, cobalt, manganese, and platinum group metals.
RT chromium
cobalt
manganese
∞ materials
metals
stockpiling
technology assessment

strategy
RT decision theory
deployment
electronic warfare
game theory
∞ operations
operations research
risk
warfare

stratification
GS **stratification**
. atmospheric stratification
. intercalation
RT anticlines
bedrock
crossbedding (geology)
flat layers
folds (geology)
geosynclines
∞ layers
static stability
strata
stratified flow
stratigraphy
synclines
temperature gradients
thermoclines

stratified flow
GS fluid flow
. laminar flow
. . . **stratified flow**
RT baroclinic waves
baroclinity
coaxial flow
flow geometry
shear flow
stratification

stratified layers
USE **strata**

stratigraphy
DEF That branch of geology which treats of the formation, composition, sequence, and correlation of the stratified rocks as part of the Earth's crust.
GS **stratigraphy**
. magnetostratigraphy
RT anticlines
bedrock
beds (geology)
crossbedding (geology)
∞ formation
formations
geochronology
geology
geophysics
geosynclines
hydrogeology
mines (excavations)
paleontology

particle tracks
petrology
plateaus
regolith
rocks
sedimentary rocks
stratification
synclines
wells

stratocumulus clouds
GS clouds (meteorology)
. **stratocumulus clouds**
RT cumulus clouds
stratus clouds

Stratofortress aircraft
USE **B-52 aircraft**

Stratojet aircraft
USE **B-47 aircraft**

stratopause
SN (ALTITUDE APPROXIMATELY 50 KM)
GS Earth atmosphere
. middle atmosphere
. . . stratosphere
. . . **stratopause**
RT mesopause
mesosphere

Stratoscope 1 telescope
USE **stratoscope telescopes**

Stratoscope 2 telescope
USE **stratoscope telescopes**

stratoscope telescopes
UF *Stratoscope 1 telescope*
Stratoscope 2 telescope
GS telescopes
. spectroscopic telescopes
. . . **stratoscope telescopes**
RT balloons
reflecting telescopes
refracting telescopes

stratosphere
SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 15 AND 50 KM)
DEF Region of the atmosphere between the troposphere and mesosphere, having a lower boundary about 8 km. at the poles to 15 km. at the equator and an upper boundary of about 50 km.
GS Earth atmosphere
. middle atmosphere
. . . **stratosphere**
. . . ozonosphere
. . . stratopause
RT chemosphere
homosphere
ice clouds
isothermal layers
stratospheric warming

stratosphere radiation
DEF Any infrared radiation involved in the complex infrared exchange continually proceeding within the stratosphere.
GS atmospheric radiation
. **stratosphere radiation**
RT corpuscular radiation
electromagnetic radiation
∞ radiation
sky radiation
tropospheric radiation

Stratospheric Aerosol & Gas Experiment
USE **SAGE satellite**

Stratospheric Observatory for IR Astronomy
USE **SOFIA (airborne observatory)**

stratospheric warming
(added October 1988)

DEF A temperature rise in the global stratosphere.
 GS heating
 . atmospheric heating
 . . **stratospheric warming**
 RT anomalous temperature zones
 atmospheric heat budget
 atmospheric temperature
 climate change
 global warming
 isothermal layers
 stratosphere

Stratotanker aircraft
 USE **C-135 aircraft**

stratus clouds

GS clouds (meteorology)
 . **stratus clouds**
 RT fog
 nimbostratus clouds
 stratocumulus clouds

streak cameras

DEF Cameras for measuring radiation pulses by deflection of an electron beam.
 GS optical equipment
 . cameras
 . . **streak cameras**
 photographic equipment
 . cameras
 . . **streak cameras**
 RT camera shutters
 cinematography
 lenses

streak photography

DEF The process of taking a time exposure photograph of a tracer particle in a fluid; the photograph reveals the motion of each tracer particle in the form of a streak which may be interpreted as a velocity vector.
 GS imagery
 . photography
 . . **streak photography**
 RT cameras
 electro-optical photography
 high speed cameras
 imaging techniques

stream functions (fluids)

RT incompressible flow
 potential theory
 Stokes-Beltrami equation
 streams
 two dimensional flow

streamline flow

USE **laminar flow**

streamlined bodies

GS symmetrical bodies
 . **streamlined bodies**
 . . fairings
 RT aerodynamic configurations
 airfoils
 axisymmetric bodies
 ∞ bodies
 bodies of revolution
 missile bodies
 ogives
 slender bodies
 streamlining
 towed bodies

streamlining

RT acoustic streaming
 air flow
 aircraft design
 aircraft structures
 airfoil profiles
 airfoils
 fairings
 fluid dynamics
 friction reduction
 helicopter design

hydrofoils
 ∞ profiles
 skin friction
 streamlined bodies

streams

DEF Bodies of flowing water, great or small, contained within channels as well as unconfined fluids such as air.
 GS **streams**
 . gas streams
 RT air flow
 alluvium
 aquifers
 Delaware River Basin (US)
 fluid flow
 gas flow
 hydrology
 hydrology models
 International Hydrological Decade
 Lake Erie
 Lake Huron
 Lake Michigan
 Lake Ontario
 Lake Superior
 limnology
 meanders
 rapids
 reservoirs
 rivers
 stream functions (fluids)
 surface water
 Susquehanna River Basin
 (MD-NY-PA)
 wadis

streets

RT highways
 intersections
 pavements
 roads
 ∞ tunnels
 urban planning
 urban research

∞ strength

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cold strength
 compressive strength
 creep rupture strength
 creep strength
 dispersion strengthening
 electric field strength
 fiber strength
 field strength
 flexural strength
 fracture strength
 high strength
 impact strength
 load carrying capacity
 mechanical properties
 microyield strength
 muscular strength
 notch strength
 residual strength
 shear strength
 tensile strength
 weld strength
 yield strength

strength of materials

USE **mechanical properties**

streptococcus

GS microorganisms
 . bacteria
 . . **streptococcus**

streptomycetes

GS microorganisms
 . bacteria
 . . **streptomycetes**

streptomycin

GS drugs

. antibiotics
 . . **streptomycin**

stress (biology)

DEF The effect of a physiological, psychological, or mental load on a biological organism which causes fatigue and tends to degrade proficiency.

GS **stress (biology)**
 . acceleration stresses (physiology)
 . . centrifuging stress
 . flight stress (biology)
 . . space flight stress
 . plant stress
 . stress (psychology)
 RT acclimatization
 anxiety
 deprivation
 exercise physiology
 fatigue (biology)
 pathological effects
 psychological effects

stress (physiology)

GS **stress (physiology)**
 . acceleration stresses (physiology)
 . . centrifuging stress
 RT acceleration (physics)
 acclimatization
 aeroembolism
 angina pectoris
 anoxia
 biodynamics
 deprivation
 exercise physiology
 fatigue (biology)
 flight stress (biology)
 gravitational physiology
 homeostasis
 hyperkinesia
 hypoxia
 lower body negative pressure
 muscular fatigue
 Palmar sweat index
 physiology
 pressure breathing
 space flight stress
 stress (psychology)
 underwater physiology

stress (psychology)

UF *mental stress*
 GS stress (biology)
 . **stress (psychology)**
 RT fatigue (biology)
 flight stress (biology)
 mental performance
 Palmar sweat index
 psychological effects
 psychological factors
 psychology
 space flight stress
 space psychology
 stress (physiology)
 workloads (psychophysiology)

stress analysis

UF *stress calculations*
 GS **stress analysis**
 . Schwartz method
 . x ray stress analysis
 RT Airy function
 ∞ analyzing
 bending moments
 bending theory
 boundary element method
 Castigliano variational theorem
 combined stress
 construction
 creep analysis
 Donnell equations
 energy methods
 Euler buckling
 ∞ flight stress
 fringe multiplication
 inelastic stress

stress concentration

influence coefficient
interference fit
isoparametric finite elements
mechanical engineering
Michell theorem
Moire fringes
moments of inertia
NASTRAN
photoelastic analysis
photoelasticity
Reissner theory
Saint Venant principle
shallow shell equations
S-N diagrams
stresses
structural analysis
structural design
structural engineering
temperature inversions

stress calculations

USE **stress analysis**

stress concentration

DEF In structures, a localized area of high stress.

GS distribution (property)
. stress distribution
. . **stress concentration**

RT combined stress
concentrating
crack initiation
cracking (fracturing)
Elber equation
fatigue (materials)
fatigue tests
force distribution
fringe multiplication
hole distribution (mechanics)
hole geometry (mechanics)
impact strength
impact tests
loads (forces)
mechanical properties
micromechanics
Moire fringes
moment distribution
notch strength
notch tests
perforated plates
perforated shells
plane stress
Saint Venant principle
strain distribution
stresses
stress-strain relationships
structural strain

stress corrosion

GS corrosion
. **stress corrosion**
. . stress corrosion cracking
RT cracking (fracturing)
fretting corrosion
intergranular corrosion
metal fatigue
salt spray tests
transgranular corrosion

stress corrosion cracking

GS corrosion
. stress corrosion
. . **stress corrosion cracking**
fracturing
. cracking (fracturing)
. . **stress corrosion cracking**
RT corrosion tests
crack closure
crack initiation
crack propagation
metal fatigue

stress cycles

DEF A variation of stress with time, repeated periodically and identically.
GS cycles

. **stress cycles**
mechanical properties

. **stress cycles**
RT cyclic loads
Elber equation
fatigue (materials)
fatigue life
fatigue tests
S-N diagrams
stresses
variable amplitude loading

stress distribution

UF *stress fields*
GS distribution (property)
. **stress distribution**
. . stress concentration
RT crack propagation
force distribution
fracture mechanics
interlaminar stress
strain distribution
stress intensity factors
stress-strain relationships
transverse loads

stress fields

USE **stress distribution**

stress functions

UF *von Mises theory*
GS functions (mathematics)
. **stress functions**
RT fracturing

stress intensity factors

DEF Load-induced variables in tension, compression, and/or shear which are conducive to crack initiation and propagation and fatigue fracture in materials.

RT bending theory
combined stress
crack initiation
crack propagation
cracking (fracturing)
edge cracks
force distribution
fracture mechanics
hole geometry (mechanics)
loads (forces)
notch strength
plane strain
stress distribution
tensile stress

stress measurement

GS mechanical measurement
. **stress measurement**
. . x ray stress measurement
RT deformeters
extensometers
photoelastic analysis
shearography
S-N diagrams
strain gages
tensometers
vibration measurement

stress propagation

GS transmission
. **stress propagation**
RT elastic waves
plastic deformation
∞ propagation

stress ratio

DEF The ratio of the minimum stress to the maximum stress occurring in one stress cycle.

GS mechanical properties
. **stress ratio**
ratios
. **stress ratio**
RT fatigue (materials)
fatigue tests
modular ratios
pressure ratio

S-N diagrams

stress relaxation

DEF The decrease in stress after a given time at constant strain.

GS mechanical properties
. **stress relaxation**
relaxation (mechanics)
. **stress relaxation**
RT anelasticity
Bordoni peaks
creep analysis
creep diagrams
creep properties
ductility
fatigue (materials)
plastic deformation
plastic flow
plastic memory
plastic properties
∞ recovery
residual stress
shear properties
strain energy release rate
stresses
temperature inversions

stress relieving

GS heat treatment
. **stress relieving**
relieving
. **stress relieving**
RT alloys
annealing
fatigue (materials)
∞ recovery
residual stress
stabilization
strain hardening
tempering

stress rupture strength

USE **creep rupture strength**

stress tensors

DEF Complete sets of stress components in a solid or fluid medium.

GS algebra
. tensors
. . **stress tensors**
RT continuum mechanics
elastic properties
fracture mechanics
plastic properties
structural design

stress waves

GS elastic waves
. **stress waves**
RT acoustic emission
shock layers
shock waves
stresses
temperature inversions
wave propagation
∞ waves

stressed-skin structures

RT monocoque structures
skin (structural member)
spherical shells
∞ structures
thin walled shells

stresses

DEF The forces per unit area of a body that tends to produce a deformation.

GS **stresses**
. axial stress
. combined stress
. critical loading
. interlaminar stress
. photostresses
. plane stress
. residual stress
. Reynolds stress

- . shear stress
 - . . torsional stress
 - . tensile stress
 - . thermal stresses
 - . triaxial stresses
 - . vibrational stress
 - RT buckling
 - cracks
 - creep properties
 - destruction
 - fatigue (materials)
 - ∞ flight stress
 - impact
 - loads (forces)
 - mechanical properties
 - microyield strength
 - prestressing
 - rolling contact loads
 - shear properties
 - stress analysis
 - stress concentration
 - stress cycles
 - stress relaxation
 - stress waves
 - structural strain
 - temperature inversions
 - transverse loads
 - triboluminescence
 - x ray stress analysis
 - yield strength
- stress-strain diagrams**
- GS diagrams
 - . **stress-strain diagrams**
 - RT axial strain
 - Hookes law
 - inelastic stress
 - modulus of elasticity
 - Poisson ratio
 - Portevin-le Chatelier effect
 - proportional limit
 - shape memory alloys
 - shear properties
 - strain measurement
 - structural strain
 - yield strength
- stress-strain relationships**
- DEF Relationship between the stress or load on a structure, structural member, or a specimen, and the strain or deformation that follows.
 - RT elastic deformation
 - interlaminar stress
 - plane strain
 - plastic deformation
 - Portevin-le Chatelier effect
 - ∞ relationships
 - residual stress
 - strain distribution
 - strain measurement
 - stress concentration
 - stress distribution
 - structural strain
 - yield strength
- stress-strain-time relations**
- RT creep diagrams
 - Newtonian fluids
 - thermoviscoelasticity
- stretch forming**
- RT bulging
 - cold working
 - ∞ drawing
 - metal drawing
 - metal working
 - stretching
- stretchers**
- GS medical equipment
 - . **stretchers**
 - RT first aid
- stretching**
- UF *dilatation*
- RT cold working
 - deep drawing
 - dilatational waves
 - distortion
 - ∞ drawing
 - ductility
 - elastic deformation
 - elongation
 - metal working
 - plastic deformation
 - stretch forming
 - tempering
 - ∞ tension
 - winding
- striation**
- DEF A fracture surface marking consisting of a separation of the advancing crack front into separate fracture planes.
 - RT grooving
 - musculoskeletal system
 - riblets
 - shatter cones
- string theory**
- SN (DOES NOT INCLUDE CLASSICAL STRING THEORY)
 - UF *superstring theory*
 - RT bosons
 - cosmology
 - field theory (physics)
 - gauge theory
 - grand unified theory
 - gravitation theory
 - large-scale structure of the universe
 - particle theory
 - quantum chromodynamics
 - quantum theory
 - relativity
 - supersymmetry
 - theoretical physics
 - unified field theory
- stringers**
- DEF Slender, lightweight, lengthwise fill-in structural members in a rocket body, or the like, serving to reinforce and give shape to the skin.
 - GS structural members
 - . **stringers**
 - RT longerons
 - reinforcement (structures)
 - structural stability
- strings**
- RT assemblies
 - cordage
- strip**
- ∞ **strip**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT airports
 - circuits
 - display devices
 - metal strips
 - ribbons
 - runways
- strip mining**
- GS mining
 - . **strip mining**
 - RT clays
 - coal
 - Earth resources
 - excavation
 - exploitation
 - lunar mining
 - mineral deposits
 - mines (excavations)
 - soils
- strip transmission lines**
- GS transmission lines
 - . **strip transmission lines**
 - . . microstrip transmission lines
 - RT antenna feeds
 - metal strips
- transmission circuits
- stripping**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT anodic stripping
 - ion stripping
 - paint removal
 - peeling
 - stripping (distillation)
- stripping (distillation)**
- GS distillation
 - . **stripping (distillation)**
 - RT ∞ separation
 - ∞ stripping
 - vaporizing
- stroboscopes**
- GS optical equipment
 - . **stroboscopes**
 - RT ballistic cameras
 - high speed cameras
 - optical measurement
 - synchronism
 - time measurement
 - velocity measurement
- stroke volume**
- (added March 1991)
 - GS output
 - . cardiac output
 - . . **stroke volume**
 - RT blood volume
 - cardiovascular system
 - heart function
 - heart rate
 - physiological tests
- strokes**
- ∞ **strokes**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT cerebral vascular accidents
 - thermodynamic cycles
- stroking tests**
- GS vibration tests
 - . damping tests
 - . . **stroking tests**
 - RT dynamic response
 - frequency response
 - modal response
 - shock spectra
 - structural vibration
 - ∞ tests
 - transient response
 - wave excitation
- strong interactions (field theory)**
- DEF One of the fundamental interactions of elementary particles, primarily responsible for nuclear forces and other interactions among hadrons.
 - GS particle interactions
 - . elementary particle interactions
 - . . high energy interactions
 - . . . **strong interactions (field theory)**
 - RT field theory (physics)
 - grand unified theory
 - ∞ interactions
 - nuclear interactions
 - nuclear reactions
 - quantum chromodynamics
 - standard model (particle physics)
 - ∞ theories
 - weak interactions (field theory)
- strongly coupled plasmas**
- DEF Highly compressed and collisional plasmas with electron densities of order 10 to the 24th power per cubic centimeter or more. The mean kinetic and potential energies of particles in the plasma are typically of the same order of magnitude.

strontium

- GS particles
 - . charged particles
 - . energetic particles
 - . plasmas (physics)
 - collisional plasmas
 - **strongly coupled plasmas**
 - dense plasmas
 - **strongly coupled plasmas**
 - . corpuscular radiation
 - . energetic particles
 - . plasmas (physics)
 - collisional plasmas
 - **strongly coupled plasmas**
 - dense plasmas
 - **strongly coupled plasmas**
- RT controlled fusion
- cosmic plasma
- coupled modes
- dusty plasmas
- high temperature plasmas
- inertial confinement fusion
- magnetohydrodynamic stability
- plasma compression
- plasma conductivity
- plasma density
- plasma equilibrium
- plasma focus

strontium

- GS chemical elements
 - . **strontium**
 - . strontium isotopes
 - . . . strontium 85
 - . . . strontium 87
 - . . . strontium 89
 - . . . strontium 90
- metals
 - . **strontium**
 - . strontium isotopes
 - . . . strontium 85
 - . . . strontium 87
 - . . . strontium 89
 - . . . strontium 90

strontium 85

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes
 - **strontium 85**
 - . . . strontium isotopes
 - **strontium 85**
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 85**
- metals
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 85**

strontium 87

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . strontium isotopes
 - **strontium 87**
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 87**
- metals
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 87**

strontium 88

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes
 - **strontium 88**

strontium 89

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes

- **strontium 89**
- . . . strontium isotopes
- **strontium 89**
- . strontium
- . . . strontium isotopes
- . . . **strontium 89**
- metals
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 89**

strontium 90

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes
 - **strontium 90**
 - . . . strontium isotopes
 - **strontium 90**
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 90**
- metals
 - . strontium
 - . . . strontium isotopes
 - . . . **strontium 90**

strontium bromides

- GS halogen compounds
 - . bromine compounds
 - . . . bromides
 - . . . **strontium bromides**
 - . halides
 - . . . bromides
 - . . . **strontium bromides**
 - . metal halides
 - . . . **strontium bromides**
- strontium compounds
 - . **strontium bromides**

strontium compounds

- GS **strontium compounds**
 - . strontium bromides
 - . strontium fluorides
 - . strontium oxides
 - . strontium sulfides
 - . strontium titanates
 - . strontium zirconates
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds

strontium fluorides

- GS halogen compounds
 - . fluorine compounds
 - . . . fluorides
 - . . . metal fluorides
 - **strontium fluorides**
 - . halides
 - . . . fluorides
 - . . . metal fluorides
 - **strontium fluorides**
 - . metal halides
 - . . . metal fluorides
 - **strontium fluorides**
- strontium compounds
 - . **strontium fluorides**

strontium isotopes

- GS chemical elements
 - . nuclides
 - . isotopes
 - . . . **strontium isotopes**
 - strontium 85
 - strontium 87
 - strontium 89
 - strontium 90
 - . strontium
 - . . . **strontium isotopes**
 - . . . strontium 85
 - . . . strontium 87
 - . . . strontium 89
 - . . . strontium 90
- metals
 - . strontium
 - . . . **strontium isotopes**

- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90

strontium oxides

(added June 1992)

- GS chalcogenides
 - . oxides
 - . . . metal oxides
 - . . . **strontium oxides**
- strontium compounds
 - . **strontium oxides**
- RT ∞ alkaline earth compounds
- BSCCO superconductors
- ∞ chemical compounds
- high temperature superconductors
- ∞ metal compounds
- mixed oxides
- superconductors (materials)

strontium sulfides

- GS chalcogenides
 - . sulfides
 - . . . inorganic sulfides
 - . . . **strontium sulfides**
- strontium compounds
 - . **strontium sulfides**
- sulfur compounds
 - . sulfides
 - . . . inorganic sulfides
 - . . . **strontium sulfides**

strontium titanates

- GS strontium compounds
 - . **strontium titanates**
- titanium compounds
 - . titanates
 - . . . **strontium titanates**

strontium zirconates

- GS strontium compounds
 - . **strontium zirconates**
- zirconium compounds
 - . zirconates
 - . . . **strontium zirconates**

Strouhal number

DEF A nondimensional number occurring in the study of periodic or quasiperiodic variations in the wake of objects immersed in a fluid stream.

- GS dimensionless numbers
 - . **Strouhal number**
 - ratios
 - . **Strouhal number**
- RT backwash
- buffeting
- flow characteristics
- flow distribution
- flow stability
- Froude number
- oscillating flow
- slipstreams
- turbulence
- unsteady flow
- vortices
- wakes

structural analysis

- UF *membrane analogy*
- membrane theory*
- GS **structural analysis**
 - . dynamic structural analysis
 - . . . flutter analysis
 - . . . energy methods
 - . . . Bernstein energy principle
 - . . . strain energy methods
 - . . . equilibrium methods
 - . . . matrix methods
- RT ∞ analyzing
- Castigliano variational theorem
- construction
- continuum modeling
- creep analysis
- design optimization

- Euler-Bernoulli beams
 - hole geometry (mechanics)
 - influence coefficient
 - J integral
 - loading moments
 - megamechanics
 - Michell theorem
 - Mindlin plates
 - modular ratios
 - moment distribution
 - NASTRAN
 - orbital space tests
 - patch tests
 - plate theory
 - shape functions
 - shape optimization
 - solid mechanics
 - stiffness matrix
 - stress analysis
 - Trefftz method
- structural basins**
- UF *basins*
 - closed basins*
 - depressions (topography)*
 - sinks (geology)*
 - GS landforms
 - structural basins**
 - .. cirques (landforms)
 - .. Great Basin (US)
 - .. Kalahari Basin (Africa)
 - .. karst
 - .. sinkholes
 - .. kettles (geology)
 - .. Lake Champlain Basin (NY-VT)
 - .. river basins
 - ... Atchafalaya River Basin (LA)
 - ... Chena River Basin (AK)
 - ... Columbia River Basin (ID-OR-WA)
 - ... Delaware River Basin (US)
 - ... Feather River Basin (CA)
 - ... Missouri River Basin (US)
 - ... Susquehanna River Basin (MD-NY-PA)
 - ... Wabash River Basin (IL-IN-OH)
 - ... wadis
 - .. watersheds
 - .. Williston Basin (North America)
 - RT geology
 - seamounts
 - valleys
- structural beams*
- USE **beams (supports)**
- structural design**
- GS **structural design**
 - . pressure vessel design
 - RT aeroelastic research wings
 - aircraft design
 - airframe materials
 - architecture
 - breakwaters
 - computer aided design
 - construction
 - ∞ design
 - design optimization
 - helicopter design
 - lofting
 - materials selection
 - missile design
 - plant design
 - product development
 - satellite design
 - shape optimization
 - ship hulls
 - shock spectra
 - space station structures
 - spacecraft design
 - spacecraft structures
 - stress analysis
 - stress tensors
 - substructures
 - tensegrity structures
 - underwater structures
- weight reduction
- structural design criteria**
- GS criteria
 - . **structural design criteria**
 - RT aerodynamic loads
 - axial compression loads
 - axial loads
 - bending moments
 - compression loads
 - cyclic loads
 - ∞ design
 - design optimization
 - dynamic loads
 - geotechnical engineering
 - gust loads
 - impact loads
 - landing loads
 - loads (forces)
 - mass distribution
 - moment distribution
 - pressure distribution
 - random loads
 - rolling contact loads
 - shape optimization
 - shock loads
 - static loads
 - thrust loads
 - transient loads
 - vibratory loads
- structural dynamics*
- USE **dynamic structural analysis**
- structural engineering**
- RT aeronautical engineering
 - aerospace engineering
 - construction
 - ∞ engineering
 - geotechnical engineering
 - megamechanics
 - modular ratios
 - smart structures
 - stress analysis
- structural failure**
- GS failure
 - . **structural failure**
 - RT bending
 - buckling
 - collapse
 - cracking (fracturing)
 - creep properties
 - deformation
 - fatigue (materials)
 - fracturing
 - load carrying capacity
 - mechanical properties
 - system failures
- structural fatigue*
- USE **fatigue (materials)**
- structural foundations*
- USE **foundations**
- structural influence coefficients**
- UF *SIC (coefficient)*
 - GS coefficients
 - . influence coefficient
 - .. **structural influence coefficients**
- structural materials*
- USE **construction materials**
- structural members**
- GS **structural members**
 - . beams (supports)
 - .. box beams
 - .. cantilever beams
 - .. curved beams
 - .. Euler-Bernoulli beams
 - .. I beams
 - .. rectangular beams
 - .. Timoshenko beams
 - . columns (supports)
 - .. tapered columns
 - .. girders
 - .. longerons
 - .. membrane structures
 - .. skin (structural member)
 - .. plates (structural members)
 - .. anisotropic plates
 - .. annular plates
 - .. cantilever plates
 - .. circular plates
 - .. corrugated plates
 - .. elastic plates
 - .. end plates
 - .. flat plates
 - .. girder webs
 - .. metal plates
 - .. boiler plate
 - .. Mindlin plates
 - .. orthotropic plates
 - .. perforated plates
 - .. plastic plates
 - .. porous plates
 - .. rectangular plates
 - .. reinforced plates
 - .. thick plates
 - .. thin plates
 - .. saddles (supports)
 - .. strakes
 - .. stringers
 - .. struts
 - .. trusses
 - .. wing panels
 - RT aircraft construction materials
 - airframe materials
 - bars
 - ∞ channels
 - clamped structures
 - ∞ components
 - concretes
 - construction
 - ∞ construction materials
 - fasteners
 - foundations
 - guy wires
 - joints (junctions)
 - masonry
 - pylon mounting
 - pylons
 - rectangular panels
 - reinforcement (structures)
 - rods
 - slabs
 - smart structures
 - stiffness matrix
 - ∞ structures
 - substructures
 - thick walls
- structural properties (geology)**
- UF *lineament*
 - GS geology
 - . **structural properties (geology)**
 - RT Earth core
 - Earth crust
 - Earth mantle
 - Earth planetary structure
 - Earth surface
 - fissures (geology)
 - geophysics
 - Great Basin (US)
 - hydrology
 - inliers (landforms)
 - landforms
 - neotectonics
 - planetary composition
 - plates (tectonics)
 - ∞ properties
 - rock mechanics
 - shatter cones
 - sinkholes
 - subduction (geology)
- structural reliability**
- GS reliability
 - . **structural reliability**
 - RT aircraft reliability
 - component reliability

structural stability

- cumulative damage
- quality control
- structural rigidity*
- USE **structural stability**
- structural stability**
 - UF *structural rigidity*
 - GS mechanical properties
 - . dimensional stability
 - . . **structural stability**
 - . . . shell stability
 - stability
 - . static stability
 - . . dimensional stability
 - . . . **structural stability**
 - shell stability
 - RT aircraft stability
 - aspect ratio
 - combustion vibration
 - hybrid structures
 - load carrying capacity
 - longerons
 - plastic properties
 - reinforcement (structures)
 - resonance testing
 - ∞ rigidity
 - rotor stator interactions
 - stiffness
 - stringers
 - wave resistance
- structural strain**
 - RT axial strain
 - bending
 - buckling
 - cracking (fracturing)
 - deflection
 - deformation
 - elastic deformation
 - failure
 - load carrying capacity
 - moments of inertia
 - plastic deformation
 - prestressing
 - reinforcement (structures)
 - rupturing
 - shear strain
 - shearing
 - strain measurement
 - stress concentration
 - stresses
 - stress-strain diagrams
 - stress-strain relationships
 - system failures
 - temperature inversions
 - twisting
 - volumetric strain
 - warpage
- structural vibration**
 - GS vibration
 - . **structural vibration**
 - . . bending vibration
 - . . breathing vibration
 - . . flutter
 - . . . panel flutter
 - . . . subsonic flutter
 - . . . supersonic flutter
 - . . . transonic flutter
 - . . linear vibration
 - . . missile vibration
 - . . self induced vibration
 - . . . panel flutter
 - . . . subsonic flutter
 - . . . supersonic flutter
 - . . . transonic flutter
 - . . torsional vibration
 - RT airfoil oscillations
 - clamped structures
 - earthquake resistant structures
 - flexible spacecraft
 - flutter analysis
 - gyrodampers
 - Mindlin plates
 - random vibration
- resonant vibration
- rotor dynamics
- shaking
- shock spectra
- stroking tests
- vibration tests
- structural weight**
 - GS weight (mass)
 - . **structural weight**
 - RT mass ratios
 - materials selection
 - NEW MOONS project
 - weight analysis
 - weight reduction
- structured grids (mathematics)**
 - (added May 1995)
 - DEF In computational fluid dynamics, grid systems where the flowfield is discretized into quadrilateral elements for two-dimensional fields, and hexahedral elements for three-dimensional fields. In this type of grid system the grid points can be associated with grid lines in an ordered manner.
 - GS coordinates
 - . computational grids
 - . . **structured grids (mathematics)**
 - . . . multiblock grids
 - RT computational fluid dynamics
 - grid generation (mathematics)
 - ∞ nets
 - smoothing
 - unstructured grids (mathematics)
- structured programming**
 - (added December 1989)
 - GS computer programming
 - . **structured programming**
 - RT computer aided design
 - computer programs
 - data structures
 - ∞ programming
 - programming languages
 - software engineering
- ∞ **structures**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT aircraft structures
 - architecture
 - atomic structure
 - breakwaters
 - bridges (structures)
 - clamped structures
 - composite structures
 - concrete structures
 - configuration interaction
 - crystal structure
 - Earth planetary structure
 - earthquake resistant structures
 - expandable structures
 - fine structure
 - folding structures
 - foundations
 - frames
 - galactic structure
 - honeycomb structures
 - hulls (structures)
 - hybrid structures
 - hyperfine structure
 - inflatable structures
 - intramolecular structures
 - isotensoid structures
 - large space structures
 - membrane structures
 - microstructure
 - missile structures
 - molecular structure
 - monocoque structures
 - planar structures
 - redundant components
 - rigid structures
 - ring structures
 - sandwich structures
 - smart structures
- space erectable structures
- space station structures
- spacecraft structures
- steel structures
- stellar structure
- stressed-skin structures
- structural members
- substructures
- tanks (containers)
- tensegrity structures
- towers
- trusses
- unimolecular structures
- variable geometry structures
- welded structures
- wooden structures
- struts**
 - GS structural members
 - . **struts**
 - RT chassis
 - columns (supports)
 - frames
 - pylons
 - supports
 - trusses
- strychnine**
 - GS bases (chemical)
 - . alkaloids
 - . . **strychnine**
 - . nitrogen compounds
 - . alkaloids
 - . . **strychnine**
 - . organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **strychnine**
 - . poisons
 - . **strychnine**
 - RT stimulants
- STS*
- USE **space transportation system**
- STS-1*
 - USE **Space Transportation System 1 flight**
- STS-2*
 - USE **Space Transportation System 2 flight**
- STS-3*
 - USE **Space Transportation System 3 flight**
- STS-4*
 - USE **Space Transportation System 4 flight**
- students**
 - UF *trainees*
 - RT education
 - instructors
 - learning
 - training evaluation
 - universities
- studies*
- USE **investigation**
- studs (structural members)**
 - RT anchors (fasteners)
 - bolts
 - columns (supports)
 - fasteners
 - holders
 - lugs
 - pins
 - screws

walls

zero sound

white dwarf stars

stunt flying

USE **aerobatics**

subcarrier waves

USE **carrier waves**

subgiant stars

DEF Celestial bodies whose position on the Hertzsprung-Russell (H-R) diagram is intermediate between that of the main-sequence stars and normal giants of the same spectral type.

Sturm-Liouville operator

USE **Sturm-Liouville theory**

subcircuits

USE **circuits**

GS celestial bodies

. stars

. . **subgiant stars**

RT carbon stars

dwarf stars

giant stars

late stars

M stars

main sequence stars

stellar evolution

superdwarf stars

Sturm-Liouville theory

UF *Sturm-Liouville operator*

GS analysis (mathematics)

. real variables

. . **Sturm-Liouville theory**

RT differential equations

Lamb waves

Lame wave equations

∞ theories

subcontracts

DEF Any contracts, other than prime contracts, entered into by a prime contractor or subcontractor calling for supplies or services required for the performance of any one or more prime contracts.

GS contracts

. **subcontracts**

RT agreements

contract management

contract negotiation

contractors

estimates

grants

options

procurement

subgravity

USE **microgravity**

subgroups

UF *sublattices*

GS algebra

. group theory

. . homomorphisms

. . . **subgroups**

RT matrices (mathematics)

number theory

probability theory

set theory

subdivisions

subsidiaries

styluses

USE **pens**

stypnates

GS explosives

. **stypnates**

RT ∞ chemical compounds

∞ initiators

initiators (explosives)

subcritical flow

DEF Open channel flow having a low velocity and a Froude number less than unity (also described as tranquil or streaming flow).

GS fluid flow

. **subcritical flow**

RT critical flow

flow characteristics

gas flow

liquid flow

multiphase flow

orifice flow

pipe flow

pressure gradients

single-phase flow

steady flow

steam flow

supercritical flow

turbulent flow

uniform flow

unsteady flow

subharmonic generators

RT damping

∞ generators

harmonic generators

harmonic oscillators

harmonics

oscillators

signal generators

stimulated emission devices

styrenes

GS **styrenes**

. polystyrene

. . styrofoam (trademark)

RT Buna (trademark)

styrofoam (trademark)

GS plastics

. polystyrene

. . **styrofoam (trademark)**

styrenes

. polystyrene

. . **styrofoam (trademark)**

vinyl polymers

. polystyrene

. . **styrofoam (trademark)**

RT foams

∞ polymers

subcritical mass

GS mass

. **subcritical mass**

RT critical mass

nuclear fission

nuclear reactions

SUBIC project

USE **Submarine Integrated Control project**

subjects

GS classifications

. **subjects**

RT handbooks

information retrieval

textbooks

sublattices

USE **lattices (mathematics) subgroups**

sublayers

USE **substrates**

sublethal dosage

GS dosage

. **sublethal dosage**

RT drugs

sublimation

DEF The transition of a substance directly from the solid state to the vapor state, or vice versa, without passing through the intermediate liquid state.

GS phase transformations

. vaporizing

. . **sublimation**

RT ablation

beneficiation

condensing

crystallization

desorption

diffusion

evaporation

gas-metal interactions

gas-solid interfaces

phase change materials

subassemblies

DEF Assemblies that are component parts of larger assemblies. Used for subcircuits.

GS assemblies

. **subassemblies**

RT accessories

∞ components

subdivisions

RT ∞ division

∞ groups

∞ sections

set theory

subgroups

subsidiaries

subduction (geology)

DEF Descent of one tectonic unit under another. Most commonly used for descent of a slab of lithosphere, but appropriate at any scale.

GS geology

. **subduction (geology)**

RT Earth mantle

earthquakes

lithosphere

neotectonics

plates (tectonics)

seismology

structural properties (geology)

tectonics

subdwarf stars

GS celestial bodies

. stars

. . **subdwarf stars**

RT dwarf stars

main sequence stars

red dwarf stars

subaudible frequencies

GS frequencies

. **subaudible frequencies**

range (extremes)

. frequency ranges

. . **subaudible frequencies**

RT acoustic frequencies

frequency distribution

harmonics

subliminal stimuli

- purification
- pyrometallurgy
- refining
- ∞ separation
- vapor pressure

subliminal stimuli

- RT psychology
- sensory stimulation
- ∞ stimuli

submarine cables

- GS transmission lines
 - . submarine cables
- RT ∞ cables
 - coaxial cables
 - communication cables
 - power lines

Submarine Integrated Control project

- UF *SUBIC project*
- GS programs
 - . projects
 - . . Submarine Integrated Control project
- RT ∞ control

submarine propulsion

- GS propulsion
 - . marine propulsion
 - . . underwater propulsion
 - . . . submarine propulsion

submarines

- DEF Any self-powered underwater craft or towed underwater barges and arrays.
- GS water vehicles
 - . ships
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . underwater vehicles
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
- RT antiship missiles
- antiship warfare
- antisubmarine warfare
- ∞ military vehicles
- navy
- nuclear powered ships
- Seafarer project
- ship hulls
- submerged bodies

submerged bodies

- GS **submerged bodies**
 - . diving (underwater)
 - . underwater research laboratories
- RT submarines
- torpedoes
- towed bodies
- underwater engineering
- underwater photography
- underwater structures
- underwater vehicles
- water immersion

submerging

- UF *immersion*
- RT baths
- dipping
- quenching (cooling)
- sinking
- ∞ soaking
- water immersion
- weightlessness simulation
- wetting

submersible aircraft

- RT ∞ aircraft
 - antisubmarine warfare aircraft
 - light aircraft
- ∞ military aircraft

- reconnaissance aircraft
- research aircraft
- water takeoff and landing aircraft

Submillimeter Wave Astronomy Satellite

(added November 2000)

DEF A NASA Small Explorer Project (SMEX) satellite designed to study the chemical composition, energy balance, and structure of interstellar gas clouds and the processes that lead to the formation of stars and planets. Its primary objective is to survey water, molecular oxygen, carbon, and isotopic carbon monoxide emission in a variety of galactic star forming regions.

- UF *Explorer 74 satellite*

- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Submillimeter Wave Astronomy Satellite**
 - . . Explorer satellites
 - . . . **Submillimeter Wave Astronomy Satellite**
 - . . small scientific satellites
 - . . . **Submillimeter Wave Astronomy Satellite**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Submillimeter Wave Astronomy Satellite**
 - interstellar chemistry
 - interstellar matter
 - molecular clouds
 - spaceborne astronomy
 - star formation
 - submillimeter waves

- RT interstellar chemistry
- interstellar matter
- molecular clouds
- spaceborne astronomy
- star formation
- submillimeter waves

submillimeter waves

- SN (BELOW 1 MILLIMETER)
- GS electromagnetic radiation
 - . radio waves
 - . . short wave radiation
 - . . . **submillimeter waves**
- RT beams (radiation)
- electromagnetic noise
- far infrared radiation
- frequencies
- Large Deployable Reflector
- microwaves
- millimeter waves
- Submillimeter Wave Astronomy Satellite
- wavelengths

subminiaturization

- GS miniaturization
 - . **subminiaturization**
- RT electronic modules
- microminiaturization
- miniature electronic equipment
- printed circuits

suborbital flight

- RT ∞ flight
 - manned space flight
 - orbits
 - parabolic flight
 - rocket flight
 - space flight
 - weightlessness

subreflectors

- RT Cassegrain antennas
- conductors
- reflector antennas
- reflectors
- scanners

Subroc missile

- GS missiles
 - . ballistic missiles
 - . . **Subroc missile**
 - . surface to surface missiles

- . . fleet ballistic missiles
- . . . **Subroc missile**
 - . underwater to surface missiles
 - . . **Subroc missile**
 - RT underwater trajectories

subroutine libraries (computers)

- GS computer programs
 - . computer systems programs
 - . . **subroutine libraries (computers)**
 - RT subroutines

subroutines

- DEF A set of instructions necessary to direct a computer to carry out a well defined mathematical or logical operation; a subunit of a routine, usually coded in such a manner that it can be treated as a black box by the routine using it.
- GS computer programs
 - . **subroutines**
 - data conversion routines
 - . **subroutines**
 - RT compilers
 - parsing algorithms
 - subroutine libraries (computers)
 - user manuals (computer programs)

subsets (mathematics)

- USE **set theory**

subsidence

- RT isostasy
- mines (excavations)
- settling

subsidiaries

- RT ∞ division
- ∞ sections
- subdivisions
- subgroups

∞ subsonic aircraft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT ∞ aircraft
 - flying platforms
 - general aviation aircraft
 - GETOL aircraft
 - gliders
 - ground effect machines
 - helicopters
 - jet aircraft
 - light aircraft
 - paragliders
 - passenger aircraft
 - rotary wing aircraft
 - short takeoff aircraft
 - supersonic aircraft
 - tandem wing aircraft
 - training aircraft
 - transport aircraft
 - turboprop aircraft
 - utility aircraft
 - vertical takeoff aircraft
 - water takeoff and landing aircraft

subsonic flow

- DEF Flow of a fluid, as air over an airfoil, at speeds less than acoustic velocity.
- GS fluid flow
 - . **subsonic flow**
 - RT aerodynamics
 - compressible flow
 - flow velocity
 - gas flow
 - incompressible flow
 - Karman vortex street
 - Ringleb flow
 - transonic flow

subsonic flutter

- GS vibration
 - . structural vibration
 - . . flutter
 - . . . **subsonic flutter**

- .. self induced vibration
 - ... **subsonic flutter**
- RT transonic flutter
- subsonic speed**
- SN (LESS THAN MACH 1)
- GS rates (per time)
- . **subsonic speed**
 - velocity
 - . **subsonic speed**
- RT acoustic velocity
- low speed
- transonic speed
- subsonic wind tunnels**
- GS test facilities
- . wind tunnels
 - .. low speed wind tunnels
 - ... **subsonic wind tunnels**
- RT blowdown wind tunnels
- hypersonic wind tunnels
- rectangular wind tunnels
- supersonic wind tunnels
- transonic wind tunnels
- substances*
- USE **materials**
- substitutes**
- UF *substitution*
- RT alternatives
- replacing
- variations
- substitution*
- USE **substitutes**
- substrates**
- UF *sublayers*
- GS strata
- . **substrates**
- RT coatings
- laminates
- ∞ layers
- metallizing
- photomasks
- plating
- ply orientation
- primers (coatings)
- substructures**
- RT floors
- foundations
- structural design
- structural members
- ∞ structures
- supports
- undercarriages
- walls
- subtraction**
- GS number theory
- . **subtraction**
- RT arithmetic
- computation
- Gaussian elimination
- subtropical regions*
- USE **temperate regions**
- tropical regions**
- suburban areas**
- RT cities
- land use
- megalopolises
- regional planning
- residential areas
- rural areas
- subzero temperature**
- GS temperature
- . **subzero temperature**
- RT absolute zero
- atmospheric temperature
- cold acclimatization
- cold tolerance
- cold weather
- Success project**
- GS programs
- . projects
 - .. **Success project**
- weapon systems
- . **Success project**
- succinimides**
- GS nitrogen compounds
- . amides
 - .. **succinimides**
 - . imides
 - .. **succinimides**
- sucrose**
- GS organic compounds
- . carbohydrates
 - .. sugars
 - ... **sucrose**
- suction**
- RT evacuating (vacuum)
- pressure effects
- pressure gradients
- vacuum
- vacuum apparatus
- vacuum pumps
- Sud Aviation aircraft**
- GS **Sud Aviation aircraft**
- . Alouette helicopters
 - .. SA-330 helicopter
 - .. SE-3160 helicopter
 - . Concorde aircraft
 - . SA-321 helicopter
 - . SE-210 aircraft
- RT ∞ aircraft
- Sud Aviation SA-321 helicopter*
- USE **SA-321 helicopter**
- Sud Aviation SA-330 helicopter*
- USE **SA-330 helicopter**
- Sud Aviation SE-210 aircraft*
- USE **SE-210 aircraft**
- Sud Aviation SE-3160 helicopter*
- USE **SE-3160 helicopter**
- Sudan**
- GS nations
- . **Sudan**
- RT Africa
- sudden enhancement of atmospheric**
- GS electromagnetic interference
- . radio frequency interference
 - .. electromagnetic noise
 - ... atmospherics
 - ... **sudden enhancement of atmospheric**
- atmospherics**
- sudden ionospheric disturbances**
- DEF Complex combinations of sudden changes in the conditions of the ionosphere and the effects of these changes. Used for geomagnetic crotchets and SID (ionospheric disturbances).
- UF *geomagnetic crotchets*
- SID (ionospheric disturbances)*
- GS ionospheric disturbances
- . ionospheric storms
 - .. **sudden ionospheric disturbances**
- storms
- . ionospheric storms
 - .. **sudden ionospheric disturbances**
- RT ∞ disturbances
- magnetic disturbances
- magnetic storms
- solar activity effects
- traveling ionospheric disturbances
- sudden storm commencements**
- RT magnetic disturbances
- magnetic storms
- solar activity effects
- solar corpuscular radiation
- solar flares
- storms
- sugar beets**
- GS farm crops
- . **sugar beets**
 - plants (botany)
 - . **sugar beets**
- RT agriculture
- botany
- crop growth
- crop vigor
- Earth resources
- farmlands
- irrigation
- seeds
- sugars
- sugar cane**
- GS farm crops
- . **sugar cane**
 - plants (botany)
 - . **sugar cane**
- RT agriculture
- botany
- crop growth
- crop vigor
- Earth resources
- farmlands
- ∞ food
- irrigation
- seeds
- sugars**
- GS organic compounds
- . carbohydrates
 - .. **sugars**
 - ... dextrans
 - ... inositols
 - ... lactose
 - ... mannitol
 - ... monosaccharides
 - ... hexoses
 - ... galactose
 - ... glucose
 - ... pentose
 - ... ribose
 - ... xylose
 - ... sucrose
- RT ∞ food
- sugar beets
- suggestion**
- GS recommendations
- . **suggestion**
- RT hypnosis
- Suhl effect**
- RT carrier injection
- ∞ effects
- electrons
- excitons
- holes (electron deficiencies)
- magnetic fields
- n-type semiconductors
- recombination reactions
- suitability**
- RT acceptability
- compatibility
- suits**
- GS clothing
- . **suits**
 - .. pressure suits
 - ... space suits
 - ... extravehicular mobility units

RT garments

Sukhoi aircraft

(added September 1995)

RT ∞ aircraft

sulfates

GS sulfur compounds

- . sulfates
- .. alum
- .. ammonium sulfates
- .. barite
- .. hydroxylamine sulfate
- .. lithium sulfates
- .. magnesium sulfates
- ... hexahedrite
- .. sodium sulfates

RT gypsum

sulfuric acid

sulfation

DEF The introduction into an organic molecule of the sulfuric ester group (or its salts) -O-SO₃H, where the sulfur is linked through an oxygen atom to the parent molecule.

GS chemical reactions

. sulfation

RT hydrometallurgy

sulfidation

sulfidation

DEF The reaction of a metal or alloy with a sulfur-containing species to produce a sulfur compound that forms on or beneath the surface of the metal or alloy.

GS chemical reactions

. sulfidation

RT corrosion resistance
gas-metal interactions
heat resistant alloys
nickel alloys
sulfation
sulfides

sulfides

GS chalcogenides

. sulfides

- .. disulfides
- ... carbon disulfide
- .. inorganic sulfides
- ... barium sulfides
- ... bismuth sulfides
- ... cadmium sulfides
- ... calcium sulfides
- ... copper sulfides
- ... hydrogen sulfide
- ... indium sulfides
- ... lead sulfides
- ... molybdenum sulfides
- ... molybdenum disulfides
- ... polysulfides
- ... strontium sulfides
- ... zinc sulfides
- ... wurtzite
- ... zinckblende
- .. pyrites
- .. pyrrhotite
- .. troilite
- sulfur compounds
- . sulfides
- .. disulfides
- ... carbon disulfide
- .. inorganic sulfides
- ... barium sulfides
- ... bismuth sulfides
- ... cadmium sulfides
- ... calcium sulfides
- ... copper sulfides
- ... hydrogen sulfide
- ... indium sulfides
- ... lead sulfides
- ... molybdenum sulfides
- ... molybdenum disulfides
- ... polysulfides
- ... strontium sulfides
- ... zinc sulfides

- ... wurtzite
- ... zinckblende
- .. pyrites
- .. pyrrhotite
- ... troilite
- RT sulfidation
- thioplastics

sulfites

GS sulfur compounds

. sulfites

- .. hydrosulfites
- .. sodium sulfites

sulfonates

GS esters

. sulfonates

sulfur compounds

. sulfonates

RT ∞ salts

sulfones

GS sulfur compounds

. sulfones

RT sulfuric acid

sulfonic acid

GS acids

. sulfonic acid

RT sulfones

sulfur compounds

sulfur

GS chemical elements

. sulfur

.. sulfur isotopes

sulfur chlorides

GS halogen compounds

. chlorine compounds

.. chlorides

... sulfur chlorides

. halides

.. chlorides

... sulfur chlorides

sulfur compounds

. sulfur chlorides

sulfur compounds

GS sulfur compounds

. organic sulfur compounds

. sulfates

.. alum

.. ammonium sulfates

.. barite

.. hydroxylamine sulfate

.. lithium sulfates

.. magnesium sulfates

.. hexahedrite

.. sodium sulfates

. sulfides

.. disulfides

... carbon disulfide

.. inorganic sulfides

... barium sulfides

... bismuth sulfides

... cadmium sulfides

... calcium sulfides

... copper sulfides

... hydrogen sulfide

... indium sulfides

... lead sulfides

... molybdenum sulfides

... molybdenum disulfides

... polysulfides

... strontium sulfides

... zinc sulfides

... wurtzite

... zinckblende

.. pyrites

.. pyrrhotite

.. troilite

. sulfites

.. hydrosulfites

.. sodium sulfites

. sulfonates

- . sulfones
- . sulfur chlorides
- . sulfur fluorides
- .. sulfur hexafluoride
- . sulfur oxides
- .. sulfur dioxides
- . sulfuric acid
- . thiazine (trademark)
- . thiols
- .. cysteine
- .. dimercaprol
- RT bloedite
- ∞ chemical compounds
- ∞ Group 6A compounds
- sulfonic acid

sulfur dioxides

GS chalcogenides

. oxides

.. dioxides

... sulfur dioxides

.. sulfur oxides

... sulfur dioxides

sulfur compounds

. sulfur oxides

.. sulfur dioxides

sulfur fluorides

GS halogen compounds

. fluorine compounds

.. fluorides

... sulfur fluorides

... sulfur hexafluoride

. halides

.. fluorides

... sulfur fluorides

... sulfur hexafluoride

sulfur compounds

. sulfur fluorides

.. sulfur hexafluoride

sulfur hexafluoride

(added September 1993)

GS gases

. sulfur hexafluoride

halogen compounds

. fluorine compounds

.. fluorides

... sulfur fluorides

... sulfur hexafluoride

. halides

.. fluorides

... sulfur fluorides

... sulfur hexafluoride

sulfur compounds

. sulfur fluorides

.. sulfur hexafluoride

RT ∞ chemical compounds

dielectrics

infrared spectroscopy

laser materials

working fluids

sulfur isotopes

GS chemical elements

. nuclides

.. isotopes

... sulfur isotopes

. sulfur

.. sulfur isotopes

sulfur oxides

GS chalcogenides

. oxides

.. sulfur oxides

... sulfur dioxides

sulfur compounds

. sulfur oxides

.. sulfur dioxides

RT acid rain

dioxides

sulfuric acid

GS acids

. sulfuric acid

sulfur compounds

- . **sulfuric acid**
 RT sulfates
- sum rules**
 GS rules
 . **sum rules**
 RT sums
- summaries**
 GS **summaries**
 . abstracts
 . prelaunch summaries
 RT annotations
 bibliographies
 documentation
 indexes (documentation)
 information dissemination
 postlaunch reports
 reports
- summer**
 GS seasons
 . **summer**
 RT autumn
 hot weather
 solstices
 spring (season)
 winter
- sumps**
 RT drainage
 pits (excavations)
 waste disposal
- sums**
 RT algebra
 amount
 arithmetic
 computation
 series (mathematics)
 sum rules
- sun**
 DEF The star at the center of the solar system, around which the planets, asteroids, and comets revolve. It is a G-type star. Used for solar disk.
 UF *solar disk*
 GS celestial bodies
 . stars
 . . G stars
 . . . **sun**
 . . main sequence stars
 . . . **sun**
 RT AOSO
 ASTEC solar turboelectric generator
 celestial mechanics
 GRIST (telescope)
 light sources
 OSO
 photosphere
 planets
 satellite solar energy conversion
 satellite solar power stations
 solar activity
 solar activity effects
 solar arrays
 solar atmosphere
 solar atriums
 solar auxiliary power units
 solar blankets
 solar cells
 solar collectors
 solar compasses
 solar constant
 solar cooling
 solar corona
 solar corpuscular radiation
 solar cosmic rays
 solar cycles
 solar eclipses
 solar electric propulsion
 solar electrons
 solar energy
 solar energy absorbers
 solar energy conversion
- solar flares
 solar flux
 solar flux density
 solar furnaces
 solar generators
 solar granulation
 solar gravitation
 solar heating
 solar houses
 solar instruments
 solar interior
 solar limb
 solar longitude
 solar magnetic field
 Solar Maximum Mission
 Solar Maximum Mission-A
 Solar Mesosphere Explorer
 solar nebula
 solar neighborhood
 solar neutrinos
 solar oblateness
 solar observatories
 solar orbits
 solar oscillations
 solar parallax
 solar physics
 solar ponds (heat storage)
 solar position
 solar power satellites
 solar powered aircraft
 solar probes
 solar prominences
 solar propulsion
 solar protons
 solar radar echoes
 solar radiation
 Solar Radiation 1 satellite
 Solar Radiation 3 satellite
 solar radiation shielding
 solar radio bursts
 solar reflectors
 solar rotation
 solar sails
 solar sea power plants
 solar sensors
 solar simulation
 solar simulators
 solar spectra
 solar spectrometers
 solar storms
 solar system
 solar system evolution
 solar temperature
 solar terrestrial interactions
 solar thermal propulsion
 solar total energy systems
 solar velocity
 solar wind
 solar wind velocity
 solar x-rays
 sunlight
 Ulysses mission
- sun sensors*
 USE **solar sensors**
- Sunblazer space probe**
 GS unmanned spacecraft
 . space probes
 . . solar probes
 . . . **Sunblazer space probe**
 RT multistage rocket vehicles
 solid propellant rocket engines
- sunflowers**
 DEF Any of a number of tall related plants having yellow, daisylike flowers with yellow, brown, purple, or almost black disks containing seeds from which an oil is extracted.
 GS farm crops
 . **sunflowers**
 plants (botany)
 . **sunflowers**
 RT agriculture
 crop identification
 ∞ crops
- Earth resources
- sunglasses**
 RT eye protection
 eyepieces
 goggles
 optical filters
 visors
- sunlight**
 GS electromagnetic radiation
 . light (visible radiation)
 . . **sunlight**
 extraterrestrial radiation
 . solar radiation
 . . **sunlight**
 RT black body radiation
 circumsolar radiation
 climatology
 cloud cover
 infrared radiation
 insolation
 sky
 sky brightness
 sky radiation
 solar energy
 solar heating
 sun
 thermal radiation
 ultraviolet radiation
 Umkehr effect
 zodiacal light
- sunrise**
 DEF The crossing of the visible horizon by the upper limb of the ascending sun.
 RT morning
 ∞ science
 sunset
 terminator lines
- sunset**
 DEF The crossing of the visible horizon by the upper limb of the descending sun.
 RT evening
 ∞ science
 sunrise
 terminator lines
- sunspot cycle**
 DEF A cycle with an average length of 11. 1 years but varying between 7 and 17 years in the number and area of sunspots, as given by the relative sunspot number. This number rises from a minimum of 0 to 10 to a maximum of 50 to 140 about 4 years later, and then declines more slowly.
 GS cycles
 . solar cycles
 . . **sunspot cycle**
 RT solar activity
 starspots
 stellar activity
- sunspots**
 DEF Relatively dark areas on the surface of the sun consisting of dark central umbras surrounded by penumbras which are intermediate in brightness between the umbras and the surrounding photosphere.
 GS stellar activity
 . solar activity
 . . **sunspots**
 . starspots
 . . **sunspots**
 RT faculae
 magnetic disturbances
 photosphere
 solar cycles
 solar flares
 solar terrestrial interactions
 twenty-seven day variation
- Sunyaev-Zeldovich effect**
 (added July 2000)
 DEF Compton scattering of microwave ra-

supercavitating flow

diation in the vicinity of galaxy clusters resulting in fluctuations in the cosmic microwave background radiation (CMBR).

- UF *S-Z effect*
- RT anisotropy
 - Compton effect
 - cosmic gases
 - cosmic microwave background radiation
- ∞ effects
 - galactic clusters
 - intergalactic media
 - microwave scattering
 - radio astronomy
 - relic radiation

Super Sabre aircraft
USE **F-100 aircraft**

superalloys
USE **heat resistant alloys**

supercapacitors
(added September 2003)
USE **electrochemical capacitors**

supercavitating flow
UF *supercavitation*
GS fluid flow

- . turbulent flow
- . . cavitation flow
- . . . **supercavitating flow**

RT hydrofoil oscillations

supercavitation
USE **supercavitating flow**

superchargers
UF *supercharging*
turbochargers
GS compressors

- . **superchargers**

RT air intakes

- blowers
- centrifugal compressors
- compressing
- internal combustion engines
- turbocompressors
- turbomachinery

supercharging
USE **superchargers**

SuperCobra
(added April 1997)
USE **AH-1W helicopter**

supercomputers
DEF Computers with very large capacity and very high speed.
GS data processing equipment

- . computers
- . . **supercomputers**
- . . . Connection Machine
- . . . Cray computers

RT architecture (computers)

- grid computing (computer networks)
- hypercube multiprocessors
- multiprocessing (computers)
- parallel processing (computers)

superconducting cavity resonators
(added December 1992)
GS resonators

- . cavity resonators
- . . **superconducting cavity resonators**
- . . . superconducting devices
- . . . **superconducting cavity resonators**

RT microwave oscillators

- oscillators
- superconducting films

superconducting magnets

superconducting devices
(added December 1992)
GS **superconducting devices**

- . SIS (superconductors)
- . squid (detectors)
- . superconducting cavity resonators
- . superconducting magnets

RT Josephson effect

- superconducting films
- superconducting power transmission
- superconducting super collider
- tunnel junctions

superconducting films
(added April 1989)
RT BSCCO superconductors

- ∞ films
 - laser deposition
 - pulsed laser deposition
 - semiconducting films
 - superconducting cavity resonators
 - superconducting devices
 - superconductors (materials)
 - thick films
 - thin films
 - YBCO superconductors

superconducting magnets
GS magnets

- . electromagnets
- . . **superconducting magnets**
- . . . superconducting devices
- . . . **superconducting magnets**

RT cryogenic magnets

- flux pumps
- high field magnets
- high temperature superconductors
- magnet coils
- magnetic energy storage
- superconducting cavity resonators
- superconducting super collider

superconducting power transmission
RT ∞ conductivity

- cryogenics
- electric power transmission
- high temperature superconductors
- low temperature physics
- power lines
- superconducting devices
- transition temperature
- transmission lines

superconducting quantum interferometers
USE **squid (detectors)**

superconducting super collider
GS particle accelerators

- . **superconducting super collider**

RT storage rings (particle accelerators)

- superconducting devices
- superconducting magnets

superconductivity
DEF A property of many elements, alloys, and compounds by virtue of which their electrical resistivity vanishes and they become strongly diamagnetic under appropriate conditions. Used for Meissner effect.
UF *Meissner effect*
GS electrical properties

- . electrical resistivity
- . . **superconductivity**
- . . . Kondo effect
- . . . transport properties
- . . . electrical resistivity
- . . . **superconductivity**
- . . . Kondo effect

RT Abrikosov theory

- BCS theory
- Bloch band

∞ conductivity

- critical current
- cryogenics

cryotrons

- electron phonon interactions
- electron tunneling
- flux pinning
- flux pumps
- gallium alloys
- high temperature superconductors
- Josephson junctions
- Landau factor
- Landau-Ginzburg equations
- low temperature physics

∞ solid state physics

- spin glass
- transition temperature
- trapped magnetic fields
- vector currents
- vortices
- YBCO superconductors

superconductor insulator superconductors
USE **SIS (superconductors)**

superconductors (materials)
DEF Materials that exhibit superconductivity under appropriate conditions.
GS conductors

- . **superconductors (materials)**
- . . high temperature superconductors
- . . . BSCCO superconductors
- . . . YBCO superconductors
- . . heavy fermion superconductors
- . . organic superconductors

RT Abrikosov theory

- carrier mobility
- critical current
- cryogenic computer storage
- cryotrons
- electron gas
- energy storage
- flux quantization
- fullerides
- heavy fermion systems
- Josephson effect
- pinning
- proximity effect (electricity)
- solid state devices
- squid (detectors)
- strontium oxides
- superconducting films
- thermodynamic coupling

supercooling
UF *undercooling*
GS cooling

- . **supercooling**

RT aging (metallurgy)

- Aitken nuclei
- condensing
- convection clouds
- crystallization
- heat treatment
- mechanical properties
- nucleation
- quenching (cooling)
- supersaturation

supercritical airfoils
GS airfoils

- . **supercritical airfoils**
- . . supercritical wings

RT airfoil profiles

supercritical flow
GS fluid flow

- . **supercritical flow**

RT critical flow

- flow characteristics
- gas flow
- liquid flow
- multiphase flow
- orifice flow
- pipe flow
- pressure gradients
- single-phase flow
- steady flow
- steam flow

- subcritical flow
turbulent flow
unsteady flow
- supercritical fluids**
RT fluid mechanics
∞ fluids
solubility
supercritical pressures
- supercritical pressures**
GS pressure
. **supercritical pressures**
thermodynamic properties
. thermophysical properties
. . **supercritical pressures**
RT critical pressure
high pressure
liquid phases
supercritical fluids
vapor phases
vapor pressure
- supercritical wings**
GS airfoils
. supercritical airfoils
. . **supercritical wings**
. wings
. . **supercritical wings**
RT CL-600 challenger aircraft
spanloader aircraft
wing profiles
∞ winged vehicles
- superfluid flow*
USE **superfluidity**
- superfluidity**
UF *superfluid flow*
RT Bose-Einstein condensates
compressible fluids
∞ fluids
incompressible fluids
Kelvin-Helmholtz instability
liquid helium
liquid helium 2
many body problem
quantum statistics
two fluid models
viscosity
vortices
- superfortress aircraft*
USE **B-50 aircraft**
- supergiant stars**
GS celestial bodies
. stars
. . **supergiant stars**
. . . R Coronae Borealis stars
RT giant stars
K stars
M stars
massive stars
Mira variables
subgiant stars
- supergravity**
GS gravitation theory
. **supergravity**
RT broken symmetry
cosmology
field theory (physics)
gauge invariance
gauge theory
gravitinos
gravitons
group theory
lie groups
particle theory
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory
- Yang-Mills theory
- superharmonics**
GS harmonics
. **superharmonics**
RT cycles
frequencies
Mach number
supersonic wind tunnels
supersonics
- superheating**
GS heating
. **superheating**
RT steam
- superheterodyne receivers**
GS communication equipment
. radio receivers
. . **superheterodyne receivers**
radio equipment
. radio receivers
. . **superheterodyne receivers**
receivers
. radio receivers
. . **superheterodyne receivers**
RT beat frequencies
heterodyning
- superhigh frequencies**
SN (3 TO 30 GHz)
UF *KU band*
S band
X band
GS frequencies
. radio frequencies
. . microwave frequencies
. . . **superhigh frequencies**
RT C band
centimeter waves
unified S band
VSAT (network)
- superhumps (astronomy)**
(added October 1998)
RT accretion disks
astronomical photometry
binary stars
cataclysmic variables
dwarf novae
eclipsing binary stars
stellar spectrophotometry
- superhybrid materials**
DEF Composites of polymers, boron-aluminum, and titanium.
GS composite materials
. **superhybrid materials**
. . graphite-epoxy composites
RT boron-epoxy composites
carbon fiber reinforced plastics
fiber composites
hybrid composites
∞ materials
reinforcing fibers
- superimposition (mathematics)*
USE **superposition (mathematics)**
- superlattices**
DEF Crystals grown by depositing semiconductors in layers whose thickness is measured in atoms.
GS crystal lattices
. **superlattices**
semiconductors (materials)
. **superlattices**
RT antiphase boundaries
crystal dislocations
crystal structure
gallium arsenides
lattice parameters
- quantum Hall effect
- supermagnets*
USE **high field magnets**
- supermassive stars**
DEF Stars with masses exceeding about 50 times that of the sun.
GS celestial bodies
. stars
. . **supermassive stars**
RT degenerate matter
massive stars
Population III stars
stellar models
stellar structure
- supernova 1987A**
GS celestial bodies
. stars
. . variable stars
. . . supernovae
. . . . **supernova 1987A**
RT Magellanic clouds
- supernova remnants**
RT black holes (astronomy)
magnetars
neutron stars
North Polar Spur (astronomy)
pulsars
red dwarf stars
soft gamma repeaters
supernovae
white dwarf stars
white holes (astronomy)
- supernovae**
GS celestial bodies
. stars
. . variable stars
. . . **supernovae**
. . . . supernova 1987A
RT Crab nebula
gravitational collapse
nebulae
novae
Opik theory
Orion nebula
stellar mass
stellar mass ejection
stellar physics
supernova remnants
- superoxides*
USE **inorganic peroxides**
- superplastic forming**
(added July 1994)
UF *SPF (materials)*
RT bonding
elastoplasticity
metal working
plastic deformation
superplasticity
- superplasticity**
GS mechanical properties
. plastic properties
. . **superplasticity**
RT creep properties
crystal dislocations
elongation
eutectic alloys
heat resistant alloys
plastic deformation
plastic flow
superplastic forming
- superposition (mathematics)**
UF *superimposition (mathematics)*
RT equivalent circuits
linear circuits
∞ mathematics
∞ nets
network analysis

superpressure balloons

network synthesis

superpressure balloons

DEF Meteorological balloons consisting of nonextensible envelopes designed to withstand higher internal pressure differentials than external ones. Such balloons will maintain constant elevations until sufficient gas diffuses from them to cause a change in buoyancy. Used for constant volume balloons and tetrons.

UF *constant volume balloons*
tetrons

GS expandable structures
. inflatable structures
. balloons
. . . high altitude balloons
. . . . **superpressure balloons**

RT balloon sounding
meteorological balloons

superrotation

DEF The generally more rapid relative motions found in the very tenuous regions of the atmosphere at heights around 300 km. The density of the atmosphere decreases rapidly with height and more than 95 percent of the mass of the atmosphere is contained within the troposphere and lower stratosphere. These regions of the atmosphere rotate faster on average than the underlying solid Earth.

GS gyration
. rotation
. . . **superrotation**

RT atmospheric circulation
Earth atmosphere
Earth rotation
rotating fluids

supersaturation

RT condensing
crystallization
heat treatment
Mayer problem
precipitation (chemistry)
precipitation hardening
quenching (cooling)
solid solutions
supercooling

supersonic aircraft

SN (AIRCRAFT DESIGNED TO FLY AT SPEEDS ABOVE MACH 1 AND BELOW MACH 5)

UF *transonic aircraft*

GS **supersonic aircraft**
. A-5 aircraft
. B-58 aircraft
. B-70 aircraft
. Boeing 733 aircraft
. D-558 aircraft
. F-4 aircraft
. F-5 aircraft
. F-8 aircraft
. F-14 aircraft
. F-15 aircraft
. F-16 aircraft
. F-17 aircraft
. F-22 aircraft
. F-100 aircraft
. F-101 aircraft
. F-102 aircraft
. F-104 aircraft
. F-106 aircraft
. F-111 aircraft
. Firebee 2 target drone aircraft
. G-95/4 aircraft
. Jaguar aircraft
. MiG aircraft
. Mirage aircraft
. . . Mirage 3 aircraft
. Nord 1500 aircraft
. P-1154 aircraft
. Saab 37 aircraft
. SR-71 aircraft
. supersonic transports
. . . CL-823 aircraft
. . . Concorde aircraft

. . L-2000 aircraft
. . supersonic commercial air transport
. . . Boeing 2707 aircraft
. . . . TU-144 aircraft
. T-38 aircraft
. TSR-2 aircraft
. VJ-101 aircraft
. X-1 aircraft
. X-2 aircraft
. X-3 aircraft
. X-15 aircraft
. X-32 aircraft

RT ∞ aircraft
attack aircraft
fighter aircraft
hypersonic aircraft
jet aircraft
passenger aircraft
reconnaissance aircraft
research aircraft
 ∞ subsonic aircraft
supersonic cruise aircraft research
supersonics
sweptback wings
transport aircraft
trapezoidal tail surfaces
variable cycle engines
variable stream control engines

supersonic airfoils

GS airfoils
. **supersonic airfoils**
RT sweepback
sweptback tail surfaces
sweptback wings

supersonic boundary layers

GS boundary layers
. **supersonic boundary layers**
RT fluid flow
laminar boundary layer
supersonics
turbulent boundary layer
two dimensional boundary layer

supersonic combustion

GS combustion
. **supersonic combustion**
RT engines
fuel combustion

supersonic combustion ramjet engines

UF *scramjet engines*
scramjets
GS engines

. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **supersonic combustion ramjet engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **supersonic combustion ramjet engines**

. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **supersonic combustion ramjet engines**
RT combustion
missiles
ramjet missiles
rocket-based combined-cycle engines
 ∞ SCRAM
X-43 vehicle

supersonic commercial air transport

UF *SCAT*
GS commercial aircraft
. **supersonic commercial air transport**

. . Boeing 2707 aircraft
. . TU-144 aircraft
supersonic aircraft
. supersonic transports
. . **supersonic commercial air transport**
. . . Boeing 2707 aircraft
. . . TU-144 aircraft

supersonic compressors

DEF Compressors in which supersonic velocity is imparted to the fluid relative to the rotor blades, the stator blades, or to both the rotor and the stator blades, producing oblique shock waves over the blades to obtain a high pressure rise.

GS compressors
. **supersonic compressors**
RT oblique shock waves
transonic compressors
turbocompressors

supersonic cruise aircraft research

UF *SCAR program*
GS programs
. NASA programs
. . **supersonic cruise aircraft research**

RT ∞ aircraft
supersonic aircraft
supersonic transports

supersonic diffusers

DEF Diffusers designed to reduce the velocity and increase the pressure of fluid moving at supersonic velocities.

RT air intakes
 ∞ diffusers
exhaust diffusers
flow stability
vaneless diffusers

supersonic drag

GS aerodynamic characteristics
. aerodynamic drag
. . **supersonic drag**
aerodynamic forces
. aerodynamic drag
. . **supersonic drag**
dynamic characteristics
. drag
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
. . . pressure drag
. . . . **supersonic drag**
friction
. flow resistance
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
. skin friction
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
RT interference drag
wave drag

supersonic flight

RT caustic lines
 ∞ flight
hypersonic flight
jet lag
Mach cones
missiles
rocket flight
sonic booms
supersonics
transonic flight

supersonic flow

DEF In aerodynamics, flow of a fluid over a body at speeds greater than the acoustic velocity and in which the shock waves start at the surface of the body.

GS fluid flow

RT . **supersonic flow**
 . . supersonic jet flow
 aerodynamics
 compressibility effects
 compressible flow
 flow velocity
 gas flow
 Godunov method
 hypersonic flow
 hypervelocity flow
 Mach cones
 Prandtl-Meyer expansion
 secondary injection
 shock waves
 transonic flow
 wedge flow
 wind tunnels

supersonic flow inlets
 USE **supersonic inlets**

supersonic flutter
 GS vibration
 . structural vibration
 . . flutter
 . . . **supersonic flutter**
 . . self induced vibration
 . . . **supersonic flutter**
 RT missile vibration
 transonic flutter

supersonic heat transfer
 GS transmission
 . heat transmission
 . . heat transfer
 . . . aerodynamic heat transfer
 **supersonic heat transfer**
 RT hypersonic heat transfer
 supersonics

supersonic inlets
 UF *supersonic flow inlets*
transonic inlets
 GS intake systems
 . air intakes
 . . **supersonic inlets**
 RT bypass ratio
 hypersonic inlets
 inlet airframe configurations
 inlet flow
 internal compression inlets
 nose inlets
 side inlets

supersonic jet flow
 GS fluid flow
 . jet flow
 . . **supersonic jet flow**
 . supersonic flow
 . . **supersonic jet flow**
 RT gas flow
 nozzle flow
 screech tones

supersonic low altitude missile
 UF *SLAM*
 GS missiles
 . ramjet missiles
 . . **supersonic low altitude missile**
 . surface to surface missiles
 . . **supersonic low altitude missile**
 RT nuclear ramjet engines
 Pluto reactors
 ramjet engines

supersonic nozzles
 DEF Converging diverging nozzles designed to accelerate a fluid to supersonic speed.
 RT coaxial nozzles
 conical nozzles
 convergent-divergent nozzles
 hypersonic nozzles
 ∞ nozzles
 rocket nozzles
 screech tones
 sonic nozzles

transonic nozzles
 variable stream control engines
 wind tunnel nozzles

supersonic speed
 SN (BETWEEN MACH 1 AND 4. 9)
 GS rates (per time)
 . **supersonic speed**
 velocity
 . **supersonic speed**
 RT acoustic velocity
 high speed
 hypersonic speed
 hypersonics
 supersonics
 transonic speed

supersonic test apparatus
 RT hypersonic test apparatus
 supersonics
 ∞ test equipment
 wind tunnel apparatus

supersonic transports
 GS supersonic aircraft
 . **supersonic transports**
 . . CL-823 aircraft
 . . Concorde aircraft
 . . L-2000 aircraft
 . . supersonic commercial air
 transport
 . . . Boeing 2707 aircraft
 . . . TU-144 aircraft
 RT cargo aircraft
 commercial aircraft
 passenger aircraft
 supersonic cruise aircraft research

supersonic turbines
 UF *transonic turbines*
 GS turbomachinery
 . turbines
 . . **supersonic turbines**
 RT gas turbine engines
 gas turbines
 rotor stator interactions

supersonic wakes
 GS wakes
 . **supersonic wakes**
 RT aircraft wakes
 hypersonic wakes

supersonic wind tunnels
 GS test facilities
 . wind tunnels
 . . **supersonic wind tunnels**
 RT blowdown wind tunnels
 hypersonic wind tunnels
 hypervelocity wind tunnels
 low density wind tunnels
 shock tunnels
 slotted wind tunnels
 subsonic wind tunnels
 superharmonics
 transonic wind tunnels

supersonics
 DEF Specifically, the study of aerodynamics of supersonic speeds.
 GS fluid mechanics
 . fluid dynamics
 . . gas dynamics
 . . . aerodynamics
 **supersonics**
 RT aerothermodynamics
 hypersonics
 Mach cones
 superharmonics
 supersonic aircraft
 supersonic boundary layers
 supersonic flight
 supersonic heat transfer
 supersonic speed

supersonic test apparatus

superstring theory
 USE **string theory**

supersymmetry
 GS symmetry
 . **supersymmetry**
 RT bosons
 broken symmetry
 cosmology
 fermions
 field theory (physics)
 gauge theory
 grand unified theory
 gravitation theory
 group theory
 lie groups
 particle theory
 quantum theory
 string theory
 supergravity
 theoretical physics
 unified field theory

supine position
 RT acceleration protection
 head up tilt
 prone position
 rest
 sitting position

supplements
 GS documents
 . **supplements**
 RT contracts
 extensions
 indexes (documentation)
 motion pictures
 records
 reports

supplying
 RT commerce
 consumption
 demand (economics)
 filling
 injection
 input
 marketing
 output

support interference
 RT antenna radiation patterns
 ∞ interference
 supports
 vibration effects

support systems
 GS **support systems**
 . ground operational support system
 . ground support systems
 . life support systems
 . . biopaks
 . . closed ecological systems
 . . emergency life sustaining systems
 . . . AEPS
 . . . portable life support systems
 . . . AEPS
 . . . IMLSS
 . decision support systems
 . pilot support systems
 RT self sealing
 services
 ∞ systems

supports
 UF *mounts*
stands
 GS **supports**
 . pylons
 . saddles (supports)
 . tripods
 RT bearings
 carriages
 chassis

suppressors

- foundations
- frames
- gimbals
- ∞ headers
- lugs
- pivots
- ∞ platforms
- pylon mounting
- racks (frames)
- reinforcement (structures)
- shafts (machine elements)
- struts
- substructures
- support interference
- ∞ sustaining
- trusses

suppression

USE **retarding**

suppressors

- GS **suppressors**
 - . echo suppressors
- RT **suppressors**
 - absorbers (materials)
 - additives
 - attenuators
 - baffles
 - circuit protection
 - damping
 - infrared suppression
 - inhibitors
 - insulation
 - isolators
 - mufflers
 - neutralizers
 - noise reduction
 - retardants
 - shielding
 - silencers
 - squelch circuits

surface acoustic wave devices

- UF *S-A-W devices*
- RT acoustic delay lines
- bulk acoustic wave devices
- ∞ devices
- electroacoustic transducers
- electroacoustics
- interdigital transducers
- microsonics
- signal processing
- sound waves
- ultrasonic wave transducers

surface cooling

- GS cooling
 - . **surface cooling**
- RT convective heat transfer
- evaporative cooling
- film cooling
- radiant cooling
- radiative heat transfer
- ∞ surfaces
- sweat cooling
- temperature

surface cracks

- UF *crazing*
- GS fractures (materials)
 - . cracks
 - . . **surface cracks**
 - surface properties
 - . **surface cracks**
- RT crack closure
- crack geometry
- crack initiation
- crack propagation
- edge cracks
- microcracks
- solid surfaces
- ∞ surfaces

surface defects

- GS defects
 - . **surface defects**
 - surface properties

- . **surface defects**
- RT caustics (optics)
- crack initiation
- crystal defects
- crystal dislocations
- fatigue (materials)
- mechanical properties
- point defects
- ∞ surfaces

surface diffusion

- GS diffusion
 - . **surface diffusion**
- RT adatoms
- molecular diffusion
- ∞ surfaces
- thermal diffusion

surface distortion

- GS distortion
 - . **surface distortion**
- RT ∞ surface geometry
- ∞ surfaces
- warpage

surface effect ships

DEF Vessels using ground effect principle and having submerged rigid sidewalls (sealants). Used for SES.

- UF *SES*
- GS surface vehicles
 - . **surface effect ships**
 - water vehicles
 - . ships
 - . . **surface effect ships**
- RT captured air bubble vehicles
- ∞ effects
- research vehicles
- ∞ surfaces
- SWATH (ship)
- ∞ vehicles
- wing-in-ground effect vehicles

surface emitting lasers

(added March 1992)

- GS stimulated emission devices
 - . lasers
 - . . **surface emitting lasers**
- RT laser arrays
- lasing
- light emitting diodes
- semiconductor lasers
- solid state lasers
- stimulated emission
- waveguide lasers

surface energy

- GS surface properties
 - . **surface energy**
 - thermodynamic properties
 - . **surface energy**
- RT activation energy
- electron energy
- ∞ energy
- interfacial energy
- interfacial tension
- proton energy
- ∞ surfaces
- thermophysical properties

surface finishing

- GS surface treatment
 - . **surface finishing**
- RT cleaning
- coating
- coatings
- corrosion prevention
- corrosion resistance
- electroplating
- electropolishing
- finishes
- machining
- metal finishing
- metal grinding
- metal polishing
- metal spraying

- metal surfaces
- micromachining
- polishing
- protective coatings
- shot peening
- solid surfaces
- sputtering
- ∞ surfaces
- wear

∞ surface geometry

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT concavity
- convexity
- Cosserat surfaces
- flat surfaces
- flatness
- geometry
- Lambert surface
- lofting
- planforms
- shapes
- surface distortion
- surface layers
- surface properties
- surface reactions
- surface roughness
- surface stability
- ∞ surfaces

surface interactions

USE **surface reactions**

surface ionization

- GS ionization
 - . **surface ionization**
- RT ionizers
- ∞ surfaces

surface layers

- RT atmospheric stratification
- barrier layers
- boundary layer thickness
- boundary layers
- crystal surfaces
- ∞ layers
- lunar surface
- monomolecular films
- oxide films
- solar granulation
- ∞ surface geometry
- surface treatment
- ∞ surfaces
- thermoclines
- ∞ transition layers

surface navigation

- UF *marine navigation*
- GS navigation
 - . **surface navigation**
- RT celestial navigation
- dead reckoning
- Decca navigation
- digital navigation
- hyperbolic navigation
- inertial navigation
- LORAC navigation system
- loran
- nautical charts
- navigation aids
- radar navigation
- radio navigation
- ships
- ∞ surfaces
- unmanned ground vehicles

surface noise interactions

- RT acoustic excitation
- acoustic scattering
- aeroacoustics
- aerodynamic noise
- rotor stator interactions

- turbulence
- surface pressure
- USE **pressure**
- surface properties**
 - UF *Bardeen approximation*
 - GS **surface properties**
 - . adhesion
 - . . . stiction
 - . adsorptivity
 - . coefficient of friction
 - . interfacial tension
 - . spectral reflectance
 - . surface cracks
 - . surface defects
 - . surface energy
 - . surface roughness
 - . surface stability
 - . surface temperature
 - . . . land surface temperature
 - . . . sea surface temperature
 - . . . skin temperature (non-biological)
 - . . . wall temperature
 - RT absorbptance
 - albedo
 - atomic force microscopy
 - bidirectional reflectance
 - coarseness
 - coating
 - coatings
 - color
 - contact potentials
 - contact resistance
 - corrosion
 - Cosserat surfaces
 - diffusion
 - effervescence
 - emissivity
 - evanescence
 - finishes
 - flat surfaces
 - foaming
 - friction
 - hardness
 - hot corrosion
 - hydrophobicity
 - interfaces
 - Jupiter red spot
 - lunar albedo
 - lunar surface
 - lunar topography
 - mechanical properties
 - metal surfaces
 - optical properties
 - permeability
 - ∞ physical properties
 - planar structures
 - planetary surfaces
 - profilometers
 - ∞ properties
 - reflectance
 - roughness
 - selenography
 - solid surfaces
 - solid-solid interfaces
 - sorption
 - ∞ surface geometry
 - surface tension driven convection
 - surface treatment
 - ∞ surfaces
 - textures
 - viscosity
 - void ratio
 - wettability
- surface reactions**
 - UF *surface interactions*
 - RT chemical reactions
 - erosion
 - fluid-solid interactions
 - gas-liquid interactions
 - interfaces
 - metal surfaces
 - metal-water reactions
 - spacecraft glow
 - ∞ surface geometry
- ∞ surfaces
- surfactants
- vaporizing
- surface roughness**
 - DEF The deviation of the topography of an actual surface from an ideal atomically smooth and planar surface.
 - GS roughness
 - . **surface roughness**
 - surface properties
 - . **surface roughness**
 - RT coarseness
 - friction
 - lunar topography
 - machining
 - mechanical properties
 - profilometers
 - runway conditions
 - ∞ surface geometry
 - ∞ surfaces
 - topography
- surface roughness effects**
 - RT ∞ effects
 - friction drag
 - reflectance
 - separated flow
 - speckle patterns
 - ∞ surfaces
- surface stability**
 - GS stability
 - . **surface stability**
 - surface properties
 - . **surface stability**
 - RT coarseness
 - dynamic stability
 - interfacial tension
 - motion stability
 - static stability
 - storage stability
 - ∞ surface geometry
 - ∞ surfaces
 - thermal stability
- surface temperature**
 - GS surface properties
 - . **surface temperature**
 - . . . land surface temperature
 - . . . sea surface temperature
 - . . . skin temperature (non-biological)
 - . . . wall temperature
 - temperature
 - . **surface temperature**
 - . . . land surface temperature
 - . . . sea surface temperature
 - . . . skin temperature (non-biological)
 - . . . wall temperature
 - RT coarseness
 - geothermal anomalies
 - ocean temperature
 - ∞ surfaces
 - temperature sensitive paints
 - thermoclines
 - water temperature
- surface tension*
- USE **interfacial tension**
- surface tension driven convection**
 - (added December 1995)
 - GS convection
 - . **surface tension driven convection**
 - . . Marangoni convection
 - RT capillary flow
 - convective flow
 - interfacial tension
 - ∞ microgravity applications
 - oscillating flow
 - surface properties
- surface to air missiles**
 - UF *ground-to-air missiles*
 - GS missiles
 - . **surface to air missiles**
- . . . Blue Goose missile
- . . . BOMARC missiles
 - . . . BOMARC A missile
 - . . . BOMARC B missile
- . . . Chaparral missile
- . . . Hawk missile
- . . . Mauler missile
- . . . Nike missiles
 - . . . Nike-Ajax missile
 - . . . Nike-Hercules missile
 - . . . Nike-Zeus missile
- . . . Patriot missile
- . . . Redeye missile
- . . . Sprint missile
- . . . Talos missile
- . . . tartar missile
- . . . terrier missile
- RT air to air missiles
- air to surface missiles
- antiaircraft missiles
- antimissile missiles
- Nike X systems
- ramjet missiles
- ∞ rockets
- Sentinel system
- space weapons
- Spartan missile
- ∞ surfaces
- surface to surface missiles**
 - GS missiles
 - . **surface to surface missiles**
 - . . . antitank missiles
 - . . . Shillelagh missiles
 - . . . tow missiles
 - . . . Corporal missile
 - . . . cruise missiles
 - . . . Navaho missile
 - . . . Tomahawk missiles
 - . . . fleet ballistic missiles
 - . . . Polaris A1 missile
 - . . . Polaris A2 missile
 - . . . Polaris A3 missile
 - . . . Poseidon missiles
 - . . . Subroc missile
 - . . . intercontinental ballistic missiles
 - . . . Atlas ICBM
 - Atlas D ICBM
 - Atlas E ICBM
 - Atlas F ICBM
 - . . . Minuteman ICBM
 - . . . MX missile
 - . . . Titan ICBM
 - Titan 1 ICBM
 - Titan 2 ICBM
 - . . . intermediate range ballistic missiles
 - . . . Blue Streak missile
 - . . . Jupiter missile
 - . . . polaris missiles
 - Polaris A1 missile
 - Polaris A2 missile
 - Polaris A3 missile
 - . . . Lance missile
 - . . . Mace missiles
 - . . . Pershing missile
 - . . . Regulus missile
 - . . . sergeant missiles
 - . . . short range ballistic missiles
 - . . . supersonic low altitude missile
 - . . . V-1 missile
 - RT air to surface missiles
 - ballistic missiles
 - Harpoon missile
 - ramjet missiles
 - ∞ rockets
 - ∞ surfaces
 - surface to surface rockets**
 - GS rocket vehicles
 - . **surface to surface rockets**
 - . . Honest John rocket vehicle
 - . . Little John rocket vehicle
 - RT ∞ rockets
 - ∞ surfaces
 - surface treatment**
 - (added April 1990)
 - GS **surface treatment**

surface vehicles

- RT . surface finishing
- anodizing
- coating
- corrosion prevention
- paint removal
- surface layers
- surface properties
- ∞ treatment

surface vehicles

- GS **surface vehicles**
 - . aircraft carriers
 - . automated transit vehicles
 - . . . automated guideway transit vehicles
 - . boats
 - . . . lifeboats
 - . captured air bubble vehicles
 - . cargo ships
 - . . . Savannah nuclear ship
 - . . . tanker ships
 - . dollies
 - . electric hybrid vehicles
 - . lunar surface vehicles
 - . . . lunar mobile laboratories
 - . . . lunar roving vehicles
 - . . . Lunokhod lunar roving vehicles
 - manned lunar surface vehicles
 - . magnetic levitation vehicles
 - . motor vehicles
 - . . . automated mixed traffic vehicles
 - . . . automobiles
 - electric automobiles
 - electric motor vehicles
 - electric automobiles
 - . . . tractors
 - crawler tractors
 - tracked vehicles
 - . . . trucks
 - tank trucks
 - . nuclear powered ships
 - . . . Savannah nuclear ship
 - . roadway powered vehicles
 - . roving vehicles
 - . . . lunar roving vehicles
 - Lunokhod lunar roving vehicles
 - manned lunar surface vehicles
 - . . . Mars roving vehicles
 - Marsokhod Mars roving vehicles
 - . satellite communications ships
 - . sleds
 - . . . rocket propelled sleds
 - . surface effect ships
 - . SWATH (ship)
 - . tanks (combat vehicles)
 - . transporter
 - . unmanned ground vehicles
 - . walking machines
- RT amphibious vehicles
- ∞ bicycle
- ground effect machines
- rail transportation
- rails
- ships
- ∞ surfaces
- underwater vehicles
- urban transportation
- ∞ vehicles
- vehicular tracks
- water vehicles

surface water

- DEF All the waters on the surface of the Earth including fresh and salt water, ice and snow.
- GS water
- . **surface water**
- RT Earth resources
- ground water
- lakes
- polynyas
- ponds
- rivers
- streams
- ∞ surfaces

water sampling

surface waves

- SN (EXCLUDES SURFACE RADIO WAVES)
- GS **surface waves**
 - . capillary waves
 - . . . gravity waves
 - baroclinic waves
 - . . . ripples
 - . electromagnetic surface waves
 - . evanescent waves
 - . Sommerfeld waves
- RT bow waves
- cnoidal waves
- crustal fractures
- elastic waves
- internal waves
- lee waves
- liquid surfaces
- Love waves
- microsonics
- P waves
- S waves
- sea roughness
- seismic waves
- splashing
- ∞ surfaces
- tropospheric waves
- tsunami waves
- water currents
- water waves
- ∞ waves

surface-active agents

USE **surfactants**

∞ surfaces

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *curved surfaces*
- lifting surfaces*
- RT air to surface missiles
- airfield surface movements
- airport surface detection equipment
- Apollo Lunar Surface Experiments Package
- area
- cold surfaces
- control surfaces
- Cosserat surfaces
- crystal surfaces
- Earth surface
- EASEP
- electromagnetic surface waves
- elevators (control surfaces)
- external surface currents
- Fermi surfaces
- flaps (control surfaces)
- flat surfaces
- horizontal tail surfaces
- hot surfaces
- interfaces
- interfacial tension
- Lambert surface
- liquid surfaces
- LSSM
- lunar surface
- lunar surface vehicles
- manned lunar surface vehicles
- Mars surface
- Mars surface samples
- menisci
- metal surfaces
- minimal surfaces
- ocean surface
- planetary surfaces
- satellite surfaces
- sizing (surface treatment)
- solid surfaces
- surface cooling
- surface cracks
- surface defects
- surface diffusion
- surface distortion
- surface effect ships
- surface energy

- surface finishing
- ∞ surface geometry
- surface ionization
- surface layers
- surface navigation
- surface properties
- surface reactions
- surface roughness
- surface roughness effects
- surface stability
- surface temperature
- surface to air missiles
- surface to surface missiles
- surface to surface rockets
- surface vehicles
- surface water
- surface waves
- sweptback tail surfaces
- T tail surfaces
- tabs (control surfaces)
- tail surfaces
- Townsend avalanche
- trapezoidal tail surfaces
- two dimensional bodies
- under surface blowing
- underwater to surface missiles
- upper surface blowing
- upper surface blown flaps
- Venus surface
- wear

surfactants

DEF A material that improves the emulsifying, dispersing, wetting, or other surface-modifying properties of liquids. Used for surface-active agents.

UF *surface-active agents*

- RT admixtures
- ∞ agents
- detergents
- hydrophobicity
- monomolecular films
- plasticizers
- retardants
- soaps
- surface reactions
- zwitterions

surgeons

- GS personnel
- . medical personnel
- . . . **surgeons**
- flight surgeons

surgery

- GS medical science
- . **surgery**
- . . . labyrinthectomy
- RT clinical medicine
- heart implantation
- ∞ operations
- skin grafts
- transplantation
- veterinary medicine

surges

DEF Transient rises in power or pressure such as a brief rise in the discharge pressure of a rotary compressor. Used for transients (surges).

UF *transients (surges)*

- RT circuit protection
- fluid flow
- overvoltage
- storm surges
- variations
- water hammer
- ∞ waves

surgical instruments

- GS medical equipment
- . **surgical instruments**
- RT ∞ instruments

- needles
- Surinam**
 - GS nations
 - . **Surinam**
 - RT Caribbean region
 - Netherlands
 - South America
- surveillance**
 - GS **surveillance**
 - . space surveillance (ground based)
 - . space surveillance (spaceborne)
 - RT command and control
 - conical scanning
 - crime
 - detection
 - Earth resources
 - forest fire detection
 - ice mapping
 - ice reporting
 - inspection
 - observation
 - panoramic scanning
 - radar scanning
 - reconnaissance
 - scanning
 - situational awareness
 - target acquisition
 - target recognition
 - targets
 - visual observation
- surveillance radar**
 - GS radar
 - . **surveillance radar**
 - . . airborne surveillance radar
 - . . Cobra Dane (radar)
 - . . multistatic radar
 - RT air traffic control
 - airport surface detection equipment
 - coherent radar
 - continuous wave radar
 - digital radar systems
 - Doppler radar
 - meteorological radar
 - pulse radar
 - radar approach control
 - radar tracking
 - radarscopes
 - satellite-borne radar
 - search radar
 - space-time adaptive processing
 - synthetic aperture radar
 - tracking radar
- surveying*
 - USE **surveys**
- Surveyor 1 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 1 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 1 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 1 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 2 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 2 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 2 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
- Surveyor 3 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 3 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 3 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 3 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 4 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 4 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 4 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 4 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 5 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 5 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 5 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 5 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 6 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 6 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 6 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 6 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 7 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 7 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 7 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 7 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor lunar probes**
 - GS lunar spacecraft
 - . lunar probes
 - . . **Surveyor lunar probes**
 - . . . Surveyor 1 lunar probe
 - . . . Surveyor 2 lunar probe
 - . . . Surveyor 3 lunar probe
 - . . . Surveyor 4 lunar probe
- . . . Surveyor 5 lunar probe
- . . . Surveyor 6 lunar probe
- . . . Surveyor 7 lunar probe
- soft landing spacecraft
- . **Surveyor lunar probes**
- . . Surveyor 1 lunar probe
- . . Surveyor 2 lunar probe
- . . Surveyor 3 lunar probe
- . . Surveyor 4 lunar probe
- . . Surveyor 5 lunar probe
- . . Surveyor 6 lunar probe
- . . Surveyor 7 lunar probe
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . **Surveyor lunar probes**
- Surveyor 1 lunar probe
- Surveyor 2 lunar probe
- Surveyor 3 lunar probe
- Surveyor 4 lunar probe
- Surveyor 5 lunar probe
- Surveyor 6 lunar probe
- Surveyor 7 lunar probe
- Surveyor project**
 - GS programs
 - . lunar programs
 - . . **Surveyor project**
 - . . NASA programs
 - . . NASA space programs
 - . . . **Surveyor project**
 - . . projects
 - . . **Surveyor project**
 - . . space programs
 - . . NASA space programs
 - . . . **Surveyor project**
 - RT Atlas Centaur launch vehicle
 - Centaur project
 - lunar landing
 - lunar probes
 - lunar spacecraft
 - soft landing
 - soft landing spacecraft
- surveys**
 - UF *surveying*
 - GS **surveys**
 - . geodetic surveys
 - . geological surveys
 - . sky surveys (astronomy)
 - . wage surveys
 - RT accuracy
 - construction
 - ∞ cross sections
 - data acquisition
 - data management
 - datum (elevation)
 - exploration
 - general overviews
 - geometry
 - layouts
 - loran
 - mapping
 - maps
 - photogrammetry
 - position (location)
 - reconnaissance
 - soil mapping
 - ∞ statistics
- survival**
 - RT aircraft survivability
 - civil defense
 - closed ecological systems
 - desert adaptation
 - kits
 - life support systems
 - lunar shelters
 - shelters
 - spacecraft survivability
- survival equipment**
 - RT AEPS
 - aircraft survivability
 - Assured Crew Return Vehicle
 - consumables (spacecrew supplies)

suspending (hanging)

emergency life sustaining systems
∞ equipment
lifeboats
onboard equipment
oxygen supply equipment
rafts

susceptibility (magnetism)

USE **magnetic permeability**

suspending (hanging)

GS **suspending (hanging)**

. hindlimb suspension
. magnetic suspension

RT gyroscope fluids

mounting

suspension systems (vehicles)

∞ suspensions

suspending (mixing)

GS mixing

. **suspending (mixing)**

RT aeration

agitation

colloiding

dispersing

dispersions

entrainment

ferrofluids

homogenizing

shaking

stirring

∞ suspensions

suspension systems (vehicles)

RT bearings

flotation

levitation

magnetic levitation vehicles

riding quality

shock absorbers

springs (elastic)

steering

suspending (hanging)

∞ suspensions

∞ systems

toroidal wheels

undercarriages

vehicle wheels

vehicular tracks

vibration isolators

∞ suspensions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF A two-phase system consisting of a finely divided solid dispersed in a solid, liquid, or gas.

RT Brownian movements

dispersions

ferrofluids

solid suspensions

suspending (hanging)

suspending (mixing)

suspension systems (vehicles)

Susquehanna River Basin (MD-NY-PA)

GS landforms

. structural basins

. . . river basins

. . . **Susquehanna River Basin (MD-NY-PA)**

RT Maryland

New York

Pennsylvania

rivers

streams

valleys

sustainer rocket engines

DEF Rocket engines that maintain the velocity of the rocket once it has achieved its programmed velocity by use of boosters or other engines.

GS engines

. rocket engines

. . **sustainer rocket engines**

RT

booster rocket engines

ducted rocket engines

electric rocket engines

electrostatic engines

electrothermal engines

hybrid propellant rocket engines

internal combustion engines

ion engines

launch vehicles

liquid air cycle engines

liquid propellant rocket engines

nuclear engine for rocket vehicles

nuclear rocket engines

restartable rocket engines

solid propellant rocket engines

stage separation

∞ sustaining

turbo-rocket engines

TX-354 engine

∞ sustaining

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT life support systems

supports

sustainer rocket engines

swaging

RT cold working

metal working

stamping

swallowing

RT drinking

eating

ingestion (biology)

swamps

USE **marshlands**

Swan bands

GS spectra

. spectral bands

. . **Swan bands**

RT ∞ bands

carbon compounds

chemical bonds

emission spectra

molecular spectra

swarming

RT bees

∞ motion

SWAS (satellite)

(added November 2000)

USE **Submillimeter Wave Astronomy Satellite**

swash

USE **splashing**

SWATH (ship)

DEF Small waterplane area twin hull concept extension of hydrofoils for improving seaworthiness and speed. Used for Small Waterplane Area Twin Hull.

UF *Small Water Plane Area Twin Hull*

GS surface vehicles

. **SWATH (ship)**

water vehicles

. ships

. . **SWATH (ship)**

RT captured air bubble vehicles

hulls (structures)

surface effect ships

∞ vehicles

swath width

DEF The width of the area covered by an imaging sensor determined by the geometry of the instrument.

RT agricultural aircraft

flight paths

remote sensing

satellite observation

Swaziland

GS nations

. **Swaziland**

RT Africa

Republic of South Africa

sweat

GS body fluids

. **sweat**

secretions

. **sweat**

RT perspiration

sweat cooling

DEF A process by which a body having a porous surface is cooled by forced flow of coolant through the surface from the interior. Used for transpiration cooling.

UF *transpiration cooling*

GS cooling

. evaporative cooling

. . **sweat cooling**

RT film cooling

liquid cooling

surface cooling

sweating

USE **perspiration**

Sweden

GS nations

. **Sweden**

RT Europe

JAS-39 aircraft

Scandinavia

Swedish space program

Swedish space program

GS programs

. space programs

. . European space programs

. . . **Swedish space program**

RT Sweden

sweep angle

GS geometry

. Euclidean geometry

. . angles (geometry)

. . . **sweep angle**

. . . . sweepback

. leading edge sweep

RT aerodynamic stalling

angle of attack

boundary layer separation

Mach number

sweep circuits

GS circuits

. **sweep circuits**

RT frequency scanning

oscilloscopes

sampling

sweep effect

RT ∞ effects

force distribution

lift

∞ loading

wing loading

sweep frequency

UF *electron sweeping*

GS frequencies

. **sweep frequency**

RT carrier frequencies

frequency analyzers

frequency scanning

frequency synchronization

oscilloscopes

television transmission

sweepback

UF *sweepback angles*

GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . sweep angle
 **sweepback**
 leading edge sweep
 RT supersonic airfoils

sweepback angles
 USE **sweepback**

swelling
 RT distortion
 expansion
 growth
 increasing
 inflating
 spreading

swept forward wings
 GS airfoils
 . wings
 . . swept wings
 . . . **swept forward wings**
 trapezoidal wings
 planforms
 . wing planforms
 . . **swept forward wings**
 . . . trapezoidal wings
 RT sweptback wings
 variable sweep wings
 X-29 aircraft

swept wings
 UF *cranked wings*
diamond wings
tapered wings
 GS airfoils
 . wings
 . . **swept wings**
 . . . swept forward wings
 trapezoidal wings
 . . . sweptback wings
 arrow wings
 delta wings
 trapezoidal wings
 RT fixed wings
 spanloader aircraft
 unswept wings
 wing planforms

sweptback tail surfaces
 GS assemblies
 . tail assemblies
 . . **sweptback tail surfaces**
 planforms
 . **sweptback tail surfaces**
 tail surfaces
 . **sweptback tail surfaces**
 RT control surfaces
 hypersonic aircraft
 rudders
 stabilizers (fluid dynamics)
 supersonic airfoils
 ∞ surfaces
 T tail surfaces
 trapezoidal tail surfaces

sweptback wings
 GS airfoils
 . wings
 . . swept wings
 . . . **sweptback wings**
 arrow wings
 delta wings
 trapezoidal wings
 planforms
 . wing planforms
 . . **sweptback wings**
 . . . arrow wings
 . . . delta wings
 . . . trapezoidal wings
 RT hypersonic aircraft
 supersonic aircraft
 supersonic airfoils
 swept forward wings

variable sweep wings

swimming
 RT physical exercise
 physical fitness

swimming pool reactors
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **swimming pool reactors**
 RT ∞ reactors

swine
 SN (EXCLUDES GUINEA PIGS)
 UF *pigs (swine)*
 GS animals
 . vertebrates
 . . mammals
 . . . **swine**
 RT grazing
 livestock

swing tail assemblies
 GS assemblies
 . tail assemblies
 . . **swing tail assemblies**
 RT afterbodies
 aircraft parts
 aircraft structures

swing wings
 GS airfoils
 . wings
 . . **swing wings**
 RT aircraft parts
 aircraft structures
 wing planforms
 wing profiles

swingby technique
 UF *gravity assist trajectories*
 RT Comet Nucleus Tour
 flyby missions
 gravitational effects
 interplanetary transfer orbits
 orbital mechanics
 planetary orbits
 round trip trajectories
 spacecraft trajectories

swirling
 RT agitation
 centrifuging
 dispersing
 foaming
 mixing
 ∞ separation
 shaking
 stirring

swirling wakes
 USE **turbulent wakes**

Swiss space program
 GS programs
 . space programs
 . . European space programs
 . . . **Swiss space program**
 RT Switzerland

switches
 GS **switches**
 . capacitance switches
 . electric relays
 . electric switches
 . . cryotrons
 . . stepping switches
 . . thermostats
 . . vacuum arc switches
 . pressure switches
 . switching circuits
 . . fluid switching elements
 . trigatrons
 RT circuit breakers
 dropouts

echo suppressors
 electric connectors
 electric contacts
 interruption
 selectors
 switching

switching
 GS **switching**
 . beam switching
 . magnetic switching
 . microwave switching
 . optical switching
 . packet switching
 RT code division multiple access
 interruption
 sequencing
 step recovery diodes
 switches
 time division multiple access

switching circuits
 UF *electronic switches*
switching elements
 GS circuits
 . **switching circuits**
 . . fluid switching elements
 switches
 . **switching circuits**
 . . fluid switching elements
 RT ARPA computer network
 capacitance switches
 cascode devices
 circuit breakers
 current regulators
 duplex operation
 duplexers
 electric relays
 electric switches
 gates (circuits)
 latch-up
 logic circuits
 matrices (circuits)
 microwave switching
 multivibrators
 optical bistability
 optical switching
 packet switching
 selectors
 squelch circuits
 vacuum arc switches
 voltage regulators

switching elements
 USE **switching circuits**

switching theory
 RT Boolean algebra
 branching (mathematics)
 communication theory
 commutation
 logic design
 network synthesis
 packet switching
 sequencing
 ∞ theories
 topology

Switzerland
 GS nations
 . **Switzerland**
 RT Alps Mountains (Europe)
 Europe
 Swiss space program

swivels
 RT bearings
 gimbals
 hinges
 hooks
 joints (junctions)
 pivots

syenite
 GS rocks
 . igneous rocks

syllables

- . . syenite
 RT soils
 trachyte
- syllables**
 RT messages
 psycholinguistics
 semantics
 signal transmission
- symbiosis**
 DEF The intimate living together of two organisms of different species, for mutual benefit.
 RT ecology
 lichens
- symbiotic stars**
 GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 **symbiotic stars**
 . . peculiar stars
 . . . **symbiotic stars**
 . . variable stars
 . . . **symbiotic stars**
 RT absorption spectra
 eclipsing binary stars
 emission spectra
 flare stars
 M stars
 novae
 stellar envelopes
 stellar mass accretion
 stellar oscillations
 stellar spectra
 stellar temperature
- symbolic programming**
 GS computer programming
 . **symbolic programming**
 RT coding
 computer assisted instruction
 context free languages
 language programming
 mnemonics
- symbols**
 UF *characters*
letters (symbols)
signs (symbols)
 GS **symbols**
 . alphanumeric characters
 . . digits
 . . . binary digits
 RT abbreviations
 alphabets
 character recognition
 ∞ codes
 coding
 color
 data processing
 high level languages
 languages
 legibility
 ∞ mathematics
 message processing
 messages
 mnemonics
 nomenclatures
 perception
 reading
 semantics
 ∞ signals
 units of measurement
 visibility
- symmetrical bodies**
 GS **symmetrical bodies**
 . axisymmetric bodies
 . . power law bodies
 . bodies of revolution
 . . conical bodies
 . . . slender cones
 . . cylindrical bodies
 . . . rotating cylinders
- . . parabolic bodies
 . . power law bodies
 . . spheres
 . . . celestial sphere
 . . . concentric spheres
 . . . falling spheres
 . . . Poincare spheres
 . . . rotating spheres
 . . toruses
 . ellipsoids
 . lenticular bodies
 . streamlined bodies
 . . fairings
 RT axes of rotation
 blunt bodies
 ∞ bodies
 cones
 finned bodies
 flared bodies
 geoids
 ogives
 slender bodies
 spinning unguided rocket trajectory
- symmetry**
 UF *axisymmetry*
 GS **symmetry**
 . broken symmetry
 . . CP violation
 . chirality
 . supersymmetry
 RT antisymmetry
 asymmetry
 congruences
 continuity (mathematics)
 eccentricity
 enantiomers
 geometry
 grand unified theory
 isotropism
 quantiles
 shapes
- symmetry breaking*
 USE **broken symmetry**
- sympathetic nervous system**
 GS anatomy
 . nervous system
 . . autonomic nervous system
 . . . **sympathetic nervous system**
 RT ∞ systems
- sympathomimetics*
 USE **adrenergics**
- Symphonie satellites**
 GS artificial satellites
 . communication satellites
 . . **Symphonie satellites**
 RT Arcosat
 broadcasting
 European space programs
 French satellites
 international cooperation
 radio transmission
 satellite television
 synchronous satellites
 telephony
- symposia*
 USE **conferences**
- symptomology**
 GS medical science
 . **symptomology**
 RT diseases
 signs and symptoms
- symptoms*
 USE **signs and symptoms**
- synapses**
 RT nerves
 nervous system
 neuromuscular transmission
- neurons
 neurotransmitters
 syncoders
- synchrocyclotrons**
 GS particle accelerators
 . cyclic accelerators
 . . **synchrocyclotrons**
 . cyclotrons
 . . **synchrocyclotrons**
 RT bevatron
 synchrotrons
- synchronism**
 DEF The relationship between two or more periodic quantities of the same frequency when the phase difference between them is zero or constant at a predetermined value. Used for beat and synchronization.
 UF *beat*
synchronization
 GS **synchronism**
 . bit synchronization
 . frequency synchronization
 . time synchronization
 RT coincidence circuits
 Dining Philosophers Problem
 phase detectors
 stroboscopes
 synchronizers
 synchrophasing
 time
 time measurement
- synchronization*
 USE **synchronism**
- synchronized oscillators**
 GS oscillators
 . **synchronized oscillators**
 RT frequency synchronization
 phase locked systems
 synchroscopes
- synchronizers**
 RT heliostats
 pulse radar
 servomotors
 synchronism
- Synchronous Communication Satellites*
 USE **SYNCOM satellites**
- Synchronous Communications Satellite Proj**
 SN (SYNCHRONOUS COMMUNICATIONS SATELLITE PROJECT)
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Synchronous Communications Satellite Proj**
 . projects
 . . **Synchronous Communications Satellite Proj**
 . space programs
 . . NASA space programs
 . . . **Synchronous Communications Satellite Proj**
 RT communication satellites
 twenty-four hour orbits
- synchronous detectors*
 USE **correlators**
- Synchronous Earth Observatory satellite**
 UF *SEOS*
 GS artificial satellites
 . meteorological satellites
 . . **Synchronous Earth Observatory satellite**
 . . . SMS 1
 . . . SMS 2
 . synchronous satellites
 . . **Synchronous Earth Observatory satellite**
 . . . SMS 1

... SMS 2
 RT early warning systems
 Landsat satellites
 NASA programs
 programs
 satellite observation
 SEASAT satellites
 Synchronous Meteorological Satellite
 technology utilization

Synchronous Meteorological Satellite

UF *SMS*
 GS artificial satellites
 . meteorological satellites
 .. **Synchronous Meteorological Satellite**
 ... SMS 1
 ... SMS 2
 . synchronous satellites
 .. **Synchronous Meteorological Satellite**
 ... SMS 1
 ... SMS 2
 RT communication satellites
 Synchronous Earth Observatory
 satellite

synchronous motors

GS electromechanical devices
 . electric motors
 .. **synchronous motors**
 motors
 . electric motors
 .. **synchronous motors**
 RT asynchronous motors
 induction motors

synchronous platforms

DEF Space platforms whose rotation is synchronized with that of Earth. Used for geostationary platforms.
 UF *geostationary platforms*
 GS space platforms
 . **synchronous platforms**
 RT communication satellites
 geosynchronous orbits
 ∞ platforms
 synchronous satellites

synchronous satellites

DEF Equatorial west-to-east satellites orbiting the Earth at an altitude of approximately 35,900 kilometers, at which they make one revolution in 24 hours, synchronous with the Earth's rotation. Used for geostationary satellites.
 UF *geostationary satellites*
 GS artificial satellites
 . **synchronous satellites**
 .. AEROS satellite
 .. Aerosat satellites
 .. Anik satellites
 ... Anik 1
 ... Anik 2
 ... Anik 3
 .. GOES satellites
 ... GOES 1
 ... GOES 2
 ... GOES 3
 ... GOES 4
 ... GOES 5
 ... GOES 6
 ... GOES 7
 ... GOES 8
 ... GOES 9
 ... GOES 10
 .. Miranda satellite
 .. SIRIO satellite
 .. StormSat satellite
 .. Synchronous Earth Observatory satellite
 ... SMS 1
 ... SMS 2
 .. Synchronous Meteorological Satellite
 ... SMS 1

... SMS 2
 .. SYNCOM satellites
 ... Early Bird satellites
 ... SYNCOM 1 satellite
 ... SYNCOM 2 satellite
 ... SYNCOM 3 satellite
 ... SYNCOM 4 satellite
 .. TD satellites
 ... TD-1 satellite

RT active satellites
 Arcomsat
 Canadian space program
 communication satellites
 Communications Technology Satellite
 military spacecraft
 navigation satellites
 passive satellites
 Refsat
 stationary orbits
 Symphonie satellites
 synchronous platforms
 twenty-four hour orbits

synchrophasing

RT aircraft noise
 noise reduction
 propeller blades
 synchronism

synchrophasotrons

GS particle accelerators
 .. **synchrophasotrons**
 RT ∞ accelerators
 synchrotrons

synchrosopes

GS circuits
 . phase detectors
 .. **synchrosopes**
 RT correlators
 measuring instruments
 oscilloscopes
 synchronized oscillators

synchrotron radiation

GS electromagnetic radiation
 . nonthermal radiation
 .. **synchrotron radiation**
 . polarized electromagnetic radiation
 .. **synchrotron radiation**
 polarized radiation
 . polarized electromagnetic radiation
 .. **synchrotron radiation**
 RT bremsstrahlung
 extraterrestrial radiation
 ∞ radiation
 radiation protection
 synchrotrons
 x rays

synchrotrons

DEF Devices for accelerating particles, ordinarily electrons, in a circular orbit in an increasing magnetic field by means of an alternating field applied in a synchronism with the orbital motion.
 GS particle accelerators
 . cyclic accelerators
 .. **synchrotrons**
 ... bevatron
 ... storage rings (particle accelerators)
 RT betatrons
 cyclotrons
 electron accelerators
 ion accelerators
 microtrons
 synchrocyclotrons
 synchrophasotrons
 synchrotron radiation

synclines

UF *synclinoria*
 RT anticlines
 domes (geology)
 geological faults

geosynclines
 ∞ layers
 strata
 stratification
 stratigraphy

synclinoria

USE **synclines**

syncoders

RT bionics
 neurons
 synapses

SYNCOM 1 satellite

GS artificial satellites
 . active satellites
 .. SYNCOM satellites
 ... **SYNCOM 1 satellite**
 . communication satellites
 .. SYNCOM satellites
 ... **SYNCOM 1 satellite**
 . synchronous satellites
 .. SYNCOM satellites
 ... **SYNCOM 1 satellite**
 RT Delta launch vehicle

SYNCOM 2 satellite

GS artificial satellites
 . active satellites
 .. SYNCOM satellites
 ... **SYNCOM 2 satellite**
 . communication satellites
 .. SYNCOM satellites
 ... **SYNCOM 2 satellite**
 . synchronous satellites
 .. SYNCOM satellites
 ... **SYNCOM 2 satellite**
 RT Delta launch vehicle

SYNCOM 3 satellite

GS artificial satellites
 . active satellites
 .. SYNCOM satellites
 ... **SYNCOM 3 satellite**
 . communication satellites
 .. SYNCOM satellites
 ... **SYNCOM 3 satellite**
 . synchronous satellites
 .. SYNCOM satellites
 ... **SYNCOM 3 satellite**
 RT Delta launch vehicle

SYNCOM 4 satellite

DEF A geosynchronous communications satellite that was deployed on Space Shuttle STS 51A in November 1984.
 GS artificial satellites
 . active satellites
 .. SYNCOM satellites
 ... **SYNCOM 4 satellite**
 . communication satellites
 .. SYNCOM satellites
 ... **SYNCOM 4 satellite**
 . synchronous satellites
 .. SYNCOM satellites
 ... **SYNCOM 4 satellite**

SYNCOM apogee engines

GS engines
 . rocket engines
 .. solid propellant rocket engines
 ... **SYNCOM apogee engines**
 . Vernier engines
 ... **SYNCOM apogee engines**
 . torpedo engines
 . Vernier engines
 ... **SYNCOM apogee engines**

SYNCOM satellites

UF *Synchronous Communication Satellites*
 GS artificial satellites
 . active satellites
 .. **SYNCOM satellites**
 ... Early Bird satellites

... SYNCOM 1 satellite
 ... SYNCOM 2 satellite
 ... SYNCOM 3 satellite
 ... SYNCOM 4 satellite
 . communication satellites
 .. **SYNCOM satellites**
 ... Early Bird satellites
 ... SYNCOM 1 satellite
 ... SYNCOM 2 satellite
 ... SYNCOM 3 satellite
 ... SYNCOM 4 satellite
 . synchronous satellites
 .. **SYNCOM satellites**
 ... Early Bird satellites
 ... SYNCOM 1 satellite
 ... SYNCOM 2 satellite
 ... SYNCOM 3 satellite
 ... SYNCOM 4 satellite
 RT Thor Delta launch vehicle

syncope

UF *fainting*
 GS **syncope**
 . blackout (physiology)
 . . blackout prevention
 RT unconsciousness

syndromes

USE **signs and symptoms**

syngas

(added January 2002)
 USE **synthesis gas**

synoptic measurement

RT ∞ measurement
 nephanalysis

synoptic meteorology

DEF The study and analysis of weather information gathered at the same time.

GS meteorology
 . **synoptic meteorology**
 RT air masses
 anticyclones
 cold fronts
 cyclones
 fronts (meteorology)
 meteorological charts
 nephanalysis
 teleconnections (meteorology)
 warm fronts
 weather forecasting

syntax

GS linguistics
 . **syntax**
 RT format
 grammars
 ∞ interpretation
 languages
 natural language processing
 orthography
 parsing algorithms
 psycholinguistics
 semantics
 sentences
 speech

syntectic alloys

DEF Metallic composite materials characterized by a reversible convertibility of their solid phases into two liquid phases by the application of heat.

GS alloys
 . **syntectic alloys**
 RT eutectics
 liquid phases
 metals
 phase transformations
 solid phases

synthane

UF *synthetic methane*
 GS fuels
 . chemical fuels

.. hydrocarbon fuels

... **synthane**
 .. synthetic fuels
 ... **synthane**
 RT automobile fuels
 carbon dioxide
 carbon monoxide
 coal
 coal gasification
 gasification
 hydrogen
 lignite
 methane

∞ **synthesis**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT biosynthesis
 chemical reactions
 decision theory
 ∞ design
 network synthesis
 nuclear fusion
 operations research
 plasma jet synthesis
 synthesis (chemistry)
 synthetic fuels
 systems engineering

synthesis (chemistry)

DEF The application of chemical reactions to obtain desired chemical products.

GS **synthesis (chemistry)**
 . polymerization
 . . copolymerization
 . . dimerization
 . electrochemical synthesis
 RT addition resins
 chemical reactions
 ∞ chemistry
 cycloaddition
 Fischer-Tropsch process
 operations research
 self assembly
 ∞ synthesis
 synthesis gas
 synthetic fibers
 synthetic fuels
 synthetic resins
 synthetic rubbers
 systems engineering

synthesis gas

(added January 2002)

DEF A mixture of gases produced as feedstock for the synthesis of chemical compounds, for example, hydrogen and carbon monoxide used as the starting material for the production of ammonia derivatives, methanol, and hydrocarbons.

UF *syngas*
 GS gases
 . **synthesis gas**
 RT catalysts
 coal derived gases
 coal gasification
 fuel production
 synthesis (chemistry)
 synthetic fuels

synthesizers

RT chemical reactors
 frequency synthesizers

synthetic aperture radar

DEF Active microwave sensors providing all-weather, high resolution imagery. Used for imaging radar.

GS radar
 . **synthetic aperture radar**
 . . Shuttle Imaging Radar
 . . side-looking radar
 RT airborne radar
 Earthnet
 Envisat-1 satellite
 ground penetrating radar

imaging radar
 Magellan spacecraft (NASA)
 microwave imagery
 microwave sensors
 radar equipment
 Radarsat
 satellite-borne radar
 surveillance radar
 synthetic apertures
 Venus orbiting imaging radar
 (spacecraft)

synthetic apertures

DEF In radar technology, the simulations of large antennas by correcting the phase and magnitude of the return signals from smaller antennas, permitting the use of lower frequencies for airborne radars.

GS openings
 . apertures
 . . **synthetic apertures**
 RT imaging techniques
 synthetic aperture radar

synthetic arrays

GS arrays
 . **synthetic arrays**
 RT antenna radiation patterns
 apertures
 distribution (property)
 ∞ patterns
 Shuttle Imaging Radar

synthetic fibers

GS fibers
 . **synthetic fibers**
 . . aramid fibers
 . . . Kevlar (trademark)
 . . ceramic fibers
 . . Dacron (trademark)
 . . Fortisan (trademark)
 . . glass fibers
 . . Nylon (trademark)
 . . rayon
 . . Vycor
 RT addition resins
 flame retardants
 Kevlar (trademark)
 polyacrylonitrile
 polybenzimidazole
 polyesters
 reinforcing fibers
 synthesis (chemistry)
 wet spinning

synthetic food

DEF Mixture of roughage, vitamins, minerals, etc. , closely approximating natural foods in appearance, taste, and nutrition.

RT amino acids
 biosynthesis
 carbohydrates
 cellulose
 eating
 fats
 ∞ food
 food intake
 nutritional requirements
 protein metabolism
 proteins
 taste

synthetic fuels

GS fuels
 . chemical fuels
 . . **synthetic fuels**
 . . . gasohol (fuel)
 . . . synthane
 RT chemical reactions
 clean fuels
 Fischer-Tropsch process
 hydrocarbon fuels
 liquid fuels
 ∞ synthesis
 synthesis (chemistry)

- synthesis gas
- synthetic metals**
 DEF Materials which do not occur in nature but have the appearance and physical properties of true metals.
 RT crystal lattices
 dendrimers
 graphite
 organometallic compounds
- synthetic methane*
 USE **synthane**
- synthetic resins**
 GS plastics
 . **synthetic resins**
 . . addition resins
 . . . acrylic resins
 . . . vinyl copolymers
 . . polyester resins
 . . polyether resins
 . . . PEEK
 . . . polymethyl methacrylate
 . . thermoplastic resins
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 . . thermosetting resins
 . . . epoxy resins
 phenolic epoxy resins
 . . . furan resins
 polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 . . . phenolic epoxy resins
 resins
 . **synthetic resins**
 . . addition resins
 . . . acrylic resins
 . . . vinyl copolymers
 . . polyester resins
 . . polyether resins
 . . . PEEK
 . . . polymethyl methacrylate
 . . thermoplastic resins
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 . . thermosetting resins
 . . . epoxy resins
 phenolic epoxy resins
 . . . furan resins
 polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 . . . phenolic epoxy resins
 RT polyethylenes
 ∞ polymers
 polypropylene
 polystyrene
 polytetrafluoroethylene
 polyvinyl alcohol
 polyvinyl chloride
 synthesis (chemistry)
 teflon (trademark)
- synthetic rubbers**
 GS elastomers
 . rubber
 . . **synthetic rubbers**
 . . . Adiprene (trademark)
 . . . Buna (trademark)
 . . . silicone rubber
 RTV-40 rubber (trademark)
 RTV-60 rubber (trademark)
 . . . Viton rubber (trademark)
 . . . vulcanized elastomers
 RTV-40 rubber (trademark)
 RTV-60 rubber (trademark)
 . . . chloroprene resins
 RT latex
- polybutadiene
 polyisobutylene
 polyisoprenes
 solithanes
 synthesis (chemistry)
- synthetic vision*
 USE **enhanced vision**
- synphony**
 DEF The situation of two or more oscillating circuits having the same resonant frequency.
 RT frequency synchronization
 oscillations
 resonance
- syphilis**
 GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **syphilis**
- Syria**
 GS nations
 . **Syria**
 RT Asia
- syringes**
 GS laboratory equipment
 . **syringes**
 medical equipment
 . **syringes**
 RT bulbs
 ∞ equipment
 fluid flow
 pipes (tubes)
 transfusion
- System 10 computer*
 USE **PDP 10 computer**
- system effectiveness**
 GS effectiveness
 . **system effectiveness**
 RT modulation transfer function
 optical transfer function
 reliability
 reliability engineering
 ∞ systems
 systems engineering
 systems health monitoring
 systems integration
- system failures**
 GS failure
 . **system failures**
 RT ∞ breakdown
 deterioration
 downtime
 fatigue (materials)
 fault detection
 malfunctions
 short circuits
 structural failure
 structural strain
 ∞ systems
 wear
- system generated electromagnetic pulses**
 DEF Electromagnetic fields generated by the emission of a large electronic current from a metallic body in space caused by the incidence on its surface of strong ionizing radiation pulses (usually x ray) from space. Used for SGEMP.
 UF *SGEMP*
 GS electromagnetic fields
 . **system generated electromagnetic pulses**
 electromagnetic radiation
 . electromagnetic pulses
 . . **system generated electromagnetic pulses**
 pulsed radiation
 . electromagnetic pulses
 . . **system generated electromagnetic pulses**
- pulses
 . electromagnetic pulses
 . . **system generated electromagnetic pulses**
- RT electric current
 electric pulses
 electromagnetic interference
 electronic equipment
 external surface currents
 extraterrestrial radiation
 ionizing radiation
 plasma sheaths
 satellite communication
 spacecraft charging
 spacecraft communication
 x rays
- system identification**
 DEF The technology of modeling plants and processes from their dynamic response.
 GS estimating
 . **system identification**
 identifying
 . **system identification**
 systems analysis
 . **system identification**
 RT complex systems
 control systems design
 dynamic response
 estimates
 fuzzy systems
 mathematical models
 maximum likelihood estimates
 observability (systems)
 optimization
 parameter identification
 parameterization
 prediction analysis techniques
 probability theory
 reliability engineering
 statistical analysis
 steepest descent method
 ∞ systems
 systems engineering
- systematic errors**
(added April 1997)
 DEF Non-random and often predictable errors due to some physical law or caused by flaws in a measurement process.
 GS errors
 . **systematic errors**
 RT error analysis
 instrument compensation
 instrument errors
 random errors
- ∞ **systems**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Advanced Vidicon Camera System (AVCS)
 aerospace systems
 afferent nervous systems
 African rift system
 air cushion landing systems
 Airborne Integrated Reconnaissance System
 aircraft fuel systems
 aircraft hydraulic systems
 all-weather landing systems
 Aloha system
 annular suspension and pointing system
 Apollo extension system
 ascent propulsion systems
 Astroguide Navigation System
 Atmospheric & Oceanographic Inform Sys
 automated pilot advisory system
 automated radar terminal system
 automatic traffic advisory and resolution
 autonomic nervous system
 Ballistic Missile Early Warning System
 Beacon Collision Avoidance System

binary systems (materials)
 Bioastronautical Orbital Space System
 biocontrol systems
 cardiovascular system
 celestial reference systems
 Central Electronic Management System
 central nervous system
 central nervous system depressants
 central nervous system stimulants
 chokes (fuel systems)
 closed ecological systems
 complex systems
 computer systems design
 computer systems performance
 computer systems programs
 computer systems simulation
 cooling systems
 cybernetics
 data base management systems
 data systems
 Defense Communications Satellite System
 defense communications system (DCS)
 descent propulsion systems
 digestive system
 digital command systems
 digital systems
 discrete address beacon system
 disk operating system (DOS)
 display devices
 distributed parameter systems
 domestic satellite communications systems
 early warning systems
 Earth Resources Information System
 Earth terminal measurement system
 Earth-Moon system
 ecosystems
 efferent nervous systems
 EISCAT radar system (Europe)
 ∞ elastic systems
 electronic recording systems
 emergency life sustaining systems
 endocrine systems
 end-to-end data systems
 escape systems
 exhaust systems
 fail-safe systems
 feed systems
 feedback
 Fleet Satellite Communication System
 fuel systems
 fuzzy systems
 gastrointestinal system
 genitourinary system
 Global Positioning System
 Goddard Trajectory Determination System
 ground operational support system
 ground support systems
 guidance (motion)
 hardening (systems)
 hematopoietic system
 hybrid navigation systems
 hydraulic equipment
 hydroplanes (surfaces)
 hydrothermal systems
 ∞ hyperbolic systems
 IFF systems (identification)
 ignition systems
 IMLSS
 inertial reference systems
 information adaptive system
 information systems
 instrument landing systems
 intake systems
 integrated energy systems
 integrated global ocean station systems
 International System of Units
 intravascular system
 jettison systems
 launch escape systems
 life support systems

Light Airborne Multipurpose System
 linear systems
 LOCATES system
 LORAC navigation system
 lubrication systems
 lumped parameter systems
 Lunar Exploration System for Apollo
 man machine systems
 man operated propulsion systems
 management information systems
 management systems
 metal-gas systems
 methoxy systems
 microwave landing systems
 microwave scanning beam landing system
 MIMO (control systems)
 minitrack system
 Miros system
 missile systems
 Modular Integrated Utility System
 musculoskeletal system
 NASA Interactive Planning System
 National Airspace Utilization System
 National Aviation System
 National Oceanic Satellite System
 navigation
 needs (data system)
 nervous system
 Nike X systems
 NOESS
 nonlinear systems
 Nova Laser System
 observability (systems)
 Omega Navigation System
 on-line systems
 operating systems (computers)
 optical relay systems
 payload deployment & retrieval system
 peripheral nervous system
 phase locked systems
 piggyback systems
 planetary systems
 PLAT system
 pneumatic equipment
 pointing control systems
 polystation doppler tracking system
 portable life support systems
 post boost propulsion system
 propulsion system configurations
 propulsion system performance
 public address systems
 quality control
 radio relay systems
 Ranger block 3 television system
 rapid transit systems
 ∞ reference systems
 remote manipulator system
 reproductive systems
 respiratory system
 rotor systems research aircraft
 Safeguard system
 SAGE air defense system
 satellite navigation systems
 self adaptive control systems
 self organizing systems
 Sentinel system
 Shiva laser system
 SISO (control systems)
 SNAP
 solar system
 solar total energy systems
 space detection and tracking system
 space transportation system
 Space Transportation System flights
 support systems
 suspension systems (vehicles)
 sympathetic nervous system
 system effectiveness
 system failures
 system identification
 systems analysis
 systems engineering
 systems integration
 systems management
 systems simulation

systems stability
 telecommunication
 telegraph systems
 teletypewriter systems
 television systems
 TERCOM
 ternary systems
 TIROS operational satellite system
 total energy systems
 TRADEX radar system
 transcontinental systems
 transfer functions
 transoceanic systems
 Typhon weapon system
 uncertain systems
 vacuum systems
 variable mass systems
 vortex advisory system
 warning systems
 weapon system management
 weapon systems

systems analysis

GS **systems analysis**
 . system identification
 RT ∞ analyzing
 block diagrams
 bond graphs
 complex systems
 computer programming
 computer systems programs
 computer systems simulation
 control systems design
 feasibility analysis
 fuzzy systems
 man machine systems
 mathematical models
 modulation transfer function
 observability (systems)
 operating costs
 operations research
 optical transfer function
 parameter identification
 preflight analysis
 procedures
 program verification (computers)
 sensitivity analysis
 simulation
 sociology
 statistical analysis
 ∞ systems
 trajectory analysis
 weight analysis
 weight reduction

systems compatibility

GS compatibility
 . **systems compatibility**
 RT interoperability
 reliability
 reliability engineering

systems design

USE **systems engineering**

systems engineering

DEF The process of applying science and technology to the study and planning of a system so that the relationships of various parts of the system and the use of various subsystems are fully established before designs are committed.

UF *systems design*
 GS **systems engineering**
 . computer systems design
 . control systems design
 RT aerospace systems
 aircraft design
 ∞ automation
 bionics
 bond graphs
 communicating
 concurrent engineering
 contract management
 ∞ control
 critical path method

cybernetics
 data processing
 decision making
 decision theory
 ∞ design
 design optimization
 electrical engineering
 ∞ engineering
 experiment design
 flight management systems
 forecasting
 functional design specifications
 human factors engineering
 information theory
 life cycle costs
 man machine systems
 management
 management planning
 mathematical models
 mechanization
 missile design
 modularity
 multidisciplinary design optimization
 observability (systems)
 operational problems
 ∞ operations
 operations research
 optical transfer function
 orbit spectrum utilization
 parameter identification
 reliability
 reliability engineering
 research and development
 reverse engineering
 satellite design
 software engineering
 spacecraft design
 statistical analysis
 ∞ statistics
 ∞ synthesis
 synthesis (chemistry)
 system effectiveness
 system identification
 ∞ systems
 systems integration

Systems for Nuclear Auxiliary Power
 USE **SNAP**

systems health monitoring

(added July 1995)

SN ((NOT USED FOR PHYSIOLOGICAL,
 PSYCHOLOGICAL, OR BIOLOGICAL
 SYSTEMS))
 UF *health and usage monitoring systems*
 RT component reliability
 engine monitoring instruments
 expert systems

fault detection
 life (durability)
 propulsion system performance
 service life
 smart structures
 software reliability
 system effectiveness

systems integration

DEF The combining of subsystems each with numerous interfaces for the input and output of data and each with specified functions vital to the planned success of the main system.

RT airborne/spaceborne computers
 avionics
 control systems design
 digital systems
 interoperability
 system effectiveness
 ∞ systems
 systems engineering
 systems simulation
 systems-on-a-chip

systems management

GS management
 . **systems management**
 RT industrial management
 information systems
 man machine systems
 management methods
 operations research
 ∞ systems

systems simulation

DEF The simulation of any dynamic system.
 GS simulation
 . **systems simulation**
 . . computer systems simulation
 RT analog simulation
 computerized simulation
 dynamic models
 dynamical systems
 flight simulation
 hardware-in-the-loop simulation
 mathematical models
 model reference adaptive control
 operations research
 ∞ systems
 systems integration

systems stability

GS stability
 . **systems stability**
 RT control stability
 dynamic stability
 equations of motion

∞ equilibrium
 flow stability
 loop transfer recovery
 MIMO (control systems)
 SISO (control systems)
 ∞ systems
 unsteady state

systems-on-a-chip

(added May 2001)

DEF Single electronic chips that incorporate the multiple functional elements comprising a complete system; usually include processor core, I/O subsystems, and memory elements, and may include mixed-signal and mixed-technology subsystems.

UF *SOAC (electronics)*
 GS chips (electronics)
 . **systems-on-a-chip**
 RT application specific integrated circuits
 large scale integration
 microelectronics
 microminiaturized electronic devices
 RISC processors
 systems integration

systole

GS heart function
 . **systole**
 rates (per time)
 . **systole**
 RT blood flow
 blood pressure
 cardiac ventricles
 cardiovascular system
 diastole
 heart rate
 systolic pressure

systolic arrays

GS arrays
 . **systolic arrays**
 RT algorithms
 architecture (computers)
 chips (electronics)
 computation
 parallel processing (computers)
 very large scale integration

systolic pressure

GS pressure
 . blood pressure
 . . **systolic pressure**
 RT systole

S-Z effect

(added July 2000)

USE **Sunyaev-Zeldovich effect**

T

T shape

- UF *tee*
- GS shapes
 - . **T shape**
- RT beams (supports)

T tail surfaces

- GS assemblies
 - . tail assemblies
 - . . . **T tail surfaces**
 - tail surfaces
 - . **T tail surfaces**
- RT control surfaces
 - stabilizers (fluid dynamics)
- ∞ surfaces
 - sweptback tail surfaces

T Tauri stars

- GS celestial bodies
 - . stars
 - . . . protostars
 - . . . pre-main sequence stars
 - **T Tauri stars**
 - . . . variable stars
 - **T Tauri stars**
- RT Herbig-Haro objects
 - star formation
 - Taurus constellation

T-2 aircraft

- UF *buckeye aircraft*
- T2J aircraft*
- YT-2 aircraft*
- GS attack aircraft
 - . **T-2 aircraft**
 - jet aircraft
 - . **T-2 aircraft**
 - monoplanes
 - . **T-2 aircraft**
 - North American aircraft
 - . **T-2 aircraft**
 - single engine aircraft
 - . **T-2 aircraft**
 - training aircraft
 - . **T-2 aircraft**
- RT ∞ aircraft

T2J aircraft

- USE **T-2 aircraft**

T3J aircraft

- USE **T-39 aircraft**

T-28 aircraft

- UF *Trojan aircraft*
- GS monoplanes
 - . **T-28 aircraft**
- North American aircraft
 - . **T-28 aircraft**
- single engine aircraft
 - . **T-28 aircraft**
- training aircraft
 - . **T-28 aircraft**
- RT ∞ aircraft

T-33 aircraft

- UF *F-80 aircraft*
- Shooting Star aircraft*
- GS jet aircraft
 - . **T-33 aircraft**
- Lockheed aircraft
 - . **T-33 aircraft**
- monoplanes
 - . **T-33 aircraft**
- single engine aircraft
 - . **T-33 aircraft**
- training aircraft
 - . **T-33 aircraft**

RT ∞ aircraft

T-34 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
 - . aircraft engines
 - . . **T-34 engine**
 - internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
- RT C-133 aircraft

T-37 aircraft

- GS Cessna aircraft
 - . **T-37 aircraft**
- jet aircraft
 - . **T-37 aircraft**
- monoplanes
 - . **T-37 aircraft**
- training aircraft
 - . **T-37 aircraft**
- RT A-37 aircraft
- ∞ aircraft

T-38 aircraft

- UF *Talon aircraft*
- GS jet aircraft
 - . **T-38 aircraft**
- monoplanes
 - . **T-38 aircraft**
- Northrop aircraft
 - . **T-38 aircraft**
- supersonic aircraft
 - . **T-38 aircraft**
- training aircraft
 - . **T-38 aircraft**
- RT ∞ aircraft

T-38 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - . aircraft engines
 - . . **T-38 engine**
 - internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**

T-39 aircraft

- UF *Sabreliner aircraft*
- T3J aircraft*
- GS jet aircraft
 - . **T-39 aircraft**
- monoplanes

. T-39 aircraft

- North American aircraft
 - . **T-39 aircraft**
- passenger aircraft
 - . **T-39 aircraft**
- training aircraft
 - . **T-39 aircraft**
- utility aircraft
 - . **T-39 aircraft**
- RT ∞ aircraft
- cargo aircraft

T-53 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-53 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-53 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-53 engine**
- RT helicopter engines

T-55 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - . aircraft engines
 - . . **T-55 engine**
 - internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
- RT helicopter engines

T-56 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**

- RT C-130 aircraft
- T-58 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . **T-58 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . **T-58 engine**
 . turbine engines
 . . gas turbine engines
 . . . **T-58 engine**
 RT aircraft engines
 helicopter engines
 vertical takeoff aircraft
- T-63 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-63 engine**
 . aircraft engines
 . . **T-63 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-63 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-63 engine**
 RT helicopter engines
- T-64 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-64 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-64 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-64 engine**
 RT helicopter engines
- T-74 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-74 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-74 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-74 engine**
- RT helicopter engines
- T-76 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-76 engine**
 . aircraft engines
 . . **T-76 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-76 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-76 engine**
 RT helicopter engines
- T-78 engine**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-78 engine**
 . aircraft engines
 . . **T-78 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-78 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turboprop engines
 **T-78 engine**
- tables (data)**
 DEF (1) An array of data, each item of which may be unambiguously identified by means of one or more arguments. (2) A collection of data in which each item is uniquely identified by a label, by its position relative to the other items, or by some other means.
 GS **tables (data)**
 . conversion tables
 . interference factor table
 . mathematical tables
 RT air data systems
 astronomical catalogs
 ∞ data
 data acquisition
 data management
 data processing
 data recording
 data reduction
 data retrieval
 printouts
 spreadsheets
 statistical analysis
 ∞ statistics
 ∞ tabulation
 tabulation processes
- tablets**
 RT briquets
 ∞ capsules
 molds
- tabs (control surfaces)**
 GS airfoils
 . **tabs (control surfaces)**
 control surfaces
 . **tabs (control surfaces)**
- RT aerial rudders
 ailerons
 ∞ control
 elevators (control surfaces)
 elevons
 rudders
 stabilizers (fluid dynamics)
 ∞ surfaces
- tabulating*
 USE **tabulation processes**
- ∞ **tabulation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT tables (data)
 tabulation processes
- tabulation processes**
 UF *tabulating*
 RT data processing
 data recording
 tables (data)
 ∞ tabulation
- Tacan**
 DEF A two dimensional navigation system which provides azimuth and distance to a fixed ground station for navigation in piloted aircraft. Used for tactical air navigation.
 UF *tactical air navigation*
 GS navigation
 . radio navigation
 . . **Tacan**
 RT air navigation
 all-weather air navigation
 flight paths
 navigation aids
 radar navigation
 solar compasses
- tachistoscopes**
 RT visual perception
- tachometers**
 GS display devices
 . speed indicators
 . . **tachometers**
 measuring instruments
 . indicating instruments
 . . speed indicators
 . . . **tachometers**
 RT aircraft instruments
 angular velocity
 timing devices
 velocity measurement
- tachycardia**
 GS diseases
 . **tachycardia**
 rates (per time)
 . heart rate
 . . **tachycardia**
- tachyons**
 GS particles
 . elementary particles
 . . hypothetical particles
 . . . **tachyons**
- tachypnea**
 GS rates (per time)
 . respiratory rate
 . . **tachypnea**
- tackiness**
 RT adhesion
- TACT program**
 UF *Transonic Aircraft Technology Program*
 GS programs
 . NASA programs
 . . **TACT program**
 RT ∞ aeronautics

tactics

∞ aircraft

tactical air navigation

USE **Tacan**

tactics

RT attacking (assaulting)
deployment
evasive actions
military operations
military technology
obstacle avoidance

tactile discrimination

GS discrimination
. sensory discrimination
. . **tactile discrimination**
perception
. sensory perception
. . touch
. . . **tactile discrimination**
RT tactile sensors (robotics)

tactile sensation

USE **touch**

tactile sensors (robotics)

(added January 1991)

GS robot sensors
. **tactile sensors (robotics)**
RT end effectors
manipulators
robots
∞ sensors
servomechanisms
tactile discrimination
teleoperators
touch

Tafel law

GS laws
. **Tafel law**
RT electrodes
electrolysis
Ficks equation
polarization (charge separation)

tagging

USE **marking**

TAGN

UF *triaminoguanidinenitrate*
GS oxidizers
. rocket oxidizers
. . **TAGN**
propellants
. rocket propellants
. . **TAGN**
RT explosives

Taguchi methods

(added September 2000)

DEF Quality engineering methodology, developed by Genichi Taguchi, for minimizing a product's sensitivity to uncontrollable system disturbances by simultaneously varying both design and disturbance parameters. The method incorporates a special set of arrays called orthogonal arrays that define the minimal number of experiments that would provide the full information for all factors that affect the performance parameter.

GS quality control
. **Taguchi methods**
RT design analysis
experiment design
multidisciplinary design optimization
optimization
parameter identification
reliability engineering
statistical analysis
total quality management

tail assemblies

DEF The rear part of a body, as of an aircraft or a rocket. The tail surfaces of an

aircraft or rocket. Used for empennage, tail mountings, tails (assemblies), and vertical tails.

UF *empennage*
tail mountings
tails (assemblies)
vertical tails

GS assemblies
. **tail assemblies**
. . horizontal tail surfaces
. . sweptback tail surfaces
. . swing tail assemblies
. . T tail surfaces
. . trapezoidal tail surfaces

RT aerial rudders
afterbodies
aircraft parts
aircraft structures
airfoils
airframes
boattails
body-wing and tail configurations
∞ boom
control surfaces
elevators (control surfaces)
fins
hydrofoils
marine rudders
missile structures
rudders
sails
stabilizers (fluid dynamics)
vanes

tail mountings

USE **tail assemblies**

tail planes

USE **horizontal tail surfaces**

tail rotors

GS rotating bodies
. rotors
. . **tail rotors**
. . . helicopter tail rotors
RT helicopter control
rotary wings
∞ rotor blades

tail surfaces

GS **tail surfaces**
. horizontal tail surfaces
. sweptback tail surfaces
. T tail surfaces
. trapezoidal tail surfaces
RT control surfaces
elevators (control surfaces)
rudders
stabilizers (fluid dynamics)
∞ surfaces

tailless aircraft

UF *flying wing aircraft*
GS **tailless aircraft**
. AVRO 707 aircraft
. B-58 aircraft
. F-102 aircraft
. F-106 aircraft
. FD 2 aircraft
. HP-115 aircraft
. Mirage 3 aircraft
. SC-1 aircraft
. Vulcan aircraft
. X-36 aircraft
. X-45 aircraft
RT ∞ aircraft
blended-wing-body configurations
jet aircraft
∞ low wing aircraft
∞ military aircraft
monoplanes

research aircraft

tailoring

USE **design**

tails (assemblies)

USE **tail assemblies**

Taiwan

UF *Republic of China*
GS nations
. **Taiwan**
RT Asia
China
Chinese space program
Chinese spacecraft
Hong Kong

Tajikistan

(added August 1993)

GS nations
. **Tajikistan**
RT Asia

takeoff

DEF The action of a rocket vehicle departing from its launch pad. The action of an aircraft as it becomes airborne.

GS **takeoff**
. vertical takeoff
RT air traffic control
ascent
climbing flight
JATO engines
landing
maneuvers
runways

takeoff runs

RT aircraft performance
distance
runway alignment
short takeoff aircraft

takeoff systems

USE **aircraft launching devices**

talc

UF *steatite*
GS magnesium compounds
. **talc**
minerals
. **talc**
silicon compounds
. silicates
. . sodium silicates
. . . **talc**
sodium compounds
. sodium silicates
. . **talc**

talking

GS speech
. **talking**
RT sentences
signal transmission

Talon aircraft

USE **T-38 aircraft**

Talos missile

GS missiles
. surface to air missiles
. . **Talos missile**
RT Bumblebee project
liquid propellant rocket engines
multistage rocket vehicles
solid propellant rocket engines

tandem mirrors

GS mirrors
. magnetic mirrors
. . **tandem mirrors**
RT fusion reactors
mirror fusion

plasma control
thermal barriers (plasma control)

tandem rotor helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . **tandem rotor helicopters**
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . H-25 helicopter
RT ∞ aircraft

tandem wing aircraft
DEF An aircraft configuration having two wings of similar span, mounted in tandem.
GS **tandem wing aircraft**
. X-19 aircraft
. X-22A aircraft
RT ∞ aircraft
biplanes
canard configurations
dual wing configurations
jet aircraft
joined wings
research aircraft
∞ subsonic aircraft
X-22 aircraft

tangential blowing
(added October 1996)
GS blowing
. **tangential blowing**
RT boundary layer control
chords (geometry)
circulation control airfoils
jet flaps
lift augmentation
spanwise blowing
wing slots

tangents
GS analysis (mathematics)
. real variables
. . . periodic functions
. . . . trigonometric functions
. . . . **tangents**
functions (mathematics)
. transcendental functions
. . . periodic functions
. . . . trigonometric functions
. . . . **tangents**
geometry
. Euclidean geometry
. . . analytic geometry
. . . . **tangents**
RT chords (geometry)

tangling
RT confusion
entrapment
mixing

tank geometry
GS geometry
. **tank geometry**
RT liquid sloshing
propellant tanks
storage tanks
tanks (containers)
ullage

tank trucks
GS surface vehicles
. motor vehicles
. . . trucks
. . . . **tank trucks**
RT ∞ tankers
trailers

tanker aircraft
GS transport aircraft
. **tanker aircraft**
RT air to air refueling
∞ aircraft
aircraft fuels

bomber aircraft
fuel tanks
∞ military aircraft
∞ tankers
Valiant aircraft

tanker ships
GS surface vehicles
. cargo ships
. . . **tanker ships**
water vehicles
. ships
. . . cargo ships
. . . . **tanker ships**
RT artificial harbors
deepwater terminals
harbors
marine transportation
offshore docking
offshore platforms
shipyards
∞ tankers
wharves

tanker terminals
RT artificial harbors
cargo ships
deepwater terminals
marine technology
oceanography
offshore docking
offshore platforms
ship terminals
∞ tankers
terminal facilities
transportation

∞ tankers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT artificial harbors
deepwater terminals
offshore docking
offshore platforms
tank trucks
tanker aircraft
tanker ships
tanker terminals
transportation energy

tanks (combat vehicles)
GS surface vehicles
. **tanks (combat vehicles)**
RT armed forces
military operations
∞ military vehicles
ordnance
∞ vehicles
weapons

tanks (containers)
GS **tanks (containers)**
. bunkers (fuel)
. cylindrical tanks
. external tanks
. fuel tanks
. . . wing tanks
. cryogenic tanks
. propellant tanks
. spherical tanks
. storage tanks
RT basins (containers)
bottles
chemical reactors
∞ containers
drums (containers)
fluid filled shells
liquid filled shells
materials handling
pipe nozzles
pressure vessels
receivers
∞ structures
tank geometry
towers

wing-fuselage stores

tantalum
GS chemical elements
. **tantalum**
. . . tantalum isotopes
metals
. refractory metals
. . . **tantalum**
. . . . tantalum isotopes
. . . . transition metals
. . . . **tantalum**
. tantalum isotopes
refractory materials
. refractory metals
. . . **tantalum**
. . . . tantalum isotopes

tantalum alloys
GS alloys
. heat resistant alloys
. . . refractory metal alloys
. . . . **tantalum alloys**
refractory materials
. refractory metal alloys
. . . **tantalum alloys**
RT hafnium alloys

tantalum carbides
GS carbon compounds
. carbides
. . . **tantalum carbides**
tantalum compounds
. **tantalum carbides**

tantalum compounds
GS **tantalum compounds**
. tantalum carbides
. tantalum nitrides
. tantalum oxides
RT ∞ chemical compounds
∞ Group 5B compounds
∞ metal compounds

tantalum isotopes
GS chemical elements
. nuclides
. . . isotopes
. . . . **tantalum isotopes**
. tantalum
. . . **tantalum isotopes**
metals
. refractory metals
. . . tantalum
. . . . **tantalum isotopes**
. . . . transition metals
. . . . tantalum
. . . . **tantalum isotopes**
refractory materials
. refractory metals
. . . tantalum
. . . . **tantalum isotopes**

tantalum nitrides
GS nitrogen compounds
. nitrides
. . . metal nitrides
. . . . **tantalum nitrides**
tantalum compounds
. **tantalum nitrides**

tantalum oxides
GS chalcogenides
. oxides
. . . metal oxides
. . . . **tantalum oxides**
tantalum compounds
. **tantalum oxides**

Tanzania
GS nations
. **Tanzania**
RT Africa

tape recorders
UF *magnetic tape recorders*

tapered columns

GS recording instruments
. **tape recorders**
. . video tape recorders

RT data recorders
electronic recording systems
magnetic tape transports
magnetic tapes

∞ recorders
recording heads

taper
USE **tapering**

tapered columns
GS structural members
. columns (supports)
. . **tapered columns**

tapered wings
USE **swept wings**

tapering
UF *taper*
RT convergence
deceleration
∞ reduction

∞ **tapes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT adhesives
audio tapes
computer compatible tapes
fasteners
heat tapes
magnetic tapes
plastic tapes
playbacks
punched tapes
ribbons
seals (stoppers)
splicing
video tapes

taps
RT cutters
drills
machine tools
tools

tar sands
GS resources
. Earth resources
. . **tar sands**
sediments
. sands
. . **tar sands**
soils
. sands
. . **tar sands**

RT distillation
oil exploration
oil fields
oils
tars

TARE (data reduction)
USE **data reduction**

target acquisition
DEF The process of optically, manually, mechanically, or electronically orienting tracking systems in the direction and range to lock on a target.

GS acquisition
. **target acquisition**

RT detection
high alt target and background measurement
MATTS (systems)
missile detection
moving target indicators
multiple target tracking
sound ranging
surveillance

targets

target drone aircraft
GS drone vehicles
. drone aircraft
. . **target drone aircraft**
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
pilotless aircraft
. drone aircraft
. . **target drone aircraft**
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft

RT ∞ aircraft
∞ military aircraft
remotely piloted vehicles
targets

target masking
DEF Technique used in vision contrast discrimination testing involving the ratio of the luminance of a target (object) to the luminance of the background, especially when light and dark adaptation are factors.

GS masking
. **target masking**

RT countermeasures
stealth technology
targets

target penetration
USE **terminal ballistics**

target recognition
GS detection
. **target recognition**
recognition
. **target recognition**

RT discrimination
laser target designators
missile detection
missile signatures
multiple target tracking
multistatic radar
nap-of-the-earth navigation
radar homing missiles
radar signatures
signature analysis
signatures
stealth technology
surveillance
targets
TRADEX radar system

target simulators
GS simulators
. **target simulators**

RT computerized simulation
display devices
scene generation

target thickness
GS dimensions
. **target thickness**

RT particle accelerator targets
targets
thickness

target tracking
USE **tracking (position)**

targets
DEF Objects or points toward which something is directed. Objects which reflect a sufficient amount of a radiated signal to produce an echo signal on detection equipment. Used for towed targets.

UF *towed targets*

GS **targets**
. Jindivik target aircraft
. laser targets
. particle accelerator targets
. radar targets
. . radar target scatter site program

RT Airborne Integrated Reconnaissance System

command and control
detection
Firebee 2 target drone aircraft
irradiation
laser target designators
laser target interactions
line of sight
microballoons

∞ missions
multiple target tracking
radar echoes
Sandpiper target missile
surveillance
target acquisition
target drone aircraft
target masking
target recognition
target thickness

tars
GS products
. petroleum products
. . **tars**

RT asphalt
gums (substances)
pitch (material)
tar sands

tartar missile
GS missiles
. anti-aircraft missiles
. . **tartar missile**
. surface to air missiles
. . **tartar missile**

RT AJ-10 engine
Bumblebee project
solid propellant rocket engines

task complexity
GS complexity
. **task complexity**

RT costs
∞ performance
quality control
scheduling

task planning (robotics)
(added December 1990)
GS planning
. **task planning (robotics)**

RT robotics
robots
scheduling
tasks
teleoperators
telerobotics

tasks
UF *jobs*
GS **tasks**
. auditory tasks
. visual tasks

RT costs
crew procedures (inflight)
crew procedures (preflight)

∞ elements
matrix management
physical work
projects
quality control
retraining
scheduling
task planning (robotics)

∞ tests

Tasmania
GS landforms
. islands
. . **Tasmania**

RT Australia

taste
UF *gustatory perception*
GS perception
. sensory perception
. . **taste**

RT chemoreceptors
synthetic food

TATB
UF *triaminotrinitrobenzene*
GS explosives
. **TATB**
propellants
. rocket propellants
.. **TATB**
RT rocket oxidizers

Taurid meteoroids
GS celestial bodies
. meteoroid showers
.. **Taurid meteoroids**
. meteoroids
.. **Taurid meteoroids**

Taurus constellation
GS constellations
. **Taurus constellation**
RT Crab nebula
Pleiades cluster
T Tauri stars

tautomers
RT congeners
isomers

taxiing
RT air traffic control
airfield surface movements
runways

taxonomy
RT classifications
∞ classifying
∞ science
∞ zoology

Taylor instability
GS dynamic characteristics
. dynamic stability
.. motion stability
... flow stability
... **Taylor instability**
. flow characteristics
.. flow stability
... **Taylor instability**
stability
. dynamic stability
.. motion stability
... flow stability
... **Taylor instability**
RT density distribution
Goertler instability
interface stability
perturbation theory
rotating fluids
two dimensional flow

Taylor manifest anxiety scale
RT anxiety
physiological tests
psychological effects
psychological tests

Taylor series
UF *Taylor theorem*
GS analysis (mathematics)
. calculus
.. series (mathematics)
... power series
... **Taylor series**
... MacLaurin series
. real variables
.. series (mathematics)
... power series
... **Taylor series**
... MacLaurin series

RT theorems

Taylor theorem
USE **Taylor series**

Taylor-Goertler instability
USE **Goertler instability**

TCG (tracking)
USE **transponder control group**

TCV program
USE **Terminal Configured Vehicle Program**

TD satellites
GS artificial satellites
. ESA satellites
.. **TD satellites**
... TD-1 satellite
. synchronous satellites
.. **TD satellites**
... TD-1 satellite
ESA spacecraft
. ESA satellites
.. **TD satellites**
... TD-1 satellite

TD-1 satellite
GS artificial satellites
. ESA satellites
.. TD satellites
... **TD-1 satellite**
. synchronous satellites
.. TD satellites
... **TD-1 satellite**
ESA spacecraft
. ESA satellites
.. TD satellites
... **TD-1 satellite**

TDMA
USE **time division multiple access**

TDR satellites
DEF Orbiting communications satellites, developed by NASA to relay data from satellite sensors to groundstations and to track the satellites in orbit.
UF *Tracking and Data Relay Satellites*
GS artificial satellites
. communication satellites
.. **TDR satellites**
RT autonomous spacecraft clocks
communicating
data transmission
radio relay systems
satellite networks
satellite transmission
telecommunication
telemetry

TEA lasers
UF *transversely excited atmospheric lasers*
GS stimulated emission devices
. lasers
.. gas lasers
... **TEA lasers**
RT atmospheric lasers
carbon dioxide lasers
carbon monoxide lasers
chemical lasers
gas masers
HF lasers
laser modes
pulsed lasers

stimulated emission

teachers
USE **instructors**

teaching
USE **education**

teaching machines
GS training devices
. **teaching machines**
RT learning
machine learning
∞ machinery

teams
RT bureaus (organizations)
federations
institutions
organizations
projects
university program

tearing
RT mechanical properties
rupturing
shredding

tearing modes (plasmas)
DEF Explosive reconnections of energetic particle accelerations at high voltages in the magnetosphere during substorms.
RT ballooning modes
modes
plasmas (physics)

technetium
GS chemical elements
. **technetium**
metals
. transition metals
.. **technetium**

technetium compounds
GS **technetium compounds**
.. technetium fluorides
RT ∞ chemical compounds
∞ Group 7B compounds
∞ metal compounds

technetium fluorides
GS halogen compounds
. fluorine compounds
.. fluorides
... **technetium fluorides**
. halides
.. fluorides
... **technetium fluorides**
.. metal halides
... **technetium fluorides**
technetium compounds
. **technetium fluorides**

technetium isotopes
GS chemical elements
. nuclides
.. isotopes
... **technetium isotopes**
metals
. transition metals
.. **technetium isotopes**

technical writing
RT abstracts
documentation
editing
records
specifications
translating

techniques
USE **methodology**

technological forecasting
GS predictions

technologies

- . forecasting
- ... **technological forecasting**
- ... Delphi method (forecasting)
- ... pattern method (forecasting)
- ... probe method (forecasting)
- ... profile method (forecasting)

RT aerospace technology transfer
estimating
technology transfer

technologies

GS technologies

- . biotechnology
- .. tissue engineering
- . bubble technique
- . energy technology
- .. geothermal technology
- . marine technology
- . military technology
- . nanotechnology
- . reactor technology
- . small satellite technology

RT

industries
low gravity manufacturing
manufacturing
nucleonics
space manufacturing
technology assessment
technology utilization
urban development

technology assessment

GS assessments

- . **technology assessment**

RT

Canadian space program
Communications Technology Satellite
Delphi method (forecasting)
evaluation
feasibility analysis
industries
manufacturing
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
strategic materials
technologies
value

technology feasibility spacecraft

GS unmanned spacecraft

- . **technology feasibility spacecraft**

RT

scientific satellites

∞ spacecraft

technology transfer

DEF The process of converting scientific findings from research laboratories and governmental activities into commercially viable products.

GS technology transfer

- . aerospace technology transfer

RT

commercialization
communicating
communication
documentation
documents
information flow
information management
information transfer
reports
selective dissemination of information
space commercialization
Starsite program
technological forecasting
technology utilization
transferring

technology utilization

GS utilization

- . **technology utilization**

RT

aerospace technology transfer
Canadian space program
Communications Technology Satellite
control configured vehicles
general overviews
Indian space program

industries
information transfer
laser applications
manufacturing
NASA programs
patent applications
research and development
Synchronous Earth Observatory
satellite
technologies
technology transfer

tectonic movement

USE **tectonics**

tectonics

DEF A branch of geology dealing with the broad architecture of the upper part of the Earth's crust, that is, the regional assembling of structural or deformational features, a study of their mutual relations, their origin, and their historical evolution. Used for tectonic movement.

UF *tectonic movement*

GS geology

- . **tectonics**

- .. neotectonics

RT

asthenosphere
core-mantle boundary

∞ depression

Earth movements

Earth planetary structure

fissures (geology)

geophysics

plates (tectonics)

sea floor spreading

subduction (geology)

TED

USE **transferred electron devices**

Tedlar (trademark)

USE **polyvinyl fluoride**

tee

USE **T shape**

teetering

RT ∞ motion

teeth

SN (EXCLUDES GEAR TEETH AND OTHER MECHANICAL DEVICES)

GS anatomy

- . digestive system

- .. **teeth**

RT

dental calculi
dentistry
mastication
mouth
oral hygiene
tooth diseases

teflon (trademark)

GS halogen compounds

- . fluorine compounds

- .. fluoro compounds

- ... difluoro compounds

- ... polytetrafluoroethylene

- ... **teflon (trademark)**

- ... fluorine organic compounds

- ... fluorohydrocarbons

- ... polytetrafluoroethylene

- ... **teflon (trademark)**

- ... fluoropolymers

- ... polytetrafluoroethylene

- ... **teflon (trademark)**

organic compounds

- . fluorine organic compounds

- .. fluorohydrocarbons

- ... polytetrafluoroethylene

- ... **teflon (trademark)**

- ... fluoropolymers

- ... polytetrafluoroethylene

- ... **teflon (trademark)**

- . hydrocarbons

- .. fluorohydrocarbons
- ... polytetrafluoroethylene
- ... **teflon (trademark)**
- plastics
- . polytetrafluoroethylene
- . **teflon (trademark)**

RT ∞ polymers
resins
synthetic resins

Tektite project

GS programs

- . NASA programs
- .. NASA space programs
- ... **Tektite project**
- . space programs
- .. NASA space programs
- ... **Tektite project**

tektites

DEF Small glassy bodies containing no crystals, composed of at least 65 percent silicon dioxide, bearing no relation to the geological formations in which they occur, and believed to be of extraterrestrial origin.

GS celestial bodies

- . meteorites

- .. stony meteorites

- ... **tektites**

- ... australites

- ... bediasites

RT

chondrites

coesite

Cyrrillid meteoroids

meteoritic composition

meteoritic microstructures

micrometeorites

natural satellites

telechirics

USE **remote handling**

telecommunication

DEF Any transmission, emission, or reception of signs, signals, writings, images, sounds, or information of any nature by wire, radio, visual, or electromagnetic systems.

UF *communication systems*

GS **telecommunication**

- . aircraft communication

- . broadcasting

- . closed circuit television

- . color television

- . communication

- .. facsimile communication

- ... automatic picture transmission

- ... line of sight communication

- .. optical communication

- ... free-space optical communication

- .. ship to shore communication

- .. underwater communication

- .. voice communication

- ... telephony

- .. quantum communication

- . data links

- . Defense Communications Satellite System

- .. Fleet Satellite Communication System

- . defense communications system (DCS)

- . educational television

- . electronic mail

- . ground-air-ground communication

- . multichannel communication

- . multiple access

- .. Aloha system

- .. carrier sense multiple access

- .. code division multiple access

- .. demand assignment multiple access

- .. frequency division multiple access

- .. time division multiple access

- . packet transmission

- .. Aloha system

- . PLAT system

- . pulse communication
- . . digital spacecraft television
- . radio communication
- . . radio relay systems
- . . . code division multiple access
- . . . time division multiple access
- . . radio telegraphy
- . . radio telemetry
- . . . pulse frequency modulation telemetry
- . . telephony
- . radiotelephones
- . single channel per carrier transmission
- . space communication
- . . extraterrestrial communication
- . . interplanetary communication
- . . lunar communication
- . . . circumlunar communication
- . . spacecraft communication
- . . . reentry communication
- . . . satellite communication
- . spacecraft antennas
- . spacecraft television
- . . digital spacecraft television
- . . Ranger block 3 television system
- . . satellite television
- . stereotelevision
- . telemetry
- . . biotelemetry
- . . . P. A. C. M. telemetry
- . . . PCM telemetry
- . . . radio telemetry
- pulse frequency modulation telemetry
- . transoceanic communication
- . video communication
- . . video conferencing
- . teleconferencing
- . telemedicine
- . wideband communication
- . wireless communication
- . . computer conferencing
- . . HET experiment
- . . video conferencing
- RT access control
- antennas
- ARPA computer network
- automatic repeat request
- ∞ channels
- code division multiplexing
- communicating
- communication networks
- communication satellites
- computers
- data compression
- data processing
- data sampling
- data transmission
- demodulation
- ∞ detectors
- digital systems
- direct broadcast satellites
- electromagnetic radiation
- frequency division multiplexing
- information theory
- INMARSAT satellites
- interfaces
- interphones
- modulation
- Molniya satellites
- Morse code
- NASCOM network
- networks
- onboard equipment
- packet switching
- point to point communication
- satellite antennas
- Seafarer project
- signal detection
- signal detectors
- signal encoding
- signal transmission
- ∞ signals
- ∞ systems
- TDR satellites
- telegraph systems

- teletypewriter systems
- television systems
- transcontinental systems
- transmission
- transmission circuits
- transmission lines
- transmission rate (communications)
- transmitters
- transoceanic systems
- video data
- VSAT (network)
- Westar satellites
- wide area networks

teleconferencing

- GS telecommunication
- . **teleconferencing**
- . . computer conferencing
- . . HET experiment
- . . video conferencing
- RT communication satellites
- conferences
- multichannel communication
- multimedia
- satellite networks
- telemedicine

teleconnections (meteorology)

- DEF Statistically significant temporal correlations between meteorological parameters at widely separated points.
- RT climatology
- correlation
- data correlation
- Earth atmosphere
- meteorological parameters
- meteorology
- secular variations
- significance
- spatial distribution
- statistical analysis
- statistical correlation
- synoptic meteorology
- temporal distribution

telegraph systems

- UF *telegraphy*
- RT pulse communication
- radio communication
- single channel per carrier transmission
- ∞ systems
- telecommunication
- teleprinters
- teletypewriters
- Westar satellites

telegraphy

- USE **telegraph systems**

telemedicine

- (added May 1997)
- DEF The use of telecommunication technologies as a medium for providing medical services (diagnostic, therapeutic, education, and research) by health care professionals to sites that are remote from the provider.
- GS telecommunication
- . **telemedicine**
- RT aerospace medicine
- biotelemetry
- diagnosis
- medical electronics
- medical equipment
- medical science
- medical services
- teleconferencing

telemeters

- USE **telemetry**

telemetry

- DEF The science of measuring a quantity or quantities, transmitting the results to a distant station, and there interpreting, indicating, and/or

recording the quantities measured. Used for telemeters.

- UF *telemeters*
- GS telecommunication
- . **telemetry**
- . . biotelemetry
- . . . P. A. C. M. telemetry
- . . . PCM telemetry
- . . . radio telemetry
- pulse frequency modulation telemetry
- transmission
- . signal transmission
- . . **telemetry**
- . . . biotelemetry
- P. A. C. M. telemetry
- PCM telemetry
- radio telemetry
- pulse frequency modulation telemetry
- RT Advanced Range Instrumentation
- Aircraft
- communication equipment
- data compression
- data links
- data retrieval
- data transmission
- decommutators
- differential pulse code modulation
- in-flight monitoring
- measuring instruments
- pulse communication
- radio communication
- ship to shore communication
- signal processing
- single channel per carrier transmission
- spiral antennas
- TDR satellites
- time division multiplexing
- trajectory measurement
- transponder control group
- weather data recorders
- wireless communication

teleoperator maneuvering system

- USE **teleoperators**

teleoperators

- DEF Remotely controlled mobility modules which incorporate sensory and manipulative subsystems for the purpose of extending the human operators skills and cognitive capabilities into hostile or remote environments.
- UF *teleoperator maneuvering system*
- GS control equipment
- . **teleoperators**
- RT human factors engineering
- man machine systems
- manipulators
- remote control
- remote handling
- robotics
- tactile sensors (robotics)
- task planning (robotics)
- teleroobotics
- torque sensors (robotics)

telephones

- GS **telephones**
- . radiotelephones
- RT earphones
- telephony
- utilities

telephony

- GS telecommunication
- . communication
- . . voice communication
- . . . **telephony**
- . . . radio communication
- . . . **telephony**
- transmission
- . **telephony**
- RT communication equipment
- crosstalk

telephotometry

- echo suppressors
- Iridium network
- radiotelephones
- single channel per carrier transmission
- sound transmission
- Symphonie satellites
- telephones
- verbal communication

telephotometers

USE **telephotometry**

telephotometry

DEF The body of principles and techniques concerned with measuring atmospheric extinction using various types of telephotometers. Used for telephotometers.

UF *telephotometers*

GS optical measurement

- . photometry

- . . **telephotometry**

RT astronomical photometry

- . optical measuring instruments

- . photometers

- . transmissometers

teleprinters

GS printers

- . **teleprinters**

- . typewriters

- . teletypewriters

- . . **teleprinters**

RT keying

- . printers (data processing)

- . receivers

- . telegraph systems

telerobotics

(added December 1990)

GS robotics

- . **telerobotics**

RT manipulators

- . orbital servicing

- . remote control

- . robot dynamics

- . robots

- . space tools

- . task planning (robotics)

- . teleoperators

Telesat Canada 3

USE **Anik 3**

Telesat Canada A

USE **Anik 1**

Telesat Canada B

USE **Anik 2**

Telesat Canada C

USE **Anik 3**

telescopes

UF *astronomical telescopes*

GS **telescopes**

- . celescopes

- . circumsolar telescopes

- . gamma ray telescopes

- . grazing incidence telescopes

- . . GRIST (telescope)

- . heliometers

- . . pyroheliometers

- . infrared telescopes

- . . Large Deployable Reflector

- . . Space Infrared Telescope Facility

- . manned orbital telescopes

- . . Apollo telescope mount

- . particle telescopes

- . radio telescopes

- . . kilometer wave orbiting telescope

- . . Very Large Array (VLA)

- . . Very Long Baseline Array (VLBA)

- . reflecting telescopes

- . . Large Deployable Reflector

- . . Starsat telescope

- . refracting telescopes

- . Schmidt telescopes

- . spaceborne telescopes

- . . German Infrared Laboratory

- . . Hubble Space Telescope

- . . Infrared Space Observatory (ISO)

- . . James Webb Space Telescope

- . . Large Deployable Reflector

- . . LIRTS (telescope)

- . . solar optical telescope

- . . Space Infrared Telescope Facility

- . . Starlab

- . . Starsat telescope

- . . X Ray Astrophysics Facility

- . . XMM-Newton telescope

- . spectroscopic telescopes

- . . multispectral tracking telescopes

- . . stratoscope telescopes

- . ultraviolet telescopes

- . . Starlab

- . x ray telescopes

- . . X Ray Astrophysics Facility

- . . XMM-Newton telescope

RT

- . anisoplanatism

- . antennas

- . astronomical observatories

- . astronomy

- . balloon-borne instruments

- . binoculars

- . Cassegrain optics

- . coronagraphs

- . etalons

- . eyepieces

- . lenses

- . mirrors

- . multi-anode microchannel arrays

- . optical equipment

- . optical measuring instruments

- . optical transfer function

- . periscopes

- . reflectors

- . Schmidt cameras

- . seeing (astronomy)

- . solar instruments

- . spaceborne astronomy

- . ultraviolet astronomy

telescoping structures

USE **folding structures**

Telesto

(added January 1996)

DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.

GS celestial bodies

- . natural satellites

- . . Saturn satellites

- . . . **Telesto**

RT

- . Saturn (planet)

teletypewriter systems

RT facsimile communication

- . microwave transmission

∞ systems

- . telecommunication

- . teletypewriters

teletypewriters

GS typewriters

- . **teletypewriters**

- . . teleprinters

RT

- . keying

- . receivers

- . telegraph systems

- . teletypewriter systems

television cameras

GS optical equipment

- . cameras

- . . **television cameras**

- . photographic equipment

- . cameras

- . . **television cameras**

- . television equipment

- . . **television cameras**

RT

- . camera tubes

- . closed circuit television

- . digital cameras

- . Lallemand cameras

- . optical scanners

- . orthicons

- . raster scanning

- . return beam vidicons

- . satellite television

television equipment

GS **television equipment**

- . image dissector tubes

- . monoscopes

- . television cameras

- . television receivers

RT

- . cathode ray tubes

- . diplexers

∞ equipment

- . flying spot scanners

- . orthicons

- . picture tubes

- . video equipment

television receivers

GS receivers

- . **television receivers**

- . television equipment

- . . **television receivers**

RT

- . closed circuit television

- . tuners

television reception

GS signal reception

- . **television reception**

RT

- . color television

- . radio receivers

- . radio reception

∞ receiving

television systems

GS **television systems**

- . Advanced Vidicon Camera System (AVCS)

- . cable television

- . closed circuit television

- . color television

- . digital television

- . . digital spacecraft television

- . educational television

- . high definition television

- . PLAT system

- . spacecraft television

- . . digital spacecraft television

- . . Ranger block 3 television system

- . . satellite television

- . stereotelevision

RT

- . communication equipment

- . Earth terminals

- . facsimile communication

- . imaging techniques

- . orbit spectrum utilization

- . radio communication

- . space communication

∞ systems

- . telecommunication

- . video communication

- . video conferencing

- . video data

television transmission

GS transmission

- . electromagnetic wave transmission

- . . **television transmission**

- . signal transmission

- . . **television transmission**

RT

- . automatic picture transmission

- . cable television

- . closed circuit television

- . color television

- . digital television

- . direct broadcast satellites

- . double sideband transmission

- . high definition television

- . line of sight communication

- . Molniya satellites

- . radio transmitters

satellite television
 satellite transmission
 single sideband transmission
 smear
 spacecraft television
 sweep frequency
 time division multiplexing
 transmitters
 wave propagation

Tellegen theory

USE **gyrators**
network analysis
network synthesis

telluric currents

DEF Large scale surges of electric charges within the Earth's crust, associated with disturbances of the ionosphere. Used for earth currents.

UF *Earth currents*
 GS electric current
 . **telluric currents**
 electricity
 . geoelectricity
 . . **telluric currents**
 RT atmospheric electricity
 auroral electrojets
 dynamo theory
 field aligned currents
 geomagnetic micropulsations

telluric lines

DEF Absorption lines in a solar spectrum produced by constituents of the atmosphere of the Earth itself rather than by gases in the outer solar atmosphere such as those responsible for the Fraunhofer lines.

GS spectra
 . radiation spectra
 . . absorption spectra
 . . . **telluric lines**
 . . electromagnetic spectra
 . . . line spectra
 **telluric lines**
 . spectral bands
 . . absorption spectra
 . . . **telluric lines**
 RT H lines

tellurides

GS chalcogenides
 . **tellurides**
 . . bismuth tellurides
 . . cadmium tellurides
 . . indium tellurides
 . . lanthanum tellurides
 . . lead tellurides
 . . mercury tellurides
 . . . mercury cadmium tellurides
 . . tin tellurides
 . . zinc tellurides
 tellurium compounds
 . **tellurides**
 . . bismuth tellurides
 . . cadmium tellurides
 . . indium tellurides
 . . lanthanum tellurides
 . . lead tellurides
 . . mercury tellurides
 . . . mercury cadmium tellurides
 . . tin tellurides
 . . zinc tellurides
 RT intermetallics

tellurium

GS chemical elements
 . metalloids
 . . **tellurium**
 . . . tellurium isotopes
 . nuclides
 . . isotopes
 . . . **tellurium**

. . . . tellurium isotopes

tellurium 119

USE **tellurium isotopes**

tellurium alloys

GS alloys
 . **tellurium alloys**

tellurium compounds

GS **tellurium compounds**
 . tellurides
 . . bismuth tellurides
 . . cadmium tellurides
 . . indium tellurides
 . . lanthanum tellurides
 . . lead tellurides
 . . mercury tellurides
 . . . mercury cadmium tellurides
 . . tin tellurides
 . . zinc tellurides
 RT ∞ chemical compounds
 ∞ Group 6A compounds

tellurium isotopes

UF *tellurium 119*
 GS chemical elements
 . metalloids
 . . tellurium
 . . . **tellurium isotopes**
 . nuclides
 . . isotopes
 . . . tellurium
 **tellurium isotopes**

tellurometers

GS measuring instruments
 . distance measuring equipment
 . . **tellurometers**
 RT geodimeters
 range finders

Telstar 1 satellite

GS artificial satellites
 . Telstar satellites
 . . **Telstar 1 satellite**

Telstar 2 satellite

GS artificial satellites
 . Telstar satellites
 . . **Telstar 2 satellite**

Telstar project

GS programs
 . projects
 . . **Telstar project**
 RT artificial satellites
 communication satellites
 Comsat program

Telstar satellites

GS artificial satellites
 . **Telstar satellites**
 . . Telstar 1 satellite
 . . Telstar 2 satellite
 RT Comsat program
 Thor Delta launch vehicle

TEM (microscopy)

USE **transmission electron microscopy**

Tempel 2 comet

DEF A comet for which a spacecraft rendezvous had been planned for 1988 because of its accessible orbit. It has been replaced by a planned spacecraft rendezvous with the Wild 2 comet in 1994.

GS celestial bodies
 . comets
 . . **Tempel 2 comet**
 RT ∞ coma
 meteoroids

solar system

temper (metallurgy)

RT cold working
 ductility
 hardness
 heat treatment
 tempering

temperate regions

UF *midlatitudes*
subtropical regions
 GS regions
 . **temperate regions**
 RT climatology
 geography
 polar regions
 tropical regions

temperature

DEF In general, the intensity of heat as measured on some definite temperature scale by means of any of various types of thermometers. In statistical mechanics, a measure of translational molecular kinetic energy (with three degrees of freedom). In thermodynamics, the integrating factor of the differential equation referred to as the first law of thermodynamics. Used for body temperature (non-biological).

UF *body temperature (non-biological)*
 GS **temperature**
 . absolute zero
 . ambient temperature
 . atmospheric temperature
 . . auroral temperature
 . . ionospheric temperature
 . body temperature
 . brightness temperature
 . combustion temperature
 . critical temperature
 . Curie temperature
 . flame temperature
 . gas temperature
 . glass transition temperature
 . high temperature
 . ignition temperature
 . . flash point
 . inlet temperature
 . ion temperature
 . low temperature
 . . cryogenic temperature
 . lunar temperature
 . neel temperature
 . noise temperature
 . operating temperature
 . planetary temperature
 . plasma temperature
 . room temperature
 . satellite temperature
 . skin temperature (biology)
 . solar temperature
 . space temperature
 . spin temperature
 . stagnation temperature
 . stellar temperature
 . subzero temperature
 . surface temperature
 . . land surface temperature
 . . sea surface temperature
 . . skin temperature (non-biological)
 . . wall temperature
 . transition temperature
 . water temperature
 . . ocean temperature
 . . . sea surface temperature
 RT ablative materials
 adiabatic conditions
 air conditioning
 biological effects
 climatology
 comfort
 convective flow
 electron energy
 emissivity
 environments
 free convection
 geotemperature

temperature compensation

Gibbs-Helmholtz equations
heat
heat shielding
heat storage
heating
humidity
isotherms
lapse rate
melting points
meteorology
ocean thermal energy conversion
refrigerating
Saha equations
surface cooling
temperature compensation
temperature control
temperature dependence
temperature distribution
temperature effects
temperature gradients
temperature inversions
temperature measurement
temperature measuring instruments
temperature probes
temperature profiles
temperature ratio
temperature scales
temperature sensors
tephigrams
thermal absorption
thermal analysis
thermal blooming
thermal boundary layer
thermal buckling
thermal comfort
thermal conductivity
thermal conductivity gages
thermal conductors
thermal control coatings
thermal cycling tests
thermal decomposition
thermal degradation
thermal diffusion
thermal diffusivity
thermal dissociation
thermal emission
thermal energy
thermal environments
thermal expansion
thermal fatigue
thermal instability
thermal insulation
thermal mapping
thermal neutrons
thermal noise
thermal plasmas
thermal pollution
thermal protection
thermal radiation
thermal reactors
thermal resistance
thermal resources
thermal shock
thermal simulation
thermal stability
thermal stresses
thermal vacuum tests
thermodynamic efficiency
thermodynamic properties
ventilation

temperature compensation

GS instrument compensation
. **temperature compensation**
RT ∞ compensation
temperature

temperature control

UF *heat regulation*
RT air conditioning
automatic control
automatic control valves
capillary pumped loops
chemical reaction control
combustion control
 ∞ control
controllers

cooling
cooling systems
cryostats
engine control
environmental control
environmental engineering
exhaust systems
heat shielding
heating
heating equipment
high temperature tests
infrared suppression
low temperature tests
manual control
plasma cooling
refrigerating
refrigerating machinery
remote control
reusable heat shielding
space cooling (buildings)
space heating (buildings)
spacecraft temperature
temperature
thermal control coatings
thermal cycling tests
thermal insulation
thermometers
thermoregulation
thermostats
transpiration
ventilation
water heating

temperature dependence

DEF The characteristic of a material which is dependent on changes in the ambient temperature.

GS dependence
. **temperature dependence**
RT heat affected zone
hot corrosion
miscibility gap
temperature
temperature effects
thermal degradation
thermal stability

temperature differences

USE **temperature gradients**

temperature distribution

UF *temperature fields*
GS distribution (property)
. **temperature distribution**
RT air conditioning
cooling
cooling systems
environmental engineering
field theory (physics)
heat treatment
heating
isothermal flow
isothermal layers
isotherms
ocean temperature
refrigerating
satellite temperature
temperature
thermal mapping
thermal resources
thermal shock
thermal stresses
thermography
ventilation
vertical distribution
water temperature

temperature effects

UF *heat effects*
photothermotropism
Richardson-Dushman equation
thermal effects
thermotropism
RT ablation
absolute zero
chemical effects

∞ effects
Ettingshausen effect
glass transition temperature
heat affected zone
jet blast effects
magnetic effects
Nernst-Ettingshausen effect
Peltier effects
pressure effects
 ∞ radiation
reentry effects
Seebeck effect
shape memory alloys
solar granulation
sterilization effects
temperature
temperature dependence
thermal buckling
thermal degradation
thermal dissociation
thermal resistance
thermal stresses
thermogravimetry
thermoluminescence
thermophoresis
thermoplasticity
time temperature parameter

temperature fields

USE **temperature distribution**

temperature gradients

UF *temperature differences*
GS gradients
. **temperature gradients**
. . thermoclines
RT atmospheric temperature
bathythermographs
Chapman-Enskog theory
convective heat transfer
isothermal layers
isotherms
nonisothermal processes
ocean temperature
potential gradients
stratification
temperature
thermal analysis
thermal mapping
thermocapillary migration
thermomigration
thermophoresis

temperature indicators

USE **indicating instruments**
temperature measuring instruments

temperature instruments

USE **temperature measuring instruments**

temperature inversions

GS inversions
. **temperature inversions**
RT air pollution
atmospheric temperature
bending
birefringence
buckling
cracking (fracturing)
cracks
creep properties
deflection
deformation
displacement
distortion
failure
fatigue (materials)
internal pressure
lapse rate
mechanical properties
meteorological parameters
meteorology
photoelastic analysis
plastic deformation

- pressure
 - pressure effects
 - residual stress
 - Saint Venant principle
 - shear properties
 - shrinkage
 - strain gages
 - strain hardening
 - strain rate
 - stress analysis
 - stress relaxation
 - stress waves
 - stresses
 - structural strain
 - temperature
 - tensile deformation
 - ∞ tension
 - tephigrams
 - torsion
 - volumetric strain
 - x ray stress analysis
 - yield strength
- temperature measurement**
- UF *pyrometry*
thermometry
 - RT anomalous temperature zones
bolometers
brightness temperature
crayons
gas temperature
high temperature
in situ measurement
 - ∞ measurement
 - noise temperature
 - nonintrusive measurement
 - pyrometers
 - radiation pyrometers
 - resistance thermometers
 - satellite temperature
 - sodar
 - sound detecting and ranging
 - temperature
 - temperature sensitive paints
 - thermocouple pyrometers
 - thermocouples
 - thermography
 - thermometers
 - wind tunnel calibration
- temperature measuring instruments**
- UF *temperature indicators*
temperature instruments
thermograms
 - GS measuring instruments
. **temperature measuring instruments**
.. bathythermographs
.. optical pyrometers
.. pneumatic probes
.. pyrometers
... radiation pyrometers
... thermocouple pyrometers
.. temperature probes
.. thermometers
... resistance thermometers
 - RT anomalous temperature zones
bolometers
bomb calorimeters
calorimeters
drop calorimeters
flame calorimeters
flame probes
temperature
thermistors
thermocouples
thermopiles
thermostats
transducers
- temperature probes**
- GS measuring instruments
. temperature measuring instruments
.. **temperature probes**
 - RT temperature
- thermocouples
- temperature profiles**
- RT heat transfer
temperature
thermal analysis
- temperature ratio**
- GS ratios
. **temperature ratio**
 - RT data correlation
heat transfer
temperature
- temperature scales**
- UF *fahrenheit temperature scale*
international practical temperature
 - RT absolute zero
anomalous temperature zones
calibrating
 - ∞ scale
 - standards
temperature
thermometers
- temperature sensitive paints**
(added January 2003)
- DEF Luminescent paints which react differentially to temperature by emitting varying amounts of visible light.
 - GS coatings
. paints
.. **temperature sensitive paints**
 - RT aerodynamic heating
fluorescence
heat transfer
luminescence
nonintrusive measurement
surface temperature
temperature measurement
thermal analysis
- temperature sensors**
- GS **temperature sensors**
. thermistors
 - RT anomalous temperature zones
temperature
- tempering**
- GS heat treatment
. **tempering**
 - RT annealing
 - ∞ drawing
hardening (materials)
laser annealing
metal working
normalizing (heat treatment)
stress relieving
stretching
temper (metallurgy)
- templates**
- RT lofting
molds
 - ∞ patterns
- temporal distribution**
- DEF The statistical distribution based on time of phenomena, occurrences or events.
 - RT annual variations
spatial distribution
teleconnections (meteorology)
time dependence
 - ∞ time response
- temporal logic**
(added October 1994)
- DEF A logic that can express properties involving the sequencing of events in time.
 - RT discriminant analysis (statistics)
 - ∞ logic
logic programming
mathematical logic
sequential analysis
- temporal resolution
- temporal resolution**
- DEF The precision with which an optical instrument or a system differentiates between time intervals. Used for multitemporal analysis.
 - UF *multitemporal analysis*
 - GS resolution
. **temporal resolution**
 - RT spatial resolution
temporal logic
- tendencies**
- RT ∞ inclination
- tendons**
- GS anatomy
. musculoskeletal system
.. muscles
... **tendons**
 - RT connective tissue
fibroblasts
- tenite**
- RT cellulose
molding materials
- Tenna satellite**
(added June 1992)
- GS artificial satellites
. scientific satellites
.. astronomical satellites
... **Tenna satellite**
Japanese spacecraft
. **Tenna satellite**
observatories
. astronomical observatories
.. astronomical satellites
... **Tenna satellite**
 - RT Japanese space program
x ray astronomy
x ray spectra
x ray stars
- Tennessee**
- GS nations
. United States
.. **Tennessee**
 - RT Great Smoky Mountains (NC-TN)
Tennessee Valley (AL-KY-TN)
- Tennessee Valley (AL-KY-TN)**
- GS valleys
. **Tennessee Valley (AL-KY-TN)**
 - RT Alabama
Kentucky
Tennessee
- tensegric structures*
(added January 2001)
- USE **tensegrity structures**
- tensegrity structures**
(added January 2001)
- DEF A class of prestressed structures whose shape is guaranteed by the interaction between a continuous network of members in tension and a discontinuous network of members in compression. These members can serve simultaneously as sensors, actuators, and load carrying elements. The word tensegrity is a contraction of "tensional integrity".
 - UF *tensegric structures*
tensile-integrity structures
 - RT isotenoid structures
prestressing
smart structures
structural design
 - ∞ structures
- tensile creep**
- GS mechanical properties
. creep properties
.. **tensile creep**
 - RT plastic deformation

tensile deformation

shear creep

tensile deformation

- GS deformation
 - . **tensile deformation**
- RT elastic deformation
 - elongation
 - plastic deformation
 - temperature inversions

tensile properties

- GS mechanical properties
 - . **tensile properties**
 - . . tensile strength
- RT elastic properties
 - high strength alloys
- ∞ properties

tensile strength

DEF The property of solid material that indicates its ability to withstand a uniaxial tensile load.

- GS mechanical properties
 - . tensile properties
 - . . **tensile strength**
- RT ductility
 - elastic properties
 - elongation
 - fiber strength
 - high strength
 - hysteresis
 - load carrying capacity
 - Poisson ratio
 - residual strength
 - resilience
 - shear strength
- ∞ strength
 - toughness

tensile stress

DEF Normal stress tending to lengthen the body in the direction in which it acts.

- GS stresses
 - . **tensile stress**
- RT axial stress
 - high strength
 - hoops
 - interfacial tension
 - stress intensity factors
- ∞ tension
 - triaxial stresses

tensile tests

- RT destructive tests
 - fatigue tests
 - load tests
 - specimen geometry
 - static tests
- ∞ tests

tensile-integrity structures
(added January 2001)

USE **tensegrity structures**

tensiometers

- GS measuring instruments
 - . **tensiometers**
- RT cable force recorders
 - mechanical measurement

∞ tension

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT blood pressure
 - interfacial tension
 - partial pressure
 - stretching
 - temperature inversions
 - tensile stress

tensometers

- GS measuring instruments
 - . **tensometers**
- RT deformeters
 - extensometers

- strain gages
- stress measurement
- weight indicators

tensor analysis

- GS geometry
 - . differential geometry
 - . . **tensor analysis**
- RT relativity
 - scalars
 - scalers
 - tensors

tensor fields

USE **tensors**

tensors

DEF Arrays of functions which obey certain laws of transformation. A one row or one column tensor array is a vector. Used for tensor fields and transformation tensors.

- UF *tensor fields*
 - transformation tensors*
- GS algebra
 - . **tensors**
 - . . stress tensors
- RT field theory (physics)
 - Jordan form
 - scalars
 - tensor analysis

tephigrams

- GS diagrams
 - . **tephigrams**
- RT atmospheric turbulence
 - entropy
 - lapse rate
 - temperature
 - temperature inversions
 - thermodynamic properties

terbium

- GS chemical elements
 - . rare earth elements
 - . . **terbium**
 - . . . terbium isotopes
- metals
 - . rare earth elements
 - . . **terbium**
 - . . . terbium isotopes
- RT terbium compounds

terbium 155

USE **terbium isotopes**

terbium 161

USE **terbium isotopes**

terbium compounds

- GS rare earth compounds
 - . **terbium compounds**
- RT terbium

terbium isotopes

- UF *terbium 155*
 - terbium 161*
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **terbium isotopes**
 - . rare earth elements
 - . . terbium
 - . . . **terbium isotopes**
 - metals
 - . rare earth elements
 - . . terbium
 - . . . **terbium isotopes**

TERCOM

- UF *Terrain Contour Matching Navigation System*
- GS navigation aids
 - . **TERCOM**
 - onboard equipment
 - . airborne equipment
 - . . **TERCOM**

- . aircraft equipment
- . . **TERCOM**

- RT display devices
 - flight instruments
 - map matching guidance
 - navigation instruments
- ∞ systems
 - video landmark acquisition and tracking

terephthalate

- GS **terephthalate**
 - . polyethylene terephthalate
- RT carboxylic acids
 - dicarboxylic acids

terminal area energy management

DEF Automated guidance and landing system for the Space Shuttle orbiter.

- GS management
 - . **terminal area energy management**
- RT digital techniques
 - Space Shuttle orbiters
 - space transportation
 - spacecraft landing

terminal ballistics

DEF That branch of ballistics dealing with the motion and behavior of projectiles at the termination of their flight, or in striking and penetrating a target. Used for penetration ballistics, projectile penetration, and target penetration.

- UF *penetration ballistics*
 - projectile penetration*
 - target penetration*
- GS ballistics
 - . **terminal ballistics**
- RT energy transfer
 - fragmentation
 - impact velocity
 - missiles
 - penetration
 - precision guided projectiles
 - projectiles

Terminal Configured Vehicle Program

DEF NASA Program for determining configurations for short haul transport aircraft, including V/STOL and VTOL aircraft. Used for TCV program.

- UF *TCV program*
- GS programs
 - . NASA programs
 - . . **Terminal Configured Vehicle Program**
- RT aircraft design
 - automatic control
 - automatic flight control
 - automatic landing control
 - electronic control
 - feedback control
- ∞ vehicles

terminal facilities

- GS **terminal facilities**
 - . ship terminals
- RT artificial harbors
 - deepwater terminals
- ∞ facilities
 - harbors
 - offshore docking
 - offshore platforms
 - site selection
 - tanker terminals
- ∞ terminals
 - transportation
 - wharves

terminal guidance

- GS guidance (motion)
 - . **terminal guidance**
 - . . laser guidance
- RT command guidance
 - descent trajectories
 - entry guidance (STS)

- glide paths
 - homing
 - inertial guidance
 - midcourse guidance
 - proportional navigation
 - reentry
 - reentry guidance
 - reentry trajectories
 - reentry vehicles
 - rendezvous guidance
 - spacecraft guidance
- terminal velocity**
 DEF The maximum velocity attainable, especially by a free falling body, under given conditions.
 GS rates (per time)
 . **terminal velocity**
 velocity
 . **terminal velocity**
 RT gravitation
 impact velocity
- ∞ **terminals**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT connectors
 data processing terminals
 electric terminals
 ∞ headers
 jumpers
 outlets
 ship terminals
 terminal facilities
- terminating*
 USE **stopping**
- terminator lines**
 RT ∞ lines
 lunar phases
 ∞ phases
 sunrise
 sunset
- terminology**
 RT abbreviations
 dictionaries
 indexing (information science)
 nomenclatures
 thesauri
 words (language)
- terms**
 RT indexing (information science)
 information theory
 thesauri
 words (language)
- ternary alloys**
 GS alloys
 . **ternary alloys**
 . . Astroloy (trademark)
 RT alloying
 antiphase boundaries
 cluster variation method
- ternary systems**
 RT alloys
 binary systems (materials)
 solid solutions
 ∞ systems
- ternary systems (digital)*
 USE **digital systems**
- terpenes**
 DEF A class of unsaturated organic compounds having the empirical formula C₁₀H₁₆ occurring in most essential oils and oleoresinous plants. Structurally the important terpenes and their derivatives are classified as monocyclic (dipentene), bicyclic (pinene), and acyclic (myrcene).
 GS **terpenes**
- . azulene
 - . camphor
 - . mecarnylamine
 - . menthol
 - . turpentine
- RT aliphatic hydrocarbons
 alkenes
- terphenyls**
 GS phenyls
 . **terphenyls**
- Terra spacecraft**
(added June 1999)
 DEF First in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. The spacecraft carries five high-resolution instruments: the Advanced Spaceborne Thermal Emission Radiometer (ASTER), the Clouds and the Earth Radiant Energy System (CERES), the Multi-Angle Imaging Spectroradiometer (MISR), the Moderate Resolution Imaging Spectroradiometer (MODIS), and the Measurements of Pollution in the Troposphere (MOPITT) instrument.
 UF *AM-1 (EOS) spacecraft*
EOS AM-1 spacecraft
 GS artificial satellites
 . **Terra spacecraft**
 Earth Observing System (EOS)
 . **Terra spacecraft**
 RT Earth observations (from space)
 MODIS (radiometry)
 remote sensing
- terraces (landforms)**
 GS landforms
 . **terraces (landforms)**
 . . plateaus
 . . . Allegheny Plateau (US)
 . . . Colorado Plateau (US)
 . . . Great Basin (US)
 . . . mesas
 buttes
 piedmonts
 Central Piedmont (US)
 RT formations
 mountains
- terradyamics**
 RT ∞ dynamics
 Earth surface
 geodynamics
 projectiles
 sea floor spreading
- terraforming**
(added September 1993)
 RT environmental engineering
 exobiology
 lunar bases
 lunar environment
 manned Mars missions
 Mars (planet)
 Mars environment
 Mars surface
 moon
 planetary atmospheres
 planetary environments
 space colonies
 space habitats
 Venus surface
- terrain**
 UF *landscape*
 GS topography
 . **terrain**
 RT digital elevation models
 geomorphology
 landforms
 landmarks
- terrain analysis**
 UF *SATAN (sensor)*
- RT ∞ analyzing
 change detection
 digital elevation models
 Earth resources
 EROS (satellites)
 geographic applications program
 hologrammetry
 mapping
 multisensor fusion
 nap-of-the-earth navigation
 photogrammetry
 reconnaissance
 satellite surfaces
 soil mapping
 soil sampling
 video landmark acquisition and tracking
- Terrain Contour Matching Navigation System*
 USE **TERCOM**
- terrain following**
(added February 1995)
 DEF The flight path of an aircraft, helicopter, or missile at a constant altitude above the terrain or highest obstacle. The altitude constantly changes to conform to the varying height of the terrain and/or obstacles.
 GS maneuvers
 . **terrain following**
 navigation
 . air navigation
 . . nap-of-the-earth navigation
 . . . **terrain following**
 RT attack aircraft
 cruise missiles
 evasive actions
 flight envelopes
 hovering
 low altitude
 map matching guidance
 military helicopters
 obstacle avoidance
 penetration
- terrestrial dust belt**
 GS particles
 . dust
 . . **terrestrial dust belt**
 RT ∞ belts
 cosmic dust
 gegenschein
 meteoroid dust clouds
 micrometeoroids
 zodiacal dust
- terrestrial magnetism*
 USE **geomagnetism**
- terrestrial planets**
 DEF The four small planets nearest the sun (Earth, Mercury, Venus, and Mars).
 GS celestial bodies
 . planets
 . . **terrestrial planets**
 . . . Earth (planet)
 . . . Mars (planet)
 . . . Mercury (planet)
 . . . Venus (planet)
 RT celestial mechanics
 Mercury surface
 planetary environments
 planetology
 solar system
- terrestrial radiation**
 SN (EXCLUDES ATMOSPHERIC RADIATION AND REFLECTED VISIBLE LIGHT)
 UF *Earth radiation*
 GS electromagnetic radiation
 . **terrestrial radiation**
 RT atmospheric radiation
 Earth (planet)
 Earth albedo
 Earth radiation budget
 Earth radiation budget experiment
 extraterrestrial radiation

terrier missile

- far infrared radiation
- greenhouse effect
- infrared radiation
- near infrared radiation
- planetary radiation
- ∞ radiation
- tropospheric radiation

terrier missile

- GS missiles
 - . antiaircraft missiles
 - . . **terrier missile**
 - . surface to air missiles
 - . . **terrier missile**
- RT Bumblebee project
- multistage rocket vehicles
- solid propellant rocket engines

terrorism

(added December 2001)

DEF The use of violence, or threat of violence directed at civilian populations with the intention of intimidating or coercing a particular group, organization, or government, often for ideological or political reasons.

- GS crime
 - . **terrorism**
- RT air piracy
- aircraft safety
- airport security
- biological weapons
- computer information security
- explosives detection
- flight safety
- sabotage
- security
- violence

Tertiary Period

(added June 1989)

- GS Cenozoic Era
 - . **Tertiary Period**
- RT Cretaceous Period
- Cretaceous-Tertiary boundary
- geochronology
- paleontology
- Quaternary period

tesseral harmonics

- GS analysis (mathematics)
 - . functional analysis
 - . . harmonic analysis
 - . . . **tesseral harmonics**
 - harmonics
 - . **tesseral harmonics**
- RT satellite perturbation

test beds

USE **test stands**

test chambers

DEF Places, sections, or rooms having special characteristics where a person or object is subjected to experiment, as an altitude chamber. Used for environmental chambers.

- UF *environmental chambers*
- GS compartments
 - . **test chambers**
 - . . anechoic chambers
 - . . pressure chambers
 - . . . hyperbaric chambers
 - . . . vacuum chambers
 - . . reverberation chambers
- RT ∞ capsules
- ∞ chambers
 - cryogenic wind tunnels
 - environment models
 - environment simulators
 - environmental control
 - environmental laboratories
 - environmental tests
 - thermal vacuum tests
 - vacuum tests

wind tunnels

∞ test equipment

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *checkout equipment*
 - testers*
 - testing machines*
- RT analyzers
- astrionics
- automatic test equipment
- avionics
- ∞ capsules
- CEFOAM checkout equipment
- centrifuges
- checkout
- dynamometers
- Earth terminal measurement system
- electronic equipment tests
- ∞ equipment
 - fatigue testing machines
 - free flight test apparatus
 - frequency analyzers
 - geophysical fluid flow cells
 - ground support equipment
 - Hartmann-Sprenger tubes
 - hypersonic test apparatus
 - impact testing machines
 - load testing machines
 - measuring instruments
 - monoscopes
 - onboard equipment
 - rocket propelled sleds
 - samplers
 - simulators
 - supersonic test apparatus
 - test facilities
 - test pattern generators
 - test stands
 - wind tunnel models
 - wind tunnels

test facilities

- GS **test facilities**
 - . anechoic chambers
 - . Central Atlantic Regional Ecol Test Site
 - . engine testing laboratories
 - . environmental laboratories
 - . hydraulic test tunnels
 - . reverberation chambers
 - . rocket test facilities
 - . test ranges
 - . . ballistic ranges
 - . . missile ranges
 - . test stands
 - . Transient Reactor Test Facility
 - . wind tunnels
 - . . blowdown wind tunnels
 - . . combustion wind tunnels
 - . . cryogenic wind tunnels
 - . . hypersonic wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . hypervelocity wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . low density wind tunnels
 - . . low speed wind tunnels
 - . . . subsonic wind tunnels
 - . . rectangular wind tunnels
 - . . slotted wind tunnels
 - . . supersonic wind tunnels
 - . . transonic wind tunnels
 - . . trisonic wind tunnels
- RT ∞ facilities
 - flight simulators
 - laboratories
 - models
 - motion simulators
 - research facilities
 - shock tubes

- simulators
- solar simulators
- spacecraft cabin simulators
- ∞ test equipment
- ∞ tests

test firing

DEF The firing of a rocket engine, either live or static, with the purpose of making controlled observations of the engine or of an engine component.

- GS firing (igniting)
 - . **test firing**
 - . . static firing
- RT engine tests
- fuel tests
- ground tests
- missile tests
- prefiring tests
- prelaunch tests
- rocket firing
- rocket test facilities
- static tests
- ∞ tests

test pattern generators

DEF Image-processing software.

- RT ∞ faults
- ∞ generators
- ∞ patterns
- ∞ test equipment

test pilots

- GS personnel
 - . flying personnel
 - . . pilots (personnel)
 - . . . aircraft pilots
 - **test pilots**
 - . operators (personnel)
 - . . pilots (personnel)
 - . . . aircraft pilots
 - **test pilots**
- RT ∞ pilots

test ranges

- GS ranges (facilities)
 - . **test ranges**
 - . . ballistic ranges
 - . . missile ranges
 - test facilities
 - . **test ranges**
 - . . ballistic ranges
 - . . missile ranges
- RT downrange
- downrange measurement
- range safety
- rocket test facilities

test stands

DEF Stationary platforms or tables, together with any testing apparatus attached thereto, for testing or proving engines or instruments.

- UF *test beds*
- GS test facilities
 - . **test stands**
- RT engine tests
- flame deflectors
- prefiring tests
- prelaunch tests
- rocket test facilities
- ∞ test equipment

test vehicles

- GS **test vehicles**
 - . flight test vehicles
- RT ∞ aircraft
 - altitude tests
- ∞ ballistic vehicles
- ∞ capsules
 - electric motor vehicles
 - high altitude tests
 - hypersonic vehicles
 - launch vehicles
 - missile tests
 - missiles
 - reentry vehicles

research aircraft
rocket vehicles
∞ spacecraft
∞ tests
towed bodies
∞ vehicles

testers

USE **test equipment**

testes

GS anatomy
. genitourinary system
. . . reproductive systems
. . . . sex glands
. gonads
. **testes**
. glands (anatomy)
. . . endocrine glands
. . . . gonads
. **testes**
. . . sex glands
. . . . gonads
. **testes**

testing

USE **tests**

testing machines

USE **test equipment**

testing time

GS time
. **testing time**
RT burning time
engine tests
fatigue tests
flight time
∞ tests
turnaround (STS)
windows (intervals)

∞ tests

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *pretests*
testing
RT accelerated life tests
acceptability
accuracy
adhesion tests
altitude tests
approach and landing tests (STS)
bend tests
captive tests
checkout
chemical analysis
chemical tests
cold flow tests
cold weather tests
compression tests
computational chemistry
confidence limits
corrosion test loops
corrosion tests
creep tests
crew procedures (inflight)
crew procedures (preflight)
damping tests
destructive tests
drop tests
dynamic tests
education
electric equipment tests
electronic equipment tests
employment
engine tests
environmental tests
errors
evaluation
examination
extrapolation
fatigue tests
field tests
flight stability tests
flight tests

fuel tests
full scale tests
ground tests
hardness tests
high altitude tests
high temperature tests
impact tests
in vitro methods and tests
in vivo methods and tests
intelligence tests
laboratories
load tests
low temperature tests
lubricant tests
∞ materials tests
median (statistics)
missile tests
nondestructive tests
notch tests
orbital space tests
patch tests
performance tests
personality tests
physiological tests
prefiring tests
preflight analysis
prelaunch tests
program verification (computers)
propellant tests
proving
psychological tests
qualifications
quality
quality control
railroad humping tests
rank tests
reactor startup tests
records
reliability
resonance testing
Rorschach tests
salt spray tests
sampling
selection
self tests
shock tests
Snellen tests
space electric rocket tests
Space Transportation System flights
space vehicle checkout program
spin tests
stability tests
static tests
statistical tests
stroking tests
tasks
tensile tests
test facilities
test firing
test vehicles
testing time
thermal cycling tests
thermal vacuum tests
ultrasonic tests
vacuum tests
vibration tests
water tunnel tests
wear tests
weld tests
wind tunnel stability tests
wind tunnel tests
wing flow method tests
x ray inspection

tethered balloons

UF *kite balloons*
GS expandable structures
. inflatable structures
. . . balloons
. . . . **tethered balloons**
RT meteorological balloons
reels

tethered satellites

DEF Concept for scientific payloads suspended at altitudes of 120 km from Space Shuttle orbiters flying at 200-km altitude; control

system would permit deployment and retrieval of the tethered satellites.

GS artificial satellites
. **tethered satellites**
RT reels

tethering

RT orbital rendezvous
reels
tetherlines

tetherlines

RT anchors (fasteners)
∞ cables
∞ lines
tethering
towed bodies
umbilical connectors

Tethys

DEF One of the natural satellites of Saturn orbiting at a mean distance of 295,000 kilometers.

GS celestial bodies
. natural satellites
. . . icy satellites
. . . . **Tethys**
. . . Saturn satellites
. . . . **Tethys**
RT Saturn (planet)

tetrabutyls

GS alkyl compounds
. **tetrabutyls**
RT dibutyl compounds
organometallic compounds

tetrachlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **tetrachlorides**
. halides
. . . chlorides
. . . . **tetrachlorides**

tetrachloromethane

USE **carbon tetrachloride**

tetracyclines

GS drugs
. antibiotics
. . . **tetracyclines**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . **tetracyclines**

tetrad theory

RT chromosomes
meiosis
spores
∞ theories

tetraethyl orthocarbonates

GS carbon compounds
. carbonates
. . . **tetraethyl orthocarbonates**

tetraethyl orthosilicate

DEF An oxidation inhibiting coating used on the wing leading edges and nose cap of the Space Shuttle.

GS adhesives
. **tetraethyl orthosilicate**
RT ethyl compounds
glues
silicates

tetrafluorohydrazine

GS amines
. **tetrafluorohydrazine**
halogen compounds
. fluorine compounds
. . . fluoro compounds
. . . . **tetrafluorohydrazine**

tetragons

hydrazines
 . **tetrafluorohydrazine**
RT rocket oxidizers

tetragons

GS geometry
 . Euclidean geometry
 . . . polygons
 **tetragons**
 parallelograms
 rhomboids
 rectangles
 squares (mathematics)
 trapezoids

tetrahedrons

GS geometry
 . Euclidean geometry
 . . polyhedrons
 . . . **tetrahedrons**
RT triangles

tetrahydrofuran

DEF In organic chemistry, an intermediate and a solvent for polyvinyl chloride. Used for butylene oxides.

UF *butylene oxides*
GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . furans
 **tetrahydrofuran**
 solvents
 . **tetrahydrofuran**
RT additives
 ∞ chemical compounds
 plastics
 polyvinyl chloride

tetranitrotetrazacyclooctane

USE **HMX**

tetraphenyls

GS phenyls
 . polyphenyls
 . . **tetraphenyls**

tetrazoles

GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **tetrazoles**

tetrodes

RT electron tubes
 pentodes
 semiconductor devices
 transistors
 triodes

tetroons

USE **superpressure balloons**

tetryl

GS amines
 . **tetryl**
 explosives
 . **tetryl**
 nitrogen compounds
 . nitro compounds
 . . **tetryl**
 propellants
 . **tetryl**

texas

GS nations
 . United States
 . . **texas**
RT Gulf of Mexico
 Houston (TX)
 Lake Texoma (OK-TX)
 Rio Grande (North America)

textbooks

GS documents
 . **textbooks**

RT education
 handbooks
 knowledge
 learning
 libraries
 manuals
 subjects

textiles

GS **textiles**
 . cotton fibers
 . linen
 . rayon
RT clothing
 cotton
 fabrics
 fibers
 vapor barrier clothing
 wet spinning

texts

GS documents
 . **texts**
RT format
 records

textures

DEF The structural qualities of surfaces determined by the interrelation of their elements.

RT curl (materials)
 fineness
 Gabor filters
 mechanical properties
 porosity
 surface properties

TF-30 engine

GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-30 engine**
 aircraft engines
 . . . **TF-30 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-30 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-30 engine**

TF-34 engine

GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-34 engine**
 aircraft engines
 . . . **TF-34 engine**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-34 engine**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **TF-34 engine**
 turbofan engines
 **TF-34 engine**
 turbofan engines
 **TF-34 engine**
RT convertible fan-shaft engines

TF-41 engine

GS engines
 . air breathing engines

. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **TF-41 engine**
. aircraft engines
. . . **TF-41 engine**
. . internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **TF-41 engine**
. . turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **TF-41 engine**

TFX aircraft

USE **F-111 aircraft**

TH-55 helicopter

GS Hughes aircraft
 . **TH-55 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **TH-55 helicopter**

Thailand

GS nations
 . **Thailand**
RT Asia

thalamus

GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 diencephalon
 **thalamus**

thallium

GS chemical elements
 . **thallium**
 . . thallium isotopes
 metals
 . **thallium**
 . . thallium isotopes
RT thallium compounds

thallium alloys

GS alloys
 . **thallium alloys**

thallium compounds

RT ∞ metal compounds
 thallium

thallium isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **thallium isotopes**
 . thallium
 . . **thallium isotopes**
 metals
 . thallium
 . . **thallium isotopes**

thawing

USE **melting**

THC (oceanography)

(added February 2002)

USE **thermohaline circulation**

Thebe

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 221,900 kilometers.

GS celestial bodies
 . natural satellites
 . . Jupiter satellites

... **Thebe**
 RT Jupiter (planet)

thematic mappers (LANDSAT)
 DEF Landsat multispectral scanners designed to acquire data to categorize the Earth's surface. Particular emphasis was placed on agricultural applications and land use.
 GS optical equipment
 . optical scanners
 . . multispectral band scanners
 . . . **thematic mappers (LANDSAT)**
 remote sensors
 . **thematic mappers (LANDSAT)**
 scanners
 . optical scanners
 . . multispectral band scanners
 . . . **thematic mappers (LANDSAT)**
 RT Landsat 4
 Landsat 5
 remote sensing
 thematic mapping

thematic mapping
 GS mapping
 . **thematic mapping**
 RT cadastral mapping
 maps
 photogeology
 photomapping
 photomaps
 thematic mappers (LANDSAT)

Themis project
 GS programs
 . projects
 . . **Themis project**

theodolites
 DEF Optical instruments which consist of a sighting telescope, mounted so that it is free to rotate around horizontal and vertical axes, and graduated scales so that the angle of rotation may be measured. The telescope is usually fitted with a right angle prism so that the observer continues to look horizontally into the eyepiece, whatever the variation of the elevation angle.
 GS measuring instruments
 . optical measuring instruments
 . . transits
 . . . **theodolites**
 cinetheodolites
 optical equipment
 . optical measuring instruments
 . . transits
 . . . **theodolites**
 cinetheodolites
 RT sextants

Theodorsen transformation
 RT airfoil profiles
 complex variables
 conformal mapping
 coordinate transformations
 Joukowski transformation
 pressure distribution

theorem proving
 GS problem solving
 . **theorem proving**
 proving
 . **theorem proving**
 RT artificial intelligence
 computer programming
 predicate calculus
 theorems

theorems
 UF *lemmas*
 GS **theorems**
 . addition theorem
 . Bayes theorem
 . Bernoulli theorem
 . binomial theorem
 . Castigliano variational theorem

. duality theorem
 . equipartition theorem
 . existence theorems
 . Floquet theorem
 . Gauss-Markov theorem
 . Hellmann-Feynman theorem
 . Kakutani theorem
 . Lebesgue theorem
 . Liouville theorem
 . Michell theorem
 . Pomeranchuk theorem
 . Poynting theorem
 . reciprocal theorems
 . reciprocity theorem
 . Richards theorem
 . Riesz theorem
 . Schauder fixpoint theorem
 . similarity theorem
 . . Lagrange similarity hypothesis
 . Stokes theorem (vector calculus)
 . uniqueness theorem
 . virial theorem
 RT hypotheses
 mathematical logic
 ∞ mathematics
 Taylor series
 theorem proving

theoretical physics
 GS **theoretical physics**
 . Newton Theory
 . quantum theory
 . . Bohr theory
 RT astrophysics
 broken symmetry
 charm (particle physics)
 electrophysics
 flavor (particle physics)
 geophysics
 grand unified theory
 naked singularities
 nuclear physics
 ∞ physics
 plasma physics
 radio physics
 ∞ science
 ∞ solid state physics
 strange attractors
 string theory
 supergravity
 supersymmetry
 unified field theory
 Yang-Mills theory

∞ **theories**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Abrikosov theory
 assumptions
 atomic theory
 automata theory
 BCS theory
 Bellman theory
 bending theory
 Bessel-Bredichin theory
 bimetric theories
 Bogoliubov theory
 Bohr theory
 Born-Infeld theory
 catastrophe theory
 Chapman-Enskog theory
 communication theory
 control theory
 Crocco-Lee theory
 Debye-Huckel theory
 decision theory
 diffusion theory
 dynamo theory
 Dyson theory
 Eyring theory
 field mode theory
 field theory (algebra)
 field theory (physics)
 finite difference theory
 flow theory
 fluctuation theory

Foster theory
 game theory
 gauge theory
 geometrical theory of diffraction
 Gestalt theory
 Glauber theory
 goal theory
 graph theory
 gravitation theory
 Griffith crack
 group theory
 Hansen lunar theory
 Heisenberg theory
 Hill lunar theory
 homotopy theory
 Hueckel theory
 hypotheses
 information theory
 Jeans theory
 kinetic theory
 Kolmogorov theory
 learning theory
 Malkus theory
 Manning theory
 matrix theory
 Michaelis theory
 mixing length flow theory
 molecular theory
 momentum theory
 Newton Theory
 nonadiabatic theory
 number theory
 numerical differentiation
 Opik theory
 orthogonal multiplexing theory
 particle theory
 perturbation theory
 physical optics
 piston theory
 plate theory
 population theory
 potential theory
 probability theory
 quantum chromodynamics
 quantum theory
 queueing theory
 Reissner theory
 relativistic theory
 S matrix theory
 saddle points (game theory)
 set theory
 shell theory
 spectral theory
 statistical decision theory
 strong interactions (field theory)
 Sturm-Liouville theory
 switching theory
 tetrad theory
 transport theory
 vinti theory
 weak interactions (field theory)
 Yang-Mills theory
 Young-Helmholtz theory

therapy
 GS **therapy**
 . chemotherapy
 . gene therapy
 . massaging
 . psychotherapy
 . radiation therapy
 RT cures
 diseases
 healing
 medical equipment
 patients
 respirators
 skin grafts

thermal absorption
 GS energy absorption
 . **thermal absorption**
 . . polar cap absorption
 RT ablation
 ∞ absorption
 atmospheric attenuation
 charring

thermal analysis

gray gas
heat sinks
pyrolysis
temperature

thermal accommodation coefficients
USE **accommodation coefficient**

thermal agitation
USE **thermal energy**

thermal analysis

DEF A general term covering a group of related techniques whereby the dependence of the parameters of any physical property of a substance or temperature is measured. Used for differential thermal analysis and DTA (analysis).

UF *differential thermal analysis*
DTA (analysis)

RT ∞ analyzing
heat transmission
temperature
temperature gradients
temperature profiles
temperature sensitive paints

thermal barriers (plasma control)

RT ∞ barriers
fusion reactors
mirror fusion
plasma control
tandem mirrors

thermal batteries

GS electric generators
. direct power generators
. . primary batteries
. . . **thermal batteries**
electrochemical cells
. electric batteries
. . primary batteries
. . . **thermal batteries**
RT alkaline batteries
dry cells

thermal blooming

UF *laser beam defocusing*
thermal defocusing
GS thermal lensing
. **thermal blooming**
RT laser cutting
laser heating
laser outputs
lasers
photon beams
temperature

thermal boundary layer

GS boundary layers
. **thermal boundary layer**
RT hypersonic boundary layer
laminar boundary layer
Rayleigh-Benard convection
temperature
turbulent boundary layer

thermal buckling

GS buckling
. **thermal buckling**
RT expansion
temperature
temperature effects
thermal expansion

thermal comfort

DEF That condition which expresses satisfaction with the thermal environment and which is measured by such factors as air temperature, relative humidity, air velocity, etc.

RT heat stroke
temperature
thermal environments

thermal conductivity

DEF Time rate of unidirectional heat transfer per unit area, in the steady-state, between

parallel planes separated by unit distance, per unit difference of temperature of the planes.

GS thermodynamic properties
. thermophysical properties
. . **thermal conductivity**
transport properties
. **thermal conductivity**
RT air conductivity
atmospheric conductivity
conductive heat transfer
∞ conductivity
Fourier law
hot-wire flowmeters
Lewis numbers
specific heat
temperature
thermohydraulics

thermal conductivity gages

SN (GAGES FOR MEASURING THERMAL CONDUCTIVITY-EXCLUDES GAGES USING THERMAL CONDUCTIVITY TO MEASURE OTHER PROPERTIES OR VARIABLES)
GS measuring instruments
. **thermal conductivity gages**
RT temperature

thermal conductors

GS conductors
. **thermal conductors**
RT ∞ conduction
conductive heat transfer
electric conductors
temperature

thermal control coatings

GS coatings
. **thermal control coatings**
RT ablative materials
∞ control
heat shielding
reentry shielding
reusable heat shielding
temperature
temperature control

thermal convection

USE **free convection**

thermal currents

USE **convective flow**

thermal cycling tests

RT closed cycles
cooling
environmental tests
fatigue tests
heating
temperature
temperature control
∞ tests
thermodynamic properties

thermal decomposition

DEF The breaking apart of complex molecules into simpler units by the application of heat.

GS chemical reactions
. **thermal decomposition**
. . pyrolysis
decomposition
. **thermal decomposition**
. . pyrolysis
RT ablation
endothermic reactions
exothermic reactions
temperature
thermochemistry
thermogravimetry

thermal defocusing

USE **thermal blooming**

thermal degradation

DEF Impairment of properties caused by exposure to heat.

GS degradation
. **thermal degradation**
RT pyrolysis
sterilization effects
temperature
temperature dependence
temperature effects

thermal diffusion

GS diffusion
. **thermal diffusion**
thermodynamic properties
. thermophysical properties
. . **thermal diffusion**
RT Chapman-Enskog theory
∞ conduction
convective flow
electron diffusion
gas heating
gaseous diffusion
heat transfer
Kirkendall effect
Peclet number
∞ separation
Soret coefficient
surface diffusion
temperature
thermochemistry
thermohydraulics
viscosity

thermal diffusivity

DEF The ratio of thermal conductivity of a substance to the product of its density and specific heat. Common units for this property are sq cm/s or sq ft/h.

GS thermodynamic properties
. thermophysical properties
. . **thermal diffusivity**
transport properties
. **thermal diffusivity**
RT photothermal deflection spectroscopy
temperature
viscosity

thermal dissociation

GS chemical reactions
. **thermal dissociation**
dissociation
. **thermal dissociation**
RT cracking (chemical engineering)
decomposition
degradation
gas dissociation
heat of dissociation
hydrogen production
ionization
plasmas (physics)
temperature
temperature effects

thermal effects

USE **temperature effects**

thermal efficiency

USE **thermodynamic efficiency**

thermal emission

DEF The process by which a body emits electromagnetic radiation as a consequence of its temperature only.

GS emission
. **thermal emission**
. . thermionic emission
RT electron emission
emissivity
exhaust emission
incandescence
infrared absorption
temperature

thermal energy

UF *thermal agitation*
RT cogeneration
∞ energy
free energy

geothermal energy conversion
 geothermal resources
 heat
 heat of fusion
 heat of solution
 internal energy
 kinetic energy
 lattice vibrations
 photothermal conversion
 solar thermal electric power plants
 temperature
 thermophotovoltaic conversion

thermal energy storage
 USE **heat storage**

thermal environments

GS environments
 . **thermal environments**
 RT adiabatic conditions
 aerospace environments
 heat stroke
 high temperature environments
 life support systems
 low temperature environments
 lunar environment
 planetary environments
 satellite temperature
 spacecraft environments
 temperature
 thermal comfort

thermal expansion

DEF The increase in the dimensions or the volume of a body due to change in temperature.
 GS expansion
 . **thermal expansion**
 thermodynamic properties
 . **thermal expansion**
 RT Boussinesq approximation
 dilatometry
 extensometers
 Gruneisen constant
 heat transfer
 high temperature tests
 low temperature tests
 neel temperature
 ∞ physical properties
 temperature
 thermal buckling
 thermophysical properties
 warpage

thermal fatigue

DEF In metals, fracture resulting from the presence of temperature gradients which vary with time in such a manner as to produce cyclic stresses in a structure.
 UF *high temperature fatigue*
 GS fatigue (materials)
 . **thermal fatigue**
 RT high temperature environments
 metal fatigue
 temperature

thermal gravimetry

USE **thermogravimetry**

thermal instability

DEF The conditions of temperature gradient, thermal conductivity, and viscosity which lead to the onset of convection in a fluid.
 GS thermodynamic properties
 . **thermal instability**
 RT clear air turbulence
 combustion stability
 magnetohydrodynamic stability
 pyrolysis
 sputtering
 stellarators
 temperature

thermal insulation

DEF A material applied to reduce the flow of heat.
 GS insulation

. **thermal insulation**
 RT air conditioning
 Amberlite (trademark)
 asbestos
 cork (materials)
 cryogenic fluid storage
 heat
 heat shielding
 heat sinks
 heat transfer
 heat transmission
 heating equipment
 reentry shielding
 refractories
 refractory coatings
 temperature
 temperature control
 Trombe walls

thermal lenses
 (added November 1998)
 USE **thermal lensing**

thermal lensing

(added November 1998)
 UF *thermal lenses*
 GS **thermal lensing**
 . thermal blooming
 RT atmospheric optics
 focusing
 laser beams
 photothermal deflection spectroscopy
 wave front deformation

thermal mapping

GS mapping
 . **thermal mapping**
 RT aerial reconnaissance
 Earth resources
 geothermal anomalies
 geothermal resources
 Heat Capacity Mapping Mission
 infrared radiometers
 infrared scanners
 isothermal layers
 isotherms
 photomapping
 planetary mapping
 temperature
 temperature distribution
 temperature gradients
 thermography

thermal neutrons

DEF Neutrons in thermal equilibrium with the medium in which they exist. Used for slow neutrons.
 UF *slow neutrons*
 GS nuclear radiation
 . **thermal neutrons**
 particles
 . elementary particles
 . . fermions
 . . . neutrons
 **thermal neutrons**
 . neutral particles
 . . neutrons
 . . . **thermal neutrons**
 RT baryons
 fast neutrons
 nuclear reactors
 temperature
 thermalization (energy absorption)

thermal noise

DEF The noise at radiofrequency caused by thermal agitation in a dissipative body. Also called Johnson noise.
 GS elastic waves
 . sound waves
 . . noise (sound)
 . . . **thermal noise**
 electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . white noise

. . . . **thermal noise**
 RT channel noise
 electromagnetic noise measurement
 noise temperature
 shot noise
 temperature

thermal plasmas

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **thermal plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **thermal plasmas**
 RT electron plasma
 high temperature plasmas
 plasma generators
 plasma temperature
 temperature

thermal pollution

DEF Environmental temperature rise due to waste heat disposal.
 GS pollution
 . **thermal pollution**
 RT biological effects
 coastal ecology
 environment effects
 environment pollution
 environmental quality
 environmental surveys
 environments
 heat transfer
 lakes
 liquid cooling
 marine biology
 nuclear reactors
 ocean temperature
 oceans
 plankton
 pollution transport
 seas
 temperature
 water pollution
 water temperature

thermal power

USE **turbogenerators**

thermal properties

USE **thermodynamic properties**

thermal protection

GS protection
 . **thermal protection**
 RT ablative materials
 carbon-carbon composites
 heat shielding
 Ludox (trademark)
 radiation protection
 reentry shielding
 reusable heat shielding
 temperature

thermal radiation

SN (EMITTED AS THE RESULT OF THERMAL EXCITATION OF MOLECULES)
 DEF The electromagnetic radiation emitted by any substance as the result of the thermal excitation of its molecules. Thermal radiation ranges in wavelength from the longest infrared radiation to the shortest ultraviolet radiation.
 GS electromagnetic radiation
 . **thermal radiation**
 . . black body radiation
 . . phonon beams
 RT concentrators
 greenhouse effect
 heat
 infrared radiation
 light (visible radiation)
 near infrared radiation
 nongray gas
 nonthermal radiation

thermal reactors

- Plancks constant
- planetary radiation
- ∞ radiation
- radio waves
- sky radiation
- solar radiation
- sunlight
- temperature
- thermodynamic properties
- ultraviolet radiation

thermal reactors

- GS nuclear reactors
- . thermal reactors
- RT ∞ reactors
- temperature

thermal resistance

DEF The extent to which a material retains useful properties as measured during exposure of the material to a specified temperature and environment for a specified time. Used for heat resistance.

- UF *heat resistance*
- GS mechanical properties
- . thermal resistance
- RT carbon-carbon composites
- ∞ high resistance
- high temperature lubricants
- high temperature tests
- ∞ low resistance
- oxidation
- oxidation resistance
- ∞ resistance
- specific heat
- temperature
- temperature effects
- thermodynamic properties

thermal resources

- GS heat sources
- . thermal resources
- . . geothermal resources
- . . . geysers
- resources
- . Earth resources
- . . thermal resources
- . . . geothermal resources
- geysers
- RT agrometeorology
- atmospheric temperature
- crop growth
- crop vigor
- geothermal technology
- resources management
- temperature
- temperature distribution

thermal shielding

USE **heat shielding**

thermal shock

DEF The development of a steep temperature gradient and accompanying high stresses within a structure.

- RT cooling
- heating
- high temperature tests
- ∞ shock
- shock resistance
- temperature
- temperature distribution
- thermodynamic properties

thermal simulation

- GS simulation
- . environment simulation
- . . thermal simulation
- RT altitude simulation
- solar simulation
- space environment simulation

temperature

thermal sinks

USE **heat sinks**

thermal stability

DEF Resistance to permanent changes in property caused solely by heat.

- UF *thermostability*
- GS stability
- . thermal stability
- thermodynamic properties
- . thermophysical properties
- . . thermal stability
- RT dimensional stability
- high temperature tests
- low temperature tests
- storage stability
- surface stability
- temperature
- temperature dependence

thermal stresses

SN (EXCLUDES BIOLOGICAL STRESSES)

DEF Stresses in metal, resulting from non-uniform temperature distribution.

- GS stresses
- . thermal stresses
- RT cooling
- fatigue (materials)
- heating
- temperature
- temperature distribution
- temperature effects

thermal vacuum tests

- GS vacuum tests
- . thermal vacuum tests
- RT environmental tests
- high altitude environments
- temperature
- test chambers
- ∞ tests
- vacuum chambers

thermalization (energy absorption)

- GS energy absorption
- . moderation (energy absorption)
- . . thermalization (energy absorption)
- . . . neutron thermalization
- RT thermal neutrons

thermicons

- GS electron tubes
- . camera tubes
- . . vidicons
- . . . return beam vidicons
- thermicons
- . image tubes
- . . thermicons
- optical equipment
- . image converters
- . . image tubes
- . . . thermicons

thermionic cathodes

- GS electrodes
- . cathodes
- . . tube cathodes
- . . . thermionic cathodes
- emitters
- . thermionic cathodes
- RT hot cathodes

thermionic conversion systems

USE **thermionic power generation**

thermionic converters

- GS electric generators
- . direct power generators
- . . thermionic converters
- . . . SNAP 13
- . . . solar blankets
- RT cesium diodes
- cesium plasma

- ∞ converters
- fuel cells
- ion production rates
- magnetohydrodynamic generators
- plasma power sources
- radioisotope batteries
- SNAP
- solar cells
- thermoelectric generators

thermionic diodes

- GS electron tubes
- . thermionic diodes
- . . cesium diodes
- electronic equipment
- . diodes
- . . thermionic diodes
- . . . cesium diodes
- RT Child-Langmuir law
- perveance
- semiconductor diodes

thermionic emission

DEF Direct ejection of electrons as the result of heating the material, which raises electron energy beyond the binding energy that holds the electron to the material. Used for Richardson-Dushman equation.

- UF *Richardson-Dushman equation*
- GS emission
- . particle emission
- . . thermionic emission
- . thermal emission
- . . thermionic emission
- RT electron emission
- ion emission
- thermoelectricity
- work functions

thermionic emitters

- GS emitters
- . thermionic emitters

thermionic power generation

- UF *thermionic conversion systems*
- RT ∞ conversion
- SNAP
- SNAP 13

thermionic reactors

USE **ion engines**

nuclear rocket engines

thermionics

DEF The study of the emission of electrons by heat.

- RT cathodes
- electron emission
- ∞ electronics
- ion emission

thermistors

DEF Electron devices employing the temperature dependent change of resistivity of a semiconductor.

- GS attenuators
- . resistors
- . . thermistors
- electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . thermistors
- temperature sensors
- . thermistors
- RT radiometers
- temperature measuring instruments
- varistors

thermites

DEF Fire-hazardous mixtures of ferric oxide and powdered aluminum; upon ignition with a magnesium ribbon, the mixtures reach temperatures up to 4000 degrees F (sufficient to soften steel).

- RT aluminum oxides
- Auger spectroscopy

barium ion clouds
copper oxides
ignition temperature
pyrotechnics

thermoacoustic effects

(added May 2000)

DEF Phenomena associated with the combination of temperature, pressure and displacement oscillations caused by acoustic waves interacting with solid boundaries, such as the walls of a tube or a "stack".

RT acoustic excitation
acoustic instability
acoustics
acousto-optics
combustion stability
∞ effects
heat transfer
sound waves
thermoacoustic refrigerators
thermophysical properties

thermoacoustic refrigerators

(added May 2000)

DEF Cooling devices in which intense sound waves in pressurized resonant cavities are used to generate temperature gradients in an array of parallel plates in the interior of a tube that serves as a heat exchanger and in which heat is drawn away by a heat sink.

GS refrigerating machinery
. refrigerators
. . . **thermoacoustic refrigerators**
RT cooling systems
refrigerating
thermoacoustic effects

thermobalances

GS measuring instruments
. indicating instruments
. . weight indicators
. . . **thermobalances**
RT thermogravimetry

thermocapillary migration

(added September 1999)

DEF Phenomenon where droplets (or bubbles) in a host fluid with a uniform temperature gradient migrate to the hot end of the host fluid because of the temperature dependence of the interfacial energy of the droplets.

RT bubbles
capillary flow
drops (liquids)
electromigration
interfacial tension
Marangoni convection
microgravity
space processing
temperature gradients
thermomigration

thermochemical properties

GS chemical properties
. **thermochemical properties**
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
thermodynamic properties
. **thermochemical properties**
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
RT heat balance

∞ properties

thermochemistry

DEF A branch of chemistry that treats the relations of heat and chemical changes.

GS **thermochemistry**
. aerothermochemistry
. combustion chemistry
RT chemical engineering
chemical reactions
∞ chemistry
combustion physics
enthalpy
entropy
heat
heat balance
heat of dissociation
heat of fusion
heat of solution
heat treatment
physical chemistry
propellant chemistry
pyrometallurgy
thermal decomposition
thermal diffusion
thermodynamic properties
thermodynamics
thermogravimetry
thermophysical properties
water splitting

thermochromatic materials

RT color
colorimetry
∞ inorganic materials
∞ materials
optical properties
organic materials
solids

thermoclines

GS gradients
. temperature gradients
. . **thermoclines**
RT oceanography
sea water
sound transmission
stratification
surface layers
surface temperature
thermohaline circulation
underwater acoustics

thermocouple pyrometers

GS measuring instruments
. temperature measuring instruments
. . pyrometers
. . . **thermocouple pyrometers**
RT galvanometers
potentiometers (instruments)
radiation pyrometers
resistance thermometers
temperature measurement
thermocouples
thermoelement ammeters

thermocouples

DEF Devices which convert thermal energy directly into electrical energy. In its basic form it consists of two dissimilar metallic electrical conductors connected in a closed loop. Each junction forms a thermocouple.

GS **thermocouples**
. thermopiles
RT constantan
indicating instruments
Manganin (trademark)
Peltier effects
potentiometers (instruments)
Seebeck effect
temperature measurement
temperature measuring instruments
temperature probes
thermocouple pyrometers
thermoelectric generators

thermoelectricity

thermodynamic coupling

GS coupling
. **thermodynamic coupling**
RT BCS theory
electron phonon interactions
superconductors (materials)

thermodynamic cycles

GS cycles
. **thermodynamic cycles**
. . Brayton cycle
. . Carnot cycle
. . Otto cycle
. . Rankine cycle
. . Stirling cycle
RT adiabatic conditions
closed cycles
heat engines
internal combustion engines
laser propulsion
∞ strokes
thermodynamics

thermodynamic efficiency

DEF In thermodynamics, the ratio of the work done by a heat engine to the total heat supplied by the heat source. Used for thermal efficiency.

UF *thermal efficiency*
GS efficiency
. **thermodynamic efficiency**
RT combustion efficiency
compressor efficiency
engines
exergy
heat sources
internal combustion engines
nozzle efficiency
power efficiency
propulsion system performance
propulsive efficiency
specific impulse
temperature
thermodynamics

thermodynamic equilibrium

DEF A very general result from statistical mechanics which states that if a system is in equilibrium, all processes which can exchange energy must be exactly balanced by the reverse process so that there is no net exchange of energy.

RT acid base equilibrium
adiabatic conditions
chemical equilibrium
∞ equilibrium
heat of dissociation
isentropic processes
isochoric processes
isoenergetic processes
isothermal processes
liquid-vapor equilibrium
local thermodynamic equilibrium
statistical mechanics

thermodynamic properties

UF *thermal properties*
GS **thermodynamic properties**
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. entropy
. free energy
. . Gibbs free energy
. surface energy
. thermal expansion
. thermal instability
. thermochemical properties
. . heat of combustion

- . . heat of dissociation
- . . heat of formation
- . . heat of solution
- . . latent heat
- . . . heat of fusion
- . . . heat of vaporization
- . thermophysical properties
- . . critical point
- . . critical pressure
- . . critical temperature
- . . emissivity
- . . fusibility
- . . heat of solution
- . . latent heat
- . . . heat of fusion
- . . . heat of vaporization
- . . melting points
- . . pyroelectricity
- . . specific heat
- . . supercritical pressures
- . . thermal conductivity
- . . thermal diffusion
- . . thermal diffusivity
- . . thermal stability
- . . vapor pressure
- . . volatility

- RT chemical properties
- diffusivity
- emittance
- ∞ equilibrium
- exergy
- heat
- heat balance
- high temperature tests
- Joule-Thomson effect
- optical properties
- ∞ physical properties
- Prandtl number
- propellant properties
- ∞ properties
- Seebeck effect
- solubility
- temperature
- tephigrams
- thermal cycling tests
- thermal radiation
- thermal resistance
- thermal shock
- thermochemistry
- thermodynamics
- thermoluminescence
- zero point energy

thermodynamics

DEF Study and application of principles describing the relation of heat transfer to various forms of energy, and the behaviors of physical systems where temperature is a significant feature. Used for heat equations, thermomechanics, and thermophysics.

- UF *heat equations*
- thermomechanics*
- thermophysics*
- GS **thermodynamics**
- . aerothermodynamics
- . combustion physics
- . nonequilibrium thermodynamics
- RT aerodynamics
- ∞ dynamics
- engines
- enthalpy
- entropy
- ∞ equations
- equations of state
- ∞ equilibrium
- ergodic process
- exergy
- fluid mechanics
- free energy
- gas dynamics
- heat
- heat of fusion
- heat of solution
- heat transfer
- internal energy
- irreversible processes
- isotherms

- Joule-Thomson effect
- Kirchhoff law of radiation
- mechanical engineering
- molecular relaxation
- Mollier diagram
- nonadiabatic conditions
- nongray gas
- nonisothermal processes
- Onsager relationship
- ∞ paths
- Pfaff equation
- photothermal conversion
- physical chemistry
- plasma physics
- plasmas (physics)
- polytropic processes
- Rankine cycle
- Rayleigh equations
- steam
- thermochemistry
- thermodynamic cycles
- thermodynamic efficiency
- thermodynamic properties
- thermoelectric cooling
- unsteady state

thermoelasticity

DEF Dependence of the stress distribution of an elastic solid on its thermal state, or of its thermal conductivity on the stress distribution.

- GS mechanical properties
- . elastic properties
- . . **thermoelasticity**
- . . . aerothermoelasticity
- RT aeroelasticity
- aerothermodynamics
- hydroelasticity
- thermoelectric generators
- thermoelectric materials

thermoelectric conversion systems

USE **thermoelectric power generation**

thermoelectric cooling

- UF *Ettingshausen coolers*
- GS cooling
- . **thermoelectric cooling**
- RT cryogenics
- Ettingshausen effect
- heat pumps
- Peltier effects
- refrigerating
- refrigerating machinery
- thermodynamics
- thermoelectricity
- thermomagnetic cooling

thermoelectric generators

- GS electric generators
- . direct power generators
- . . **thermoelectric generators**
- . . . SNAP 3
- . . . SNAP 7
- . . . SNAP 9A
- . . . SNAP 10A
- . . . SNAP 11
- . . . SNAP 15
- . . . SNAP 17
- . . . SNAP 19
- . . . SNAP 21
- . . . SNAP 23
- . . . SNAP 27
- . . . SNAP 29
- . . . solar sea power plants
- RT ASTEC solar turboelectric generator
- fuel cells
- ∞ generators
- magnetohydrodynamic generators
- nuclear auxiliary power units
- photoelectric generators
- radioisotope batteries
- SNAP
- solar cells
- solar generators
- space station power supplies
- thermionic converters

- thermocouples
- thermoelasticity
- thermoelectricity

thermoelectric materials

- RT ∞ materials
- semiconductors (materials)
- thermoelasticity
- thermoelectricity

Thermoelectric Outer Planet Spacecraft

USE **TOPS (spacecraft)**

thermoelectric power generation

- UF *thermoelectric conversion systems*
- RT ∞ conversion
- nuclear auxiliary power units
- radioisotope heat sources
- SNAP
- thermoelectricity

thermoelectric spacecraft

USE **TOPS (spacecraft)**

thermoelectricity

- UF *Thomson effect*
- RT Ettingshausen effect
- Peltier effects
- Seebeck effect
- thermionic emission
- thermocouples
- thermoelectric cooling
- thermoelectric generators
- thermoelectric materials
- thermoelectric power generation
- thermopiles
- transport properties

thermoelement ammeters

- GS measuring instruments
- . ammeters
- . . **thermoelement ammeters**
- RT thermocouple pyrometers

thermograms

USE **recording instruments**
temperature measuring instruments

thermography

- DEF Technique employing heat transfer transients.
- RT infrared imagery
- nondestructive tests
- temperature distribution
- temperature measurement
- thermal mapping

thermogravimetry

- UF *thermal gravimetry*
- RT chemical analysis
- dehydration
- pyrolysis
- temperature effects
- thermal decomposition
- thermobalances
- thermochemistry

thermohaline circulation

(added February 2002)

DEF Any water movements, including convection and large-scale currents, due to the joint action of temperature and salinity.

- UF *THC (oceanography)*
- GS circulation
- . water circulation
- . . **thermohaline circulation**
- RT ocean currents
- ocean dynamics
- ocean temperature
- salinity
- sea water
- thermoclines

upwelling water

thermo hydraulics

RT convective heat transfer
fluid dynamics
fluid flow
heat transmission
∞ hydraulics
hydrodynamics
laminar heat transfer
radiative heat transfer
thermal conductivity
thermal diffusion
turbulent heat transfer

thermoluminescence

GS emission
. light emission
. . . luminescence
. . . **thermoluminescence**
RT temperature effects
thermodynamic properties

*thermomagnadynamics*USE **thermomagnetic effects****thermomagnetic cooling**

UF *Nernst generators*
GS cooling
. **thermomagnetic cooling**
RT cryogenics
Ettingshausen effect
thermoelectric cooling

thermomagnetic effects

UF *thermomagnadynamics*
thermomagnetism
GS magnetic properties
. **thermomagnetic effects**
RT ∞ effects
Ettingshausen effect
Nernst-Ettingshausen effect

*thermomagnetism*USE **thermomagnetic effects****thermomechanical treatment**

DEF Combination of material-forming processes with heat treatments in order to obtain specific material properties.

GS **thermomechanical treatment**
. hot pressing
. . . hot isostatic pressing
RT heat affected zone
heat treatment
∞ metallurgy
microstructure
plastic deformation
quenching (cooling)
∞ treatment

*thermomechanics*USE **thermodynamics****thermometers**

DEF Devices for measuring temperature.
GS measuring instruments
. temperature measuring instruments
. . **thermometers**
. . . resistance thermometers
RT temperature control
temperature measurement
temperature scales

*thermometry*USE **temperature measurement****thermomigration**

DEF A technique for doping semiconductors in which exact amounts of known impurities are made to migrate from the cool side of a wafer of pure semiconductor material to the hotter side when the wafer is heated in an oven.

RT electromigration
heat transfer
temperature gradients

thermocapillary migration

*thermonuclear energy*USE **thermonuclear power generation****thermonuclear explosions**

GS explosions
. nuclear explosions
. . **thermonuclear explosions**
RT aerial explosions
Argus project
fission weapons
nuclear devices
nuclear vulnerability
underground explosions
underwater explosions

thermonuclear power generation

UF *thermonuclear energy*
GS nuclear electric power generation
. **thermonuclear power generation**
RT Astron thermonuclear reactor
controlled fusion
electric generators
∞ energy
pinch effect
plasma generators
stellarators
zeta thermonuclear reactor

*thermonuclear propulsion*USE **nuclear propulsion****thermonuclear reactions**

GS nuclear reactions
. **thermonuclear reactions**
. . nuclear fusion
. . . controlled fusion
RT Astron thermonuclear reactor
high energy interactions
magnetohydrodynamics
pinch effect
plasmas (physics)
proton-proton reactions
Q values (nuclear physics)
radioactive decay
Scylla
stellarators
zeta thermonuclear reactor

thermophiles

RT algae
fungi
mesophiles
psychrophiles

thermophilic plants

GS plants (botany)
. **thermophilic plants**
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
RT algae

thermophoresis

DEF A process in which particles migrate in a gas under the influence of forces created by a temperature gradient.

RT aerosols
deposition
diffusion
particle diffusion
particle motion
particle size distribution
∞ separation
temperature effects
temperature gradients

thermophotovoltaic conversion*(added May 1995)*

DEF A technique for efficiently converting heat or solar energy to electrical energy using heated surfaces coated with a selective emitter material whose photon emission peaks sharply in a narrow wavelength.

GS energy conversion
. solar energy conversion
. . photothermal conversion
. . . **thermophotovoltaic conversion**
. . . photovoltaic conversion
. . . **thermophotovoltaic conversion**
RT emitters
energy conversion efficiency
solar cells
spacecraft power supplies
thermal energy

thermophysical properties

GS thermodynamic properties
. **thermophysical properties**
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility
RT Peltier effects
∞ properties
Seebeck effect
surface energy
thermal expansion
thermoacoustic effects
thermochemistry

*thermophysics*USE **thermodynamics****thermopiles**

DEF Transducers for converting thermal energy directly into electrical energy, composed of pairs of thermocouples which are connected either in series or in parallel. Batteries of thermocouples connected in series to form single compact units.

GS thermocouples
. **thermopiles**
transducers
. **thermopiles**
RT Dicke radiometers
indicating instruments
temperature measuring instruments
thermoelectricity

thermoplastic films

DEF Materials with a linear macromolecular structure that will repeatedly soften when heated and harden when cooled.

GS plastics
. synthetic resins
. . thermoplastic resins
. . . **thermoplastic films**
resins
. synthetic resins
. . thermoplastic resins
. . . **thermoplastic films**
RT ∞ films

thermoplastic resins

GS plastics
. synthetic resins
. . **thermoplastic resins**
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
resins
. synthetic resins
. . **thermoplastic resins**
. . . PEEK

thermoplasticity

- . . . quinoxalines
- . . . thermoplastic films
- RT acrylic resins
- glass fiber reinforced plastics
- polyethylenes
- polymer blends
- polystyrene
- thermoplasticity
- thermosetting resins
- vulcanized elastomers

thermoplasticity

- GS mechanical properties
- . plastic properties
- . . **thermoplasticity**
- RT Bouguer law
- temperature effects
- thermoplastic resins

thermoreceptors

- GS anatomy
- . sense organs
- . . **thermoreceptors**
- receptors (physiology)
- . **thermoreceptors**
- RT body temperature
- sensitometry
- skin (anatomy)
- thermoregulation

thermoregulation

DEF A mechanism by which mammals and birds balance heat gain and loss in order to maintain a constant body temperature. Used for body temperature regulation.

- UF *body temperature regulation*
- RT body temperature
- cold tolerance
- hibernation
- homeostasis
- hyperthermia
- hypothermia
- metabolism
- physiology
- regulatory mechanisms (biology)
- temperature control
- thermoreceptors

thermosetting resins

- GS plastics
- . synthetic resins
- . . **thermosetting resins**
- . . . epoxy resins
- . . . phenolic epoxy resins
- . . . furan resins
- . . . polyamide resins
- Kevlar (trademark)
- Nylon (trademark)
- . . . phenolic resins
- micarta
- . . . phenolic epoxy resins
- resins
- . synthetic resins
- . . **thermosetting resins**
- . . . epoxy resins
- . . . phenolic epoxy resins
- . . . furan resins
- . . . polyamide resins
- Kevlar (trademark)
- Nylon (trademark)
- . . . phenolic resins
- micarta
- . . . phenolic epoxy resins
- RT Bakelite (trademark)
- composite materials
- formica
- glass fiber reinforced plastics
- laminates
- polyester resins
- reinforced plastics
- silicone resins
- thermoplastic resins

thermosiphons

- GS regenerators
- . **thermosiphons**

- RT convective heat transfer
- free convection
- ∞ radiators
- siphoning

thermosphere

- SN (ALTITUDES ABOVE APPROXIMATELY 80 KM)
- GS Earth atmosphere
- . upper atmosphere
- . . **thermosphere**
- . . . turbopause
- RT chemosphere
- Earth ionosphere
- Earth magnetosphere
- exosphere
- heterosphere
- homosphere

thermostability

- USE **thermal stability**

thermostats

- GS control equipment
- . regulators
- . . **thermostats**
- switches
- . electric switches
- . . **thermostats**
- RT automatic control
- controllers
- cryostats
- temperature control
- temperature measuring instruments

thermotropism

- USE **anisotropy**
- temperature effects**

thermoviscoelasticity

- GS mechanical properties
- . elastic properties
- . . viscoelasticity
- . . . **thermoviscoelasticity**
- RT irreversible processes
- stress-strain-time relations

thesauri

- RT indexes (documentation)
- indexing (information science)
- information retrieval
- KWIC indexes
- nomenclatures
- space glossaries
- terminology
- terms
- words (language)

theses

- GS documents
- . **theses**
- RT hypotheses

theta pinch

- GS pinch effect
- . plasma pinch
- . . **theta pinch**
- RT laser plasma interactions
- plasma compression
- rotating plasmas
- screw pinch
- zeta pinch

thiamine

- UF *vitamin B*
- GS organic compounds
- . coenzymes
- . . **thiamine**
- . . cyclic compounds
- . . heterocyclic compounds
- . . . **thiamine**
- vitamins
- . **thiamine**

thiazine (trademark)

- GS dyes

- . **thiazine (trademark)**
- nitrogen compounds
- . **thiazine (trademark)**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **thiazine (trademark)**
- sulfur compounds
- . **thiazine (trademark)**

thick films

- RT electronic packaging
- ∞ films
- integrated circuits
- microminiaturization
- printed circuits
- semiconducting films
- superconducting films
- thin films

thick plates

DEF Plates of steel or other material that are over two inches thick. The exact definition of dimensions that constitute thickness varies.

- GS structural members
- . plates (structural members)
- . . **thick plates**
- RT flat plates
- metal plates
- Mindlin plates
- ∞ plates
- ∞ sheets
- thickness
- thin plates

thick walls

- GS walls
- . **thick walls**
- RT boiler plate
- bulkheads
- reinforcement (structures)
- structural members
- thin walls
- wall pressure
- wall temperature

∞ thickeners

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT thickeners (equipment)
- thickeners (materials)

thickeners (equipment)

- GS separators
- . classifiers
- . . **thickeners (equipment)**
- RT coalescing
- precipitators
- ∞ thickeners

thickeners (materials)

- RT additives
- gels
- greases
- ∞ materials
- ∞ thickeners

thickness

- GS **thickness**
- . boundary layer thickness
- RT airfoil profiles
- depth
- diameters
- dimensions
- film thickness
- length
- optical thickness
- spacing
- target thickness
- thick plates
- thickness ratio
- volume

thickness ratio

- GS ratios
- . aspect ratio

- . . **thickness ratio**
 RT airfoil profiles
 airfoils
 dimensional analysis
 fineness ratio
 thickness
 thin airfoils
 thin wings
- thigh**
 GS anatomy
 . limbs (anatomy)
 . . leg (anatomy)
 . . . **thigh**
 appendages
 . leg (anatomy)
 . . **thigh**
- thin airfoils**
 GS airfoils
 . **thin airfoils**
 . . thin wings
 . . . infinite span wings
 RT airfoil profiles
 thickness ratio
- ∞ **thin bodies**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT slender bodies
 thin plates
 thin walls
 thin wings
- thin films**
 SN (SOLID STATE PHYSICS AND ELECTRONICS)
 DEF Films having a thickness much smaller than any lateral dimension, formed by deposition of a material or by a thinning process.
 GS **thin films**
 . diamond films
 . energy absorption films
 . ferromagnetic films
 . monomolecular films
 . . Langmuir-Blodgett films
 RT amorphous silicon
 atomic force microscopy
 atomic layer epitaxy
 carbon nitrides
 coatings
 computer storage devices
 copper indium selenides
 electrochromism
 electrode film barriers
 ferroelectric materials
 ∞ films
 heterojunctions
 indium selenides
 integrated circuits
 integrated optics
 ion plating
 Langmuir turbulence
 metal films
 microchannel plates
 microminiaturization
 miniature electronic equipment
 molecular electronics
 nanoparticles
 oxide films
 parametrons
 pellicle
 plating
 praeter-sonic devices
 rectifiers
 semiconducting films
 silicon films
 solid state devices
 ∞ solid state physics
 sputtering gages
 squeeze films
 superconducting films
 thick films
 wafers
 YBCO superconductors
- yttria-stabilized zirconia
- thin layer chromatography**
 GS chemical tests
 . chemical analysis
 . . chromatography
 . . . **thin layer chromatography**
 RT gas chromatography
 monomolecular films
- thin plates**
 SN (EXCLUDES THIN SURFACE COATINGS AND FILMS)
 GS structural members
 . plates (structural members)
 . . **thin plates**
 RT diaphragms (mechanics)
 flat plates
 foils (materials)
 metal plates
 panels
 parallel plates
 ∞ plates
 ∞ sheets
 thick plates
 ∞ thin bodies
- thin walled shells**
 GS shells (structural forms)
 . **thin walled shells**
 RT cylindrical shells
 membrane structures
 metal shells
 orthotropic shells
 reinforced shells
 skin (structural member)
 spherical shells
 stressed-skin structures
 toroidal shells
- thin walls**
 GS walls
 . **thin walls**
 RT bulkheads
 diaphragms (mechanics)
 partitions (structures)
 skin (structural member)
 thick walls
 ∞ thin bodies
- thin wings**
 GS airfoils
 . thin airfoils
 . . **thin wings**
 . . . infinite span wings
 . wings
 . . **thin wings**
 . . . infinite span wings
 RT airfoil profiles
 fixed wings
 flexible wings
 thickness ratio
 ∞ thin bodies
 uncambered wings
- thinners*
 USE **solvents**
- thiols**
 UF *dithiols*
mercaptan
mercapto compounds
 GS sulfur compounds
 . **thiols**
 . . cysteine
 . . dimercaprol
 RT alcohols
 ∞ chemical compounds
 phenols
- thiophenes**
 (added January 1995)
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **thiophenes**
- RT benzene
 drugs
 furans
 pyrroles
- thioplastics**
 RT elastomers
 plastics
 sulfides
- thioureas**
 GS nitrogen compounds
 . amides
 . . ureas
 . . . **thioureas**
- thiuronium**
 GS amines
 . **thiuronium**
 nitrogen compounds
 . amides
 . . ureas
 . . . **thiuronium**
- thixotropic propellants*
 USE **gelled rocket propellants**
- thixotropy**
 DEF The property of material that enables it to stiffen in a relatively short time on standing, but upon agitation or manipulation to change to a very soft consistency or to a fluid of high viscosity, the process being completely reversible.
 RT gelation
 gels
 liquefaction
 nonNewtonian flow
 ∞ physical properties
 semisolids
 solubility
 viscosity
- Thomas-Fermi model**
 UF *Thomas-Fermi theory*
 GS models
 . mathematical models
 . . **Thomas-Fermi model**
 RT atomic structure
 electron distribution
 plasma composition
 quantum statistics
- Thomas-Fermi theory*
 USE **Thomas-Fermi model**
- Thomson effect*
 USE **thermoelectricity**
- Thomson scattering**
 GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . **Thomson scattering**
 RT electromagnetic radiation
- Thor Able rocket vehicle**
 GS launch vehicles
 . Thor launch vehicles
 . . **Thor Able rocket vehicle**
 . Thorad launch vehicles
 . . **Thor Able rocket vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Thor launch vehicles
 . . . **Thor Able rocket vehicle**
 . Thorad launch vehicles
 . . **Thor Able rocket vehicle**
 RT Explorer 6 satellite
 liquid propellant rocket engines
 Pioneer 1 space probe
 Pioneer 5 space probe
 solid propellant rocket engines

Thor Agena launch vehicle

TIROS 1 satellite

Thor Agena launch vehicle

GS launch vehicles
. Thor launch vehicles
. . **Thor Agena launch vehicle**
. Thorad launch vehicles
. . **Thor Agena launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . **Thor Agena launch vehicle**
. Thorad launch vehicles
. . **Thor Agena launch vehicle**

RT Agena A rocket vehicle
Agena B Ranger Program
Agena rocket vehicles
Discoverer satellites
Explorer 31 satellite
Explorer 34 satellite
Explorer 35 satellite
Explorer 36 satellite
liquid propellant rocket engines
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus satellites
OGO-3

Thor Delta launch vehicle

UF *Echo 1 carrier rocket*

GS launch vehicles
. Thor launch vehicles
. . **Thor Delta launch vehicle**
. Thorad launch vehicles
. . **Thor Delta launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . **Thor Delta launch vehicle**
. Thorad launch vehicles
. . **Thor Delta launch vehicle**

RT Ariel satellites
Echo 1 satellite
Explorer satellites
liquid propellant rocket engines
OSO
Relay satellites
solid propellant rocket engines
SYNCOM satellites
Telstar satellites

Thor launch vehicles

GS launch vehicles
. **Thor launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Thor launch vehicles**
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle

RT liquid propellant rocket engines
solid propellant rocket engines
Thorad launch vehicles
 ∞ vehicles

Thorad launch vehicles

GS launch vehicles
. **Thorad launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. **Thorad launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle

RT liquid propellant rocket engines
Thor launch vehicles
 ∞ vehicles

thorax

GS anatomy
. **thorax**

RT chest
diaphragm (anatomy)
sternum
viscera

thorium

GS chemical elements
. actinide series
. . **thorium**
. . . thorium isotopes
metals
. actinide series
. . **thorium**
. . . thorium isotopes

RT nuclear fuels

thorium 228
USE **thorium isotopes**

thorium 230
USE **thorium isotopes**

thorium 234
USE **thorium isotopes**

thorium alloys

GS alloys
. **thorium alloys**

RT nuclear fuels

thorium compounds

GS actinide series compounds
. **thorium compounds**
. . thorium fluorides
. . thorium oxides

RT ceramic nuclear fuels
 ∞ chemical compounds
 ∞ metal compounds
nuclear fuels

thorium fluorides

GS actinide series compounds
. thorium compounds
. . **thorium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **thorium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **thorium fluorides**
. metal halides
. . metal fluorides
. . . . **thorium fluorides**

thorium isotopes

UF *thorium 228*
thorium 230
thorium 234

GS chemical elements
. actinide series
. . thorium
. . . **thorium isotopes**
. nuclides
. . isotopes
. . . **thorium isotopes**
metals
. actinide series
. . thorium
. . . **thorium isotopes**

thorium oxides

GS actinide series compounds
. thorium compounds
. . **thorium oxides**
chalcogenides
. oxides
. . metal oxides
. . . **thorium oxides**

RT dioxides

thoron
USE **radon isotopes**

threads

SN (EXCLUDES TEXTILES AND FILAMENTARY FORMS)

RT bolts
nuts (fasteners)
screws

threat evaluation

DEF The evaluation of the potential harm of an approaching aircraft or other objects.

RT aircraft hazards
aircraft safety
collision avoidance
midair collisions
radar tracking
situational awareness
warning systems

three axis stabilization

DEF Maintenance of a stable platform in a desired 3-axis orientation in inertial space by utilizing gyros and accelerometers and which is independent of vehicle motion.

GS stabilization
. **three axis stabilization**

RT inertial platforms
satellite attitude control
satellite orientation
stabilized platforms

three body problem

DEF That problem in classical celestial mechanics which treats the motion of a small body, usually with negligible mass, relative to and under the gravitational influence of two other finite point masses.

RT celestial mechanics
four body problem
many body problem
orbits
perturbation
 ∞ problems
retrograde orbits
triple stars
Trojan asteroids
Trojan orbits
two body problem

three dimensional bodies

RT aerodynamic configurations
 ∞ bodies
boundary value problems
flow distribution

three dimensional boundary layer

GS boundary layers
. **three dimensional boundary layer**

RT axisymmetric flow
boundary layer transition
compressible boundary layer
laminar boundary layer
 ∞ layers
secondary flow
turbulent boundary layer
velocity distribution

three dimensional composites

GS composite materials
. **three dimensional composites**

RT braided composites
fiber composites
 ∞ materials
woven composites

three dimensional flow

GS fluid flow
. parallel flow
. . **three dimensional flow**
. . . Karman-Bodewadt flow
. . . secondary flow
translational motion

. three dimensional motion
 . . . **three dimensional flow**
 . . . Karman-Bodewadt flow
 . . . secondary flow

RT axial flow
 conical flow
 flow geometry
 helical flow
 one dimensional flow
 Roshko prediction
 spherical waves
 two dimensional flow
 wedge flow

three dimensional models
(added August 1988)
 GS models
 . **three dimensional models**

RT computational grids
 computer aided design
 computerized simulation
 mathematical models
 rapid prototyping
 two dimensional models

three dimensional motion
 GS translational motion
 . **three dimensional motion**
 . . three dimensional flow
 . . . Karman-Bodewadt flow
 . . . secondary flow

RT degrees of freedom
 optical flow (image analysis)

threshold currents
 GS electric current
 . **threshold currents**

RT lasers
 threshold voltage
 ∞ thresholds

threshold detectors (dosimeters)
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . dosimeters
 **threshold detectors**
 (dosimeters)

RT ionization chambers
 ∞ thresholds

threshold gates
 GS circuits
 . gates (circuits)
 . . **threshold gates**
 . logic circuits
 . . **threshold gates**

RT ∞ thresholds
 trigger circuits

threshold logic
 GS mathematical logic
 . set theory
 . . **threshold logic**

RT gates (circuits)
 ∞ logic
 logic circuits
 ∞ thresholds
 transistor logic
 trigger circuits

threshold shift
 USE **thresholds**

threshold voltage
 DEF The threshold energy necessary to remove an electron from the bound position to the conduction band in solid state devices.
 GS potential energy
 . electric potential
 . . **threshold voltage**

RT photovoltages
 photovoltaic effect
 semiconductor junctions
 silicon junctions
 solid state devices

threshold currents
 ∞ thresholds
 volt-ampere characteristics

∞ **thresholds**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Generally, the minimum values of signals that can be detected by the systems or sensors under consideration. Used for threshold shift.
 UF *threshold shift*
 RT doors
 entrances
 noise threshold
 resolution
 responses
 sensitivity
 threshold currents
 threshold detectors (dosimeters)
 threshold gates
 threshold logic
 threshold voltage
 thresholds (perception)

thresholds (perception)
 RT acuity
 adaptation
 audiometry
 auditory perception
 auditory sensation areas
 auditory stimuli
 chronaxy
 frequency response
 hearing
 light adaptation
 limen
 neurology
 perception
 photosensitivity
 sensitivity
 ∞ thresholds
 vision
 visual perception

throats
 SN (NON BIOLOGICAL)
 DEF The narrowest portion of a constricted duct, as in a diffuser, or a venturi tube. SN (non biological).
 RT carburetors
 ∞ channels
 chokes (restrictions)
 ducts
 nozzle geometry
 nozzle inserts
 nozzle walls
 orifices

thrombin
 GS biopolymers
 . proteins
 . . enzymes
 . . . **thrombin**
 body fluids
 . blood
 . . **thrombin**
 organic compounds
 . proteins
 . . enzymes
 . . . **thrombin**

RT blood coagulation
 fibrin
 fibrinogen
 hemostatics
 prothrombin
 thromboplastin

thrombocytes
 RT blood coagulation
 clotting

thrombopenia
 GS diseases
 . **thrombopenia**

RT coagulation

thromboplastin
 GS body fluids
 . blood
 . . **thromboplastin**

RT blood coagulation
 clotting
 hemostatics
 homeostasis
 platelets
 thrombin

thrombosis
 GS diseases
 . **thrombosis**

RT blood coagulation
 infarction
 myocardial infarction

throttling
 RT Joule-Thomson effect
 variable thrust

throwing
 RT ejection
 spreading

thrust
 DEF The pushing or pulling force developed by an aircraft engine or a rocket engine. The force exerted in any direction by a fluid jet or by a powered screw, as, the thrust of an antitorque rotor. Specifically in rocketry, $F(\text{thrust}) = mv$ where m is propellant mass flow and v is exhaust velocity relative to the vehicle. Used for thrust power.

UF *thrust power*
 GS **thrust**
 . high thrust
 . jet thrust
 . leading edge thrust
 . low thrust
 . . microthrust
 . rocket thrust
 . . retrothrust
 . static thrust
 . variable thrust

RT acceleration (physics)
 auxiliary propulsion
 burning time
 dual thrust nozzles
 ∞ force
 jet engines
 nozzle thrust coefficients
 ∞ power
 propulsion
 ∞ reaction
 rocket engines
 rocket propellants
 specific impulse
 total impulse

thrust augmentation
 DEF The increasing of the thrust of an engine or power plant, especially of a jet engine and usually for a short period of time, over the thrust normally developed.

GS augmentation
 . **thrust augmentation**

RT afterburning
 Coanda effect
 high thrust
 secondary injection
 shrouded propellers
 variable thrust
 water injection

thrust bearings
 GS bearings
 . **thrust bearings**

RT antifriction bearings
 ball bearings
 gas bearings

thrust chamber pressure

roller bearings

thrust chamber pressure

GS pressure
. thrust chamber pressure

thrust chambers

UF *rocket chambers*
RT arc chambers
∞ chambers
combustion chambers
divergent nozzles
rocket engine cases

thrust control

GS **thrust control**
. thrust vector control
RT attitude control
∞ control
control rockets
engine control
jet control
∞ reaction control
rocket engine control
satellite control
turbojet engine control
variable thrust

thrust distribution

DEF The location of areas of upward thrust (lift) on wings, airfoils, etc.
RT aerodynamic forces
∞ distribution
force distribution
leading edges
pressure distribution
vortices
wing planforms

thrust faults

USE **geological faults**

thrust loads

GS loads (forces)
. dynamic loads
. . **thrust loads**
RT aerodynamic loads
axial compression loads
axial loads
compression loads
jet thrust
rocket thrust
structural design criteria

thrust measurement

GS mechanical measurement
. **thrust measurement**
RT accelerometers
dynamometers
∞ force
∞ measurement

thrust power

USE **thrust**

thrust programming

UF *optimum thrust programming*
GS scheduling
. programming (scheduling)
. . **thrust programming**
RT flight mechanics
flight optimization
flight plans
orbital mechanics
parking orbits
propulsive efficiency
trajectory control

thrust reversal

RT aircraft brakes
brakes (for arresting motion)
braking
deceleration

thrust termination

GS stopping

. thrust termination

RT burnout
rocket thrust
stage separation
variable thrust

thrust vector control

UF *TVC (control)*
GS attitude control
. directional control
. . **thrust vector control**
flight control
. **thrust vector control**
thrust control
. **thrust vector control**
RT air slew missiles
automatic control
automatic flight control
∞ control
guide vanes
gyrostabilizers
jet vanes
liquid injection
maneuverable spacecraft
missile control
nozzle thrust coefficients
rocket engines
secondary injection
spacecraft control
variable thrust
Vernier engines
X-31 aircraft

∞ thrusters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ion engines
magnetoplasmadynamic thrusters
pulsed inductive thrusters
pulsed plasma thrusters
rocket engines

thrust-weight ratio

GS ratios
. **thrust-weight ratio**
RT acceleration (physics)
mass ratios
pressure ratio
rocket engines

thulium

GS chemical elements
. rare earth elements
. . **thulium**
. . . thulium isotopes
metals
. rare earth elements
. . **thulium**
. . . thulium isotopes

thulium 171

USE **thulium isotopes**

thulium compounds

GS rare earth compounds
. **thulium compounds**
RT ∞ chemical compounds
∞ metal compounds

thulium isotopes

UF *thulium 171*
GS chemical elements
. nuclides
. . isotopes
. . . **thulium isotopes**
. rare earth elements
. . thulium
. . . **thulium isotopes**
metals
. rare earth elements
. . thulium

. . . thulium isotopes

Thunderchief aircraft

USE **F-105 aircraft**

thunderstorms

DEF Local storms resulting from warm humid air rising in an unstable environment.
GS storms
. storms (meteorology)
. . rainstorms
. . . **thunderstorms**
RT anvil clouds
arc clouds
atmospherics
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
cold fronts
cumulonimbus clouds
downbursts
elves
fronts (meteorology)
hail
hailstorms
lightning
lightning suppression
microbursts (meteorology)
rain
sprites (atmospheric physics)
storm damage
warm fronts
wind (meteorology)

thymidine

GS acids
. **thymidine**
bases (chemical)
. **thymidine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymidine**
RT alloxan
deoxyribonucleic acid
nucleosides

thymine

GS acids
. **thymine**
nitrogen compounds
. **thymine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymine**
RT alloxan
deoxyribonucleic acid

thymol

GS hydroxyl compounds
. alcohols
. . phenols
. . . **thymol**

thymus gland

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **thymus gland**
. immune systems
. . lymphatic system
. . . **thymus gland**

thyatron

GS electron tubes
. gas discharge tubes
. . **thyatron**
microwave equipment
. **thyatron**
rectifiers
. **thyatron**
RT current converters (AC to DC)
silicon controlled rectifiers

thyristors

thyristors

- GS electronic equipment
 - . solid state devices
 - . . . semiconductor devices
 - **thyristors**
 - silicon controlled rectifiers
 - rectifiers
 - . **thyristors**
 - . . . silicon controlled rectifiers
- RT junction transistors
 - p-n-p-n junctions
 - thyratrons
 - trigger circuits
 - triodes

thyroid gland

- GS anatomy
 - . glands (anatomy)
 - . . . endocrine glands
 - **thyroid gland**
- RT calcium metabolism
 - hypometabolism
 - thyroxine

thyroxine

- GS acids
 - . amino acids
 - . . . **thyroxine**
 - organic compounds
 - . amino acids
 - . . . **thyroxine**
 - secretions
 - . endocrine secretions
 - . . . hormones
 - **thyroxine**
- RT thyroid gland

Tibet

- GS nations
 - . **Tibet**
- RT Asia
 - Bhutan
 - Himalayas

tibia

- GS anatomy
 - . musculoskeletal system
 - . . . bones
 - **tibia**
- RT leg (anatomy)

TIDUSE **traveling ionospheric disturbances****tidal flats**

- GS landforms
 - . flats (landforms)
 - . . . **tidal flats**
- RT aquiculture
 - coasts
 - estuaries
 - fisheries
 - marshlands
 - mud
 - oceans
 - shorelines
 - tides

tidal oscillationUSE **tides****tidal waves**

- GS water waves
 - . **tidal waves**
 - RT ocean currents
 - ocean surface
 - oceanography
 - sea breeze
 - sea roughness
 - seismology
 - tsunami waves
- ∞ waves

wind (meteorology)

tide powered generators

- RT electric generators
 - energy conversion efficiency
- ∞ generators
 - ocean currents
 - ocean surface
 - oceanography
 - oceans
 - sea roughness
 - tidepower
 - tides
 - waterwave energy conversion
 - waterwave powered machines

tide powered machines

- RT ∞ machinery
 - ocean currents
 - ocean surface
 - sea roughness
 - tidepower
 - tides
 - waterwave energy conversion
 - waterwave powered machines

tidepower

- GS renewable energy
 - . **tidepower**
- RT clean energy
 - Earth resources
- ∞ energy sources
 - ocean currents
 - ocean surface
 - oceanography
 - sea roughness
 - tide powered generators
 - tide powered machines
 - tides
 - waterwave energy
 - waterwave energy conversion
 - waterwave powered machines

tides

DEF The periodic rising and falling of the Earth's oceans and atmosphere. It results from the gravitational forces of the moon and sun acting upon the rotating Earth. The disturbance actually propagates as a wave through the atmosphere and along the surface of the waters of the Earth. Atmospheric tides are always so designated, whereas the term tide alone commonly implies the oceanic variety. Used for tidal oscillation.

UF *tidal oscillation***tides**

- GS
 - . atmospheric tides
 - . Earth tides
 - . lunar tides
- RT coastal currents
 - estuaries
 - flood damage
 - floods
 - ocean currents
 - ocean surface
 - oceanography
 - pressure ice
 - sea roughness
 - tidal flats
 - tide powered generators
 - tide powered machines
 - tidepower
 - water currents
 - waterwave energy conversion
 - waterwave powered machines
 - wetlands

tiebolts

- GS fasteners
 - . bolts

. . tiebolts

TIG weldingUSE **gas tungsten arc welding****tightness**

- RT clearances
 - closures
 - proximity

tiles

DEF Ceramic surfacing units, usually relatively thin in relation to facial area, made from clay or a mixture of clay and other ceramic materials, called the body of the tile having either a "glazed" or "unglazed" face and fired above red heat in the course of manufacture to a temperature sufficiently high to produce specific physical properties and characteristics.

- RT ceramics
 - floors
 - grout
 - Ludox (trademark)
 - masonry
 - walls

tiltUSE **attitude (inclination)****tilt rotor aircraft**

DEF A type of convertible aircraft which takes off, hovers, and lands as a helicopter but is converted into a fixed wing aircraft by the 90-degree tilting of its rotor or rotors for use as a propeller for forward flight.

- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . **tilt rotor aircraft**
 - . . . V-22 aircraft
 - . . . XV-15 aircraft
- RT ∞ aircraft
 - helicopters
 - rotor stator interactions
 - tilting rotors

Tilt Rotor Research Aircraft Program

- GS programs
 - . NASA programs
 - . . **Tilt Rotor Research Aircraft Program**
- RT ∞ aircraft
 - helicopters
 - rotary wings
 - V-22 aircraft
 - XV-15 aircraft

tilt wing aircraft

- UF *pivoted wing aircraft*
- GS **tilt wing aircraft**
 - . CL-84 aircraft
 - . L-29 jet trainer
 - . VZ-2 aircraft
 - . XC-142 aircraft
- RT ∞ aircraft
 - fan in wing aircraft
 - research aircraft
 - short takeoff aircraft
 - V-22 aircraft
 - V/STOL aircraft
 - vertical takeoff aircraft
 - X-22 aircraft

tilted propellers

- GS propellers
 - . **tilted propellers**
- RT helicopter propeller drive

tiltingUSE **attitude (inclination)****tilting rotors**

- GS airfoils
 - . wings
 - . . . rotary wings
 - **tilting rotors**
- rotating bodies

tiltmeters

- . rotors
- . . rotary wings
- . . . **tilting rotors**
- RT tilt rotor aircraft
- V-22 aircraft
- XV-3 aircraft

tiltmeters

DEF Instruments used to measure small changes in the tilt of the Earth's surface usually in relation to a liquid-level surface or to the rest position of a pendulum.

- GS measuring instruments
- . **tiltmeters**
- RT attitude (inclination)
- geophysics
- seismographs

timber identification

- GS identifying
- . **timber identification**
- recognition
- . **timber identification**
- RT conifers
- crop identification
- deciduous trees
- Earth resources
- evaluation
- forests
- trees (plants)

timber inventory

- GS inventories
- . **timber inventory**
- RT aerial photography
- Earth resources
- forest management
- forests
- infrared photography
- photography
- reforestation
- satellite-borne photography
- trees (plants)

timber vigor

- RT foliage
- forests
- growth
- timberline
- trees (plants)

timberline

- RT dendrochronology
- forests
- growth
- high altitude environments
- polar regions
- timber vigor
- trees (plants)

time

DEF The hour of the day reckoned by the position of a celestial reference point relative to a reference celestial median. Used for duration.

- UF *duration*
- GS **time**
- . access time
- . burning time
- . downtime
- . ephemeris time
- . flight time
- . MTBF
- . reaction time
- . . chronaxy
- . relaxation time
- . response time (computers)
- . sidereal time
- . testing time
- . transit time
- . universal time
- RT calendars
- celestial geodesy
- chronology
- exposure
- intervals
- launch dates

- month
- prolongation
- relativistic effects
- schedules
- synchronism
- time measurement
- units of measurement

time constant

DEF Generally, the time required for an instrument to indicate a given percentage of the final reading resulting from an input signal; the relaxation time of an instrument.

- GS constants
- . **time constant**
- . . perceptual time constant
- RT access time
- ∞ constant
- damping
- dynamic characteristics
- dynamic response
- impedance
- LC circuits
- RC circuits
- reaction time
- relaxation time
- RL circuits
- RLC circuits
- ∞ time response
- transfer functions
- transient response

time delay

USE **time lag**

time dependence

- GS dependence
- . **time dependence**
- RT ∞ Helmholtz equations
- spatial dependencies
- stochastic processes
- temporal distribution
- ∞ time response

time discrimination

- RT comparator circuits
- sensory discrimination

time division multiple access

DEF Radio transmission method in which each station of a satellite communication network is assigned a time schedule for transmission (in lieu of frequency division); a multi-element antenna with an adaptive null steering array eliminates interference. Used for TDMA.

- UF *TDMA*
- GS telecommunication
- . multiple access
- . . **time division multiple access**
- . . radio communication
- . . radio relay systems
- . . . **time division multiple access**
- transmission
- . signal transmission
- . . data transmission
- . . . multiple access
- **time division multiple access**
- RT Aloha system
- channel noise
- frequency division multiple access
- multichannel communication
- packet switching
- pulse communication
- satellite networks
- switching
- wideband communication

time division multiplexing

DEF A system for the transmission of information about two or more quantities (measurands) over a common channel by dividing available time intervals among the measurands to form a composite pulse train.

- GS transmission
- . multiplexing
- . . **time division multiplexing**

- RT demultiplexing
- frequency division multiplexing
- pulse modulation
- telemetry
- television transmission
- wavelength division multiplexing

time domain analysis

(added April 1999)

- GS analysis (mathematics)
- . **time domain analysis**
- . . finite difference time domain
- method
- RT control systems design
- dynamic response
- parameter identification
- signal processing
- ∞ time response

time functions

- GS functions (mathematics)
- . **time functions**
- RT rates (per time)
- square waves
- stochastic processes
- wave functions
- waveforms
- wavelet analysis

time lag

DEF The total time between the application of a signal to a measuring instrument and the full indication of that signal within the uncertainty of the instrument. Used for chronotrons, lag (delay), and time delay.

- UF *chronotrons*
- lag (delay)*
- time delay*
- RT cepstral analysis
- delay
- delay lines
- electric relays
- hysteresis
- inventory controls
- reaction time
- refractory period
- responses
- schedules
- ∞ time response
- transmission rate (communications)

time lapse photography

USE **chronophotography**

time marching

DEF Techniques for solving a problem with partial differential equations that have a time derivation.

- RT finite difference theory
- numerical analysis
- spatial marching

time measurement

- UF *dating*
- epochs*
- timing*
- GS **time measurement**
- . clock paradox
- RT atomic clocks
- chronometers
- clocks
- consecutive events
- frequency measurement
- ∞ measurement
- oscillographs
- radioactive age determination
- rates (per time)
- sidereal time
- stroboscopes
- synchronism
- time
- ∞ time response
- time synchronization
- timing devices
- velocity
- velocity measurement

- windows (intervals)
- time measuring instruments**
 GS measuring instruments
 . **time measuring instruments**
 . . clocks
 . . . atomic clocks
 . . . autonomous spacecraft clocks
 . . . chronometers
 . . timing devices
- time of flight spectrometers**
 GS measuring instruments
 . spectrometers
 . . **time of flight spectrometers**
 RT spectroscopy
- time optimal control**
 GS automatic control
 . optimal control
 . . **time optimal control**
 optimization
 . optimal control
 . . **time optimal control**
 RT ∞ control
- ∞ **time response**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT access time
 delay
 response bias
 responses
 temporal distribution
 time constant
 time dependence
 time domain analysis
 time lag
 time measurement
- time series analysis**
 RT ∞ applications of mathematics
 autocorrelation
 autoregressive moving average
 correlation
 curve fitting
 data sampling
 extrapolation
 forecasting
 Fourier analysis
 Kalman-Schmidt filtering
 maximum entropy method
 scheduling
 ∞ statistics
 stochastic processes
 trend analysis
 trends
- time sharing**
 DEF A mode of operation that permits two or more users to execute computer programs concurrently on the same computer system by interleaving the execution of the program. Time sharing may be implemented by time slicing, priority-based interrupts, or other scheduling methods.
 RT computer programming
 coordination
 multiple output programs
 multiprocessing (computers)
 multiprogramming
 pipelining (computers)
 run time (computers)
- time signals**
 DEF Accurate signals marking specified times or time intervals. They are used primarily for determining errors of timepieces. Such signals are usually sent from an observatory by radio or telegraph.
 RT clock paradox
 frequency standards
 picosecond pulses
 pulse duration
 ∞ signals
 time synchronization
- timing devices
- time synchronization**
 (added December 1998)
 GS synchronism
 . **time synchronization**
 RT clocks
 frequency standards
 frequency synchronization
 Global Positioning System
 time measurement
 time signals
 universal time
- time temperature parameter**
 RT aging (metallurgy)
 austenitic stainless steels
 embrittlement
 fracture mechanics
 long term effects
 metallography
 precipitation hardening
 temperature effects
- timers*
 USE **timing devices**
- timing*
 USE **time measurement**
- timing devices**
 UF *timers*
 GS measuring instruments
 . time measuring instruments
 . . **timing devices**
 RT chronometers
 clock paradox
 clocks
 dwell
 pendulums
 tachometers
 time measurement
 time signals
- Timoshenko beams**
 DEF Simple structural units used by Stephen Timoshenko as models in developing analysis equations for deflections and deformations of beams and columns under load.
 GS structural members
 . beams (supports)
 . . **Timoshenko beams**
 RT columns (supports)
 Euler-Bernoulli beams
 trusses
- tin**
 GS chemical elements
 . **tin**
 . . tin isotopes
 metals
 . **tin**
 . . tin isotopes
- tin alloys**
 GS alloys
 . **tin alloys**
 . . babbitt metal
 RT bearing alloys
 bismuth alloys
 indium alloys
 solders
 stannides
 Zircalloys (trademark)
- tin compounds**
 GS **tin compounds**
 . organic tin compounds
 . stannates
 . stannides
 . . niobium stannides
 . tin oxides
 . tin tellurides
 RT ∞ chemical compounds
 ∞ Group 4A compounds
- ∞ metal compounds
- tin isotopes**
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **tin isotopes**
 . tin
 . . **tin isotopes**
 metals
 . tin
 . . **tin isotopes**
- tin oxides**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **tin oxides**
 tin compounds
 . **tin oxides**
 RT SIS (semiconductors)
- tin tellurides**
 GS chalcogenides
 . tellurides
 . . **tin tellurides**
 tellurium compounds
 . tellurides
 . . **tin tellurides**
 tin compounds
 . **tin tellurides**
- tip driven rotors**
 UF *hot cycle propulsion system*
 GS airfoils
 . wings
 . . rotary wings
 . . . **tip driven rotors**
 rotating bodies
 . rotors
 . . rotary wings
 . . . **tip driven rotors**
 RT XV-9A aircraft
- tip speed**
 GS rates (per time)
 . **tip speed**
 velocity
 . **tip speed**
 RT angular velocity
 critical velocity
 rotor speed
- tip vanes**
 DEF Wing mounted rotor tips with their spans oriented approximately parallel to the local free stream to increase the capture area and power output of the rotor.
 GS rotating bodies
 . rotors
 . . **tip vanes**
 turbomachinery
 . turbines
 . . wind turbines
 . . . **tip vanes**
- tips**
 GS **tips**
 . blade tips
 . crack tips
 . nose tips
 . wing tips
 RT airfoil profiles
 edges
- tires**
 GS **tires**
 . aircraft tires
 RT blowouts
 inflatable structures
 landing gear
 rollers
 toroidal wheels
 treads
 vehicle wheels
 wheel brakes

TIROS 1 satellite

wheels

TIROS 1 satellite
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 1 satellite**
RT Thor Able rocket vehicle

TIROS 2 satellite
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 2 satellite**
RT Delta launch vehicle

TIROS 3 satellite
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 3 satellite**
RT Delta launch vehicle

TIROS 4 satellite
UF *TIROS D satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 4 satellite**
RT Delta launch vehicle

TIROS 5 satellite
UF *TIROS E satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 5 satellite**
RT Delta launch vehicle

TIROS 6 satellite
UF *TIROS F satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 6 satellite**
RT Delta launch vehicle

TIROS 7 satellite
UF *TIROS G satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 7 satellite**
RT Delta launch vehicle

TIROS 8 satellite
UF *TIROS H satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 8 satellite**
RT Delta launch vehicle

TIROS 9 satellite
UF *TIROS wheel satellite*
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 9 satellite**
RT Delta launch vehicle

TIROS 10 satellite
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS 10 satellite**

RT Delta launch vehicle

TIROS D satellite
USE **TIROS 4 satellite**

TIROS E satellite
USE **TIROS 5 satellite**

TIROS F satellite
USE **TIROS 6 satellite**

TIROS G satellite
USE **TIROS 7 satellite**

TIROS H satellite
USE **TIROS 8 satellite**

TIROS M
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS M**
RT ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites

TIROS N series satellites
DEF A new term for the family of satellites designed to prototype Tiros N.
GS artificial satellites
. meteorological satellites
. . . TIROS satellites
. . . **TIROS N series satellites**
. . . . NOAA 6 satellite
RT Advanced Microwave Sounding Unit
Advanced Very High Resolution Radiometer
ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites
NOAA 7 satellite
TIROS operational satellite system

TIROS operational satellite system
RT cloud photography
ITOS 1
ITOS 2
ITOS 3
ITOS 4
satellite observation
∞ systems
TIROS N series satellites

TIROS project
GS programs
. NASA programs
. . . NASA space programs
. . . **TIROS project**
. projects
. . . **TIROS project**
. space programs
. . . NASA space programs
. . . **TIROS project**
RT cloud photographs
cloud photography
meteorological satellites

TIROS satellites
DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, and those funded by NOAA are called ESSA.
GS artificial satellites
. meteorological satellites
. . . **TIROS satellites**
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite

. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite
RT cloud photography
ESSA satellites
polar orbits
satellite observation

TIROS wheel satellite
USE **TIROS 9 satellite**

tissue engineering
(added October 2000)
DEF Discipline for the in vitro growth and maintenance of tissue, organ primordia, or the whole or part of an organ so as to preserve its architecture and/or function. In terms of application, the primary goal of this technology is the replacement of deficient organs.
GS bioengineering
. **tissue engineering**
technologies
biotechnology
. . . **tissue engineering**
RT bioreactors
cells (biology)
clonostats
culture techniques
cytology
growth
histology
in vitro methods and tests
∞ microgravity applications
organs
tissues (biology)

tissues (biology)
GS **tissues (biology)**
. connective tissue
. endothelium
. epicardium
. epithelium
. hypodermis
. neuroglia
. plantar tissues
. scars
. . . adipose tissues
. . . bone marrow
. . . cartilage
RT anatomy
atrophy
∞ biology
cancer
∞ cells
cells (biology)
cultivation
cystic fibrosis
cysts
fibroblasts
fibrosis
histochemical analysis
histology
infarction
macrophages
mediastinum
necrosis
organs
peritoneum
tissue engineering

Titan
DEF A satellite of Saturn orbiting at a mean distance of 1,222,000 kilometers.
GS celestial bodies
. natural satellites
. . . Saturn satellites
. . . **Titan**
RT atmospheric composition

- Cassini mission
 - Charon
 - Huygens probe
 - satellite atmospheres
 - Saturn (planet)
 - Triton
 - Titan 1 ICBM**
 - UF *SM-68 missile*
 - GS missiles
 - . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . Titan ICBM
 - **Titan 1 ICBM**
 - . surface to surface missiles
 - . . intercontinental ballistic missiles
 - . . . Titan ICBM
 - **Titan 1 ICBM**
 - RT LR-87-AJ-5 engine
 - Titan 2 ICBM**
 - UF *SM-68B missile*
 - GS missiles
 - . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . Titan ICBM
 - **Titan 2 ICBM**
 - . surface to surface missiles
 - . . intercontinental ballistic missiles
 - . . . Titan ICBM
 - **Titan 2 ICBM**
 - RT Hyla-Star rocket vehicle
 - Titan 3 launch vehicle**
 - GS launch vehicles
 - . Titan launch vehicles
 - . . **Titan 3 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . Titan launch vehicles
 - . . . **Titan 3 launch vehicle**
 - RT manned orbital laboratories
 - Titan 4 launch vehicle**
(added February 1993)
 - GS launch vehicles
 - . Titan launch vehicles
 - . . **Titan 4 launch vehicle**
 - . . . Titan 4B launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - . . Titan launch vehicles
 - . . . **Titan 4 launch vehicle**
 - Titan 4B launch vehicle
 - RT Titan Centaur launch vehicle
 - ∞ vehicles
 - Titan 4B launch vehicle**
(added October 1998)
 - GS launch vehicles
 - . Titan launch vehicles
 - . . Titan 4 launch vehicle
 - . . . **Titan 4B launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . Titan launch vehicles
 - . . . Titan 4 launch vehicle
 - **Titan 4B launch vehicle**
 - RT Cassini mission
 - laser gyroscopes
 - Titan Centaur launch vehicle**
 - DEF A Titan III rocket augmented with a Centaur rocket for launching spacecraft requiring high-velocity escape trajectories.
 - GS launch vehicles
 - . **Titan Centaur launch vehicle**
 - rocket vehicles
 - . **Titan Centaur launch vehicle**
 - RT Centaur launch vehicle
 - Titan 4 launch vehicle
 - Titan ICBM**
 - GS missiles
 - . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . **Titan ICBM**
 - Titan 1 ICBM
 - Titan 2 ICBM
 - . surface to surface missiles
 - . . intercontinental ballistic missiles
 - . . . Titan ICBM
 - **Titan ICBM**
 - Titan 1 ICBM
 - Titan 2 ICBM
 - RT liquid propellant rocket engines
 - LR-91-AJ-5 engine
 - multistage rocket vehicles
 - YLR-91-AJ-1 engine
 - Titan launch vehicles**
 - GS launch vehicles
 - . **Titan launch vehicles**
 - . . Titan 3 launch vehicle
 - . . Titan 4 launch vehicle
 - . . . Titan 4B launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Titan launch vehicles**
 - . . . Titan 3 launch vehicle
 - . . . Titan 4 launch vehicle
 - Titan 4B launch vehicle
 - RT Gemini 3 flight
 - Gemini 7 flight
 - Gemini 8 flight
 - Gemini 9 flight
 - Gemini 10 flight
 - Gemini 11 flight
 - Gemini 12 flight
 - liquid propellant rocket engines
 - solid propellant rocket engines
 - ∞ vehicles
 - Titan project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Titan project**
 - . projects
 - . . **Titan project**
 - . space programs
 - . . NASA space programs
 - . . . **Titan project**
 - RT ∞ boosters
 - Gemini project
 - Gemini spacecraft
 - launch vehicles
 - launchers
 - launching
 - titanates**
 - GS titanium compounds
 - . **titanates**
 - . . barium titanates
 - . . ilmenite
 - . . lead titanates
 - . . . lead zirconate titanates
 - . . magnesium titanates
 - . . perovskites
 - . . strontium titanates
 - . . zirconium titanates
 - . . . lead zirconate titanates
 - RT euxenite
 - Titania**
 - DEF A satellite of Uranus orbiting at a mean distance of 438,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Titania**
 - . . Uranus satellites
 - . . . **Titania**
 - RT Uranus (planet)
 - titanium**
 - GS chemical elements
 - . **titanium**
 - . . titanium isotopes
 - metals
 - . transition metals
 - . . **titanium**
 - . . . titanium isotopes
 - titanium alloys**
 - GS alloys
 - . **titanium alloys**
 - . . nitinol alloys
 - RT aluminides
 - shape memory alloys
 - titanium aluminides
 - vanadium alloys
 - titanium aluminides**
(added June 1997)
 - GS aluminum compounds
 - . aluminides
 - . . **titanium aluminides**
 - titanium compounds
 - . **titanium aluminides**
 - RT intermetallics
 - titanium alloys
 - titanium borides**
 - GS boron compounds
 - . borides
 - . . **titanium borides**
 - titanium compounds
 - . **titanium borides**
 - titanium carbides**
 - GS carbon compounds
 - . carbides
 - . . **titanium carbides**
 - titanium compounds
 - . **titanium carbides**
 - RT ceramic fibers
 - ceramic matrix composites
 - titanium chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **titanium chlorides**
 - . halides
 - . . chlorides
 - . . . **titanium chlorides**
 - . . metal halides
 - . . . **titanium chlorides**
 - titanium compounds
 - . **titanium chlorides**
 - titanium compounds**
 - GS **titanium compounds**
 - . titanates
 - . . barium titanates
 - . . ilmenite
 - . . lead titanates
 - . . . lead zirconate titanates
 - . . magnesium titanates
 - . . perovskites
 - . . strontium titanates
 - . . zirconium titanates
 - . . . lead zirconate titanates
 - . titanium borides
 - . titanium carbides
 - . titanium chlorides
 - . titanium nitrides
 - . titanium oxides
 - . . anatase
 - . . ilmenite
 - . . rutile
 - . titanium aluminides
 - RT ∞ chemical compounds
 - ∞ Group 4B compounds
 - ∞ metal compounds
- titanium dioxide*
- USE **titanium oxides**
- titanium isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **titanium isotopes**
 - . titanium
 - . . **titanium isotopes**
 - metals

titanium nitrides

. transition metals
. . . titanium
. . . . **titanium isotopes**

titanium nitrides

GS nitrogen compounds
. nitrides
. . . metal nitrides
. . . . **titanium nitrides**
titanium compounds
. **titanium nitrides**
RT ceramic matrix composites

titanium oxides

UF *titanium dioxide*
GS chalcogenides
. oxides
. . . metal oxides
. . . . **titanium oxides**
. anatase
. ilmenite
. rutile
titanium compounds
. **titanium oxides**
. . . anatase
. . . ilmenite
. . . rutile
RT dioxides

titration

DEF The determination of the reactive capacity, usually of a solution, especially, the analytical process of successively adding measured amounts of a reagent (as a standard solution) to a known volume or weight of a sample or sample solution until a desired end point is reached.

GS chemical reactions
. **titration**
RT acidity
coulometers
iodimetry
ion concentration
Kjeldahl method
solutions

titrimeters

GS measuring instruments
. **titrimeters**
RT chemical analysis

TNT (*trinitrotoluene*)

USE **trinitrotoluene**

tobacco

GS plants (botany)
. **tobacco**
RT nicotine

tocopherol

UF *vitamin E*
GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . **tocopherol**
. lipids
. **tocopherol**
vitamins
. **tocopherol**

Togo

GS nations
. **Togo**
RT Africa

toilets

RT human wastes
sanitation
spacecrews
waste disposal

tokamak devices

DEF Experimental toroidal magnetic confinement devices where toroidal current runs through the plasma in order to produce fusion reactor like plasma conditions. The name is a Russian acronym for toroidal magnetic current.

GS nuclear reactors
. **tokamak devices**
. . . Joint European Torus
plasma generators
. **tokamak devices**
. . . Joint European Torus
RT beam injection
beta factor
bumpy toruses
divertors (fusion reactors)
∞ electric power
limiters (fusion reactors)
nuclear fusion
plasma compression
plasma control
plasma physics
poloidal flux
Q values (nuclear physics)
∞ reactors
spheromaks

tolerances (mechanics)

DEF A group of prescribed limits for specific properties of a particular material.

GS tolerances (mechanics)

. impact tolerances
RT acceptability
accuracy
allowances
clearances
consistency
dimensional stability
drift (instrumentation)
errors
hysteresis
inspection
linearity
mechanical properties
nondestructive tests
precision
quality control
radiation tolerance
range (extremes)
reliability
resolution
sensitivity
specifications
stability
standards

tolerances (physiology)

GS tolerances (physiology)

. acceleration tolerance
. altitude tolerance
. cold tolerance
. heat tolerance
. human tolerances
. radiation tolerance
RT acclimatization
Barany chair
biocontrol systems
impact resistance
noise tolerance
orthostatic tolerance
physiology
range (extremes)
∞ resistance

Tollmien-Schlichting waves

(*added May 1988*)

GS elastic waves . Tollmien-Schlichting waves

RT Blasius flow
boundary layer flow
boundary layer transition
laminar flow
turbulent flow

toluene

GS organic compounds
. hydrocarbons
. . . **toluene**
RT solvents

xylene

Tomahawk missiles

GS missiles
. surface to surface missiles
. . . cruise missiles
. . . . **Tomahawk missiles**
RT weapons

tomatoes

(*added June 1990*)

GS farm crops
. **tomatoes**
RT agriculture
botany
∞ crops
∞ food
seeds

tombolos

USE **bars (landforms)**

tomography

DEF Technique of making radiographs of plane sections of a body or an object; its purpose is to show detail in a predetermined plane of the body, while blurring the images of structures in other planes. Used for planigraphy.

UF *planigraphy*
GS imagery
. radiography
. . . **tomography**
. . . . computer aided tomography
RT computer graphics
ground penetrating radar
image enhancement
optical data processing
x ray analysis

TOMS

USE **Total Ozone Mapping Spectrometer**

tone

USE **pitch**

tongue

GS anatomy
. digestive system
. . . **tongue**
RT mouth
voice

Tonk meteorite

GS celestial bodies
. meteorites
. . . stony meteorites
. . . . carbonaceous meteorites
. carbonaceous chondrites
. **Tonk meteorite**
. chondrites
. carbonaceous chondrites
. **Tonk meteorite**

tonometry

USE **intraocular pressure
pressure measurement**

tonus

USE **muscular tonus**

tooling

RT ∞ automation
machining
mechanization
setups
tools

tools

GS **tools**
. drill bits
. drills
. files (tools)
. hammers
. . . electromagnetic hammers
. machine tools

- . . boring machines
- . . grinding machines
- . . lathes
- . . . turret lathes
- . . milling machines
- . . shapers
- . . saws
- . . shears
- . . software development tools
- . . space tools
- . . wrenches
- RT antiquities
- anvils
- cutters
- fixtures
- ∞ hardware
- jigs
- kits
- ∞ machinery
- mechanical devices
- mechanization
- platens
- presses
- ∞ production
- taps
- tooling
- ultrasonic cleaning

tooth diseases

- UF *aerodontalgia*
- GS diseases
- . **tooth diseases**
- RT cavities
- dental calculi
- dentistry
- oral hygiene
- teeth

TOPEX

DEF The NASA Ocean Surface Topography Experiment, a proposed mission to utilize satellite altimetry to map the surface topography of the ocean from which the ocean currents are derived.

- RT Gulf Stream
- maritime satellites
- ocean currents
- ocean surface
- oceanography
- Poseidon satellite
- satellite observation
- sea states
- topography

topography

- UF *landscape*
- GS **topography**
- . lunar topography
- . terrain
- RT altimetry
- badlands
- barren land
- beaches
- cliffs
- contour sensors
- contours
- cusps (landforms)
- ∞ depression
- desertline
- deserts
- digital elevation models
- dunes
- Earth surface
- elevation
- elevation angle
- escarpments
- geodesy
- geodetic surveys
- geomorphology
- geophysics
- gulfs
- highlands
- hypsography
- isthmuses
- Jupiter red spot
- lagoons
- land

- landforms
- landmarks
- ledges
- mapping
- maria
- Mars surface
- meanders
- muskegs
- oceanography
- peaks (landforms)
- photomapping
- plains
- planetary surfaces
- ∞ profiles
- ravines
- relief maps
- satellite altimetry
- shallow water
- slopes
- stairsteps
- surface roughness
- TOPEX
- valleys
- Venus surface
- wadis

topology

- GS geometry
- . **topology**
- . . fixed points (mathematics)
- . . homotopy theory
- . . imbeddings (mathematics)
- . . . invariant imbeddings
- . . links (mathematics)
- . . metric space
- . . . Hilbert space
- Sobolev space
- RT catastrophe theory
- ∞ cells
- continuity
- continuity (mathematics)
- continuuums
- deformation
- dimensions
- fault trees
- fibers (mathematics)
- graph theory
- homology
- homotropy
- intervals
- isoperimetric problem
- manifolds (mathematics)
- mapping
- ∞ nets
- network synthesis
- shapes
- switching theory
- toruses
- trees (mathematics)
- Voronoi diagrams

topping cycle engines

- RT aircraft engines
- liquid hydrogen
- propulsion system configurations
- wave rotors

TOPS (spacecraft)

- UF *Thermoelectric Outer Planet Spacecraft*
- thermoelectric spacecraft*
- GS interplanetary spacecraft
- . **TOPS (spacecraft)**
- RT flyby missions
- interplanetary flight
- outer planets explorers
- space exploration
- space missions
- ∞ spacecraft

torches

- GS **torches**
- . plasma torches
- RT cutting
- pyrogen
- welding

- welding machines

Tornado aircraft

- USE **MRCA aircraft**

tornadoes

- GS storms
- . storms (meteorology)
- . . **tornadoes**
- RT atmospheric circulation
- cold fronts
- cumulonimbus clouds
- cyclones
- fronts (meteorology)
- Fujita method
- ground wind
- hurricanes
- National Severe Storms Project
- rainstorms
- storm damage
- tropical storms
- typhoons
- warm fronts
- wind (meteorology)

Toro asteroid

- GS celestial bodies
- . asteroid belts
- . . **Toro asteroid**
- . . asteroids
- . . . **Toro asteroid**
- RT meteoroids
- solar system
- space debris

toroidal discharge

- GS electric current
- . electric discharges
- . . Townsend discharge
- . . . gas discharges
- **toroidal discharge**
- ring discharge
- RT electrodeless discharges
- high frequencies
- plasma jets
- spectrum analysis

toroidal plasmas

- UF *plasma rings*
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **toroidal plasmas**
- corpuscular radiation
- energetic particles
- plasmas (physics)
- **toroidal plasmas**
- RT beam injection
- beta factor
- bumpy toruses
- elliptical plasmas
- limiters (fusion reactors)
- plasma control
- plasma currents
- poloidal flux
- reverse field pinch
- ∞ rings
- rotating plasmas
- solenoids
- spheromaks
- stellarators

toroidal shells

- GS shells (structural forms)
- . **toroidal shells**
- RT metal shells
- reinforced shells
- skin (structural member)
- thin walled shells
- toroids

toroidal wheels

DEF Doughnut-shaped wheels designed particularly for vehicles used in soft, granular soil

toroids

(planetary surfaces). Used for doughnut shape wheels.

UF *doughnut shape wheels*

GS wheels

. **toroidal wheels**

RT roving vehicles

suspension systems (vehicles)

tires

vehicle wheels

toroids

RT ∞ coils

∞ curves

geometry

inductors

ion impact

magnet coils

magnetic cores

toroidal shells

transformers

torpedo engines

GS engines

. **torpedo engines**

. . . turborocket engines

. . . ullage rocket engines

. . . Vernier engines

. . . control rockets

. . . SYNCOM apogee engines

RT internal combustion engines

rocket propellants

turbine engines

underwater propulsion

torpedoes

UF *RETORC (torpedoes)*

GS explosive devices

. **torpedoes**

RT ammunition

antisubmarine warfare

ASROC engine

bombs (ordnance)

∞ configurations

countermeasures

explosives

hydroballistics

missiles

nuclear weapons

propellants

∞ rockets

sea launching

shaped charges

submerged bodies

underwater trajectories

warheads

weapons

torque

DEF About an axis, the product of a force and the distance of its line of action from the axis. Used for hinge moments.

UF *hinge moments*

GS moments

. **torque**

RT bending moments

∞ force

loading moments

moments of inertia

pitching moments

rolling moments

rotation

shafts (machine elements)

torque sensors (robotics)

torquemeters

torsion

torsional stress

torsional vibration

twisting

yawing moments

torque converters

DEF Devices for changing the torque speed or mechanical advantage between an input shaft and an output shaft.

RT ∞ converters

power converters

transmissions (machine elements)

torque measuring apparatus

USE **torquemeters**

torque motors

GS electromechanical devices

. electric motors

. . **torque motors**

motors

. electric motors

. . **torque motors**

RT actuators

servomotors

transmissions (machine elements)

torque sensors (nonrobotics)

USE **torquemeters**

torque sensors (robotics)

(added January 1991)

GS robot sensors

. **torque sensors (robotics)**

RT end effectors

manipulators

robots

∞ sensors

servomechanisms

teleoperators

torque

torquemeters

torquemeters

UF *torque measuring apparatus*

torque sensors (nonrobotics)

GS measuring instruments

. **torquemeters**

RT dynamometers

mechanical measurement

torque

torque sensors (robotics)

torquers

GS transducers

. **torquers**

RT degrees of freedom

gyroscopes

sea keeping

Torres Strait

GS passageways

. straits

. . **Torres Strait**

RT Australia

New Guinea (island)

torsion

RT buckling

deflection

deformation

∞ force

moments

temperature inversions

torque

torsional stress

torsional vibration

twisting

torsional stress

GS stresses

. shear stress

. . **torsional stress**

RT torque

torsion

torsional vibration

GS vibration

. structural vibration

. . **torsional vibration**

RT missile vibration

random vibration

self induced vibration

shear strain

torque

torsion

twisting

torso

GS anatomy

. **torso**

RT chest

toruses

GS geometry

. Euclidean geometry

. . analytic geometry

. . . **toruses**

symmetrical bodies

. bodies of revolution

. . **toruses**

RT descriptive geometry

loops

∞ rings

topology

Tory 2 reactor

GS nuclear electric power generation

. nuclear power reactors

. . **Tory 2 reactor**

nuclear reactors

. gas cooled reactors

. . **Tory 2 reactor**

. nuclear power reactors

. . **Tory 2 reactor**

. nuclear research and test reactors

. . **Tory 2 reactor**

Tory 2-A reactor

GS nuclear electric power generation

. nuclear power reactors

. . **Tory 2-A reactor**

nuclear reactors

. gas cooled reactors

. . **Tory 2-A reactor**

. nuclear power reactors

. . **Tory 2-A reactor**

. nuclear research and test reactors

. . **Tory 2-A reactor**

Tory 2-C reactor

GS nuclear electric power generation

. nuclear power reactors

. . **Tory 2-C reactor**

nuclear reactors

. gas cooled reactors

. . **Tory 2-C reactor**

. nuclear power reactors

. . **Tory 2-C reactor**

. nuclear research and test reactors

. . **Tory 2-C reactor**

TOS-A

USE **ESSA 3 satellite**

total energy systems

DEF Energy systems which supply both electrical and heat requirements.

GS **total energy systems**

. solar total energy systems

RT integrated energy systems

phosphoric acid fuel cells

∞ systems

total impulse

(added March 2000)

DEF The integral of thrust over a given interval of time; the product of thrust and duration expressed in force-seconds; the total thrust produced by a rocket engine or motor over the entire time that its fuel is burning.

GS impulses

. **total impulse**

RT propulsion system performance

propulsive efficiency

spacecraft propulsion

specific impulse

thrust

Total Ozone Mapping Spectrometer

(added July 1988)

UF *TOMS*

- GS measuring instruments
 . optical measuring instruments
 . . photometers
 . . . ultraviolet spectrometers
 **Total Ozone Mapping Spectrometer**
 . radiation measuring instruments
 . . actinometers
 . . . ultraviolet detectors
 ultraviolet spectrometers
 **Total Ozone Mapping Spectrometer**
 . . photometers
 . . . ultraviolet spectrometers
 **Total Ozone Mapping Spectrometer**
 . satellite-borne instruments
 . . **Total Ozone Mapping Spectrometer**
 . spectrometers
 . . ultraviolet spectrometers
 . . . **Total Ozone Mapping Spectrometer**
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . ultraviolet spectrometers
 **Total Ozone Mapping Spectrometer**
- RT Antarctic regions
 Nimbus 7 satellite
 ozone depletion
 ozonometry
- total quality management**
(added February 1992)
 UF *TQM (quality control)*
 GS management
 . **total quality management**
 quality control
 . **total quality management**
- RT acceptability
 aircraft reliability
 concurrent engineering
 industrial management
 management methods
 production management
 quality
 reliability
 reliability engineering
 Taguchi methods
 value engineering
- total variation diminishing schemes*
 USE **TVD schemes**
- touch**
 UF *cutaneous perception*
tactile sensation
 GS perception
 . sensory perception
 . . **touch**
 . . . tactile discrimination
- RT electrocutaneous communication
 skin (anatomy)
 tactile sensors (robotics)
- touchdown**
 GS landing
 . **touchdown**
- RT aircraft landing
 approach
 approach and landing tests (STS)
 downrange
 spacecraft landing
 vertical landing
 vertical motion
 water landing
- toughness**
 DEF That property of a material by virtue of which it can absorb work.
 GS mechanical properties
 . **toughness**
 . . notch sensitivity
- RT abrasion resistance
- brittleness
 compressive strength
 crack initiation
 ductility
 fracture strength
 hardness
 impact tests
 J integral
 shear properties
 tensile strength
 wear resistance
- tourism**
(added April 1999)
 GS **tourism**
 . space tourism
- RT industries
 recreation
 transportation
 ∞ travel
- tourmaline**
 GS aluminum compounds
 . **tourmaline**
 boron compounds
 . **tourmaline**
 minerals
 . **tourmaline**
 silicon compounds
 . silicates
 . . sodium silicates
 . . . **tourmaline**
 sodium compounds
 . sodium silicates
 . . **tourmaline**
- RT igneous rocks
- Tournesole satellite*
 USE **D-2 satellites**
- tourniquets**
 GS medical equipment
 . **tourniquets**
- RT blood circulation
 blood flow
 first aid
- Toutatis asteroid**
(added July 1995)
 GS celestial bodies
 . asteroids
 . . **Toutatis asteroid**
- RT asteroid belts
 meteoroids
- tow missiles**
 GS missiles
 . surface to surface missiles
 . . antitank missiles
 . . . **tow missiles**
- towed bodies**
 UF *drogues*
towed targets
- RT aircraft brakes
 ∞ bodies
 brakes (for arresting motion)
 drag chutes
 gliders
 lifting bodies
 parachutes
 sleds
 streamlined bodies
 submerged bodies
 test vehicles
 tetherlines
 towing
 trailers
- towed targets*
 USE **targets**
towed bodies
- Tower Shielding Reactor 2**
 GS nuclear reactors
 . nuclear research and test reactors
- . . **Tower Shielding Reactor 2**
- RT radiation shielding
- towers**
 GS **towers**
 . airport towers
 . umbilical towers
- RT air traffic control
 antennas
 bridges (structures)
 columns (supports)
 concrete structures
 construction industry
 cranes
 pylons
 ∞ structures
 tanks (containers)
- towing**
 RT cables (ropes)
 towed bodies
 tractors
 trailers
- Townsend avalanche**
 UF *townsend surfaces*
 GS avalanches
 . **Townsend avalanche**
- RT electromagnetic absorption
 electron avalanche
 ion impact
 secondary emission
 ∞ surfaces
- Townsend discharge**
 DEF A type of direct current discharge between two electrodes immersed in a gas and requiring electron emission from the cathode.
 GS electric current
 . electric discharges
 . . **Townsend discharge**
 . . . gas discharges
 toroidal discharge
 ring discharge
- RT electrodeless discharges
 ion impact
- townsend surfaces*
 USE **Townsend avalanche**
- toxic diseases**
 UF *poisoning (toxicology)*
 GS diseases
 . **toxic diseases**
 . . benzene poisoning
 . . beryllium poisoning
 . . carbon monoxide poisoning
 . . carbon tetrachloride poisoning
 . . hydrocarbon poisoning
 . . lead poisoning
- RT Clostridium botulinum
 diphtheria
 hyperoxia
 ∞ poisoning
 toxicity
 toxicology
- toxic hazards**
 GS hazards
 . **toxic hazards**
- RT aircraft hazards
 biological hazards
 flight hazards
 hazardous materials
 hazardous wastes
 heavy metals
 occupational diseases
 ∞ poisoning
 toxicity
- toxicity**
 GS **toxicity**
 . benzene poisoning
 . beryllium poisoning
 . carbon monoxide poisoning
 . carbon tetrachloride poisoning

toxicity and safety hazard

. hydrocarbon poisoning
. lead poisoning
RT acidosis
alkalosis
bioavailability
chemical properties
endangered species
herbicides
hyperoxia
poisons
toxic diseases
toxic hazards
toxicology
toxins and antitoxins
virulence

toxicity and safety hazard
GS irritation
. **toxicity and safety hazard**
RT acroleins
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
chemical properties
hazardous material disposal (in space)
hydrocarbon poisoning
intoxication
soil pollution

toxicology
RT benzene poisoning
beryllium poisoning
bioavailability
biomarkers
carbon tetrachloride poisoning
curare
endotoxins
fungicides
hazards
hemoperfusion
hydrocarbon poisoning
insecticides
intoxication
nonpoint sources
pesticides
pollution
red tide
toxic diseases
toxicity
vaccines

toxins and antitoxins
GS **toxins and antitoxins**
. endotoxins
. polybrominated biphenyls
RT biological weapons
hazardous materials
immunity
toxicity
vaccines

TQM (quality control)
USE **total quality management**

TRAAC satellite
USE **Transit Attitude Control satellite**

trace contaminants
GS contaminants
. **trace contaminants**
RT chemical elements
impurities
pollution transport
purity
∞ tracing

trace elements
RT isotopic labeling
∞ nutrients
particle tracks
siderophile elements
∞ tracers

∞ tracing

TRACE satellite
(added May 1998)
USE **Transition Region and Coronal Explorer**

tracers
∞ tracers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ammunition
isotopic labeling
marking
trace elements

trachea
GS anatomy
. respiratory system
. . **trachea**
RT bronchi
∞ tubes

trachyte
GS rocks
. igneous rocks
. . **trachyte**
RT soils
syenite

tracing
∞ tracing
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT drawings
trace contaminants
trace elements

tracked vehicles
DEF Land vehicles equipped with continuous roller belts over cogged wheels for moving over rough terrain.
GS surface vehicles
. motor vehicles
. . tractors
. . . **tracked vehicles**
RT crawler tractors
∞ vehicles
vehicular tracks

tracking (position)
UF *target tracking*
tracking studies
GS **tracking (position)**
. compensatory tracking
. infrared tracking
. missile tracking
. multiple target tracking
. optical tracking
. photographic tracking
. polystation doppler tracking system
. pursuit tracking
. radar tracking
. radio tracking
. . wildlife radiolocation
. range and range rate tracking
. space detection and tracking system
. spacecraft tracking
. . satellite tracking
. . . satellite-to-satellite tracking
. star trackers
. . CCD star tracker
. video landmark acquisition and tracking

RT air traffic control
aircraft detection
approach control
detection
identifying
instrument landing systems
laser ranger/tracker
multispectral tracking telescopes
position (location)
ranging
ray tracing
satellite doppler positioning
solar sensors

sound localization
sound ranging
tracking problem
∞ tracks

Tracking and Data Relay Satellites
USE **TDR satellites**

tracking antennas
USE **directional antennas**

tracking filters
DEF Electron devices for attenuating unwanted signals while passing desired signals, by means of phase lock techniques which reduce the effective bandwidth of the circuit and eliminate amplitude variations.
GS electromagnetic wave filters
. bandpass filters
. . **tracking filters**
. electric filters
. . **tracking filters**
RT adaptive filters
bandstop filters
bandwidth
multiple target tracking
phase locked systems
video landmark acquisition and tracking

tracking networks
GS networks
. **tracking networks**
. . Deep Space Network
. . Global Tracking Network
. . manned space flight network
. . MATTS (systems)
. . polystation doppler tracking system
. . radar networks
. . space detection and tracking system
. . Space Flight Tracking and Data Network
. . STDN (network)
RT Advanced Range Instrumentation Ship
data acquisition
ground support equipment
minitrack system
missile tracking
Orion (radio interferometry network)
satellite tracking
satellite-to-satellite tracking
spacecraft tracking

tracking problem
DEF The problem of controlling a system so that the output follows a given path.
RT automatic control
control theory
feedback control
linear systems
multiple target tracking
nonlinear systems
optimal control
output
∞ problems
tracking (position)
trajectory control
trajectory optimization

tracking radar
DEF A radar used for following a target.
GS radar
. **tracking radar**
. . Cobra Dane (radar)
RT coherent radar
continuous wave radar
digital radar systems
monopulse radar
pulse radar
radar tracking
satellite-borne radar
search radar
surveillance radar
TRADEX radar system

trajectory measurement

tracking stations

DEF Stations set up to track objects moving through the atmosphere or space, usually by means of radio or radar.

- GS stations
 - . tracking stations
 - . . Deep Space Instrumentation Facility
 - . . Global Tracking Network
 - . . polystation doppler tracking system
- RT ∞ fences
 - ground stations
 - ground support equipment
 - Jodrell Bank Observatory
- ∞ mars
 - minitrack system
 - missile tracking
 - radar networks
 - satellite tracking
 - space detection and tracking system
 - Space Flight Tracking and Data Network
 - spacecraft tracking
 - STDN (network)

tracking studies

USE **tracking (position)**

∞ tracks

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- UF *trails*
- RT conveyors
 - ground tracks
 - meteor trails
 - minitrack system
 - particle tracks
 - particle trajectories
 - smoke trails
 - tracking (position)
 - vehicular tracks

traction

- RT adhesion
- friction
- pulling

tractors

- GS surface vehicles
 - . motor vehicles
 - . . **tractors**
 - . . . crawler tractors
 - . . . tracked vehicles
- RT agriculture
 - electric motor vehicles
 - ground handling
 - handling equipment
 - lunar excavation equipment
 - materials handling
 - planting
 - plowing
 - sleds
 - towing
 - transportation
 - trucks
- ∞ vehicles

tracts

USE **sites**

tradeoffs

- RT decision making
- management analysis
- management planning

Trader aircraft

USE **C-1A aircraft**

tradesantia

- GS plants (botany)

. tradesantia

TRADEX radar system

- GS radar
 - . **TRADEX radar system**
- RT search radar
 - ∞ systems
 - target recognition
 - tracking radar

traffic

- GS **traffic**
 - . air traffic
- RT accidents
- avoidance
- harbors
- transportation

traffic control

DEF Control of vehicular traffic such as priority highway lanes, stoplight control, rapid-transit train control, or air traffic control.

- GS **traffic control**
 - . air traffic control
 - . . automated en route ATC
 - . . radar approach control
- RT air traffic controllers (personnel)
- airport towers
- approach control
- avoidance
- collision avoidance
- ∞ control
 - ground based control
 - National Aviation System

tragacanth

- GS plants (botany)
- . **tragacanth**

Trailblazer 1 reentry vehicle

- UF *Trailblazer 1 rocket vehicle*
- GS reentry vehicles
 - . **Trailblazer 1 reentry vehicle**
- RT Honest John rocket vehicle
- Lance missile
- multistage rocket vehicles
- Nike-Ajax missile
- rocket vehicles
- solid propellant rocket engines

Trailblazer 1 rocket vehicle

USE **Trailblazer 1 reentry vehicle**

Trailblazer 2 reentry vehicle

- UF *Trailblazer 2 rocket vehicle*
- GS reentry vehicles
 - . **Trailblazer 2 reentry vehicle**
- RT multistage rocket vehicles
- rocket vehicles
- solid propellant rocket engines
- TX-354 engine

Trailblazer 2 rocket vehicle

USE **Trailblazer 2 reentry vehicle**

trailers

- RT automobiles
- couplings
- sleds
- tank trucks
- towed bodies
- towing
- trucks

trailing edge flaps

- UF *variable area wings*
- GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **trailing edge flaps**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **trailing edge flaps**
 - . aircraft brakes
 - . . wing flaps

. . . trailing edge flaps

- control surfaces
- . flaps (control surfaces)
- . . wing flaps
- . . . **trailing edge flaps**
- drag devices
- . aerodynamic brakes
- . . wing flaps
- . . . **trailing edge flaps**
- RT jet flaps
- leading edge slats
- split flaps
- vortex flaps

trailing edges

- GS edges
 - . **trailing edges**
 - . . blunt trailing edges
- RT airfoils
- blunt leading edges
- leading edges
- sharp leading edges
- vortex flaps

trails

USE **tracks**

trainees

USE **students**

trainers

USE **training devices**

training

USE **education**

training aircraft

- GS **training aircraft**
 - . Alpha jet aircraft
 - . jet provost aircraft
 - . L-29 jet trainer
 - . T-2 aircraft
 - . T-28 aircraft
 - . T-33 aircraft
 - . T-37 aircraft
 - . T-38 aircraft
 - . T-39 aircraft
 - . TS-11 aircraft
- RT ∞ aircraft
 - bomber aircraft
 - fighter aircraft
 - general aviation aircraft
 - jet aircraft
 - light aircraft
 - ∞ military aircraft
 - ∞ subsonic aircraft

training analysis

DEF Evaluation of all facets of instruction -- presentation methods, instructors, effectiveness of training, and testing.

- RT ∞ analyzing
 - ∞ development
 - education
 - handbooks
 - learning
 - personnel development
 - planning
 - retraining

training devices

- UF *trainers*
- GS **training devices**
 - . teaching machines
 - . training simulators
 - . . flight simulators
 - . . . cockpit simulators
 - . . spacecraft cabin simulators
- RT altitude simulation
- audio visual equipment
- child device
- cockpit simulators
- ∞ devices
 - education
 - educational television
 - flight simulators

training evaluation

- multimedia
- onboard equipment
- simulators
- visual aids

training evaluation

DEF Procedures for determining the effectiveness of instruction.

GS evaluation

- . **training evaluation**

RT certification

- examination
- instructors
- knowledge
- learning
- ∞ performance
- reviewing
- schools
- students

training simulators

UF *simulator training*

GS simulators

- . **training simulators**
- . . . flight simulators
- . . . cockpit simulators
- . . . spacecraft cabin simulators

training devices

- . **training simulators**

- . . . flight simulators
- . . . cockpit simulators
- . . . spacecraft cabin simulators

RT astronaut training

- centrifuges
- control simulation
- flight simulation
- flight training
- in-flight simulation
- landing simulation
- lunar orbit and landing simulators
- ∞ missile simulators
- pilot training
- space flight training
- virtual reality

trajectories

DEF In general, paths traced by bodies moving as a result of an externally applied force, considered in three dimensions.

GS **trajectories**

- . abort trajectories
- . ascent trajectories
- . ballistic trajectories
- . descent trajectories
- . . . reentry trajectories
- . hyperbolic trajectories
- . interorbital trajectories
- . midcourse trajectories
- . missile trajectories
- . molecular trajectories
- . particle trajectories
- . . . electron trajectories
- . rendezvous trajectories
- . round trip trajectories
- . . . circumlunar trajectories
- . spacecraft trajectories
- . . . interplanetary trajectories
- . . . Earth-Mars trajectories
- . . . Earth-Mercury trajectories
- . . . Earth-Venus trajectories
- . . . lunar trajectories
- . . . circumlunar trajectories
- . . . Earth-Moon trajectories
- . . . moon-Earth trajectories
- . spinning unguided rocket trajectory
- . underwater trajectories

RT apexes

- attractors (mathematics)
- ballistics

- ∞ curves
- downrange
- equations of motion

- ∞ flight
- flight mechanics
- flight optimization
- flight paths
- flight time

- great circles
- missiles
- orbits
- ordnance
- parabolic flight
- ∞ paths
- rocket flight
- space flight
- transfer orbits

trajectory analysis

RT ∞ analyzing

- astrodynamics
- ballistics
- capture effect
- celestial mechanics
- equations of motion
- Goddard Trajectory Determination System

- impact prediction
- mathematical models
- numerical analysis
- orbital mechanics
- preflight analysis
- systems analysis
- trajectory planning

trajectory control

UF *range control*

GS **trajectory control**

- . trajectory optimization

RT attitude control

- ∞ control
- drift rate
- guidance (motion)
- homing devices
- landing sites
- optimal control
- optimization
- post boost propulsion system
- range safety
- thrust programming
- tracking problem
- trajectory planning

trajectory measurement

RT ballistic cameras

- ballistics
- flight mechanics
- ∞ measurement
- telemetry
- tracking radar

trajectory optimization

GS optimization

- . **trajectory optimization**
- trajectory control
- . **trajectory optimization**

RT aircraft maneuvers

- flight mechanics
- flight optimization
- genetic algorithms
- Goddard Trajectory Determination System
- pursuit-evasion games
- tracking problem
- trajectory planning

trajectory planning

(added December 1990)

UF *path planning*

GS planning

- . **trajectory planning**

RT robot dynamics

- robotics
- trajectory analysis
- trajectory control
- trajectory optimization
- Voronoi diagrams

tranquilizers

GS drugs

- . **tranquilizers**

RT central nervous system depressants

- hypertension

- sedatives

Transall C-160 aircraft

USE **C-160 aircraft**

transatmospheric vehicles

RT aerospace planes

- aerospace vehicles

- ∞ aircraft
- aircraft design
- National Aerospace Plane Program

- ∞ spacecraft
- spacecraft design
- X-30 vehicle

transceivers

USE **transmitter receivers**

transcendental functions

GS functions (mathematics)

- . **transcendental functions**
- . . . exponential functions
- . . . logarithms
- . . . periodic functions
- . . . trigonometric functions
- cosine series
- sine series
- tangents

transconductance

DEF The real part of the transadmittance. Note: Transconductance is, as most commonly used, the interelectrode transconductance between the control grid and the plate. At low frequencies, transconductance is the slope of the control-grid-to-plate transfer characteristic.

GS electrical properties

- . electrical impedance
- . . electrical resistance
- . . . **transconductance**
- impedance
- . electrical impedance
- . . electrical resistance
- . . . **transconductance**

RT ∞ conductivity

- electric potential
- electrodes
- electron tubes
- linear circuits
- low conductivity
- ∞ low resistance
- ohmmeters
- Ohms law
- RC circuits
- reactance
- ∞ resistance
- RL circuits
- RLC circuits
- solid electrodes
- volt-ampere characteristics

transcontinental systems

RT continents

- ∞ systems
- telecommunication
- transportation

transcription (genetics)

(added April 2002)

DEF Transfer of genetic information from DNA to mRNA.

RT deoxyribonucleic acid

- gene expression
- genetics
- ribonucleic acids

transducers

DEF Devices capable of being actuated by energy from one or more other transmission systems or media and of supplying related energy to one or more other transmission systems or media as microphones or thermocouples.

GS **transducers**

- . digital transducers
- . electronic transducers
- . image transducers

- . interdigital transducers
- . magnetic transducers
- . mode transformers
- . piezoelectric transducers
- . . . piezoelectric gages
- . piezoresistive transducers
- . . . piezoelectric gages
- . pressure sensors
- . . Bourdon tubes
- . quartz transducers
- . sound transducers
- . . electroacoustic transducers
- . . . hydrophones
- . . . loudspeakers
- . . . microphones
- . thermopiles
- . torquers
- . ultrasonic wave transducers
- RT bulk acoustic wave devices
- control equipment
- ∞ converters
- data converters
- ∞ detectors
- energy conversion efficiency
- extensometers
- form factors
- instrument receivers
- instrument transmitters
- ∞ instruments
- measuring instruments
- meteorological instruments
- photoelectric cells
- ∞ probes
- recording instruments
- remote sensors
- ∞ sensors
- strain gages
- temperature measuring instruments
- ultrasonic cleaning
- vibration meters

transearth injection

- GS injection
- . **transearth injection**
- RT injection guidance
- midcourse guidance
- orbital mechanics
- transfer orbits

transequatorial propagation

- GS transmission
- . electromagnetic wave transmission
- . . radio transmission
- . . . **transequatorial propagation**
- . signal transmission
- . . radio transmission
- . . . **transequatorial propagation**
- . wave propagation
- . . **transequatorial propagation**
- RT equators
- F 2 region
- ∞ propagation

transfer

USE **transferring**

transfer functions

- GS functions (mathematics)
- . **transfer functions**
- . . loop transfer functions
- . . modulation transfer function
- . . optical transfer function
- RT amplification
- automatic control
- bandwidth
- coupling coefficients
- damping
- dynamic characteristics
- dynamic response
- feedback
- feedback circuits
- high gain
- impedance matching
- logarithmic receivers
- negative feedback
- nonlinear feedback

- Nyquist diagram
- output
- positive feedback
- self oscillation
- sensitivity
- ∞ systems
- time constant
- transient response

transfer of training

- GS learning
- . **transfer of training**
- RT abilities
- education
- generalization (psychology)

transfer orbits

DEF In interplanetary travel, elliptical trajectories tangent to the orbits of both the departure planet and the target planet. Used for Hohmann trajectories, Hohmann transfer orbits, and orbital transfer.

- UF *Hohmann trajectories*
- Hohmann transfer orbits*
- orbital transfer*
- GS orbits
- . elliptical orbits
- . . **transfer orbits**
- . . . interplanetary transfer orbits
- . . spacecraft orbits
- . . . **transfer orbits**
- . . . interplanetary transfer orbits
- RT aeroassist
- aerobraking
- aerocapture
- aeromaneuvering
- circumlunar trajectories
- Earth orbital rendezvous
- Earth orbits
- Earth-Mars trajectories
- Earth-Mercury trajectories
- Earth-Moon trajectories
- Earth-Venus trajectories
- interplanetary trajectories
- lunar orbits
- lunar trajectories
- moon-Earth trajectories
- orbit insertion
- orbital launching
- orbital mechanics
- parking orbits
- planetary orbits
- satellite orbits
- solar orbits
- space rendezvous
- spacecraft docking
- trajectories
- transearth injection
- transferring
- translunar injection

transfer RNA

USE **ribonucleic acids**

transfer tunnels

- GS passageways
- . **transfer tunnels**
- RT entrances
- ∞ tunnels

transferred electron devices

DEF Electronic equipment utilizing diodes exhibiting negative conductance and susceptance. Used for TED.

- UF *TED*
- GS electronic equipment
- . diodes
- . . semiconductor diodes
- . . . Gunn diodes
- **transferred electron devices**
- . . solid state devices
- . . semiconductor devices
- . . . **transferred electron devices**
- RT diffraction radiation
- electron transfer
- gallium arsenides

- indium phosphides
- microwave amplifiers
- microwave oscillators

transferring

- UF *transfer*
- GS **transferring**
- . drop transfer
- RT charge transfer
- electron transfer
- energy transfer
- exchanging
- heat transfer
- mass transfer
- materials handling
- momentum transfer
- ∞ shift
- technology transfer
- transfer orbits
- transportation

transform integrals

USE **integral transformations**

transformation tensors

USE **tensors**

∞ **transformations**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Fujita method
- functions (mathematics)
- order-disorder transformations
- phase transformations
- transformations (mathematics)

transformations (mathematics)

- UF *transforms*
- GS **transformations (mathematics)**
- . coordinate transformations
- . discrete cosine transform
- . Householder transformations
- . integral transformations
- . . Fourier transformation
- . . . fast Fourier transformations
- . . Fourier-Bessel transformations
- . . Hilbert transformation
- . . Laplace transformation
- . Gabor transformation
- . linear transformations
- RT Fujita method
- functions (mathematics)
- gauge invariance
- Racah coefficient
- ∞ transformations
- wavelet analysis

transformers

- GS **transformers**
- . instrument transformers
- . mode transformers
- . voltage converters (AC to AC)
- RT amplifiers
- ballasts (impedances)
- circuit protection
- ∞ converters
- coupling circuits
- diplexers
- electric coils
- electric filters
- electric motors
- electric reactors
- electrical grounding
- inductance
- magnet coils
- magnetic circuits
- magnetic cores
- oscillators
- phase control
- plasma control
- power supply circuits
- resolvers
- saturable reactors
- solid state devices
- toroids
- up-converters

transfusion

voltage regulators

transforming genes
(added July 2002)
USE **oncogenes**

transforms
USE **transformations (mathematics)**

transfusion

RT blood
first aid
medical science
syringes
veins

transgranular corrosion

DEF A slow mode of failure that requires the combined action of stress and aggressive environment where the path of failure runs through the grains producing branched cracking.

GS chemical attack
. **transgranular corrosion**
corrosion
. **transgranular corrosion**

RT corrosion tests
grain boundaries
intergranular corrosion
metal fatigue
protective coatings
stress corrosion

transhorizon radio propagation

GS transmission
. electromagnetic wave transmission
. . . radio transmission
. . . . **transhorizon radio propagation**
. signal transmission
. . . radio transmission
. . . . **transhorizon radio propagation**

RT radio attenuation
radio signals

transient heating

GS heating
. **transient heating**
. . . pulse heating
. . . shock heating

RT aerodynamic heating

transient loads

SN (LIMITED TO FORCE LOADS)

GS loads (forces)
. dynamic loads
. . . **transient loads**
. . . . gust loads
. . . . impact loads
. . . . landing loads
. . . . shock loads
. . . . blast loads

RT aerodynamic loads
contact loads
cyclic loads
random loads
structural design criteria

transient oscillations

GS oscillations
. **transient oscillations**

RT damping
electron oscillations
lasers
masers
pilot induced oscillation
stimulated emission devices
transverse oscillation

transient pressures

GS pressure
. **transient pressures**

RT mass flow rate
pressure sensors

Transient Reactor Test Facility

UF *TREAT (test facility)*
GS test facilities

. **Transient Reactor Test Facility**
RT nuclear research and test reactors
reactor safety
SNAP

transient response

GS dynamic characteristics
. **transient response**
responses
. dynamic response
. . . **transient response**

RT amplification

∞ compensation
damping
dynamic stability
impedance
pressure sensors
resonant frequencies
response bias
sensitivity
stroking tests
time constant
transfer functions

transients (surges)

USE **surges**

transistor amplifiers

GS amplifiers
. **transistor amplifiers**
electronic equipment
. solid state devices
. . . semiconductor devices
. . . . **transistor amplifiers**

RT cascode devices
current amplifiers
differential amplifiers
feedback amplifiers
intermediate frequency amplifiers
operational amplifiers
power amplifiers
preamplifiers
transistors

transistor circuits

GS circuits
. **transistor circuits**

RT cascode devices
DTL integrated circuits

∞ electronics
hybrid circuits
integrated circuits
linear integrated circuits
logic circuits
microelectronics
printed circuits
TTL integrated circuits

transistor logic

RT Boolean algebra

∞ logic
logic circuits
logic design
threshold logic

transistors

GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . **transistors**
. bipolar transistors
. field effect transistors
. charge flow devices
. JFET
. MODFETS
. high electron mobility transistors
. MODFETS
. junction transistors
. JFET
. phototransistors
. silicon transistors
. SOS (semiconductors)

RT cascode devices
germanium diodes
ion implantation
miniaturization

pentodes
resonant tunneling
SIS (semiconductors)
tetrodes
transistor amplifiers
TRAPATT devices
triodes

transistor-transistor-logic integ circuits

USE **TTL integrated circuits**

∞ transit

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT occultation
Transit satellites
transits

Transit Attitude Control satellite

UF *TRAAC satellite*
GS artificial satellites
. navigation satellites
. . . **Transit Attitude Control satellite**

RT ∞ control
satellite attitude control

Transit navigation system

GS satellite navigation systems
. **Transit navigation system**

RT NASA programs
navigation satellites
Nova satellites
Transit satellites

Transit satellites

GS artificial satellites
. navigation satellites
. . . **Transit satellites**

RT Discos (satellite attitude control)

∞ transit
Transit navigation system

transit time

SN (NOT LIMITED TO ASTRONOMICAL TIMES OF TRANSIT)

GS time
. **transit time**

RT Barritt diodes
CATT devices
flight time

∞ motion

∞ transition

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT boundary layer transition
ductile-brittle transition
electron transitions
forbidden transitions
phase transformations

transition elements (chemistry)

(added March 2000)

USE **transition metals**

transition flight

(added January 1990)

RT aircraft maneuvers

∞ flight
horizontal flight
hovering
V/STOL aircraft
vertical flight

transition flow

GS fluid flow
. gas flow
. . . molecular flow
. . . . **transition flow**

RT boundary layer thickness
boundary layer transition
free molecular flow
period doubling
rarefied gas dynamics

slip flow

∞ **transition layers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT boundary layer transition
interlayers
laminar flow
plasma layers
shear layers
shock layers
shock waves
surface layers
turbulent flow

transition metals

UF *transition elements (chemistry)*

GS metals

. **transition metals**

. . cadmium

. . . cadmium isotopes

. . chromium

. . . chromium isotopes

. . cobalt

. . . cobalt isotopes

. . . . cobalt 58

. . . . cobalt 60

. . copper

. . . copper isotopes

. . gold

. . . gold isotopes

. . . . gold 198

. . hafnium

. . . hafnium isotopes

. . iridium

. . . iridium isotopes

. . iron

. . . iron isotopes

. . . . iron 57

. . . . iron 58

. . . . iron 59

. . manganese

. . . manganese isotopes

. . mercury (metal)

. . . mercury isotopes

. . . mercury vapor

. . molybdenum

. . nickel

. . . nickel isotopes

. . niobium

. . . niobium isotopes

. . . . niobium 95

. . osmium

. . . osmium isotopes

. . palladium

. . platinum

. . . platinum isotopes

. . rhenium

. . . rhenium isotopes

. . rhodium

. . . rhodium isotopes

. . ruthenium

. . . ruthenium isotopes

. . scandium

. . . scandium isotopes

. . silver

. . . silver isotopes

. . tantalum

. . . tantalum isotopes

. . technetium

. . . technetium isotopes

. . titanium

. . . titanium isotopes

. . tungsten

. . . tungsten isotopes

. . vanadium

. . . vanadium isotopes

. . yttrium

. . . yttrium isotopes

. . zinc

. . . zinc isotopes

. . zirconium

. . . zirconium isotopes

. . . . zirconium 95

RT actinide series
complex compounds

metal nitrides
palladium compounds
rare earth elements
refractory metals
ruthenium compounds
shape memory alloys
transuranium elements

transition points

DEF In aerodynamics, the points of change from laminar to turbulent flow.

RT boundary layer transition

∞ equilibrium

Knudsen flow
phase diagrams
Reynolds number

transition pressure

DEF The pressure at which phase transition occurs.

GS pressure

. **transition pressure**

RT high pressure
hydrostatic pressure
phase transformations
pressure effects

transition probabilities

RT electron transitions
excitation
Fermi surfaces
nuclear capture
probability theory
spectra

Transition Region and Coronal Explorer*(added May 1998)*

DEF Small Explorer Mission satellite supporting the investigation of the relationships between fine-scale magnetic fields and their associated plasma structures in the transition region and lower corona of the Sun.

UF *Explorer 73 satellite*TRACE *satellite*

GS artificial satellites

. scientific satellites

. . Explorer satellites

. . . **Transition Region and Coronal Explorer**

. . . small scientific satellites

. . . **Transition Region and Coronal Explorer**

RT chromosphere
SOHO Mission
solar atmosphere
solar corona
solar magnetic field
solar observatories
solar physics
solar transition region

transition temperature

DEF An arbitrarily defined temperature within the temperature range in which metal fracture characteristics determined usually by notched tests are changing rapidly such as from primarily fibrous (shear) to primarily crystalline (cleavage) fracture. The arbitrarily defined temperature in a range in which the ductility of a material changes rapidly with temperature.

GS temperature

. **transition temperature**

RT ductile-brittle transition
glass transition temperature
heat of fusion
Kondo effect
liquid phases
melting points
phase diagrams
phase transformations
solidification
superconducting power transmission
superconductivity

transits

SN (EXCLUDES PARTIAL OR TOTAL

OCCULTATION OF ONE BODY BY ANOTHER)

GS measuring instruments
. optical measuring instruments
. . **transits**
. . . theodolites
. . . . cinetheodolites
optical equipment
. optical measuring instruments
. . **transits**
. . . theodolites
. . . . cinetheodolites

RT compasses
sextants

∞ transit

translating

GS **translating**
. machine translation

RT decoding
documentation

∞ interpretation
languages
technical writing

∞ translators

translational motion

GS **translational motion**
. three dimensional motion
. . three dimensional flow
. . . Karman-Bodewadt flow
. . . secondary flow

RT ∞ motion
racks (gears)
rigid structures

∞ **translators**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT computer programs
decoders
digital to voice translators
language programming
repeaters
translating

translucence

GS electromagnetic properties
. optical properties
. . **translucence**

RT light transmission
opacity
optical density
transmissivity
transparence

translunar injection

GS injection
. **translunar injection**

RT injection guidance
midcourse guidance
orbital mechanics
transfer orbits

*translunar space*USE **interplanetary space****transmission**

DEF Process by which radiant energy proceeds through any material or object. Used for coaxial transmission.

UF *coaxial transmission*

GS **transmission**
. demultiplexing
. electric power transmission
. electromagnetic wave transmission
. . light transmission
. . . light scattering
. . . . halos
. . . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation

transmission circuits

- . . . microwave transmission
- . . . multipath transmission
- . . . short wave radio transmission
- . . . single sideband transmission
- . . . spread spectrum transmission
- . . . transequatorial propagation
- . . . transhorizon radio propagation
- . . . scatter propagation
- . . . ionospheric F-scatter propagation
- . . . television transmission
- . heat transmission
- . heat transfer
 - . . . aerodynamic heat transfer
 - . . . hypersonic heat transfer
 - . . . supersonic heat transfer
 - . . . conductive heat transfer
 - . . . convective heat transfer
 - . . . laminar heat transfer
 - . . . radiative heat transfer
 - . . . turbulent heat transfer
- . multiplexing
 - . . code division multiplexing
 - . . frequency division multiplexing
 - . . time division multiplexing
 - . . wavelength division multiplexing
- . self propagation
- . signal transmission
 - . . data transmission
 - . . . automatic picture transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
 - . . . packet transmission
 - Aloha system
 - . . . single channel per carrier transmission
 - . . microwave attenuation
 - . . radar transmission
 - . . radio transmission
 - . . . double sideband transmission
 - . . . ionospheric propagation
 - . . . ionospheric F-scatter propagation
 - . . . microwave transmission
 - . . . multipath transmission
 - . . . short wave radio transmission
 - . . . single sideband transmission
 - . . . spread spectrum transmission
 - . . . transequatorial propagation
 - . . . transhorizon radio propagation
 - . . . satellite transmission
 - . . . telemetry
 - biotelemetry
 - P. A. C. M. telemetry
 - PCM telemetry
 - radio telemetry
 - pulse frequency modulation telemetry
 - . . . television transmission
 - . . . sound transmission
 - . . . stress propagation
 - . . . telephony
 - . . . wave propagation
 - acoustic propagation
 - sound propagation
 - diffraction propagation
 - ground wave propagation
 - ionospheric propagation
 - ionospheric F-scatter propagation
 - light scattering
 - halos
 - scatter propagation
 - ionospheric F-scatter propagation
 - shock wave propagation
 - transequatorial propagation
- RT absorptance
- atmospheric attenuation
- attenuation
- broadcasting
- ∞ conduction
- diffraction

- electromagnetic absorption
- electromagnetic radiation
- optical filters
- output
- ∞ propagation
- radar attenuation
- radio attenuation
- reflection
- refraction
- signal reflection
- telecommunication
- transmissivity
- transmittance
- wave dispersion

transmission circuits

- GS circuits
 - . **transmission circuits**
- RT circuit protection
- electric power transmission
- signal stabilization
- strip transmission lines
- telecommunication

transmission efficiency

- GS efficiency
 - . **transmission efficiency**
- RT Aloha system
- attenuation coefficients
- bit error rate
- carrier to noise ratios
- data transmission
- downlinking
- electromagnetic wave transmission
- frequency hopping
- intersymbolic interference
- network control
- opacity
- packet transmission
- packets (communication)
- power efficiency
- signal transmission
- transmission rate (communications)
- transmittance
- uplinking

transmission electron microscopy

(added December 1992)

DEF A type of electron microscopy in which the specimen transmits an electron beam focused on it. Image contrasts are formed by the scattering of electrons out of the beam. Various magnetic lenses perform functions analogous to those of ordinary lenses in light microscopy.

- UF *TEM (microscopy)*
- GS microscopy
 - . electron microscopy
 - . . **transmission electron microscopy**
- RT electron beams
- electron scattering
- field emission
- ion microscopes
- magnetic lenses
- microanalysis
- phase contrast
- scanning tunneling microscopy

transmission fluids

- RT fluid transmission lines
- ∞ fluids
 - hydraulic fluids
 - working fluids

transmission lines

DEF The conductive connections between system elements which carry signal power. (2) lines used for electric power transmission.

- UF *trunks (lines)*
- GS **transmission lines**
 - . communication cables
 - . . coaxial cables
 - . fluid transmission lines
 - . power lines
 - . strip transmission lines
 - . . microstrip transmission lines

- . submarine cables
- . underground transmission lines
- RT acoustic delay lines
- antenna couplers
- antenna feeds
- backward waves
- ∞ cables
 - circuit protection
 - circuits
 - delta antennas
 - directional couplers
 - distributed amplifiers
 - electric conductors
 - electric current
 - electric power transmission
 - electric wire
 - electrical engineering
 - electrification
 - harnesses
 - impedance matching
 - insulators
- ∞ lines
 - mode transformers
 - nonresonance
 - optical fibers
 - Smith chart
 - standing wave ratios
 - superconducting power transmission
 - telecommunication
 - waveguides
 - wiring

transmission loss

DEF The reduction in the magnitude of some characteristic of a signal between two stated points in a transmission system.

- RT attenuation
- current regulators
- electric power transmission
- insertion
- insertion loss
- losses
- lossy media
- silence
- transmission rate (communications)
- voltage regulators
- wave dispersion

transmission rate (communications)

(added July 1993)

UF *transmission speed (communications)*

GS rates (per time)

. **transmission rate (communications)**

- RT access time
- bit error rate
- channel capacity
- data transmission
- delay
- interprocessor communication
- satellite communication
- signal reception
- signal transmission
- telecommunication
- time lag
- transmission efficiency
- transmission loss

transmission speed (communications)

USE **transmission rate (communications)**

transmissions (machine elements)

DEF The gearing system by which power is transmitted from the engine to the live axle in an automobile. Also known as gearboxes.

- UF *gearboxes*
- GS mechanical drives
- . **transmissions (machine elements)**
- RT gears
- shafts (machine elements)
- torque converters
- torque motors

vehicle wheels

transmissivity

DEF Concerning radiation incident upon the boundary between two media, transmissivity is the ratio of the radiation transmitted through the boundary to the component of radiation normal to the boundary.

GS electromagnetic properties
 . optical properties
 . . **transmissivity**

RT absorptance
 absorptivity
 density (mass/volume)
 light scattering
 opacity
 ∞ physical properties
 translucence
 transmission
 transmittance
 transparence
 transponders
 visibility

transmissometers

GS measuring instruments
 . optical measuring instruments
 . . **transmissometers**
 optical equipment
 . optical measuring instruments
 . . **transmissometers**

RT densitometers
 photometers
 radiance
 telephotometry
 transmittance

transmittance

DEF The ratio of the radiant flux transmitted by a medium or a body to the incident flux.

GS electromagnetic properties
 . optical properties
 . . **transmittance**

RT absorptance
 attenuation coefficients
 density (mass/volume)
 electromagnetic absorption
 infrared absorption
 light (visible radiation)
 optical density
 photometry
 ray tracing
 reflectance
 scattering
 transmission
 transmission efficiency
 transmissivity
 transmissometers
 transparence

transmitter receivers

DEF Combinations of transmitters and receivers in single housings, with some components being used by both units. Used for transceivers.

UF *transceivers*
 GS communication equipment
 . radio receivers
 . . **transmitter receivers**
 radio equipment
 . radio receivers
 . . **transmitter receivers**
 . radio transmitters
 . . **transmitter receivers**
 receivers
 . radio receivers
 . . **transmitter receivers**
 transmitters
 . radio transmitters
 . . **transmitter receivers**

RT interrogation
 transponders

transmitters

DEF Devices used for the generation of signals of any type and form which are to be

transmitted. Used for senders.

UF *senders*

GS **transmitters**

. emergency locator transmitters
 . instrument transmitters
 . radar transmitters
 . radio transmitters
 . . radio beacons
 . . . omnidirectional radio ranges
 self calibrating omnirange
 . . radiometerographs
 . . radiosondes
 . . . ionosondes
 . . . rawinsondes
 . . radiotelephones
 . . sonobuoys
 . . transmitter receivers
 . repeaters

RT antennas
 attenuation
 duplexers
 ∞ instruments
 microphones
 receivers
 signal encoding
 telecommunication
 television transmission
 transponders

transmutation

GS nuclear reactions
 . nuclear transformations
 . . **transmutation**
 RT neutron irradiation
 neutron transmutation doping
 radiogenic materials

transoceanic communication

GS telecommunication
 . **transoceanic communication**
 transoceanic systems
 . **transoceanic communication**
 RT facsimile communication
 radio communication
 Relay satellites

transoceanic flight

DEF Flight across an ocean.
 RT ∞ flight

transoceanic systems

GS **transoceanic systems**
 . transoceanic communication
 RT intercontinental ballistic missiles
 ocean data acquisitions systems
 ∞ systems
 telecommunication
 transportation
 world data centers

transonic aircraft

USE **supersonic aircraft**

Transonic Aircraft Technology Program

USE **TACT program**

transonic compressors

GS compressors
 . **transonic compressors**
 RT supersonic compressors
 turbocompressors

transonic flight

RT ∞ flight
 rocket flight
 sonic booms
 supersonic flight

transonic flow

DEF In aerodynamics, flow of a fluid over a body in the range just above and just below the acoustic velocity. Used for sonic flow and transonics.

UF *sonic flow*
transonics
 GS fluid flow

. compressible flow
 . . **transonic flow**
 RT aerodynamics
 compressibility effects
 ∞ flow
 flow velocity
 gas flow
 nozzle flow
 Ringleb flow
 shock waves
 sonic nozzles
 subsonic flow
 supersonic flow
 trisonic wind tunnels
 wind tunnels

transonic flutter

GS vibration
 . structural vibration
 . . flutter
 . . . **transonic flutter**
 . . self induced vibration
 . . . **transonic flutter**
 RT missile vibration
 subsonic flutter
 supersonic flutter

transonic inlets

USE **supersonic inlets**

transonic nozzles

RT conical nozzles
 convergent-divergent nozzles
 hypersonic nozzles
 ∞ nozzles
 sonic nozzles
 supersonic nozzles
 wind tunnel nozzles

transonic speed

SN (APPROXIMATELY MACH 0. 8 TO 1. 2)
 DEF The speed of a body relative to the surrounding fluid at which the flow is in some places on the body subsonic and in other places supersonic.

GS rates (per time)
 . **transonic speed**
 velocity
 . **transonic speed**
 RT acoustic velocity
 subsonic speed
 supersonic speed

transonic turbines

USE **supersonic turbines**

transonic wind tunnels

GS test facilities
 . wind tunnels
 . . **transonic wind tunnels**
 RT blowdown wind tunnels
 hypersonic wind tunnels
 slotted wind tunnels
 subsonic wind tunnels
 supersonic wind tunnels
 wing flow method tests

transonics

USE **transonic flow**

transparence

UF *transparent materials*
 GS electromagnetic properties
 . optical properties
 . . **transparence**
 RT absorptance
 absorptivity
 atmospheric optics
 clarity
 density (mass/volume)
 electromagnetic absorption
 haze
 light transmission
 opacity
 optical density
 radome materials

transpiration

translucence
transmissivity
transmittance
turbidity

transparent materials

USE **transparence**

transpiration

DEF The passage of gas or liquid through a porous solid (usually under conditions of molecular flow). Used for fluid transpiration.

UF *fluid transpiration*

GS phase transformations

. vaporizing

. . . evaporation

. . . **transpiration**

RT cooling

cooling systems

evanescence

evapotranspiration

evolution (liberation)

gas evolution

mass transfer

molecular flow

outgassing

permeating

perspiration

temperature control

transpiration cooling

USE **sweat cooling**

transplantation

RT clinical medicine

heart implantation

surgery

transplutonic planets

(added June 1998)

USE **hypothetical planets**

transponder control group

UF *TCG (tracking)*

RT ∞ control

radar tracking

satellite tracking

spacecraft tracking

telemetry

transponders

transponders

DEF Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders.

UF *responders*

GS radio equipment

. **transponders**

RT air traffic control

Beacon Collision Avoidance System

interrogation

radar beacons

radar equipment

radio receivers

radio transmitters

transmissivity

transmitter receivers

transmitters

transponder control group

transport aircraft

GS **transport aircraft**

. Aladin 2 aircraft

. AN-2 aircraft

. AN-22 aircraft

. AN-24 aircraft

. Argosy MK-1 aircraft

. BAC 111 aircraft

. Boeing 707 aircraft

. Boeing 720 aircraft

. Boeing 727 aircraft

. Boeing 733 aircraft

. Boeing 737 aircraft

. Boeing 747 aircraft

. Boeing 757 aircraft

. Boeing 767 aircraft

. Boeing 777 aircraft

. Boeing 777 aircraft

. Boeing 777 aircraft

. cargo aircraft

. . Breguet 941 aircraft

. . C-1A aircraft

. . C-2 aircraft

. . C-5 aircraft

. . C-9 aircraft

. . C-15 aircraft

. . C-17 aircraft

. . C-33 aircraft

. . C-35 aircraft

. . C-46 aircraft

. . C-47 aircraft

. . C-54 aircraft

. . C-118 aircraft

. . C-119 aircraft

. . C-121 aircraft

. . C-123 aircraft

. . C-124 aircraft

. . C-130 aircraft

. . C-131 aircraft

. . C-133 aircraft

. . C-135 aircraft

. . C-140 aircraft

. . C-141 aircraft

. . C-160 aircraft

. . CH-21 helicopter

. . CL-44 aircraft

. . DC 3 aircraft

. . DC 7 aircraft

. . P-160 aircraft

. . P-166 aircraft

. . spanloader aircraft

. . YC-14 aircraft

. CH-3 helicopter

. CH-34 helicopter

. CH-46 helicopter

. CH-47 helicopter

. CH-54 helicopter

. CL-84 aircraft

. CL-823 aircraft

. Concorde aircraft

. CV-880 aircraft

. DC 8 aircraft

. DC 9 aircraft

. DC 10 aircraft

. DH 121 aircraft

. DH 125 aircraft

. DHC 2 aircraft

. DHC 4 aircraft

. DHC 5 aircraft

. DO-31 aircraft

. DO-328 aircraft

. Electra aircraft

. European Airbus

. . A-300 aircraft

. . A-310 aircraft

. . A-320 aircraft

. . A-330 aircraft

. . A-340 aircraft

. F-27 aircraft

. F-28 transport aircraft

. G-1 aircraft

. G-222 aircraft

. H-19 helicopter

. H-53 helicopter

. H-56 helicopter

. HC-3 helicopter

. HFB-320 aircraft

. IL-14 aircraft

. IL-76 aircraft

. IL-86 aircraft

. IL-96 aircraft

. L-1011 aircraft

. L-2000 aircraft

. light intratheater transport

. light transport aircraft

. Lockheed model 18 aircraft

. MD 11 aircraft

. MD 80 aircraft

. MH-262 aircraft

. Mystere 20 aircraft

. Mystere 50 aircraft

. S-58 helicopter

. S-61 helicopter

. SA-330 helicopter

. SC-5 aircraft

. SC-7 aircraft

. SH-3 helicopter

. SH-4 helicopter

. short haul aircraft

. . C-8A augmentor wing aircraft

. . Cessna 402B aircraft

. . Mercure aircraft

. Boeing 717 aircraft

. tanker aircraft

. TU-124 aircraft

. TU-144 aircraft

. TU-154 aircraft

. TU-204 aircraft

. UH-34 helicopter

. UH-60A helicopter

. UH-61A helicopter

. VC-10 aircraft

. very large transport aircraft

. Viscount aircraft

. XC-142 aircraft

. YS-11 aircraft

RT air transportation

∞ aircraft

commercial aircraft

general aviation aircraft

jet aircraft

light aircraft

∞ low wing aircraft

∞ military aircraft

passenger aircraft

rotary wing aircraft

∞ subsonic aircraft

supersonic aircraft

∞ transport vehicles

turbofan aircraft

turboprop aircraft

utility aircraft

V/STOL aircraft

water takeoff and landing aircraft

transport coefficients

USE **transport properties**

transport properties

UF *transport coefficients*

GS **transport properties**

. atmospheric conductivity

. . ionospheric conductivity

. carrier mobility

. . electron mobility

. hole mobility

. diffusion coefficient

. . Soret coefficient

. electrical resistivity

. . ionospheric conductivity

. . magnetoresistivity

. . photoconductivity

. . plasma conductivity

. . superconductivity

. . . Kondo effect

. gaseous diffusion

. . gaseous self-diffusion

. ionic mobility

. thermal conductivity

. thermal diffusivity

. viscosity

. . eddy viscosity

. . gas viscosity

RT binary fluids

Boltzmann transport equation

∞ conductivity

diffusion

flow coefficients

Hall effect

Hall resistance

heat transfer

high temperature tests

kinetic theory

Lighthill gas model

mobility

∞ physical properties

pollution transport

∞ properties

radiation transport

Seebeck effect

∞ solid state physics
thermoelectricity

transport theory

GS kinetic theory
 . **transport theory**
 . . Chapman-Enskog theory
 . . Eyring theory

RT Boltzmann transport equation
diffusion theory
gas transport
integral equations
molecular interactions
Monte Carlo method
pollution transport
reaction-diffusion equations
∞ theories

∞ **transport vehicles**

SN ((USE OF A MORE SPECIFIC TERM IS
RECOMMENDED—CONSULT THE TERMS
LISTED BELOW)

RT crawler tractors
ground effect machines
rapid transit systems
ships
transport aircraft
∞ vehicles

transportation

GS **transportation**
 . air transportation
 . marine transportation
 . rail transportation
 . rapid transit systems
 . space transportation
 . . space transportation system
 . . . Advanced Launch System (STS)
 . . . Saenger space transportation
 system
 . urban transportation

RT artificial harbors
automated guideway transit vehicles
automated transit vehicles
cargo
contractors
conveyors
deepwater terminals
delivery
distributing
∞ distribution
electric automobiles
evacuating (transportation)
freight costs
freighters
handling equipment
hauling
highways
logistics
materials handling
missiles
motor vehicles
offshore docking
offshore platforms
packaging
passengers
pipelines
riding quality
roads
routes
services
site selection
tanker terminals
terminal facilities
tourism
tractors
traffic
transcontinental systems
transferring
transoceanic systems
transportation networks
∞ travel
trucks

transportation energy

RT allocations

cargo
commercial energy
distributing
domestic energy
economic factors
∞ energy
energy conversion
engines
fuels
hauling
industrial energy
ships
∞ tankers
trucks

transportation networks

DEF Networks of highways, railways, subways, etc., for the movement of passenger and cargo.

RT highways
intersections
rapid transit systems
roads
transportation

transporter

GS surface vehicles
 . **transporter**

RT ∞ containers
∞ vehicles

transputers
(added August 1989)

GS data processing equipment
 . computers
 . . **transputers**

RT architecture (computers)
distributed processing
interprocessor communication
microprocessors
parallel processing (computers)

transuranium elements

DEF Elements above uranium in the periodic table, that is, with an atomic number greater than 92.

GS chemical elements
 . actinide series
 . . **transuranium elements**
 . . . americium
 americium isotopes
 americium 241
 berkelium
 californium
 californium isotopes
 curium
 curium isotopes
 curium 242
 curium 244
 einsteinium
 fermium
 lawrencium
 mendelevium
 neptunium
 neptunium isotopes
 nobelium
 plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240
 plutonium 241
 plutonium 244
 sergenium
 nuclides
 isotopes
 radioactive isotopes
 **transuranium elements**
 americium
 americium isotopes
 americium 241
 berkelium
 californium
 californium isotopes
 curium
 curium isotopes

. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
. nobelium
. plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. sergenium

metals
 . actinide series
 . . **transuranium elements**
 . . . americium
 americium isotopes
 americium 241
 berkelium
 californium
 californium isotopes
 curium
 curium isotopes
 curium 242
 curium 244
 einsteinium
 fermium
 lawrencium
 mendelevium
 neptunium
 neptunium isotopes
 nobelium
 plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240
 plutonium 241
 plutonium 244
 sergenium

RT transition metals

transverse acceleration

GS rates (per time)
 . acceleration (physics)
 . . **transverse acceleration**

RT ∞ acceleration
acceleration measurement
acceleration stresses (physiology)
angular acceleration
transverse momentum

transverse loads
(added June 1992)

GS loads (forces)
 . **transverse loads**

RT dynamic loads
force distribution
load distribution (forces)
loading moments
shear stress
static loads
stress distribution
stresses

transverse momentum
(added June 1999)

GS momentum
 . **transverse momentum**

RT angular momentum
elementary particle interactions
particle motion
transverse acceleration

transverse oscillation

DEF Oscillation in which the direction of motion of the particles is perpendicular to the direction of advance of the oscillatory motion in contrast with longitudinal oscillation, in which the direction of motion is the same as that of advance. Used for transverse vibration.

transverse waves

UF *transverse vibration*
 GS oscillations
 . **transverse oscillation**
 . . H waves
 RT gamma rays
 harmonic oscillation
 lateral oscillation
 stable oscillations
 transient oscillations

transverse vibration
 USE **transverse oscillation**

transverse waves
 DEF Waves in which the direction of displacement at each point of the medium is parallel to the wave front.
 GS **transverse waves**
 . H waves
 RT elastic waves
 electromagnetic radiation
 gamma rays
 longitudinal waves
 magnetohydrodynamic flow
 plane waves
 radio waves
 S waves
 SH waves
 vibration mode
 wave packets
 ∞ waves

transversely excited atmospheric lasers
 USE **TEA lasers**

TRAP program
 GS programs
 . **TRAP program**
 RT plasma control
 ∞ radiation

TRAPATT devices
 UF *trapped plasma avalanche triggered transit*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **TRAPATT devices**
 RT avalanche diodes
 ∞ devices
 diodes
 transistors

TRAPATT diodes
 USE **avalanche diodes**

trapezoidal tail surfaces
 GS assemblies
 . tail assemblies
 . . **trapezoidal tail surfaces**
 planforms
 . **trapezoidal tail surfaces**
 tail surfaces
 . **trapezoidal tail surfaces**
 RT control surfaces
 horizontal tail surfaces
 hypersonic aircraft
 rudders
 stabilizers (fluid dynamics)
 supersonic aircraft
 ∞ surfaces
 sweptback tail surfaces

trapezoidal wings
 GS airfoils
 . wings
 . . low aspect ratio wings
 . . . **trapezoidal wings**
 . . swept wings
 . . . swept forward wings
 **trapezoidal wings**
 . . . sweptback wings
 **trapezoidal wings**
 planforms
 . wing planforms
 . . swept forward wings

. . . **trapezoidal wings**
 . . sweptback wings
 . . . **trapezoidal wings**
 range (extremes)
 tourism
 transportation

trapezoids
 GS geometry
 . Euclidean geometry
 . . polygons
 . . . tetragons
 **trapezoids**

trapped magnetic fields
 GS magnetic fields
 . **trapped magnetic fields**
 RT flux pinning
 magnetically trapped particles
 plasma control
 superconductivity
 trapping

trapped particles
 GS particles
 . **trapped particles**
 . . magnetically trapped particles
 . . . radiation belts
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 RT charged particles
 electron precipitation
 laser cooling
 proton precipitation
 trapping

trapped plasma avalanche triggered transit
 USE **TRAPATT devices**

trapped vortices
(added August 1989)
 DEF Air flow in rotary motion but trapped relative to leading edge vortex separation, which increases not only lift but also drag. The trapped vortices result in thrust and reduced drag. Used for vortex traps.
 UF *vortex traps*
 GS vortices
 . **trapped vortices**
 RT counterflow
 flow distribution
 mixing
 rotating fluids
 rotating liquids
 turbulent mixing
 turbulent wakes
 vortex rings
 vorticity

trapping
 GS **trapping**
 . cryotrapping
 RT conduction bands
 crystal defects
 flux pinning
 ion storage
 phosphorescence
 radiation belts
 trapped magnetic fields
 trapped particles

traps
 GS **traps**
 . cold traps
 . ion traps (instrumentation)
 . vapor traps
 RT concentrators
 entrapment
 separators
 valves

∞ **travel**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT distance
 harbors
 logistics

traveling charge
 GS electric charge
 . **traveling charge**
 RT electrodynamics
 energy dissipation
 field theory (physics)

traveling ionospheric disturbances
 DEF Atmospheric gravity waves originating at the auroral oval or at the terminator with speeds of 1000 km/hour over the Earth's surface. Due to interaction between the neutral atmosphere and the ionosphere, they result in temporary enhancements and depletions of the ionosphere that travel with the gravity waves.
 UF *TID*
 GS ionospheric disturbances
 . **traveling ionospheric disturbances**
 RT gravity waves
 ionospheric currents
 ionospheric propagation
 ionospheric storms
 ionospheric tilts
 magnetic variations
 sudden ionospheric disturbances

traveling salesman problem
 RT operations research
 probability theory
 ∞ problems
 statistical analysis

traveling solvent method
 SN (LIMITED TO CRYSTAL GROWTH TECHNIQUES)
 GS growth
 . crystal growth
 . . **traveling solvent method**
 RT additives
 carrier injection
 electroepitaxy
 ∞ methodology

traveling wave amplifiers
 GS amplifiers
 . **traveling wave amplifiers**
 RT amplifier design
 power amplifiers
 traveling wave tubes

traveling wave masers
 GS stimulated emission devices
 . masers
 . . **traveling wave masers**
 RT amplifiers
 cavity resonators
 coherent electromagnetic radiation

traveling wave modulation
 GS modulation
 . **traveling wave modulation**
 RT lasers
 light modulation
 wave diffraction

traveling wave tubes
 DEF Electron tubes in which streams of electrons interact continuously or repeatedly with guided electromagnetic waves moving substantially in synchronism with them, and in such a way that there is a net transfer of energy from the streams to the waves. Used for crestatrons and helix tubes.
 UF *crestatrons*
helix tubes
 GS electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . **traveling wave tubes**
 backward wave tubes
 helitrons

. . . . carcinotrons
 microwave equipment
 . microwave tubes
 . . **traveling wave tubes**
 . . . backward wave tubes
 helitrons
 . . . carcinotrons
 RT backward waves
 Brillouin flow
 crossed field amplifiers
 cyclotron resonance devices
 electron bunching
 magnetostatic amplifiers
 magnetrons
 microwave oscillators
 oscillations
 scalloping
 traveling wave amplifiers

traveling waves
 GS **traveling waves**
 . solitary waves
 RT backward waves
 elastic waves
 electromagnetic radiation
 nonresonance
 phase velocity
 plane waves
 radio waves

trays
 RT ∞ buckets
 ∞ containers
 ∞ plates

treadmills
 RT physical exercise
 physical fitness
 physical work
 physiological tests

treads
 RT stairways
 tires
 vehicular tracks

TREAT (test facility)
 USE **Transient Reactor Test Facility**

∞ **treatment**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *conditioning (treating)*
 RT air conditioning
 clinical medicine
 heat treatment
 prewhitening
 sewage treatment
 surface treatment
 thermomechanical treatment
 waste treatment
 water treatment

tree ring dating
 USE **dendrochronology**

∞ **trees**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT conifers
 trees (mathematics)
 trees (plants)

trees (mathematics)
 GS **trees (mathematics)**
 . fault trees
 RT analysis (mathematics)
 circuits
 graph theory
 graphs (charts)
 ∞ nets
 Petri nets
 sneak circuit analysis
 topology

∞ trees

trees (plants)
 DEF Woody plants having one well defined stem and a more or less definitely formed crown, usually attaining a height of at least 8 feet.
 GS plants (botany)
 . **trees (plants)**
 . . citrus trees
 . . conifers
 . . deciduous trees
 RT balsa
 canopies (vegetation)
 chaparral
 clearings (openings)
 defoliant
 defoliation
 dendrochronology
 forests
 geobotany
 herbicides
 logging (industry)
 Masonite (trademark)
 orchards
 phreatophytes
 plywood
 silviculture
 timber identification
 timber inventory
 timber vigor
 timberline
 ∞ trees
 vegetation
 wood

Trefftz method
(added July 1998)
 DEF Boundary-type approximation scheme for the solution of boundary value problems for partial differential equations.
 UF *hybrid-Trefftz finite element method*
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . boundary element method
 **Trefftz method**
 RT bending theory
 boundary conditions
 boundary value problems
 finite element method
 partial differential equations
 plate theory
 structural analysis

trellis coding
(added August 1991)
 DEF A 'sliding window' method of encoding a binary data stream into a sequence of real numbers that are input to a noisy transmission channel.
 GS coding
 . signal encoding
 . . **trellis coding**
 RT binary codes
 channel noise
 ∞ codes
 concatenated codes
 convolution integrals
 phase modulation
 phase shift keying

tremors
 RT earthquake resistance
 earthquakes
 paralysis
 Parkinson disease
 Rouse belts

trend analysis
(added May 1989)
 DEF A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results.
 GS information analysis
 . **trend analysis**

RT ∞ analyzing
 data mining
 failure analysis
 performance prediction
 prediction analysis techniques
 regularity
 reliability analysis
 statistical analysis
 time series analysis
 trends

trends
 RT extrapolation
 forecasting
 growth
 periodic variations
 ∞ projection
 time series analysis
 trend analysis

Tresca flow
 GS fluid flow
 . plastic flow
 . . **Tresca flow**
 RT ductility
 stability
 yield point

triacetin
 GS acetates
 . **triacetin**
 esters
 . **triacetin**
 RT acetic acid
 glycerols
 plasticizers
 solvents

triaminoguanidinenitrate
 USE **TAGN**

triaminoguanidinium azide
 GS amines
 . diamines
 . . guanidines
 . . . **triaminoguanidinium azide**
 nitrogen compounds
 . azides (organic)
 . . **triaminoguanidinium azide**

triaminotrinitrobenzene
 USE **TATB**

triangles
 GS geometry
 . Euclidean geometry
 . . polygons
 . . . **triangles**
 RT tetrahedrons
 trigonometry

triangular wings
 USE **delta wings**

triangulation
 RT angles (geometry)
 mapping
 navigation
 trigonometry
 wildlife radiolocation

triatomic molecules
 GS molecules
 . polyatomic molecules
 . . **triatomic molecules**
 RT diatomic molecules

triaxial stresses
 UF *triaxiality*
 GS stresses
 . **triaxial stresses**
 RT mechanical properties

tribolia

tensile stress

triaxiality

USE **triaxial stresses**

tribolia

GS animals
. invertebrates
. . . arthropods
. . . . insects
. Coleoptera
. beetles
. **tribolia**

tribology

DEF Science of friction, wear, and lubrication.

RT abrasion
corrosion
erosion
erosive burning
fretting
friction
interfacial tension
lubrication
triboluminescence
tribometers
vapor phase lubrication
wear

triboluminescence

DEF The emission of light caused by application of mechanical energy to a solid.

GS emission
. light emission
. . luminescence
. . . photoluminescence
. . . . **triboluminescence**

RT fluorescence
friction
mechanical properties
photoluminescent bands
stresses
tribology

tribometers

(added September 2002)

DEF Instruments and related methods for determining the degree of friction between two bodies.

GS measuring instruments
. **tribometers**
RT friction
friction measurement
∞ instruments
lubricant tests
sliding friction
tribology
wear tests

tribometry

(added September 2002)

USE **friction measurement**

tributaries

RT drainage patterns
Earth resources
estuaries
rivers

trichlorides

USE **chlorides**

trichloroethylene

(added September 1995)

GS ethylene compounds
. chloroethylene
. . **trichloroethylene**
halogen compounds
. chlorine compounds
. . **trichloroethylene**

RT cleaning
reduction (chemistry)

solvents

Trident aircraft

USE **DH 121 aircraft**

trident submarine

GS water vehicles
. ships
. . submarines
. . . **trident submarine**
. underwater vehicles
. . submarines
. . . **trident submarine**
RT navy
nuclear propulsion

trienes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . **trienes**

triethyl compounds

GS alkyl compounds
. **triethyl compounds**
RT ∞ chemical compounds
diethyl compounds
ethyl compounds

trifluoroamine oxide

GS amines
. fluoroamines
. . **trifluoroamine oxide**
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoroamines
. **trifluoroamine oxide**
organic compounds
. fluorine organic compounds
. . fluoroamines
. . . **trifluoroamine oxide**

trigatrons

GS switches
. **trigatrons**
RT ∞ gas tubes
pulse modulation
spark gaps
trigger circuits

trigger circuits

DEF Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, either spontaneously or through application of an external stimulus.

GS circuits
. **trigger circuits**
RT anticoincidence detectors
bistable circuits
gates (circuits)
multivibrators
threshold gates
threshold logic
thyristors
trigatrons

triggers

USE **actuators**

trigonometric functions

GS analysis (mathematics)
. real variables
. . periodic functions
. . . **trigonometric functions**
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . periodic functions
. . . **trigonometric functions**
. . . . cosine series

. . . . sine series

. . . . tangents

RT Fresnel integrals
sine waves
trigonometry

trigonometry

GS geometry
. Euclidean geometry
. . analytic geometry
. . . **trigonometry**
RT angles (geometry)
∞ science
triangles
triangulation
trigonometric functions

trim (balance)

USE **aerodynamic balance**

trimers

GS oligomers
. **trimers**
prepolymers
. **trimers**
RT dimers
monomers

trimethadione

GS drugs
. **trimethadione**
ketones
. **trimethadione**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **trimethadione**

trimethyl compounds

GS alkyl compounds
. **trimethyl compounds**
RT ∞ chemical compounds
dimethyl compounds
methyl compounds

Trinidad and Tobago

GS landforms
. islands
. . West Indies
. . . **Trinidad and Tobago**
nations
. **Trinidad and Tobago**
RT Caribbean region
South America

trinitramine

GS amines
. **trinitramine**
nitrogen compounds
. **trinitramine**

trinitro compounds

GS nitrogen compounds
. nitro compounds
. . **trinitro compounds**
RT ∞ chemical compounds

trinitrotoluene

UF **TNT (trinitrotoluene)**
GS explosives
. **trinitrotoluene**
nitrogen compounds
. nitro compounds
. . nitrobenzenes
. . . **trinitrotoluene**
RT exposure

trinitrotriazocyclohexane

USE **RDX**

triodes

RT CATT devices
diodes
electron tubes
microwave tubes
semiconductor devices

tetrodes
thyristors
transistors

triols
GS hydroxyl compounds
. alcohols
. . **triols**
. . . cyanuric acid

triphenyl silicon
GS organic compounds
. organic silicon compounds
. . **triphenyl silicon**
silicon compounds
. organic silicon compounds
. . **triphenyl silicon**

triphenyls
GS organic compounds
. hydrocarbons
. . **triphenyls**
phenyls
. polyphenyls
. . **triphenyls**

triple axis spectrometers
USE **neutron spectrometers**

triple stars
(added October 1988)
GS celestial bodies
. stars
. . **triple stars**
RT binary stars
companion stars
stellar systems
three body problem

triplet excitation
USE **atomic energy levels**

triplet state
USE **atomic energy levels**

tripods
GS supports
. **tripods**
RT optical equipment

tripropellants
USE **liquid rocket propellants**

trisonic wind tunnels
DEF Wind tunnels designed for subsonic, transonic, and supersonic flows.
GS test facilities
. wind tunnels
. . **trisonic wind tunnels**
RT slotted wind tunnels
transonic flow
wind tunnel tests

tritium
UF *hydrogen 3*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **tritium**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **tritium**
. . . . radioactive isotopes
. . . . **tritium**
gases
. hydrogen
. . hydrogen isotopes
. . . **tritium**
RT heavy water
nuclear fuels

Triton
DEF One of the two satellites of the planet Neptune, with a diameter of about 4800 kilome-

ters, orbiting at a mean distance of 354,000 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Triton**
RT Galilean satellites
Neptune (planet)
Neptune atmosphere
satellite atmospheres
Titan

tritons
GS ions
. **tritons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **tritons**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **tritons**
RT alpha particles
protons

trivalent ions
GS ions
. **trivalent ions**
RT free radicals
positive ions
valence

TRMM satellite
(added May 1998)
DEF Satellite supporting the joint US-Japanese Tropical Rainfall Measuring Mission (TRMM) to explore tropical rainfall and its effects on the Earth energy budget, general circulation, and climate. The TRMM satellite represents the first dual deployment of a precipitation radar and passive microwave radiometer on an Earth-viewing satellite.
UF *Tropical Rainfall Measuring Mission sat*
GS artificial satellites
. meteorological satellites
. . **TRMM satellite**
. scientific satellites
. . **TRMM satellite**
RT atmospheric circulation
Earth radiation budget
equatorial atmosphere
rain
tropical meteorology

trochoids
USE **pivots**

troilite
GS chalcogenides
. sulfides
. . pyrrhotite
. . . **troilite**
iron compounds
. pyrrhotite
. . **troilite**
minerals
. pyrrhotite
. . **troilite**
sulfur compounds
. sulfides
. . pyrrhotite
. . . **troilite**
RT iron meteorites
meteoritic composition

Trojan aircraft
USE **T-28 aircraft**

Trojan asteroids
(added August 2000)
DEF Any asteroid that orbits in the Lagrange points of another (larger) body. In particular, those asteroids with a revolution pe-

riod approximately equal to that of Jupiter (1:1 resonance) and clustered at either of the two Lagrange points--60 degrees ahead of or behind the Jupiter. Most asteroids of this group are named after the heroes of the Trojan War.
GS celestial bodies
. asteroids
. . **Trojan asteroids**
RT Jupiter (planet)
Lagrangian equilibrium points
three body problem
Trojan orbits

Trojan orbits
GS orbits
. **Trojan orbits**
RT celestial mechanics
many body problem
three body problem
Trojan asteroids

Trombe walls
DEF Structures with passive solar collectors in the walls.
GS walls
. **Trombe walls**
RT energy technology
heat storage
phase change materials
radiative heat transfer
solar energy absorbers
solar heating
solar houses
thermal insulation

tropical meteorology
GS meteorology
. **tropical meteorology**
RT agrometeorology
el Nino
equatorial atmosphere
GARP Atlantic Tropical Experiment
intertropical convergent zones
intraseasonal variations
Madden-Julian Oscillation
meteorological parameters
quasi-biennial oscillation
TRMM satellite

Tropical Rainfall Measuring Mission sat
(added May 1998)
USE **TRMM satellite**

tropical regions
UF *jungles*
low latitudes
subtropical regions
tropics
GS regions
. **tropical regions**
. . Amazon region (South America)
. . . intertropical convergent zones
RT climatology
equatorial atmosphere
equatorial regions
GARP Atlantic Tropical Experiment
geography
hot weather
laterites
Lomonosov current
meteorology
rain forests
temperate regions
Virgin Islands

tropical storms
GS storms
. storms (meteorology)
. . **tropical storms**
. . . hurricanes
. . . . Anna hurricane
. . . . typhoons
RT atmospheric circulation
cyclones
meteorology
storm damage

tropism

tornadoes

tropics

USE **tropical regions**

tropism

GS **tropism**
. aeotropism
. geotropism
. gravitropism
. gyrotropism
. neurotropism

tropopause

SN (ALTITUDE APPROXIMATELY 15 TO 20 KM)

DEF The boundary between the troposphere and the stratosphere, usually characterized by an abrupt change of lapse rate. The change is in the direction of increased atmospheric stability from regions below to regions above the tropopause. Its height varies from 15 to 20 kilometers in the tropics to about 10 kilometers in polar regions. In polar regions in winter it is often difficult or impossible to determine just where the tropopause lies, since under some conditions there is no abrupt change in lapse rate at any height.

GS Earth atmosphere
. lower atmosphere
. . . troposphere
. . . . **tropopause**

RT diurnal variations
isothermal layers
middle atmosphere

troposphere

SN (GROUND LEVEL TO APPROXIMATELY 15 KM)

DEF That portion of the atmosphere from the Earth's surface to the stratosphere; that is, the lowest 10 to 20 kilometers of the atmosphere. The troposphere is characterized by decreasing temperature with height, appreciable vertical wind motion, appreciable water vapor content, and weather. Dynamically, the troposphere can be divided into the following layers: surface boundary layer, Ekman layer, and free atmosphere.

GS Earth atmosphere
. lower atmosphere
. . . **troposphere**
. . . . tropopause

RT chemosphere
homosphere
Intasat satellite

tropospheric radiation

SN (EXCLUDES TERRESTRIAL RADIATION)

GS atmospheric radiation
. **tropospheric radiation**
electromagnetic radiation
. **tropospheric radiation**

RT ∞ radiation
sky radiation
stratosphere radiation
terrestrial radiation

tropospheric scattering

GS scattering
. wave scattering
. . . atmospheric scattering
. . . . **tropospheric scattering**

RT light scattering
wideband communication

tropospheric waves

SN (EXCLUDES RADIO WAVES)

DEF Radio waves that are propagated by reflection from a place of abrupt change in the dielectric constant or its gradient in the troposphere.

GS **tropospheric waves**
. planetary waves

RT elastic waves
lee waves
radio waves

surface waves
∞ waves

tropyl compounds

GS bases (chemical)
. alkaloids
. . . **tropyl compounds**
nitrogen compounds
. alkaloids
. . . **tropyl compounds**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . alkaloids
. **tropyl compounds**

RT ∞ chemical compounds

troubleshooting

USE **maintenance**

troughs

RT canals
ditches
irrigation
low pressure

trucks

SN (EXCLUDES UNDERCARRIAGES)

UF *vans*

GS surface vehicles
. motor vehicles
. . . **trucks**

. . . . tank trucks
RT antiskid devices
automobiles
cargo
delivery
dollies
electric motor vehicles
ground handling
hauling
materials handling
∞ military vehicles
recovery vehicles
tractors
trailers
transportation
transportation energy

truncation (mathematics)

USE **approximation**

truncation errors

DEF In computations, the errors resulting from the use of only a finite number of terms of an infinite series or from the approximation of operations in the infinitesimal calculus by operations in the calculus of finite differences.

GS analysis (mathematics)
. numerical analysis
. . . **truncation errors**
errors

. **truncation errors**
RT ill-conditioned problems
(mathematics)
precision

trunks (lines)

USE **transmission lines**

trunnions

USE **shafts (machine elements)**

trusses

GS structural members
. **trusses**

RT arches
beams (supports)
construction industry
frames
girders
I beams
Integrated Truss Structure P1
Integrated Truss Structure S1
Integrated Truss Structure Z1
loops

Maxwell-Mohr method
megamechanics
∞ structures
struts
supports
Timoshenko beams

trypanosome

GS animals
. protozoa
. . . Flagellata
. . . . **trypanosome**
microorganisms
. protozoa
. . . Flagellata
. . . . **trypanosome**
parasites
. **trypanosome**
RT parasitic diseases

trypsin

GS biopolymers
. proteins
. . . enzymes
. . . . **trypsin**
organic compounds
. proteins
. . . enzymes
. . . . **trypsin**

RT pancreas

tryptamines

GS amines
. **tryptamines**
. . . serotonin

tryptophan

GS acids
. amino acids
. . . **tryptophan**
. . . . carboxylic acids
. . . . **tryptophan**
nitrogen compounds
. **tryptophan**
organic compounds
. amino acids
. . . **tryptophan**
. . . . carboxylic acids
. . . . **tryptophan**
. cyclic compounds
. heterocyclic compounds
. azoles
. pyrroles
. indoles
. **tryptophan**

TS-11 aircraft

UF *Iskra aircraft*
Polish TS-11 aircraft

GS jet aircraft
. **TS-11 aircraft**
monoplanes
. **TS-11 aircraft**
training aircraft
. **TS-11 aircraft**

RT ∞ aircraft

TSR-2 aircraft

UF *BAC TSR 2 aircraft*
attack aircraft

GS **TSR-2 aircraft**
BAC aircraft
. **TSR-2 aircraft**
jet aircraft
. **TSR-2 aircraft**
monoplanes
. **TSR-2 aircraft**
reconnaissance aircraft
. **TSR-2 aircraft**
supersonic aircraft
. **TSR-2 aircraft**

RT ∞ aircraft

tsunami waves

DEF A series of waves of extremely long length and period typically caused by a sudden

vertical displacement of a large area of the sea floor during an undorsa earthquake.

- RT Earth movements
 - earthquake damage
 - earthquakes
 - frontal waves
 - seismic waves
 - shock waves
 - surface waves
 - tidal waves
 - water waves

TTL integrated circuits

- SN (TRANSISTOR-TRANSISTOR-LOGIC INTEGRATED CIRCUITS)
- UF *transistor-transistor-logic integ circuits*
- GS circuits
 - . integrated circuits
 - . . **TTL integrated circuits**
- RT electronic packaging
 - large scale integration
 - microminiaturization
 - molecular electronics
 - transistor circuits

TU-104 aircraft

- UF *Camel aircraft*
- GS commercial aircraft
 - . **TU-104 aircraft**
 - . jet aircraft
 - . **TU-104 aircraft**
 - monoplanes
 - . **TU-104 aircraft**
 - passenger aircraft
 - . **TU-104 aircraft**
 - Tupolev aircraft
 - . **TU-104 aircraft**
- RT ∞ aircraft
 - TU-154 aircraft

TU-124 aircraft

- UF *Cookpot aircraft*
- GS commercial aircraft
 - . **TU-124 aircraft**
 - . jet aircraft
 - . **TU-124 aircraft**
 - monoplanes
 - . **TU-124 aircraft**
 - passenger aircraft
 - . **TU-124 aircraft**
 - transport aircraft
 - . **TU-124 aircraft**
 - Tupolev aircraft
 - . **TU-124 aircraft**
- RT ∞ aircraft
 - turbofan engines

TU-134 aircraft

- GS commercial aircraft
 - . **TU-134 aircraft**
 - . jet aircraft
 - . turbofan aircraft
 - . . **TU-134 aircraft**
 - monoplanes
 - . **TU-134 aircraft**
 - passenger aircraft
 - . **TU-134 aircraft**
 - Tupolev aircraft
 - . **TU-134 aircraft**
- RT ∞ aircraft

TU-144 aircraft

- GS commercial aircraft
 - . supersonic commercial air transport
 - . . **TU-144 aircraft**
 - . jet aircraft
 - . turbofan aircraft
 - . . **TU-144 aircraft**
 - passenger aircraft
 - . **TU-144 aircraft**
 - supersonic aircraft
 - . supersonic transports
 - . . supersonic commercial air transport
 - . . . **TU-144 aircraft**
 - transport aircraft
 - . **TU-144 aircraft**

RT ∞ aircraft

TU-154 aircraft

- GS commercial aircraft
 - . **TU-154 aircraft**
 - . jet aircraft
 - . **TU-154 aircraft**
 - transport aircraft
 - . **TU-154 aircraft**
 - Tupolev aircraft
 - . **TU-154 aircraft**
- RT ∞ aircraft
 - cargo aircraft
 - passenger aircraft
 - TU-104 aircraft

TU-204 aircraft

- (added September 1994)
- GS commercial aircraft
 - . **TU-204 aircraft**
 - . jet aircraft
 - . **TU-204 aircraft**
 - passenger aircraft
 - . **TU-204 aircraft**
 - transport aircraft
 - . **TU-204 aircraft**
 - Tupolev aircraft
 - . **TU-204 aircraft**
- RT ∞ aircraft

tube anodes

- GS electrodes
 - . anodes
 - . . **tube anodes**
- RT cathodes
 - electrode materials
 - electron guns

tube cathodes

- GS electrodes
 - . cathodes
 - . . **tube cathodes**
 - . . . cold cathodes
 - . . . hot cathodes
 - . . . photocathodes
 - . . . thermionic cathodes
 - . . . tunnel cathodes
- RT cold cathode tubes
 - electron guns
 - hollow cathodes

tube grids

- GS electrodes
 - . **tube grids**
- RT bias
 - electron guns
 - electron tubes
- ∞ grids
 - ionizers

tube heat exchangers

- GS heat exchangers
 - . **tube heat exchangers**
- RT regenerators

tube lasers

- DEF Stimulated emission devices activated with shock tubes.
- RT chemical lasers
 - gasdynamic lasers
 - laser outputs
 - pulsed lasers
 - shock tubes
 - waveguide lasers

tuberculosis

- GS diseases
 - . infectious diseases
 - . . bacterial diseases
 - . . . **tuberculosis**
 - . respiratory diseases

. . **tuberculosis**

∞ **tubes**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bourdon tubes
 - bronchi
 - burettes
 - cannulae
 - capillary tubes
 - circular tubes
 - ducts
 - electron tubes
 - eustachian tubes
 - Hilsch tubes
 - hoses
 - linings
 - manifolds
 - microwave tubes
 - nanotubes
 - pipes (tubes)
 - pitot tubes
 - shock tubes
 - siphons
 - trachea
 - Venturi tubes

tubing

USE **pipes (tubes)**

tubular fullerenes

(added September 2001)

USE **carbon nanotubes**

tumbling motion

- DEF An attitude situation in which the vehicle continues on its flight, but turns end over end about its center of mass.
- RT attitude stability
 - coning motion
 - destabilization
 - mixers
- ∞ motion
 - rotating environments
 - satellite rotation
- ∞ separation
 - spacecraft motion
 - spacecraft stability

tumors

- GS diseases
 - . **tumors**
 - . . neoplasms
 - . . . cancer
 - leukemias
- RT cysts
 - occupational diseases

tunable filters

(added June 1995)

- DEF Filters consisting generally of combinations of capacitors, inductors, and resistors that have been selected in such a way as to present a relative minimum (maximum) impedance to one or more specific frequencies.
- RT acousto-optics
 - adaptive filters
 - charge transfer devices
 - crystal filters
 - electric filters
 - electro-optics
- ∞ filters
 - microwave filters
 - optical filters
 - radio filters
 - tuning

tunable lasers

- DEF Stimulated emission devices with selectable frequency output.
- GS stimulated emission devices
 - . lasers
 - . . **tunable lasers**
- RT DBR lasers
 - diffraction radiation
 - light modulation

tundra

optical communication
tuning
wiggler magnets

tundra

DEF A treeless, level or gently undulating plain characteristic of arctic and subarctic regions. It usually has a marshy surface which supports a growth of mosses, lichens, and numerous low shrubs underlain by a dark, mucky soil and permafrost.

GS land
. plains
. . **tundra**
landforms
. plains
. . **tundra**
RT Arctic regions
Asia
geography
North America

tuners

GS **tuners**
. waveguide tuners
RT radio receivers
resonance probes
resonant frequencies
television receivers

tungstates

GS tungsten compounds
. **tungstates**
. . calcium tungstates
. . lead tungstates
. . zinc tungstates

tungsten

UF *wolfram*
GS chemical elements
. **tungsten**
metals
. refractory metals
. . **tungsten**
. transition metals
. . **tungsten**
refractory materials
. refractory metals
. . **tungsten**

tungsten alloys

GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **tungsten alloys**
refractory materials
. refractory metal alloys
. . **tungsten alloys**
RT hafnium alloys
Stellite (trademark)

tungsten carbides

GS carbon compounds
. carbides
. . **tungsten carbides**
tungsten compounds
. **tungsten carbides**

tungsten chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **tungsten chlorides**
. halides
. . chlorides
. . . **tungsten chlorides**
. . metal halides
. . . tungsten halides
. . . . **tungsten chlorides**
tungsten compounds
. tungsten halides
. . **tungsten chlorides**

tungsten compounds

GS **tungsten compounds**
. tungstates

. . calcium tungstates
. . lead tungstates
. . zinc tungstates
. tungsten carbides
. tungsten halides
. . tungsten chlorides
. . tungsten fluorides
. tungsten oxides
. . scheelite
RT ∞ chemical compounds
 ∞ Group 6B compounds
 ∞ metal compounds

tungsten fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **tungsten fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **tungsten fluorides**
. metal halides
. . metal fluorides
. . . . **tungsten fluorides**
. tungsten halides
. . . . **tungsten fluorides**
tungsten compounds
. tungsten halides
. . **tungsten fluorides**

tungsten halides

GS halogen compounds
. halides
. . metal halides
. . . **tungsten halides**
. . . . tungsten chlorides
. . . . tungsten fluorides
tungsten compounds
. **tungsten halides**
. . tungsten chlorides
. . tungsten fluorides

tungsten inert gas welding

USE **gas tungsten arc welding**

tungsten isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **tungsten isotopes**
metals
. refractory metals
. . **tungsten isotopes**
. transition metals
. . **tungsten isotopes**
refractory materials
. refractory metals
. . **tungsten isotopes**

tungsten oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **tungsten oxides**
. . . . scheelite
tungsten compounds
. **tungsten oxides**
. . scheelite

Tungusk meteorite

UF *Tunguska event*
GS celestial bodies
. meteorites
. . stony meteorites
. . . **Tungusk meteorite**
RT meteorite collisions
meteorite craters

Tunguska event

USE **Tungusk meteorite**

tuning

GS **tuning**
. Schuler tuning

RT automatic frequency control
automatic gain control
dye lasers
frequency pulling
mistuning (turbomachinery)
Q factors
resonance
resonant frequencies
resonators
tunable filters
tunable lasers

tuning fork gyroscopes

GS gyroscopes
. **tuning fork gyroscopes**
RT resonators

Tunisia

GS nations
. **Tunisia**
RT Africa

tunnel cathodes

GS electrodes
. cathodes
. . tube cathodes
. . . **tunnel cathodes**
RT cold cathode tubes
cold cathodes
electron tubes
hollow cathodes
 ∞ tunnels

tunnel diodes

UF *Esaki diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **tunnel diodes**
RT electron tunneling
junction diodes
MIM diodes
negative conductance
negative resistance circuits
resonant tunneling
tunnel junctions
 ∞ tunnels

tunnel junctions

(added September 1993)
DEF An electronic device having an extremely thin potential barrier to electron flow, so that the transport characteristic (the current-voltage flow) is primarily governed by the quantum-mechanical tunneling process which permits electrons to penetrate the barrier.

RT barrier layers
electron tunneling
heterojunctions
Josephson junctions
photoconductors
quantum electronics
semiconductor devices
semiconductor junctions
solar cells
superconducting devices
tunnel diodes

tunnel resistors

USE **electron tunneling resistors**

∞ tunneling

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electron tunneling
resonant tunneling
tunneling (excavation)

tunneling (excavation)

GS excavation
. **tunneling (excavation)**
RT bedrock
construction
drainage
drilling

- jacks (lifts)
 - lining processes
 - rocks
 - soils
 - ∞ tunneling
 - underground structures
- ∞ **tunnels**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT
 - gaps
 - hydraulic test tunnels
 - lunar shelters
 - passageways
 - streets
 - transfer tunnels
 - tunnel cathodes
 - tunnel diodes
 - wind tunnels
- Tupolev aircraft**
 - GS **Tupolev aircraft**
 - . TU-104 aircraft
 - . TU-124 aircraft
 - . TU-134 aircraft
 - . TU-154 aircraft
 - . TU-204 aircraft
 - RT ∞ aircraft
- turbidity**
 - GS
 - electromagnetic properties
 - . optical properties
 - . . **turbidity**
 - RT
 - absorptance
 - clarity
 - haze
 - light transmission
 - opacity
 - optical density
 - ∞ properties
 - solubility
 - transparence
- turbine blades**
 - DEF The blades of a turbine wheel.
 - GS
 - turbomachine blades
 - . **turbine blades**
 - RT ∞ blades
 - compressor blades
 - engine parts
 - fan blades
 - rotor blades (turbomachinery)
 - rotor stator interactions
 - stator blades
 - turbines
- turbine engines**
 - DEF Engines incorporating a turbine as a principal component; especially gas turbine engines.
 - GS
 - engines
 - . **turbine engines**
 - . . gas turbine engines
 - . . . hydrogen engines
 - . . . jet engines
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines
 - . . . T-58 engine
 - RT
 - aircraft engines
 - automobile engines
 - convergent nozzles
 - gas bearings
 - integral rocket ramjets
 - torpedo engines
- turbine exhaust nozzles**
 - GS
 - exhaust nozzles
 - . **turbine exhaust nozzles**
 - RT
 - conical nozzles
 - convergent-divergent nozzles
- turbine instruments**
 - RT
 - flowmeters
 - ∞ instruments
 - turbomachinery
- turbine pumps**
 - UF
 - turbopumps*
 - GS
 - pumps
 - . axial flow pumps
 - . . **turbine pumps**
 - turbomachinery
 - . **turbine pumps**
 - RT
 - centrifugal pumps
 - fuel pumps
 - jet pumps
 - preburners
 - turbines
 - turbocompressors
- turbine wheels**
 - DEF Multivaned wheels or rotors, especially in gas turbine engines, rotated by the impulse from or reaction to a fluid passing across the vanes. Used for rotor disks and turborotors.
 - UF
 - rotor disks*
 - turborotors*
 - GS
 - rotating bodies
 - . rotors
 - . . **turbine wheels**
 - wheels
 - . **turbine wheels**
 - RT
 - compressor rotors
 - engine parts
 - hydraulic equipment
 - impellers
 - turbines
 - turbomachine blades
 - water wheels
- turbines**
 - GS
 - turbomachinery
 - . **turbines**
 - . . axial flow turbines
 - . . gas turbines
 - . . shrouded turbines
 - . . steam turbines
 - . . supersonic turbines
 - . . two stage turbines
 - . . wind turbines
 - . . . tip vanes
 - RT
 - engines
 - geothermal energy conversion
 - geothermal energy extraction
 - impellers
 - impulse generators
 - jet engine fuels
 - jet propulsion
 - ∞ nozzles
 - refractories
 - rotating generators
 - rotors
 - stators
 - turbine blades
 - turbine pumps
 - turbine wheels
 - turbogenerators
 - turboshafts
- turbochargers*
 - USE **superchargers**
 - turbocompressors**
- turbocompressors**
 - UF
 - axial compressors*
 - axial flow compressors*
 - multistage compressors*
 - turbochargers*
 - GS
 - compressors
 - . **turbocompressors**
 - turbomachinery
 - . **turbocompressors**
 - RT
 - centrifugal compressors
 - centrifugal pumps
 - compressor blades
 - compressor rotors
 - rotating stalls
 - rotors
 - superchargers
 - supersonic compressors
 - transonic compressors
 - turbine pumps
 - turbofans
- turboconverters*
 - USE **turbogenerators**
- turboelectric conversion*
 - USE **turbogenerators**
- turbofan aircraft**
 - GS
 - jet aircraft
 - . **turbofan aircraft**
 - . . A-7 aircraft
 - . . BAC 111 aircraft
 - . . Boeing 707 aircraft
 - . . Boeing 717 aircraft
 - . . Boeing 720 aircraft
 - . . Boeing 727 aircraft
 - . . Boeing 733 aircraft
 - . . Boeing 737 aircraft
 - . . Boeing 757 aircraft
 - . . Boeing 767 aircraft
 - . . C-141 aircraft
 - . . CL-600 challenger aircraft
 - . . Concorde aircraft
 - . . CV-990 aircraft
 - . . DC 8 aircraft
 - . . DH 121 aircraft
 - . . DO-31 aircraft
 - . . F-5 aircraft
 - . . F-28 transport aircraft
 - . . F-111 aircraft
 - . . IL-62 aircraft
 - . . Mystere 20 aircraft
 - . . P-1127 aircraft
 - . . P-1154 aircraft
 - . . Saab 37 aircraft
 - . . Saab 105 aircraft
 - . . SE-210 aircraft
 - . . TU-134 aircraft
 - . . TU-144 aircraft
 - RT ∞ aircraft

turbofan engines

- C-135 aircraft
 - ∞ low wing aircraft
 - passenger aircraft
 - transport aircraft
 - turboprop aircraft
- turbofan engines**
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - RT
 - B-52 aircraft
 - Boeing 747 aircraft
 - Boeing 767 aircraft
 - C-5 aircraft
 - C-17 aircraft
 - C-141 aircraft
 - DC 10 aircraft
 - ducted fan engines
 - L-1011 aircraft
 - Mystere 50 aircraft
 - P-1127 aircraft
 - P-1154 aircraft
 - TU-124 aircraft
 - turbofans
 - turboprop engines

turbofans
DEF Turbojet engines in which additional propulsive thrust is gained by extending a portion of the compressor or turbine blades outside the inner engine cases.

- GS turbomachinery
 - . **turbofans**
- RT ducted fans
- ∞ fans
 - lift fans
 - turbocompressors
 - turbofan engines

- turbogenerators**
- UF *thermal power turboconverters*
turboelectric conversion
 - GS electric generators
 - . rotating generators
 - . . **turbogenerators**
 - . . . ASTEC solar turboelectric generator
 - turbomachinery
 - . **turbogenerators**
 - . . ASTEC solar turboelectric generator
 - RT AC generators

- ∞ conversion
- ∞ electric power
 - electrical engineering
 - gas turbine engines
 - gas turbines
- ∞ generators
 - geothermal energy conversion
 - geothermal energy extraction
 - geothermal energy utilization
 - hydroelectric power stations
 - hydroelectricity
 - SNAP
 - SNAP 1
 - SNAP 2
 - SNAP 8
 - solar generators
 - space power reactors
 - space power unit reactors
 - steam turbines
 - turbines
 - wind turbines

turbojet aircraft
USE **jet aircraft**

- turbojet engine control**
- GS engine control
 - . **turbojet engine control**
 - RT aircraft control
 - automatic control
 - ∞ control
 - flight control
 - fuel control
 - remote control
 - servocontrol
 - thrust control

turbojet engines
DEF Jet engines incorporating a turbine driven air compressor to take in and compress the air for the combustion of fuel (or for heating by a nuclear reactor), the gases of combustion (or the heated air) being used both to rotate the turbine and create a thrust producing jet.

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - **turbojet engines**
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine

- turboramjet engines
- . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - **turbojet engines**
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines

RT convergent nozzles
Hound Dog missile
jet aircraft
Mace missiles
quail missile
ramjet engines
Regulus missile

turbomachine blades

GS **turbomachine blades**
. compressor blades
. rotor blades (turbomachinery)
. stator blades
. turbine blades
RT airfoils
∞ blades
∞ buckets
cascade flow
fan blades
impellers
mistuning (turbomachinery)
paddles
rotors
turbine wheels
vanes

turbomachinery

GS **turbomachinery**
. centrifugal compressors
. centrifugal pumps
. J-33 engine
. turbine pumps
. turbines
. axial flow turbines
. gas turbines
. shrouded turbines
. steam turbines
. supersonic turbines
. two stage turbines
. wind turbines
. tip vanes
. turbocompressors
. turbofans
. turbogenerators
. ASTEC solar turboelectric generator
RT blowers
compressors
∞ machinery
pumps
rotating generators
rotor dynamics
superchargers
turbine instruments
wave rotors

turbopause

GS Earth atmosphere
. upper atmosphere
. thermosphere
. . . **turbopause**
RT atmospheric circulation
atmospheric physics
atmospheric turbulence

turboprop aircraft

GS jet aircraft
. **turboprop aircraft**
. . . AN-22 aircraft
. . . AN-24 aircraft
. . . Argosy MK-1 aircraft
. . . ATR-72 aircraft
. . . Breguet 941 aircraft
. . . Breguet 1150 aircraft
. . . C-2 aircraft
. . . C-130 aircraft
. . . C-133 aircraft
. . . C-160 aircraft
. . . CL-44 aircraft
. . . CL-84 aircraft
. . . DHC 5 aircraft
. . . DO-328 aircraft
. . . E-2 aircraft
. . . Electra aircraft
. . . F-27 aircraft
. . . G-222 aircraft

. . . HS-748 aircraft
. . . MH-262 aircraft
. . . OV-1 aircraft
. . . OV-10 aircraft
. . . P-3 aircraft
. . . SC-5 aircraft
. . . Viscount aircraft
. . . YS-11 aircraft

RT ∞ aircraft
general aviation aircraft
∞ low wing aircraft
passenger aircraft
∞ subsonic aircraft
transport aircraft
turbofan aircraft

turboprop engines

UF *Dart turboprop engines*
GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **turboprop engines**
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
. internal combustion engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **turboprop engines**
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
. turbine engines
. gas turbine engines
. jet engines
. . . turbojet engines
. . . . **turboprop engines**
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
RT C-160 aircraft
contrarotating propellers
E-2 aircraft
P-3 aircraft
prop-fan technology
turbofan engines
XC-142 aircraft

turbopumps

USE **turbine pumps**

turboramjet engines

GS engines
. air breathing engines
. gas turbine engines
. jet engines
. . . ramjet engines
. . . . **turboramjet engines**
. . . . turbojet engines
. **turboramjet engines**
. internal combustion engines
. gas turbine engines
. jet engines

. . . . ramjet engines
. **turboramjet engines**
. . . . turbojet engines
. **turboramjet engines**
. turbine engines
. gas turbine engines
. jet engines
. . . ramjet engines
. **turboramjet engines**
. . . . turbojet engines
. **turboramjet engines**
RT ∞ hybrid rocket engines

turborocket engines

GS engines
. rocket engines
. . **turborocket engines**
. torpedo engines
. . **turborocket engines**
RT booster rocket engines
hydrazine engines
hydrogen oxygen engines
liquid air cycle engines
restartable rocket engines
sustainer rocket engines

turborotors

USE **turbine wheels**

turboshfts

GS shafts (machine elements)
. rotating shafts
. . **turboshfts**
RT convertible fan-shaft engines
rotors
turbines
wave rotors

Turbo-Skyvan aircraft

USE **SC-7 aircraft**

turbulence

DEF A state of fluid flow in which the instantaneous velocities exhibit irregular and apparently random fluctuations so that in practice only statistical properties can be recognized and subjected to analysis.

GS **turbulence**

. atmospheric turbulence
. clear air turbulence
. gusts
. low level turbulence
. homogeneous turbulence
. isotropic turbulence
. low turbulence
. magnetohydrodynamic turbulence
. plasma turbulence
. . . Langmuir turbulence

RT

aerodynamic drag
atmospheric effects
backwash
boundary layer control
boundary layer transition
flow characteristics
fluid dynamics
gas streams
micrometeorology
mixing
∞ motion
nonuniformity
panel method (fluid dynamics)
period doubling
sea roughness
slipstreams
steady flow
strange attractors
Strouhal number
surface noise interactions
turbulent boundary layer
turbulent flow
unsteady flow
vertical air currents
vortex filaments
vortices
vorticity
wakes

turbulence effects

wind effects

turbulence effects

- RT aerodynamic stability
- buffeting
- ∞ effects
- flutter
- seeing (astronomy)
- separated flow

turbulence meters

- UF *hot-wire turbulence meters*
- GS measuring instruments
- . **turbulence meters**
- RT hot-wire flowmeters

turbulence models

(added September 1988)

- GS models
- . mathematical models
- . . **turbulence models**
- . . . Baldwin-Lomax turbulence model
- . . . k-epsilon turbulence model
- . . . k-omega turbulence model
- RT computational fluid dynamics
- flow equations
- large eddy simulation
- mixing length flow theory
- renormalization group methods
- Reynolds averaging
- turbulent boundary layer
- turbulent combustion
- turbulent flow

turbulent boundary layer

DEF The layer in which the Reynolds stresses are much larger than the viscous stresses. When the Reynolds number is sufficiently high, there is a turbulent layer adjacent to the laminar boundary layer.

- GS boundary layers
- . **turbulent boundary layer**
- RT Baldwin-Lomax turbulence model
- boundary layer transition
- compressible boundary layer
- Ekman layer
- hypersonic boundary layer
- incompressible boundary layer
- k-epsilon turbulence model
- k-omega turbulence model
- laminar boundary layer
- ∞ layers
- mixing layers (fluids)
- Reynolds stress
- riblets
- supersonic boundary layers
- thermal boundary layer
- three dimensional boundary layer
- turbulence
- turbulence models
- two dimensional boundary layer

turbulent combustion

(added September 1992)

DEF Combustion or combustible flow in which turbulence is superimposed on the main movement of the flame fronts resulting in random, unpredictable fluctuations.

- GS combustion
- . **turbulent combustion**
- RT chemical explosions
- combustible flow
- combustion physics
- combustion stability
- flame propagation
- flames
- fuel combustion
- oxidation
- premixed flames
- propellant combustion
- reacting flow
- turbulence models
- turbulent flames

turbulent flow

turbulent diffusion

- UF *eddy diffusion*
- GS diffusion
- . **turbulent diffusion**
- RT atmospheric diffusion
- atmospheric turbulence
- clear air turbulence
- counterflow

turbulent flames

(added June 1997)

- GS flames
- . **turbulent flames**
- RT combustible flow
- flame propagation
- flame stability
- premixed flames
- turbulent combustion
- turbulent flow

turbulent flow

DEF Fluid motion in which random motions of parts of the fluid are superimposed upon a simple pattern of flow. All or nearly all fluid flow displays some degree of turbulence. The opposite is laminar flow.

- GS fluid flow
- . **turbulent flow**
- . . cavitation flow
- . . . supercavitating flow
- RT aerodynamic interference
- aerodynamics
- annular flow
- atmospheric turbulence
- Baldwin-Lomax turbulence model
- Blasius flow
- boundary layer transition
- closure law
- combustible flow
- counterflow
- critical flow
- direct numerical simulation
- eddy viscosity
- flow characteristics
- flow stability
- fluid amplifiers
- free convection
- gas flow
- gust alleviators
- inviscid flow
- isotropic turbulence
- k-epsilon turbulence model
- Kolmogorov theory
- k-omega turbulence model
- Lagrange similarity hypothesis
- laminar flow
- large eddy simulation
- liquid flow
- mass flow
- mixing length flow theory
- multiphase flow
- nonuniform flow
- open channel flow
- orifice flow
- particle laden jets
- period doubling
- pipe flow
- pressure oscillations
- reacting flow
- recirculative fluid flow
- Reynolds number
- Reynolds stress
- rotating fluids
- single-phase flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- Tollmien-Schlichting waves
- ∞ transition layers
- turbulence
- turbulence models
- turbulent combustion
- turbulent flames
- two phase flow

uniform flow
viscous drag
viscous flow
vortex avoidance
vortex breakdown
vortices
vorticity transport hypothesis

turbulent heat transfer

- GS transmission
- . heat transmission
- . . heat transfer
- . . . **turbulent heat transfer**
- RT aerodynamic heat transfer
- convective heat transfer
- laminar heat transfer
- thermohydraulics

turbulent jets

- RT fluid amplifiers
- jet streams (meteorology)
- ∞ jets

turbulent mixing

- GS mixing
- . **turbulent mixing**
- RT agitation
- laminar mixing
- mixing layers (fluids)
- mixing length flow theory
- recirculative fluid flow
- trapped vortices
- vortices

turbulent wakes

- UF *swirling wakes*
- GS wakes
- . **turbulent wakes**
- . . slipstreams
- . . . propeller slipstreams
- RT aircraft wakes
- laminar wakes
- trapped vortices
- vortex advisory system
- vortex sheets
- vortex streets

Turing machines

DEF Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930s, they are named after their inventor, A. M. Turing. Used for finite-state machines.

- UF *finite-state machines*
- RT automata theory
- cellular automata
- digital computers
- ∞ machinery
- mathematical logic
- quantum computation
- self organizing systems

Turkey

- GS nations
- . **Turkey**
- RT Black Sea
- Europe
- Turkish space program

turkeys

- GS animals
- . vertebrates
- . . birds
- . . . **turkeys**
- RT livestock

Turkish space program

- (added August 1990)
- GS programs
- . space programs
- . . European space programs
- . . . **Turkish space program**

- RT Turkey
- Turkmenistan**
(added August 1993)
GS nations
. Turkmenistan
RT Asia
- turnaround (STS)**
DEF The intervals between flights of the shuttle orbiters.
RT downtime
flight time
launch dates
schedules
sequencing
spacecraft maintenance
testing time
- turning flight**
UF *banking flight*
GS **turning flight**
. minor circle turning flight
RT aerodynamic balance
aircraft maneuvers
aircraft stability
climbing flight
∞ flight
flight paths
horizontal flight
lateral oscillation
lateral stability
maneuvers
momentum
roll
yaw
- turnstile antennas**
DEF Antennas composed of two dipole antennas, normal to each other, with their axes intersecting at their midpoints. Usually, the currents are equal and in phase quadrature.
GS antennas
. omnidirectional antennas
. . **turnstile antennas**
arrays
. antenna arrays
. . **turnstile antennas**
RT dipole antennas
∞ grids
wire grid lenses
- turpentine**
GS solvents
. **turpentine**
terpenes
. **turpentine**
RT paints
- ∞ **turret**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gun turrets
turret lathes
- turret lathes**
GS tools
. machine tools
. . lathes
. . . **turret lathes**
RT ∞ turret
- turtles**
GS animals
. vertebrates
. . reptiles
- . . . **turtles**
- Tutor aircraft*
USE **CL-41 aircraft**
- TVC (control)*
USE **thrust vector control**
- TVD schemes**
(added August 1989)
UF *total variation diminishing schemes*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **TVD schemes**
RT computational fluid dynamics
essentially non-oscillatory schemes
finite difference theory
finite volume method
- twenty-four hour orbits**
GS orbits
. Earth orbits
. . **twenty-four hour orbits**
. spacecraft orbits
. . satellite orbits
. . . **twenty-four hour orbits**
RT circular orbits
equatorial orbits
geosynchronous orbits
orbital mechanics
PAS
planetary orbits
polar orbits
stationary orbits
Synchronous Communications
Satellite Proj
synchronous satellites
- twenty-seven day variation**
GS variations
. **twenty-seven day variation**
RT solar cycles
solar rotation
starspots
sunspots
- twilight glow**
GS atmospheric radiation
. sky radiation
. . airglow
. . . **twilight glow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . **twilight glow**
RT dayglow
night
night sky
- twinning**
GS **twinning**
. mechanical twinning
RT crystal defects
crystal growth
crystal structure
grain boundaries
stacking fault energy
- twisted wings**
GS airfoils
. wings
. . **twisted wings**
RT cambered wings
fixed wings
flexible wings
ring wings
uncambered wings
- twisting**
UF *pretwisting*
RT bending
buckling
deformation
distortion
- kinking
structural strain
torque
torsion
torsional vibration
warpage
winding
- twitching**
RT involuntary actions
muscles
muscular function
- two body orbits*
USE **two body problem**
- two body problem**
DEF That problem in classical celestial mechanics which treats of the relative motion of two point masses under their mutual gravitational attraction. Used for two body orbits.
UF *two body orbits*
RT binary stars
celestial mechanics
Earth-Moon system
Hylleraas coordinates
many body problem
orbital mechanics
orbits
perturbation
∞ problems
Roche limit
three body problem
- two dimensional bodies**
RT ∞ bodies
∞ cross sections
ducted bodies
mathematical models
∞ surfaces
- two dimensional boundary layer**
GS boundary layers
. **two dimensional boundary layer**
RT laminar boundary layer
supersonic boundary layers
turbulent boundary layer
- two dimensional flow**
GS fluid flow
. **two dimensional flow**
. . Couette flow
. . Ringlee flow
RT axial flow
Blasius flow
capillary waves
coaxial flow
flow geometry
Hartmann flow
one dimensional flow
Prandtl-Meyer expansion
radial flow
Rayleigh waves
steady flow
stream functions (fluids)
Taylor instability
three dimensional flow
wall flow
wedge flow
- two dimensional jets**
RT jet flow
jet mixing flow
∞ jets
wall flow
- two dimensional models**
(added August 1988)
GS models
. **two dimensional models**
RT computerized simulation
mathematical models
three dimensional models
- two fluid models**
RT Boltzmann distribution

two phase flow

- liquid helium
- magnetohydrodynamic flow
- mixing layers (fluids)
- rotating plasmas
- shock wave propagation
- superfluidity

two phase flow

- GS fluid flow
 - . multiphase flow
 - . . . **two phase flow**
- RT gas flow
 - laminar flow
 - liquid flow
 - particle image velocimetry
- ∞ pressure drop
- single-phase flow
- solids flow
- turbulent flow

two phase systems

- USE **binary systems (materials)**

two photon coherent states

- USE **squeezed states (quantum theory)**

two reflector antennas

- GS antennas
 - . directional antennas
 - . . . reflector antennas
 - **two reflector antennas**
- RT Cassegrain antennas
 - radio antennas
 - reflectometers
 - reflectors

two stage plasma engines

- GS engines
 - . rocket engines
 - . . . electric rocket engines
 - plasma engines
 - **two stage plasma engines**
- RT electric propulsion
 - plasmas (physics)

two stage turbines

- GS turbomachinery
 - . turbines
 - . . . **two stage turbines**
- RT gas turbine engines
 - gas turbines
 - steam turbines

two-wavelength lasers

- GS stimulated emission devices
 - . lasers
 - . . . **two-wavelength lasers**
- RT coherent light
 - dye lasers
 - laser outputs
 - masers
 - molecular oscillators
 - quantum amplifiers
 - stimulated emission

TX-33-39 engine

- USE **XM-33 engine**

TX-77 engine

- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - **TX-77 engine**
- RT Lance missile

TX-354 engine

- UF *Castor 2 engine*
- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - **TX-354 engine**
- RT booster rocket engines
 - Little Joe 2 launch vehicle
 - RAM B launch vehicle
 - Scout launch vehicle
 - sustainer rocket engines

- Trailblazer 2 reentry vehicle
- XM-33 engine

Tycho crater

- GS craters
 - . lunar craters
 - . . . **Tycho crater**
- RT meteorite craters

type 2 bursts

- GS bursts
 - . radio bursts
 - . . solar radio bursts
 - **type 2 bursts**
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . radio bursts
 - solar radio bursts
 - **type 2 bursts**
 - . . . solar radio emission
 - **type 2 bursts**
 - solar radio emission
 - solar radio bursts
 - **type 2 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 2 bursts**
 - solar radio bursts
 - **type 2 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 2 bursts**
 - solar radio emission
 - solar radio bursts
 - . **type 2 bursts**
 - . extraterrestrial radiation
 - . extraterrestrial radio waves
 - . radio bursts
 - . solar radio bursts
 - . **type 2 bursts**
 - . solar radio emission
 - . solar radio bursts
 - . **type 2 bursts**
 - . solar radiation
 - . solar radio emission
 - . solar radio bursts
 - . **type 2 bursts**

type 3 bursts

- GS bursts
 - . radio bursts
 - . . solar radio bursts
 - **type 3 bursts**
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . radio bursts
 - solar radio bursts
 - **type 3 bursts**
 - . . . solar radio emission
 - solar radio bursts
 - **type 3 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 3 bursts**
 - solar radio bursts
 - **type 3 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 3 bursts**
 - solar radio emission
 - solar radio bursts
 - **type 3 bursts**
 - extraterrestrial radiation
 - . extraterrestrial radio waves
 - . radio bursts
 - . solar radio bursts
 - . **type 3 bursts**
 - . solar radio emission
 - . solar radio bursts
 - . **type 3 bursts**
 - . solar radiation
 - . solar radio emission

- **type 3 bursts**
- solar radiation
- solar radio emission
- solar radio bursts
- **type 3 bursts**

type 4 bursts

- GS bursts
 - . radio bursts
 - . . solar radio bursts
 - **type 4 bursts**
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . radio bursts
 - solar radio bursts
 - **type 4 bursts**
 - . . . solar radio emission
 - solar radio bursts
 - **type 4 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 4 bursts**
 - solar radio emission
 - solar radio bursts
 - **type 4 bursts**
 - emission
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 4 bursts**
 - solar radio emission
 - solar radio bursts
 - . **type 4 bursts**
 - . extraterrestrial radiation
 - . extraterrestrial radio waves
 - . radio bursts
 - . solar radio bursts
 - . **type 4 bursts**
 - . solar radio emission
 - . solar radio bursts
 - . **type 4 bursts**
 - . solar radiation
 - . solar radio emission
 - . solar radio bursts
 - . **type 4 bursts**

type 5 bursts

- GS bursts
 - . radio bursts
 - . . solar radio bursts
 - **type 5 bursts**
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . radio bursts
 - solar radio bursts
 - **type 5 bursts**
 - . . . solar radio emission
 - solar radio bursts
 - **type 5 bursts**
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 5 bursts**
 - solar radio emission
 - solar radio bursts
 - **type 5 bursts**
 - emission
 - radio emission
 - radio bursts
 - solar radio bursts
 - **type 5 bursts**
 - solar radio emission
 - solar radio bursts
 - . **type 5 bursts**
 - . extraterrestrial radiation
 - . extraterrestrial radio waves
 - . radio bursts
 - . solar radio bursts
 - . **type 5 bursts**
 - . solar radio emission
 - . solar radio bursts
 - . **type 5 bursts**
 - . solar radiation
 - . solar radio emission

. . . solar radio bursts
 **type 5 bursts**

typewriters

GS **typewriters**
 . automatic typewriters
 . teletypewriters
 . . teleprinters
 RT printers

typhoid

GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **typhoid**

Typhon weapon system

GS weapon systems

. **Typhon weapon system**

RT Bumblebee project
 ∞ systems

typhoons

GS storms
 . storms (meteorology)
 . . cyclones
 . . . **typhoons**
 . . tropical storms
 . . . **typhoons**
 RT atmospheric circulation
 hurricanes
 marine meteorology
 meteorology
 storm damage

tornadoes

typhus

GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **typhus**

tyrosine

GS acids
 . amino acids
 . . **tyrosine**
 organic compounds
 . amino acids
 . . **tyrosine**
 RT enzyme activity
 liver

U

U bends

- GS pipes (tubes)
 - . **U bends**
- RT fittings

U spin space

- GS algebra
 - . vector spaces
 - . . **U spin space**
- RT matrices (mathematics)
 - quantum mechanics

U tubes

- USE **manometers**

U-2 aircraft

- UF *ER-2 aircraft*
 - Lockheed U-2 aircraft*
 - WU-2 aircraft*
- GS jet aircraft
 - . **U-2 aircraft**
 - Lockheed aircraft
 - . **U-2 aircraft**
 - monoplanes
 - . **U-2 aircraft**
 - reconnaissance aircraft
 - . **U-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **U-2 aircraft**
 - utility aircraft
 - . **U-2 aircraft**
- RT ∞ aircraft

U-10 aircraft

- UF *Courier aircraft*
 - L-28 aircraft*
- GS Helio aircraft
 - . **U-10 aircraft**
 - light aircraft
 - . **U-10 aircraft**
 - monoplanes
 - . **U-10 aircraft**
 - passenger aircraft
 - . **U-10 aircraft**
 - utility aircraft
 - . **U-10 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **U-10 aircraft**
- RT ∞ aircraft

U. S. S. R.

- UF *Soviet Union*
- GS nations
 - . **U. S. S. R.**
- RT Asia
 - Barents Sea
 - Black Sea
 - Caucasus Mountains (U. S. S. R.)
 - Europe
 - Kurile Islands
 - Moscow
 - Sea of Okhotsk
 - Siberia

U. S. S. R. space program

- GS programs
 - . space programs
 - . . **U. S. S. R. space program**
- RT Apollo Soyuz test project
 - Automatic Universal Orbiting Stations
 - Buran space shuttle
 - GLONASS
 - international cooperation
 - international relations
 - International Satellite Geodesy Experiment
 - lunar retroreflectors
 - Lunik 19 lunar probe

- Lunik 22 lunar probe
- Lunik lunar probes
- Lunokhod lunar roving vehicles
- Mars 1 spacecraft
- Mars 2 spacecraft
- Mars 3 spacecraft
- Mars 4 Spacecraft
- Mars 5 spacecraft
- Mars 6 spacecraft
- Mars 7 spacecraft
- Mir space station
- Molniya satellites
- Proton satellites
- Russian Space Program
- Salyut space station
- Soyuz spacecraft
- Vega project
- Venera 8 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- Venera satellites

UARS (satellite)

- USE **Upper Atmosphere Research Satellite (UARS)**

UBV spectra

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **UBV spectra**
- RT color-color diagram

Udimet alloys

- GS alloys
 - . heat resistant alloys
 - . . **Udimet alloys**
 - . . nickel alloys
 - . . **Udimet alloys**

UFO

- USE **unidentified flying objects**

Uganda

- GS nations
 - . **Uganda**
- RT Africa

UGV (vehicles)

- (*added July 2002*)
- USE **unmanned ground vehicles**

UH-1 helicopter

- UF *HU-1 helicopter*
 - Iroquois helicopter*
 - RH-2 helicopter*
 - YHU-1 helicopter*
 - YUH-1 helicopter*
- GS Bell aircraft
 - . **UH-1 helicopter**
 - utility aircraft
 - . **UH-1 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-1 helicopter**
- RT UH-60A helicopter
 - UH-61A helicopter

UH-2 helicopter

- UF *HU2K-1 helicopter*
 - Kaman UH-2A helicopter*
 - Seasprite helicopter*
- GS Kaman aircraft
 - . **UH-2 helicopter**
 - utility aircraft
 - . **UH-2 helicopter**
 - V/STOL aircraft

- . rotary wing aircraft
- . . helicopters
- . . . military helicopters
- **UH-2 helicopter**

UH-12 helicopter

- USE **OH-23 helicopter**

UH-13 helicopter

- USE **OH-13 helicopter**

UH-34 helicopter

- UF *HUS-1 helicopter*
 - Seahorse helicopter*
- GS Sikorsky aircraft
 - . **UH-34 helicopter**
 - transport aircraft
 - . **UH-34 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-34 helicopter**
- RT S-58 helicopter

UH-60A helicopter

- UF *YUH-60A helicopter*
- GS Sikorsky aircraft
 - . **UH-60A helicopter**
 - transport aircraft
 - . **UH-60A helicopter**
 - utility aircraft
 - . **UH-60A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-60A helicopter**
- RT helicopter design
 - UH-1 helicopter

UH-61A helicopter

- UF *YUH-61A helicopter*
- GS Sikorsky aircraft
 - . **UH-61A helicopter**
 - transport aircraft
 - . **UH-61A helicopter**
 - utility aircraft
 - . **UH-61A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-61A helicopter**
- RT helicopter design
 - UH-1 helicopter

UHTREX (nuclear reactors)

- USE **high temperature nuclear reactors**

Uhuru satellite

- UF *Explorer 42 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Uhuru satellite**
- RT galactic radiation
 - SAS
 - satellite observation
 - x ray astronomy
 - x ray stars

UK 4 satellite

- GS artificial satellites
 - . scientific satellites
 - . . UK satellites
 - . . . **UK 4 satellite**

UK satellites

- UF *United Kingdom satellites*

- GS artificial satellites
 . scientific satellites
 . . **UK satellites**
 . . . Ariel 4 satellite
 . . . Ariel 5 satellite
 . . . Miranda satellite
 . . . UK 4 satellite
 RT Infrared Astronomy Satellite
 Skynet satellites
 UK space program
- UK space program**
 GS programs
 . space programs
 . . European space programs
 . . . **UK space program**
 RT HOTOL launch vehicle
 UK satellites
 United Kingdom
- Ukraine**
(added August 1993)
 GS nations
 . **Ukraine**
 RT Europe
 Ukrainian space program
- Ukrainian space program**
(added January 1999)
 GS programs
 . space programs
 . . **Ukrainian space program**
 RT Ukraine
 Zenit launch vehicles
- ulcers**
 GS diseases
 . **ulcers**
 RT cancer
- ullage**
 DEF The amount that a container, such as a fuel tank, lacks of being full.
 RT fuel tank pressurization
 fuel tanks
 interface stability
 liquid sloshing
 propellant tanks
 splashing
 tank geometry
 ullage rocket engines
- ullage rocket engines**
 GS engines
 . rocket engines
 . . **ullage rocket engines**
 . torpedo engines
 . . **ullage rocket engines**
 RT solid propellant rocket engines
 ullage
- ULM (light modulation)*
 USE **ultrasonic light modulation**
- ulna**
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **ulna**
 RT arm (anatomy)
 elbow (anatomy)
- ultra short wave radio equipment*
 USE **very high frequency radio equipment**
- ultracapacitors*
(added September 2003)
 USE **electrochemical capacitors**
- ultrahigh frequencies**
 SN (300 TO 3000 MHZ)
 UF *L band*
S band
 GS frequencies
 . radio frequencies
 . . **ultrahigh frequencies**
 . . . P band
 RT decimeter waves
 EISCAT radar system (Europe)
 Fleet Satellite Communication System
 low frequencies
 passive L-band radiometers
 praetersonic devices
 unified S band
 very high frequency radio equipment
- ultrahigh vacuum**
 GS pressure
 . vacuum
 . . **ultrahigh vacuum**
 RT high vacuum
 low density research
 residual gas
 vacuum apparatus
 vacuum tests
- ultralight aircraft**
 DEF An aircraft for one person weighing less than 254 pounds with a top speed of 55 knots and a maximum stalling speed of 24 knots.
 RT ∞ aircraft
 hang gliders
 light aircraft
 man powered aircraft
 ∞ winged vehicles
- ultralow frequencies*
 USE **extremely low frequencies**
- ultralow temperature*
 USE **cryogenic temperature**
- ultrapure metals**
 GS metals
 . **ultrapure metals**
 RT crystal lattices
 impurities
 purification
 purity
 single crystals
 space processing
 vapor deposition
 zone melting
- ultrashort pulsed lasers**
 GS stimulated emission devices
 . lasers
 . . pulsed lasers
 . . . **ultrashort pulsed lasers**
 RT glass lasers
 laser applications
 light amplifiers
 pulse duration
 quantum amplifiers
 stimulated emission
- ultrasonic agitation**
 GS agitation
 . **ultrasonic agitation**
 RT ultrasonics
- ultrasonic cleaning**
 GS cleaning
 . **ultrasonic cleaning**
 RT acoustics
 cavitation flow
 cleaners
 etching
 fluid flow
 grinding machines
 machine tools
 piezoelectric transducers
 polishing
 tools
 transducers
 ultrasonic processing
 ultrasonics
- ultrasonic densimeters**
 DEF Density measuring instruments utiliz-
- ing ultrasonic devices (sensors).
 GS measuring instruments
 . densimeters
 . . **ultrasonic densimeters**
 RT density (mass/volume)
 density measurement
 ∞ instruments
 ∞ measurement
- ultrasonic flaw detection**
 GS detection
 . **ultrasonic flaw detection**
 RT acoustic imaging
 ∞ detectors
 examination
 identifying
 inspection
 nondestructive tests
 quality control
 ultrasonic scanners
- ultrasonic grinding machines*
 USE **ultrasonic machining**
- ultrasonic light modulation**
 UF *ULM (light modulation)*
 GS modulation
 . light modulation
 . . **ultrasonic light modulation**
 RT Bragg cells
 ultrasonics
- ultrasonic machining**
 UF *ultrasonic grinding machines*
 GS machining
 . **ultrasonic machining**
 RT ultrasonics
- ultrasonic processing**
(added June 1998)
 DEF The use of ultrasonic radiation to synthesize a compound or material, or alter the structure, properties, or form of a material.
 UF *sonochemistry*
ultrasonic treatment
 RT ∞ processing
 ultrasonic cleaning
 ultrasonics
- ultrasonic radiation**
 UF *ultrasonic waves*
 GS elastic waves
 . **ultrasonic radiation**
 RT acoustic frequencies
 coherent acoustic radiation
 magnetoelastic waves
 ∞ radiation
 sound waves
 ultrasonics
 underwater acoustics
- ultrasonic scanners**
 GS scanners
 . **ultrasonic scanners**
 RT acoustics
 imaging techniques
 measuring instruments
 scanning
 ultrasonic flaw detection
 ultrasonics
- ultrasonic soldering**
 UF *sonic soldering*
 GS soldering
 . **ultrasonic soldering**
 RT brazing
 ∞ joining
 ultrasonic welding
 ultrasonics
- ultrasonic spectroscopy**
 GS spectroscopy
 . **ultrasonic spectroscopy**
 RT cracks
 nondestructive tests

ultrasonic tests

spectrum analysis

ultrasonic tests

- RT acoustic measurement
- acoustic sounding
- dynamic modulus of elasticity
- Lamb waves
- ∞ materials tests
- nondestructive tests
- SH waves
- ∞ tests
- ultrasonics

ultrasonic treatment

(added June 1998)

USE **ultrasonic processing**

ultrasonic wave transducers

- GS transducers
- . **ultrasonic wave transducers**
- RT electroacoustics
- electronic transducers
- microphones
- piezoelectric actuators
- piezoelectric motors
- pressure sensors
- sonar
- surface acoustic wave devices
- ultrasonics
- underwater acoustics

ultrasonic waves

USE **ultrasonic radiation**

ultrasonic welding

- GS welding
- . pressure welding
- . . **ultrasonic welding**
- RT spot welds
- ultrasonic soldering
- ultrasonics

ultrasonics

DEF The technology of sound at frequencies above the audio frequency range.

- RT acoustics
- electroacoustics
- ultrasonic agitation
- ultrasonic cleaning
- ultrasonic light modulation
- ultrasonic machining
- ultrasonic processing
- ultrasonic radiation
- ultrasonic scanners
- ultrasonic soldering
- ultrasonic tests
- ultrasonic wave transducers
- ultrasonic welding

ultraviolet absorption

- GS energy absorption
- . radiation absorption
- . . electromagnetic absorption
- . . . **ultraviolet absorption**
- RT ∞ absorption
- ultraviolet detectors

ultraviolet astronomy

DEF Use of special optical instruments for the observation of astronomical phenomena in the ultraviolet spectrum.

- GS astronomy
- . **ultraviolet astronomy**
- RT electromagnetic radiation
- Extreme Ultraviolet Explorer satellite
- Hubble Space Telescope
- Lyman alpha radiation
- Lyman beta radiation
- Spartan satellites
- Starsat telescope
- telescopes
- ultraviolet telescopes

ultraviolet detectors

- GS measuring instruments
- . radiation measuring instruments

- . . actinometers
- . . . **ultraviolet detectors**
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers
- RT ∞ detectors
- photometers
- radiometers
- ultraviolet absorption
- ultraviolet radiation
- ultraviolet spectra
- x ray detectors

ultraviolet emission

(added August 1991)

- GS electromagnetic radiation
- . ultraviolet radiation
- . . **ultraviolet emission**
- emission
- . **ultraviolet emission**
- RT emission spectra
- spectral emission
- ultraviolet spectra

ultraviolet filters

- GS electromagnetic wave filters
- . optical filters
- . . **ultraviolet filters**
- RT bandpass filters
- electric filters
- infrared filters

ultraviolet imagery

(added January 1997)

- GS imagery
- . **ultraviolet imagery**
- . . ultraviolet photography
- RT ultraviolet photometry
- ultraviolet telescopes

ultraviolet lasers

- UF *UV lasers*
- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **ultraviolet lasers**
- . . . pulsed lasers
- . . . **ultraviolet lasers**
- RT coherent light
- laser outputs
- light amplifiers
- light transmission
- masers
- molecular oscillators
- nitrogen lasers
- quantum amplifiers
- stimulated emission
- xenon chloride lasers

ultraviolet light

USE **ultraviolet radiation**

ultraviolet lithography

USE **lithography**

ultraviolet microscopy

- GS microscopy
- . **ultraviolet microscopy**
- RT microscopes

ultraviolet photography

- GS imagery
- . photography
- . . **ultraviolet photography**
- . . ultraviolet imagery
- . . **ultraviolet photography**
- RT aerial photography
- cameras
- color photography
- faint object camera
- infrared photography

radar photography

ultraviolet photometry

- GS imagery
- . photography
- . . **ultraviolet photometry**
- optical measurement
- . photometry
- . . **ultraviolet photometry**
- RT black and white photography
- ultraviolet imagery

ultraviolet radiation

DEF Electromagnetic radiation of shorter wavelength than visible radiation; roughly, radiation in the wavelength interval from 100 to 4000 angstroms. Used for ultraviolet light.

- UF *ultraviolet light*
- GS electromagnetic radiation
- . **ultraviolet radiation**
- . . extreme ultraviolet radiation
- . . far ultraviolet radiation
- . . . Lyman alpha radiation
- . . . Lyman beta radiation
- . . near ultraviolet radiation
- . . ultraviolet emission
- RT beams (radiation)
- black body radiation
- Cerenkov radiation
- coherent electromagnetic radiation
- coronal holes
- dayglow
- IUE
- microchannels
- monochromatic radiation
- polarized electromagnetic radiation
- ∞ radiation
- Seyfert galaxies
- solar radiation
- sterilization
- sunlight
- thermal radiation
- ultraviolet detectors
- Umkehr effect

ultraviolet reflection

- GS reflection
- . **ultraviolet reflection**
- RT infrared reflection
- radio echoes
- reflectometers
- spread reflection

ultraviolet spectra

- GS spectra
- . radiation spectra
- . . electromagnetic spectra
- . . . **ultraviolet spectra**
- RT absorption spectra
- emission spectra
- Herzberg bands
- high dispersion spectrographs
- light (visible radiation)
- line spectra
- Lyman spectra
- molecular spectra
- radio spectroscopy
- solar spectra
- stellar spectra
- ultraviolet detectors
- ultraviolet emission

ultraviolet spectrographs

USE **ultraviolet spectrometers**

ultraviolet spectrometers

- UF *ultraviolet spectrographs*
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . radiation measuring instruments
- . . actinometers

. . . ultraviolet detectors
 **ultraviolet spectrometers**
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 . . photometers
 . . . **ultraviolet spectrometers**
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 . . spectrometers
 . . **ultraviolet spectrometers**
 . . . high dispersion spectrographs
 . . . Total Ozone Mapping Spectrometer
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . **ultraviolet spectrometers**
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 RT Ebert spectrometers
 Solar Maximum Mission
 solar spectrometers

ultraviolet spectrophotometers

GS measuring instruments
 . optical measuring instruments
 . . photometers
 . . . **ultraviolet spectrophotometers**
 . . spectrophotometers
 . . . **ultraviolet spectrophotometers**
 . radiation measuring instruments
 . . actinometers
 . . . spectrophotometers
 **ultraviolet spectrophotometers**
 ultraviolet detectors
 **ultraviolet spectrophotometers**
 photometers
 **ultraviolet spectrophotometers**
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . **ultraviolet spectrophotometers**
 . . spectrophotometers
 . . . **ultraviolet spectrophotometers**

ultraviolet spectroscopy

GS spectroscopy
 . **ultraviolet spectroscopy**
 RT absorption spectroscopy
 astronomical spectroscopy
 molecular spectroscopy
 optogalvanic spectroscopy
 radio spectroscopy
 spectroscopic analysis
 spectrum analysis
 vacuum spectroscopy
 x ray spectroscopy

ultraviolet telescopes

DEF Optical telescopes designed to collect ultraviolet light (wavelengths not capable of passing through Earth's atmosphere) and as such must be used in space.
 GS telescopes
 . **ultraviolet telescopes**
 . . Starlab
 RT far ultraviolet radiation
 spaceborne astronomy
 ultraviolet astronomy
 ultraviolet imagery
 x ray astronomy

Ulysses mission

DEF A proposed ESA/NASA mission using the STS for orbital launching of two spin-stabilized spacecraft equipped with instruments for solar and astrophysical observations. Used for International Solar Polar Mission.
 UF *International Solar Polar Mission*
 GS space missions
 . **Ulysses mission**

RT Inertial Upper Stage
 mission planning
 ∞ missions
 Solar Maximum Mission
 solar probes
 sun

umbilical connectors

GS connectors
 . **umbilical connectors**
 RT bundles
 extravehicular activity
 tetherlines

umbilical towers

GS towers
 . **umbilical towers**
 RT gantry cranes
 launching pads

umbras

DEF The darkest parts of shadows in which light is completely cut off by intervening objects. Lighter parts surrounding the umbras, in which the light is only partly cut off, are called penumbras. The darker central portions of sun spots, surrounded by lighter penumbra.
 RT eclipses
 penumbras
 shadows

Umbriel

DEF A satellite of Uranus orbiting at a mean distance of 267,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Uranus satellites
 . . . **Umbriel**
 RT Uranus (planet)

Umkehr effect

DEF Due to the presence of the ozone layer, an anomaly of the relative zenith intensities of scattered sunlight at certain wavelengths in the ultraviolet as the sun approaches the horizon.
 RT ∞ effects
 light scattering
 ozonosphere
 sunlight
 ultraviolet radiation

Umklapp process

RT electron scattering
 phonon beams
 phonons
 photon-electron interaction
 ∞ processes

uncambered wings

GS airfoils
 . wings
 . . **uncambered wings**
 . . . ring wings
 RT cambered wings
 fixed wings
 thin wings
 twisted wings

uncertain systems

(added June 2000)
 RT control systems design
 control theory
 fuzzy systems
 linear systems
 nonlinear systems
 probability theory
 ∞ systems

unconsciousness

GS **unconsciousness**
 . blackout (physiology)
 . . blackout prevention
 . . narcosis
 RT anesthesia
 ∞ coma

syncope

uncontrolled reentry (spacecraft)

DEF The descent into a denser atmosphere of a spacecraft in an elliptical orbit due to aerodynamic drag and other perturbation forces. The gradually increasing deceleration causes some kinetic energy to be converted into atmospheric heat. The centrifugal force decreases and gravity pulls the spacecraft further into the atmosphere. The spacecraft eventually burns.

GS atmospheric entry
 . reentry
 . . hypersonic reentry
 . . . **uncontrolled reentry (spacecraft)**
 . . spacecraft reentry
 . . . **uncontrolled reentry (spacecraft)**

RT aerodynamic heating
 Cosmos 954 satellite
 descent
 flight paths
 plasma sheaths
 spacecraft breakup
 spacecraft survivability

uncoupled modes

DEF Modes of vibration that can exist in systems concurrently with and independently of other modes.
 GS modes
 . vibration mode
 . . **uncoupled modes**
 RT coupled modes
 couples
 modes (standing waves)

undamped oscillations

GS oscillations
 . **undamped oscillations**
 RT airfoil oscillations
 flapping
 flutter
 resonant vibration
 stable oscillations
 wing oscillations

under surface blowing

DEF Use of jets blowing on the underside of airfoils for variations in pressure distribution.
 GS blowing
 . **under surface blowing**
 RT aerodynamic characteristics
 aircraft configurations
 circulation control airfoils
 lift
 ∞ surfaces
 upper surface blowing

undercarriages

GS frames
 . **undercarriages**
 RT carriages
 carts
 chassis
 dollies
 landing gear
 substructures
 suspension systems (vehicles)

undercooling

(added May 1999)
 USE **supercooling**

underground acoustics

DEF The sounding of subsoils, rocks, etc. , for mineralogy and other exploratory purposes.
 RT acoustic sounding
 exploration
 minerals
 strata

underground communication

GS communicating
 . **underground communication**

underground explosions

RT radio communication

underground explosions

GS explosions
. **underground explosions**
RT chemical explosions
gas explosions
mines (excavations)
nuclear explosions
seismic waves
thermonuclear explosions

underground radio antenna grid (navy)

USE **Seafarer project**

underground storage

RT decommissioning
mines (excavations)
missile storage
propellant storage
∞ storage
storage tanks
waste management

underground structures

DEF Subterranean construction of tunnels, passageways, chambers, or excavations.

RT caves
excavation
foundations
mines (excavations)
mining
passageways
tunneling (excavation)

underground transmission lines

GS transmission lines
. **underground transmission lines**
RT circuits
electric power transmission
∞ lines
power lines

underwater acoustics

UF *hydroacoustics*
underwater sound
GS acoustics
. **underwater acoustics**
RT acoustic scattering
coherent acoustic radiation
deep scattering layers
echo sounding
elastic waves
flow noise
LOFAR
noise (sound)
shock waves
sonar
sonobuoys
sound fixing and ranging
sound transducers
thermoclines
ultrasonic radiation
ultrasonic wave transducers

underwater breathing apparatus

GS breathing apparatus
. **underwater breathing apparatus**
RT argon-oxygen atmospheres
bioengineering
helium-oxygen atmospheres
life support systems

underwater communication

GS telecommunication
. communication
. . . **underwater communication**
RT Seafarer project
shock waves
sonar
sonobuoys
sound transducers

underwater engineering

RT breakwaters
∞ engineering

submerged bodies

underwater explosions

GS explosions
. **underwater explosions**
RT antisubmarine warfare
chemical explosions
hydroballistics
nuclear explosions
thermonuclear explosions

underwater optics

RT diffraction patterns
diffraction propagation
geometrical optics
opacity
optical density
optical paths
∞ optics
refractivity

underwater photography

GS imagery
. photography
. . . **underwater photography**
RT cameras
color photography
sea water
seas
submerged bodies

underwater physiology

DEF The study of the bodily responses to the environmental stresses of the underwater milieu such as pressure, temperature and immersion effects.

GS physiology
. **underwater physiology**
RT diving (underwater)
∞ science
stress (physiology)

underwater propulsion

GS propulsion
. marine propulsion
. . . **underwater propulsion**
. . . submarine propulsion
RT aeroquatic vehicles
chemical propulsion
electric propulsion
nuclear propulsion
propeller drive
torpedo engines

underwater research laboratories

GS laboratories
. **underwater research laboratories**
research vehicles
. **underwater research laboratories**
submerged bodies
. **underwater research laboratories**
water vehicles
. underwater vehicles
. . . **underwater research laboratories**
RT bathymeters
ocean data acquisitions systems
oceanography

underwater resources

DEF Earth resources (minerals, petroleum, etc.) within or under the oceans.

GS resources
. Earth resources
. . . **underwater resources**
RT crude oil
dredging
fossil fuels
geothermal resources
marine resources
mineral deposits
ocean bottom
oceanography
oil exploration
sea water

water resources

underwater sound

USE **underwater acoustics**

underwater structures

RT breakwaters
structural design
submerged bodies

underwater tests

GS environmental tests
. **underwater tests**
. . . neutral buoyancy simulation
RT corrosion tests
diving (underwater)
water immersion

underwater to surface missiles

GS missiles
. **underwater to surface missiles**
. . . Subroc missile
RT ∞ surfaces

underwater trajectories

GS trajectories
. **underwater trajectories**
RT antisubmarine warfare
hydroballistics
missile trajectories
Subroc missile
torpedoes

underwater vehicles

GS water vehicles
. **underwater vehicles**
. . . submarines
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
. . . underwater research laboratories
RT aeroquatic vehicles
boats
∞ military vehicles
research vehicles
ships
submerged bodies
surface vehicles
∞ vehicles

uniaxial strain

USE **axial strain**

unidentified flying objects

UF *UFO*
RT ∞ aircraft
extraterrestrial intelligence
∞ spacecraft
∞ vehicles

unified field theory

DEF Any theory which attempts to express gravitational theory and electromagnetic theory within a single unified framework; usually, an attempt to generalize Einstein's general theory of gravitation alone to a theory of gravitation and classical electromagnetism.

GS field theory (physics)
. gauge theory
. . . **unified field theory**
. . . electroweak model
. . . standard model (particle physics)
RT electromagnetic fields
electromagnetic interactions
electromagnetism
gravitation theory
gravitational fields
particle theory
plasma physics
relativity
string theory
supergravity
supersymmetry

theoretical physics

unified S band

RT Apollo spacecraft
carrier frequencies
circumlunar communication
communication equipment
differential pulse code modulation
manned space flight network
pulse code modulation
satellite communication
spacecraft communication
spacecraft tracking
superhigh frequencies
ultrahigh frequencies

uniform flow

GS fluid flow
. **uniform flow**
. . Blasius flow

RT aerodynamics
gas flow
heat transmission
laminar flow
liquid flow
mass flow
multiphase flow
nonuniform flow
pipe flow
pressure gradients
quasi-steady states
single-phase flow
solids flow
steady flow
steam flow
subcritical flow
turbulent flow
unsteady flow

unimolecular structures

RT molecular structure
∞ structures

unionization

RT federations
organizing
personnel
∞ unions

∞ unions

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)

RT Boolean algebra
unionization
unions (connectors)

unions (connectors)

GS connectors
. **unions (connectors)**

RT couplings
fasteners
fittings
joints (junctions)
linkages
∞ unions

uniphase flow

USE **single-phase flow**

unipolar transistors

USE **field effect transistors**

uniqueness

RT abnormalities
ill-conditioned problems
(mathematics)
ill-posed problems (mathematics)
singularity (mathematics)

uniqueness theorem

GS theorems
. **uniqueness theorem**

RT algebra
complex variables
geometry

number theory
probability theory
real variables

United Arab Emirates

GS nations
. **United Arab Emirates**

United Kingdom

UF *Great Britain*
GS nations
. **United Kingdom**
. . England
. . Gibraltar
. . Northern Ireland
. . Scotland
. . Wales

RT English Channel
Europe
UK space program

United Kingdom satellites

USE **UK satellites**

United Nations

RT communities
developing nations
federations
international cooperation
international law
nations
organizations
politics
sea law
World Meteorological Organization

United States

UF *USA (United States)*
GS nations
. **United States**
. . Alabama
. . Alaska
. . Arizona
. . Arkansas
. . California
. . Colorado
. . Connecticut
. . Delaware
. . District of Columbia
. . Florida
. . Georgia
. . Guam
. . Hawaii
. . Idaho
. . Illinois
. . Indiana
. . Iowa
. . Kansas
. . Kentucky
. . Louisiana
. . Maine
. . Maryland
. . Massachusetts
. . Michigan
. . Minnesota
. . Mississippi
. . Missouri
. . Montana
. . Nebraska
. . Nevada
. . New Hampshire
. . New Jersey
. . New Mexico
. . New York
. . North Carolina
. . North Dakota
. . Ohio
. . Oklahoma
. . Oregon
. . Pennsylvania
. . Puerto Rico
. . Rhode Island
. . South Carolina
. . South Dakota
. . Tennessee
. . Texas

. . Utah
. . Vermont
. . Virgin Islands
. . Virginia
. . Washington
. . West Virginia
. . Wisconsin
. . Wyoming

RT Aleutian Islands (US)
Cascade Range (CA-OR-WA)
Central Atlantic Region (US)
Great Lakes (North America)
Great Plains Corridor (North America)
International Field Year for Great
Lakes
International Hydrological Decade
Missouri River (US)
New England (US)
North America
Pacific Northwest (US)
Panama Canal Zone
Rocky Mountains (North America)
Southern California

units of measurement

DEF Precisely stated quantities in terms of
which the magnitudes of other quantities of the
same kind can be stated. f whichrms of which the
magnitude of other Precisely specified quanti-
ties in te

GS units of measurement

. International System of Units

RT conversion tables
dimensional analysis
dimensions

∞ measurement

metrication
metrology
month
parameterization
sidereal time
symbols
time

unity

RT homogeneity
stability

Unity connecting module

(added November 1998)

DEF Component of the International Space
Station providing six ports that serve as con-
necting points for other station modules and
framework elements.

GS modules

. space station modules

. . **Unity connecting module**

RT Integrated Truss Structure Z1
International Space Station
spacecraft docking

Univac 80 computer

GS data processing equipment
. computers
. . digital computers
. . . **Univac 80 computer**
. . . Univac computers
. . . **Univac 80 computer**

Univac 418 computer

GS data processing equipment
. computers
. . digital computers
. . . **Univac 418 computer**
. . . Univac computers
. . . **Univac 418 computer**

Univac 490 computer

GS data processing equipment
. computers
. . digital computers
. . . **Univac 490 computer**
. . . Univac computers

- ... Univac 490 computer
- Univac 494 computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **Univac 494 computer**
 - .. Univac computers
 - ... **Univac 494 computer**
- Univac 1100 series computers**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... **Univac 1100 series computers**
 - ... Univac 1105 computer
 - ... Univac 1106 computer
 - ... Univac 1107 computer
 - ... Univac 1108 computer
 - ... Univac 1110 computer
 - .. digital computers
 - ... **Univac 1100 series computers**
 - ... Univac 1105 computer
 - ... Univac 1106 computer
 - ... Univac 1107 computer
 - ... Univac 1108 computer
 - ... Univac 1110 computer
 - .. Univac computers
 - ... **Univac 1100 series computers**
 - ... Univac 1105 computer
 - ... Univac 1106 computer
 - ... Univac 1107 computer
 - ... Univac 1108 computer
 - ... Univac 1110 computer
- Univac 1105 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - ... **Univac 1105 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - ... **Univac 1105 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - ... **Univac 1105 computer**
- Univac 1106 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - ... **Univac 1106 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - ... **Univac 1106 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - ... **Univac 1106 computer**
- Univac 1107 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - ... **Univac 1107 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - ... **Univac 1107 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - ... **Univac 1107 computer**
- Univac 1108 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - ... **Univac 1108 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - ... **Univac 1108 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - ... **Univac 1108 computer**

- ... Univac 1108 computer
- Univac 1110 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - ... **Univac 1110 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - ... **Univac 1110 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - ... **Univac 1110 computer**
- Univac 1230 computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **Univac 1230 computer**
 - .. Univac computers
 - ... **Univac 1230 computer**
- Univac computers**
 - GS data processing equipment
 - . computers
 - .. **Univac computers**
 - ... Univac 1100 series computers
 - ... Univac 1105 computer
 - ... Univac 1106 computer
 - ... Univac 1107 computer
 - ... Univac 1108 computer
 - ... Univac 1110 computer
 - ... Univac 80 computer
 - ... Univac 418 computer
 - ... Univac 490 computer
 - ... Univac 494 computer
 - ... Univac 1230 computer
 - ... Univac Larc computer
- RT digital computers
- Univac Larc computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **Univac Larc computer**
 - .. Univac computers
 - ... **Univac Larc computer**
- universal time**
 - DEF Time defined by the rotational motion of the Earth and determined from the apparent diurnal motions which reflect this rotation; because of variations in the rate of rotation, universal time is not rigorously uniform. Also called Greenwich mean time.
 - GS time
 - .. **universal time**
 - RT ephemeris time
 - time synchronization
- universe**
 - UF *metagalaxy*
 - RT big bang cosmology
 - celestial bodies
 - cosmology
 - ∞ cosmos
 - dark matter
 - large-scale structure of the universe
 - relic radiation
- universities**
 - UF *colleges*
 - RT education
 - instructors
 - learning
 - schools
 - students
- university program**
 - GS programs
 - .. **university program**
 - RT bureaus (organizations)
 - investigation
 - NASA programs

- teams
- UNIX (operating system)**
 - (added October 1988)
 - GS computer programs
 - . computer systems programs
 - .. operating systems (computers)
 - ... **UNIX (operating system)**
 - RT computer programming
 - software engineering
 - workstations
- unloading**
 - RT ∞ discharge
 - disposal
 - dumping
 - ejection
 - emptying
 - evacuating (transportation)
 - expulsion
 - loading operations
 - materials handling
 - releasing
 - removal
 - spreading
- unloading waves**
 - GS elastic waves
 - . **unloading waves**
- unmanned aerial vehicles*
- USE **pilotless aircraft**
- unmanned ground vehicles**
 - (added July 2002)
 - DEF Ground vehicles using remote or autonomous control.
 - UF *UGV (vehicles)*
 - GS surface vehicles
 - . **unmanned ground vehicles**
 - RT autonomous navigation
 - remotely piloted vehicles
 - robot control
 - robotics
 - roving vehicles
 - surface navigation
- unmanned spacecraft**
 - GS **unmanned spacecraft**
 - . Echo 2 satellite
 - . HEAO 1
 - . HEAO 2
 - . HEAO 3
 - . HOTOL launch vehicle
 - . Pioneer Venus spacecraft
 - .. Pioneer Venus 1 spacecraft
 - .. Pioneer Venus 2 spacecraft
 - ... Pioneer Venus 2 entry probes
 - ... Pioneer Venus 2 night probe
 - ... Pioneer Venus 2 sounder probe
 - ... Pioneer Venus 2 transporter bus
 - . space probes
 - .. Explorer 18 satellite
 - .. Giotto mission
 - .. Jupiter probes
 - ... Galileo probe
 - ... Galileo spacecraft
 - .. lunar probes
 - ... Lunik lunar probes
 - ... Lunik 2 lunar probe
 - ... Lunik 3 lunar probe
 - ... Lunik 9 lunar probe
 - ... Lunik 10 lunar probe
 - ... Lunik 11 lunar probe
 - ... Lunik 12 lunar probe
 - ... Lunik 13 lunar probe
 - ... Lunik 14 lunar probe
 - ... Lunik 16 lunar probe
 - ... Lunik 17 lunar probe
 - ... Lunik 19 lunar probe
 - ... Lunik 20 lunar probe
 - ... Lunik 22 lunar probe
 - .. Ranger lunar probes
 - ... Ranger 1 lunar probe
 - ... Ranger 2 lunar probe
 - ... Ranger 3 lunar probe

- ... Ranger 4 lunar probe
- ... Ranger 5 lunar probe
- ... Ranger 6 lunar probe
- ... Ranger 7 lunar probe
- ... Ranger 8 lunar probe
- ... Ranger 9 lunar probe
- ... Ranger lunar landing vehicles
- ... Surveyor lunar probes
- ... Surveyor 1 lunar probe
- ... Surveyor 2 lunar probe
- ... Surveyor 3 lunar probe
- ... Surveyor 4 lunar probe
- ... Surveyor 5 lunar probe
- ... Surveyor 6 lunar probe
- ... Surveyor 7 lunar probe
- .. Mariner space probes
- ... Mariner 1 space probe
- ... Mariner 2 space probe
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 5 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mariner 10 space probe
- ... Mariner 11 space probe
- ... Mariner R 2 space probe
- .. Mariner spacecraft
- .. Mariner C spacecraft
- .. Mariner Venus 67 spacecraft
- .. Mars probes
- ... Advanced Recon Electric Spacecraft
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mars 1 spacecraft
- ... Mars 2 spacecraft
- ... Mars 3 spacecraft
- ... Mars 4 Spacecraft
- ... Mars 5 spacecraft
- ... Mars 6 spacecraft
- ... Mars 7 spacecraft
- ... Mars Observer
- ... Mars Pathfinder
- ... Viking 1975 entry vehicle
- ... Viking spacecraft
- ... Viking 1 spacecraft
- Viking lander 1
- Viking orbiter 1
- ... Viking 2 spacecraft
- Viking lander 2
- Viking orbiter 2
- ... Viking lander spacecraft
- Viking lander 1
- Viking lander 2
- ... Viking orbiter spacecraft
- Viking orbiter 1
- Viking orbiter 2
- Viking orbiter 1975
- ... Mars Climate Orbiter
- ... Mars Express
- ... Mars Global Surveyor
- ... Mars Polar Lander
- ... Nozomi Mars Orbiter
- ... Phobos spacecraft
- ... Zond 2 space probe
- .. Pioneer space probes
- ... Pioneer 1 space probe
- ... Pioneer 2 space probe
- ... Pioneer 3 space probe
- ... Pioneer 4 space probe
- ... Pioneer 5 space probe
- ... Pioneer 6 space probe
- ... Pioneer 7 space probe
- ... Pioneer 8 space probe
- ... Pioneer 9 space probe
- ... Pioneer 10 space probe
- ... Pioneer 11 space probe
- ... Pioneer Venus 2 entry probes
- ... Pioneer Venus 2 night probe
- ... Pioneer Venus 2 sounder probe
- .. solar probes

- ... Helios 1
- ... Helios 2
- ... Helios A
- ... Helios B
- ... Starprobe spacecraft
- ... Sunblazer space probe
- .. Venus probes
- ... Magellan spacecraft (NASA)
- ... Mariner 1 space probe
- ... Mariner 2 space probe
- ... Mariner 5 space probe
- ... Mariner 10 space probe
- ... Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe
- Pioneer Venus 2 transporter bus
- ... Venera satellites
- ... Venera 2 satellite
- ... Venera 3 satellite
- ... Venera 4 satellite
- ... Venera 5 satellite
- ... Venera 6 satellite
- ... Venera 7 satellite
- ... Venera 8 satellite
- ... Venera 9 satellite
- ... Venera 10 satellite
- ... Venera 11 satellite
- ... Venera 12 satellite
- ... Zond 1 space probe
- ... Zond 3 space probe
- ... Zond 4 space probe
- ... Zond 5 space probe
- ... Zond 6 space probe
- ... Zond 7 space probe
- ... Zond 8 space probe
- .. Huygens probe
- .. Microwave Anisotropy Probe
- .. Voyager 1 spacecraft
- .. Voyager 2 spacecraft
- .. technology feasibility spacecraft
- .. Zond space probes
- .. Zond 1 space probe
- .. Zond 2 space probe
- .. Zond 3 space probe
- .. Zond 4 space probe
- .. Zond 5 space probe
- .. Zond 6 space probe
- .. Zond 7 space probe
- .. Zond 8 space probe
- RT artificial satellites
- communication satellites
- geophysical satellites
- gravity gradient satellites
- inflatable spacecraft
- interplanetary spacecraft
- lunar landing modules
- lunar satellites
- lunar spacecraft
- manned spacecraft
- Mariner program
- meteorological satellites
- military spacecraft
- reconnaissance spacecraft
- recoverable spacecraft
- rendezvous spacecraft
- reusable spacecraft
- SIRS B satellite
- space capsules
- ∞ spacecraft
- Voyager project

unsaturation (chemistry)

DEF A state in which the atomic bonds of an organic compound's chain or ring are not completely satisfied (not saturated); unsaturation usually results in a double bond (as for olefins) or a triple bond (as for the acetylenes).

RT chemical bonds

- ∞ chemistry
- precipitation (chemistry)
- ∞ saturation
- saturation (chemistry)

unsteady aerodynamics

GS fluid mechanics

- . fluid dynamics
- .. gas dynamics
- ... aerodynamics
- ... **unsteady aerodynamics**
- RT aerodynamic characteristics
- aerodynamic forces
- aerodynamic stability
- aeroelasticity
- aeroservoelasticity
- flutter
- flutter analysis
- unsteady flow
- wing oscillations

unsteady flow

- UF *pulsating flow*
- GS fluid flow
- . **unsteady flow**
- .. oscillating flow
- RT aerodynamics
- critical flow
- ∞ flow
- flow stability
- flow velocity
- gas flow
- heat transmission
- hydrodynamic coefficients
- laminar flow
- liquid flow
- mass flow
- method of characteristics
- multiphase flow
- nonequilibrium flow
- nonNewtonian flow
- nonuniform flow
- orifice flow
- pipe flow
- pressure gradients
- single-phase flow
- solids flow
- steady flow
- steady state
- steam flow
- Strouhal number
- subcritical flow
- supercritical flow
- turbulence
- uniform flow
- unsteady aerodynamics

unsteady state

RT ∞ equilibrium

- fluid dynamics
- metastable state
- nonequilibrium conditions
- stability
- steady state
- systems stability
- thermodynamics

unstructured grids (mathematics)

(added May 1995)

DEF In computational fluid dynamics, grid systems where the flowfield is discretized into triangular-shaped elements for two-dimensional fields, and tetrahedral elements for three-dimensional fields. In this type of grid system the grid points cannot be associated with grid lines.

GS coordinates

- . computational grids
- .. **unstructured grids (mathematics)**

RT computational fluid dynamics

- finite element method
- finite volume method
- grid generation (mathematics)
- multigrid methods
- structured grids (mathematics)

unswept wings

GS airfoils

- . wings
- .. **unswept wings**
- ... infinite span wings
- ... rectangular wings
- ... ring wings

up-converters

RT fixed wings
swept wings
wing planforms

up-converters

DEF Parametric amplifiers characterized by the output signal frequencies being greater than the frequencies of the input signals.

GS frequency converters
. **up-converters**

RT ∞ converters
parametric frequency converters
transformers

updrafts

USE **vertical air currents**

upgrading

RT beneficitation
concentrating
enrichment
experience
improvement
promotion
public relations
purification
quality
refining

uplinking

DEF The transmission of signals from ground terminals to satellites in telecommunication systems.

RT carrier to noise ratios
communication satellites
downlinking
frequency reuse
microwave transmission
satellite transmission
transmission efficiency

upper air

USE **upper atmosphere**

upper atmosphere

DEF The general term applied to the atmosphere above the troposphere. Used for upper air.

UF *upper air*
GS Earth atmosphere
. **upper atmosphere**
.. Earth ionosphere
... E region
.... E-1 layer
.... E-2 layer
.... sporadic E layer
... lower ionosphere
.... D region
... upper ionosphere
... F region
.... F 1 region
.... F 2 region
.. exosphere
.. thermosphere
... turbopause

RT acoustic sounding
aeronomy
chemosphere
field aligned currents
heterosphere
high altitude
homosphere
meteor trails
meteorological balloons
middle atmosphere
ozonosphere
plasmasphere
proton precipitation
radiation belts
satellite atmospheres
Upper Atmosphere Research Satellite (UARS)

Upper Atmosphere Research Satellite (UARS)

(added August 1989)

UF *UARS (satellite)*
GS artificial satellites
. scientific satellites
.. **Upper Atmosphere Research Satellite (UARS)**
RT upper atmosphere

upper ionosphere

GS Earth atmosphere
. upper atmosphere
.. Earth ionosphere
... **upper ionosphere**
.... F region
.... F 1 region
.... F 2 region
RT E region

upper stage rocket engines

GS engines
. rocket engines
.. **upper stage rocket engines**
RT Inertial Upper Stage
multistage rocket vehicles
spacecraft configurations
spinning solid upper stage
stage separation

upper surface blowing

DEF Use of jet blowing on the upper surface of airfoils to create variations in pressure distribution.

GS blowing
. **upper surface blowing**
RT aerodynamic characteristics
aircraft configurations
circulation control airfoils
lift
 ∞ surfaces
under surface blowing

upper surface blown flaps

GS airfoils
. flaps (control surfaces)
.. externally blown flaps
... **upper surface blown flaps**
control surfaces
. flaps (control surfaces)
.. externally blown flaps
... **upper surface blown flaps**
RT aircraft stability
blowing
boundary layer control
lift augmentation
lift devices
 ∞ surfaces

Upper Volta

USE **Burkina**

upsetting

RT cold pressing
cold working
forming techniques
hot isostatic pressing
hot pressing
hot working
pressing (forming)
stamping

upstream

RT air currents
water currents
wind direction

upwash

RT downwash
 ∞ draft
interference drag
interference lift

upwelling

USE **upwelling water**

upwelling water

DEF The process by which water rises from

a deeper to a shallower depth. Used for upwelling.

UF *upwelling*
RT atmospheric circulation
coasts
ocean currents
thermohaline circulation
wind (meteorology)
wind direction

upwind schemes (mathematics)

(added July 1992)

GS analysis (mathematics)
. numerical analysis
.. approximation
... **upwind schemes (mathematics)**
RT computational fluid dynamics
Euler equations of motion
finite difference theory

uracil

GS bases (chemical)
. **uracil**
nitrogen compounds
. **uracil**
organic compounds
. cyclic compounds
.. heterocyclic compounds
... pyrimidines
.... **uracil**
RT alloxan
uridylic acid

uranium

GS chemical elements
. actinide series
.. **uranium**
... uranium isotopes
.... uranium 232
.... uranium 233
.... uranium 234
.... uranium 235
.... uranium 238
metals
. actinide series
.. **uranium**
... uranium isotopes
.... uranium 232
.... uranium 233
.... uranium 234
.... uranium 235
.... uranium 238
RT fissionable materials
jet membrane process
nuclear fuels
uranium plasmas

uranium 232

GS chemical elements
. actinide series
.. uranium
... uranium isotopes
.... **uranium 232**
. nuclides
.. isotopes
... radioactive isotopes
.... **uranium 232**
... uranium isotopes
.... **uranium 232**
metals
. actinide series
.. uranium
... uranium isotopes
.... **uranium 232**

uranium 233

GS chemical elements
. actinide series
.. uranium
... uranium isotopes
.... **uranium 233**
. nuclides
.. isotopes
... radioactive isotopes
.... **uranium 233**
... uranium isotopes

urban research

sociology
Starsite program
streets

urban research

RT cities
communities
land use
recreation
social factors
streets

urban transportation

GS transportation
. **urban transportation**
RT automated guideway transit vehicles
automated mixed traffic vehicles
automated transit vehicles
industrial areas
megalopolises
rail transportation
rapid transit systems
regional planning
surface vehicles

ureas

GS nitrogen compounds
. amides
. . . **ureas**
. . . . difluorourea
. . . . thioureas
. . . . thiuronium
RT diuretics
fertilizers
urine

ureilites

(added December 1988)
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . achondrites
. . . . **ureilites**
. . . . carbonaceous meteorites
. . . . **ureilites**
RT meteoritic diamonds

urethanes

GS esters
. Carbamates (tradenname)
. . . **urethanes**
poisons
. pesticides
. . . insecticides
. . . . Carbamates (tradenname)
. . . . **urethanes**
RT cyanates

uric acid

GS acids
. **uric acid**
fungicides
. xanthines
. . . **uric acid**
nitrogen compounds
. xanthines
. . . **uric acid**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . purines
. . . . xanthines
. **uric acid**
RT alloxan

uridylic acid

GS acids
. **uridylic acid**
organic compounds
. nucleotides
. . . **uridylic acid**
. . . organic phosphorus compounds
. . . **uridylic acid**
phosphorus compounds
. organic phosphorus compounds
. . . **uridylic acid**

. phosphates
. . . **uridylic acid**
RT amino acids
nucleic acids
uracil

urinalysis

GS chemical tests
. chemical analysis
. . . **urinalysis**
RT diabetes mellitus
physiological tests
urine

urination

UF *micturition*
RT diuresis
urine
water balance

urine

GS body fluids
. **urine**
wastes
. liquid wastes
. . . **urine**
. . . metabolic wastes
. . . human wastes
. . . . **urine**
RT antidiuretics
creatinine
excretion
feces
hematuria
kidneys
ureas
urinalysis
urination

urography

GS imagery
. photography
. . . **urography**
. radiography
. . . **urography**
RT black and white photography

urolithiasis

GS diseases
. **urolithiasis**
RT calculi
kidneys
urology

urology

GS medical science
. **urology**
RT bladder
genitourinary system
kidneys
urolithiasis

Uruguay

GS nations
. **Uruguay**
RT South America

US Laboratory Module (ISS)
(added February 2001)

USE **Destiny Laboratory Module**

US-2A aircraft

USE **S-2 aircraft**

USA (United States)

USE **United States**

user manuals (computer programs)

GS documents
. handbooks
. . . **user manuals (computer programs)**
. manuals
. . . **user manuals (computer programs)**
RT computer programs

programs
report generators
∞ routines
subroutines

user requirements

GS requirements
. **user requirements**
RT commerce lab
human-computer interface
international cooperation
specifications

user-computer interface

USE **human-computer interface**

USNS Kingsport

USE **satellite communications ships**

Utah

GS nations
. United States
. . . **Utah**
RT Colorado Plateau (US)
Colorado River (North America)
Great Basin (US)
Great Salt Lake (UT)

uterus

GS anatomy
. genitourinary system
. . . reproductive systems
. . . . **uterus**

utilities

RT ∞ electric equipment
∞ electric power
garbage
industries
integrated energy systems
logistics
Modular Integrated Utility System
services
site selection
telephones
waste disposal
water

utility aircraft

GS **utility aircraft**
. BO-105 helicopter
. DHC 4 aircraft
. DHC 5 aircraft
. HH-43 helicopter
. S-2 aircraft
. Saab 105 aircraft
. T-39 aircraft
. U-2 aircraft
. U-10 aircraft
. UH-1 helicopter
. UH-2 helicopter
. UH-60A helicopter
. UH-61A helicopter
. XV-8A aircraft
. Z-37 aircraft
RT ∞ aircraft
biplanes
cargo aircraft
commercial aircraft
general aviation aircraft
helicopters
light aircraft
∞ military aircraft
observation aircraft
reconnaissance aircraft
∞ subsonic aircraft
transport aircraft
V/STOL aircraft
water takeoff and landing aircraft

utilization

UF *application*
GS **utilization**
. coal utilization
. geothermal energy utilization
. laser applications

- .. laser ablation
- .. laser annealing
- .. laser cooling
- .. laser cutting
- .. laser deposition
- ... pulsed laser deposition
- .. laser drilling
- .. laser fusion
- .. laser guidance
- .. laser guide stars
- .. laser heating
- .. laser induced fluorescence
- .. laser interferometry
- .. laser machining
- .. laser microscopy
- .. laser power beaming
- .. laser propulsion
- .. laser spectroscopy

- ... optogalvanic spectroscopy
- .. laser ranging
- .. laser weapons
- .. laser welding
- ... satellite laser ranging
- . reuse
- .. software reuse
- . in situ resource utilization
- . technology utilization
- . waste energy utilization
- . waste utilization
- . windpower utilization
- RT consumption
- depletion
- efficiency

utricle
RT plants (botany)

seeds

UV Ceti stars
USE **flare stars**

UV lasers
USE **ultraviolet lasers**

Uzbekistan
(*added August 1993*)
GS nations
. **Uzbekistan**
RT Asia

V

V band

USE **extremely high frequencies**

V grooves

GS grooves
 . **V grooves**
 . . riblets
 RT machining
 micromachining
 notches

V-1 missile

GS missiles
 . surface to surface missiles
 . . **V-1 missile**
 RT liquid propellant rocket engines
 pulsejet engines

V-2 missile

GS missiles
 . ballistic missiles
 . . **V-2 missile**
 RT liquid propellant rocket engines

V-3 aircraft

USE **XV-3 aircraft**

V-4 aircraft

USE **XV-4 aircraft**

V-5 aircraft

USE **XV-5 aircraft**

V-9 aircraft

USE **XV-9A aircraft**

V-22 aircraft

(added September 1990)

DEF A Bell/Boeing developed tilt rotor aircraft, nicknamed "Osprey", and designed for light multiservice use. Used for Osprey aircraft.

UF *Osprey aircraft*

GS Bell aircraft
 . **V-22 aircraft**
 Boeing aircraft
 . **V-22 aircraft**
 V/STOL aircraft
 . rotary wing aircraft
 . . tilt rotor aircraft
 . . . **V-22 aircraft**

RT ∞ aircraft
 helicopters
 ∞ military aircraft
 rotary wings
 Tilt Rotor Research Aircraft Program
 tilt wing aircraft
 tilting rotors

V/STOL aircraft

DEF A hybrid form of heavier-than-air aircraft that is capable, by virtue of one or more horizontal rotors or units acting as rotors, of taking off, hovering, and landing as, or in a fashion similar to, a helicopter, and once aloft, and moving forward, capable, by means of a mechanical conversion of one sort or another, of flying as a fixed-wing aircraft, especially in its higher speed ranges. Used for convertiplanes and steep gradient aircraft.

UF *convertiplanes*
steep gradient aircraft

GS **V/STOL aircraft**
 . CL-84 aircraft
 . DO-31 aircraft
 . FV-12A aircraft
 . G-95/4 aircraft
 . G-222 aircraft
 . L-29 jet trainer
 . P-1127 aircraft
 . P-1154 aircraft

. rotary wing aircraft
 . . autogyros
 . . . Avian 2/180 autogiro
 . . helicopters
 . . . Alouette helicopters
 SA-330 helicopter
 SE-3160 helicopter
 . . . Bell 214A helicopter
 . . . compound helicopters
 S-67 helicopter
 . . . H-17 helicopter
 . . . heavy lift helicopters
 CH-62 helicopter
 . . . light helicopters
 OH-4 helicopter
 OH-5 helicopter
 OH-6 helicopter
 OH-58 helicopter
 . . . military helicopters
 AH-1G helicopter
 AH-1S helicopter
 AH-1W helicopter
 AH-63 helicopter
 AH-64 helicopter
 BO-105 helicopter
 CH-3 helicopter
 CH-21 helicopter
 CH-34 helicopter
 CH-46 helicopter
 CH-47 helicopter
 CH-54 helicopter
 CH-62 helicopter
 H-19 helicopter
 H-43 helicopter
 H-53 helicopter
 H-54 helicopter
 H-56 helicopter
 H-60 Helicopter
 HC-3 helicopter
 HH-43 helicopter
 HH-65 helicopter
 OH-4 helicopter
 OH-5 helicopter
 OH-6 helicopter
 OH-13 helicopter
 OH-23 helicopter
 OH-58 helicopter
 P-531 helicopter
 QH-50 helicopter
 S-67 helicopter
 SA-321 helicopter
 SA-330 helicopter
 SH-3 helicopter
 SH-4 helicopter
 . . . Sikorsky Whirlwind helicopter
 UH-1 helicopter
 UH-2 helicopter
 UH-34 helicopter
 UH-60A helicopter
 UH-61A helicopter
 Westland Whirlwind helicopter
 XV-9A aircraft
 . . . rigid rotor helicopters
 CH-3 helicopter
 F-28 helicopter
 XH-51 helicopter
 . . . S-58 helicopter
 . . . S-61 helicopter
 . . . tandem rotor helicopters
 CH-46 helicopter
 CH-47 helicopter
 H-25 helicopter
 . . . EH-101 helicopter
 . . . TH-55 helicopter
 . . rotor systems research aircraft
 . . tilt rotor aircraft
 . . . V-22 aircraft
 . . . XV-15 aircraft
 . . short takeoff aircraft
 . . . Aladin 2 aircraft
 . . Breguet 940 aircraft

. . Breguet 941 aircraft
 . . C-8A augmentor wing aircraft
 . . C-15 aircraft
 . . C-123 aircraft
 . . DHC 4 aircraft
 . . DHC 5 aircraft
 . . Questol aircraft
 . . U-10 aircraft
 . vertical takeoff aircraft
 . . flying platforms
 . . SC-1 aircraft
 . . VJ-101 aircraft
 . . VZ-8 aircraft
 . . X-13 aircraft
 . . X-14 aircraft
 . . X-19 aircraft
 . . X-22 aircraft
 . . X-22A aircraft
 . . XC-142 aircraft
 . . XV-4 aircraft
 . . XV-11A aircraft
 . VZ-2 aircraft
 . X-32 aircraft
 . X-35 aircraft
 . XV-3 aircraft
 . XV-5 aircraft
 . XV-8A aircraft

RT ∞ aircraft
 antisubmarine warfare aircraft
 attack aircraft
 commercial aircraft
 convertible fan-shaft engines
 drone aircraft
 fan in wing aircraft
 fighter aircraft
 ground effect machines
 heliports
 hovering
 jet aircraft
 ∞ military aircraft
 passenger aircraft
 reconnaissance aircraft
 research aircraft
 short haul aircraft
 STOVL aircraft
 tilt wing aircraft
 transition flight
 transport aircraft
 utility aircraft
 vertical flight
 Weser aircraft
 Westland aircraft

vacancies (crystal defects)

DEF Vacant sites in a crystal structure due to the absence of an atom or ion from its normal structural position.

GS defects
 . crystal defects
 . . point defects
 . . . **vacancies (crystal defects)**
 Frenkel defects
 RT antisite defects
 binding energy
 holes (electron deficiencies)
 square wells

vaccines

GS **vaccines**
 . inoculum
 RT acquired immunodeficiency syndrome
 antibodies
 antigens
 antiserums
 bacteriology
 biocompatibility
 diseases
 drugs
 epidemiology
 human immunodeficiency virus
 inoculation

- toxicology
toxins and antitoxins
- vacillation**
RT dithers
human reactions
- vacuum**
DEF A given space filled with gas at pressures below atmospheric pressure. Used for aspiration.
UF *aspiration*
GS pressure
. **vacuum**
. . high vacuum
. . low vacuum
. . ultrahigh vacuum
RT aerospace environments
boundary layer control
evacuating (vacuum)
getters
high pressure
Knudsen flow
low pressure
mean free path
offgassing
outgassing
pressure measurement
rarefaction
suction
- vacuum apparatus**
GS **vacuum apparatus**
. vacuum chambers
. vacuum furnaces
. vacuum gages
. . ionization gages
. . . alphasatrons
. . . Bayard-Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
. . Knudsen gages
. . Mcleod gages
. . Pirani gages
. vacuum pumps
. . condensation pumps
. . ion pumps
. . molecular pumps
RT cold traps
diffusion pumps
high vacuum
low density research
residual gas
suction
ultrahigh vacuum
vacuum arc switches
- vacuum arc switches**
GS switches
. electric switches
. . **vacuum arc switches**
RT airborne equipment
switching circuits
vacuum apparatus
vacuum effects
- vacuum chambers**
UF *low pressure chambers*
GS compartments
. test chambers
. . pressure chambers
. . . **vacuum chambers**
vacuum apparatus
. **vacuum chambers**
RT altitude simulation
∞ chambers
high altitude environments
high altitude pressure
hyperbaric chambers
pressure
space environment simulation
space simulators
thermal vacuum tests
- wind tunnel drives
- vacuum deposition**
GS deposition
. vapor deposition
. . **vacuum deposition**
RT ceramic coatings
diamond films
electroless deposition
ion plating
- vacuum effects**
RT cold welding
∞ effects
environments
offgassing
pressure effects
space manufacturing
vacuum arc switches
- vacuum furnaces**
GS heating equipment
. furnaces
. . **vacuum furnaces**
vacuum apparatus
. **vacuum furnaces**
RT solar furnaces
- vacuum gages**
GS measuring instruments
. pressure gages
. . **vacuum gages**
. . . ionization gages
. . . . alphasatrons
. . . . Bayard-Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
. . . Knudsen gages
. . . Mcleod gages
. . . Pirani gages
vacuum apparatus
. **vacuum gages**
. . ionization gages
. . . alphasatrons
. . . Bayard-Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
. . Knudsen gages
. . Mcleod gages
. . Pirani gages
RT barometers
manometers
orbitrons
pressure measurement
- vacuum melting**
GS phase transformations
. melting
. . **vacuum melting**
RT arc melting
induction heating
levitation
powder metallurgy
zone melting
- vacuum pumps**
GS pumps
. **vacuum pumps**
. . condensation pumps
. . ion pumps
. . molecular pumps
vacuum apparatus
. **vacuum pumps**
. . condensation pumps
. . ion pumps
. . molecular pumps
RT compressors
cryopumping
diffusion pumps
ejectors
evacuating (vacuum)
jet pumps
materials handling
outgassing
- suction
- vacuum spectroscopy**
GS spectroscopy
. **vacuum spectroscopy**
RT gas spectroscopy
inductively coupled plasma mass spectrometry
infrared spectroscopy
magnetic spectroscopy
mass spectroscopy
molecular spectroscopy
nuclear radiation spectroscopy
spectroscopic analysis
ultraviolet spectroscopy
x ray spectroscopy
- vacuum systems**
DEF Chambers having walls capable of withstanding atmospheric pressure and having an opening through which the gas can be removed through a pipe or manifold to a pumping system. The pumping system may or may not be considered as part of the vacuum system.
RT ampoules
∞ systems
- vacuum tests**
GS **vacuum tests**
. thermal vacuum tests
RT high vacuum
hypobaric atmospheres
test chambers
∞ tests
ultrahigh vacuum
- vacuum tube oscillators**
GS electron tubes
. vacuum tubes
. . **vacuum tube oscillators**
oscillators
. **vacuum tube oscillators**
RT autodynes
frequency modulation photomultipliers
microwave oscillators
- vacuum tubes**
DEF Electron tubes evacuated to such a degree that their electrical characteristics are essentially unaffected by the presence of residual gas or vapor.
GS electron tubes
. **vacuum tubes**
. . cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . celescopes
. . cyclotron resonance devices
. . klystrons
. . magnetrons
. . . nigotrons
. . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. helitrons
. . . . carcinotrons
. . vacuum tube oscillators
RT pentodes
perveance
residual gas
- vacuum ultraviolet radiation*
USE **far ultraviolet radiation**
- vadose water**
GS water
. **vadose water**
RT coastal water
evapotranspiration
Lake Texoma (OK-TX)
nearshore water
river basins
soils

valence

water tables

valence

DEF numbers representing the combining or displacing power of an atom, number of electrons lost, gained or shared by an atom in a compound, number of hydrogen atoms with which an atom will combine, or which it will displace. The valence of an element is the ratio of the atomic weight to the equivalent weight.

GS **valence**

. octets
RT chemical bonds
conduction electrons
ion charge
ions
positive ions
quantum wells
trivalent ions

valeric acid

GS acids
. carboxylic acids
. . fatty acids
. . . **valeric acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **valeric acid**

Valiant aircraft

UF *Vickers Valiant aircraft*
GS attack aircraft
. bomber aircraft
. . **Valiant aircraft**
BAC aircraft
. **Valiant aircraft**
jet aircraft
. **Valiant aircraft**
monoplanes
. **Valiant aircraft**
RT ∞ aircraft
reconnaissance aircraft
tanker aircraft

validation

USE **proving**

validity

RT acceptability
accuracy
adequacy
consistency
correlation
existence
mathematical models
precision
quality
reliability
simulation
standards
statistical tests
variability

Valkyrie aircraft

USE **B-70 aircraft**

valleys

UF *intermontane floors*
rift valleys
rills
GS **valleys**
. Coachella Valley (CA)
. Death Valley (CA)
. Imperial Valley (CA)
. Magdalena-Cauca Valley (Colombia)
. Palo Verde Valley (CA)
. Potomac River Valley (MD-VA-WV)
. Sacramento Valley (CA)
. San Joaquin Valley (CA)
. Shenandoah Valley (VA)
. St Lawrence Valley (North America)
. Tennessee Valley (AL-KY-TN)
RT canyons
Delaware River Basin (US)
erosion

meanders
Missouri River (US)
ravines
rivers
structural basins
Susquehanna River Basin
(MD-NY-PA)
topography
wadis
watersheds

Valsalva exercise

DEF The procedure of raising the pressure in the nasopharynx by forcible expiration with the mouth closed and nostrils pinched, in order to clear the eustachian tubes. Used for valsalva maneuver.

UF *Valsalva maneuver*
RT respiration

Valsalva maneuver

USE **Valsalva exercise**

value

GS **value**
. Q values (nuclear physics)
RT amount
assessments
costs
damage assessment
estimates
estimating
evaluation
figure of merit
level (quantity)
norms
ranking
technology assessment

value engineering

RT concurrent engineering
cost analysis
cost estimates
cost incentives
cost reduction
design analysis
economic analysis
∞ engineering
incentive techniques
life cycle costs
management planning
quality control
reliability engineering
standards
total quality management

valves

UF *hydraulic valves*
GS **valves**
. automatic control valves
. . pressure regulators
. . relief valves
. butterfly valves
. dampers (valves)
. cocks
. control valves
. fuel valves
. gas valves
. heart valves
. . artificial heart valves
. solenoid valves
RT balls
chokes (restrictions)
closures
diverters
engine parts
hydraulic equipment
packings (seals)
pneumatic circuits
pneumatic equipment
seals (stoppers)
traps

water hammer

Vampire aircraft

USE **DH 115 aircraft**

Vampire MK 35 aircraft

GS attack aircraft
. fighter aircraft
. . **Vampire MK 35 aircraft**
Hawker Siddeley aircraft
. **Vampire MK 35 aircraft**
jet aircraft
. **Vampire MK 35 aircraft**
single engine aircraft
. **Vampire MK 35 aircraft**
RT ∞ aircraft
bomber aircraft
Harrier aircraft

Van Allen radiation belts

USE **radiation belts**

Van Biesbroeck star

GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . M stars
. . . . **Van Biesbroeck star**

Van de Graaff accelerators

DEF Electrostatic machines in which an electrical charge is carried into the high voltage terminal by a belt made of insulating materials moving at high speed. The particles are then accelerated along a discharge path through a vacuum tube by the potential difference between the insulated terminal and the grounded end of the accelerator.

GS particle accelerators
. **Van de Graaff accelerators**
RT ∞ accelerators
electron accelerators

Van der Waals forces

RT dipole moments
∞ force
interatomic forces
intermolecular forces

Van Slyke method

GS chemical tests
. chemical analysis
. . gas analysis
. . . **Van Slyke method**
. . quantitative analysis
. . . **Van Slyke method**
RT ∞ methodology

vanadates

GS vanadium compounds
. **vanadates**
. . calcium vanadates
RT metal oxides
vanadium oxides

vanadium

GS chemical elements
. **vanadium**
. . vanadium isotopes
metals
. transition metals
. . **vanadium**
. . . vanadium isotopes
RT vanadium alloys

vanadium alloys

GS alloys
. **vanadium alloys**
RT aluminum alloys
microstructure
titanium alloys
vanadium

vanadium carbides

GS carbon compounds

- . carbides
- . . **vanadium carbides**
- vanadium compounds
- . **vanadium carbides**
- vanadium compounds**
- GS **vanadium compounds**
 - . vanadates
 - . . calcium vanadates
 - . vanadium carbides
 - . vanadium oxides
 - . vanadyl compounds
- RT ∞ chemical compounds
- ∞ Group 5B compounds
- ∞ metal compounds
- vanadium isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **vanadium isotopes**
 - . vanadium
 - . . **vanadium isotopes**
 - metals
 - . transition metals
 - . . vanadium
 - . . . **vanadium isotopes**
- vanadium oxides**
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **vanadium oxides**
 - vanadium compounds
 - . **vanadium oxides**
- RT vanadates
- vanadyl compounds**
- GS vanadium compounds
 - . **vanadyl compounds**
- RT ∞ chemical compounds
- ∞ metal compounds
- vanadyl radical**
- GS ions
 - . molecular ions
 - . . **vanadyl radical**
 - . positive ions
 - . . cations
 - . . . **vanadyl radical**
 - radicals
 - . **vanadyl radical**
- vaneless diffusers**
- RT compressors
- ∞ diffusers
- exhaust diffusers
- pumps
- supersonic diffusers
- vanes**
- GS **vanes**
 - . guide vanes
 - . . jet vanes
 - . wind vanes
- RT airfoils
- ∞ blades
- compressor blades
- control surfaces
- fins
- impellers
- nose fins
- stator blades
- tail assemblies
- turbomachine blades
- windpower utilization
- windpowered generators
- windpowered pumps
- Vanguard 1 satellite**
- GS artificial satellites
 - . geodetic satellites
 - . . **Vanguard 1 satellite**
 - . Vanguard satellites
- . . **Vanguard 1 satellite**
- vanguard 2 launch vehicle**
- GS launch vehicles
 - . **vanguard 2 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **vanguard 2 launch vehicle**
- RT liquid propellant rocket engines
- solid propellant rocket engines
- Viking rocket vehicle
- X-248 engine
- Vanguard 2 satellite**
- GS artificial satellites
 - . meteorological satellites
 - . . **Vanguard 2 satellite**
 - . Vanguard satellites
 - . . **Vanguard 2 satellite**
- Vanguard 3 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . **Vanguard 3 satellite**
 - . Vanguard satellites
 - . . **Vanguard 3 satellite**
- Vanguard project**
- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Vanguard project**
 - . projects
 - . . **Vanguard project**
 - . space programs
 - . . NASA space programs
 - . . . **Vanguard project**
- RT X-405 engine
- Vanguard satellites**
- GS artificial satellites
 - . **Vanguard satellites**
 - . . Vanguard 1 satellite
 - . . Vanguard 2 satellite
 - . . Vanguard 3 satellite
- RT geodetic satellites
- geophysical satellites
- International Geophysical Year
- meteorological satellites
- vans*
- USE **trucks**
- vapor barrier clothing**
- DEF Impermeable garments used with respirators as life support systems in toxic environments (caustic chemicals, etc.).
- GS clothing
 - . protective clothing
 - . . **vapor barrier clothing**
- RT ∞ barriers
- life support systems
- textiles
- vapor deposition**
- UF *chemical vapor deposition*
- CVD (deposition)*
- GS deposition
 - . **vapor deposition**
 - . . metalorganic chemical vapor deposition
 - . . vacuum deposition
- RT atomic layer epitaxy
- coating
- coatings
- crystal growth
- diamond films
- electroless deposition
- laser deposition
- metal vapors
- metallizing
- nanostructure growth
- pulsed laser deposition
- ultrapure metals
- vaporizers
- vaporizing
- vapor generators*
- USE **vaporizers**
- vapor jets**
- GS fluid jets
 - . **vapor jets**
- RT air jets
- gas flow
- jet flow
- plasma jets
- vapor liquid equilibrium*
- USE **liquid-vapor equilibrium**
- vapor phase epitaxy**
- DEF A crystal growth process whereby an element or a compound is deposited as a thin layer on a slice of substrate single crystal material by the vapor phase technique.
- GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **vapor phase epitaxy**
- RT atomic layer epitaxy
- crystal structure
- liquid phase epitaxy
- liquid phases
- vapor phase lubrication**
- (added August 1996)
- DEF The use of an organic liquid that is vaporized into a flowing air stream directed to sliding surfaces where lubrication is needed. The organic vapor reacts at the concentrated contact sliding area generating a lubricous deposit. This deposit has been characterized as a thin polymeric film that can provide effective lubrication temperatures greater than 400 degrees Celsius.
- GS lubrication
 - . **vapor phase lubrication**
- RT boundary lubrication
- lubrication systems
- ∞ sliding contact
- squeeze films
- tribology
- vapor phases**
- UF *gas phases*
- RT association reactions
- critical pressure
- gases
- gas-metal interactions
- gas-solid interfaces
- hydrogen clouds
- liquid phases
- liquid-gas mixtures
- liquids
- liquid-vapor interfaces
- metal-gas systems
- phase diagrams
- ∞ phases
- prevaporization
- solids
- supercritical pressures
- vapors
- volatility
- vapor pressure**
- DEF The pressure exerted by the molecules of a given vapor. For a pure confined vapor, it is that vapor's pressure on the walls of its containing vessel; and for a vapor mixed with other vapors or gases, it is that vapor's contribution to the total pressure (i. e. , its partial pressure).
- GS pressure
 - . **vapor pressure**
 - thermodynamic properties
 - . thermophysical properties
 - . . **vapor pressure**
- RT Dalton law
- flash point
- fuel tank pressurization
- Henry law

vapor traps

humidity
interfacial tension
liquid-gas mixtures
liquid-vapor interfaces
partial pressure
Raoult law
sublimation
supercritical pressures
volatility

vapor trails

USE **contrails**

vapor traps

GS traps
. **vapor traps**
RT cold traps
getters
ion traps (instrumentation)

vaporization heat

USE **heat of vaporization**

vaporizers

UF *vapor generators*
GS heating equipment
. **vaporizers**
. . . evaporators
RT boilers
cavity vapor generators
colloidal generators
columns (process engineering)
condensers (liquefiers)
gas generators
∞ generators
∞ heaters
separators
sprayers
vapor deposition
vaporizing
vapors

vaporizing

UF *volatilization*
GS phase transformations
. **vaporizing**
. . . boiling
. . . film boiling
. . . nucleate boiling
. . . Leidenfrost phenomenon
. . . evaporation
. . . evapotranspiration
. . . propellant evaporation
. . . transpiration
. . . flashing (vaporizing)
. . . prevaporization
. . . sublimation
RT ablation
concentrating
desalinization
distillation
evolution (liberation)
gasification
heat of vaporization
heating
∞ separation
spraying
stripping (distillation)
surface reactions
vapor deposition
vaporizers
vapors
volatility

vapors

DEF Gases whose temperatures are below their critical temperatures, so that they can be condensed to the liquid or solid state by increase of pressure alone.

GS **vapors**
. cesium vapor
. metal vapors
. . . mercury vapor
. . . sodium vapor
. water vapor
RT cavity vapor generators

combustion products
condensates
exhaust gases
fumes
gases
haze detection
hydrogen clouds
liquid-vapor equilibrium
prevaporization
smoke
vapor phases
vaporizers
vaporizing

varactor diode circuits

GS circuits
. **varactor diode circuits**
RT diodes

varactor diodes

UF *varactors*
GS electronic equipment
. diodes
. . . semiconductor diodes
. . . **varactor diodes**
. solid state devices
. . . semiconductor devices
. . . **varactor diodes**
RT junction diodes
parametric diodes
varistors

varactors

USE **varactor diodes**

variability

RT consistency
continuity
convergence
correlation
covariance
∞ dispersion
eccentricity
∞ equilibrium
factor analysis
heterogeneity
linearity
nonlinearity
periodic variations
quality
quality control
range (extremes)
regression analysis
reliability
sampling
stability
standard deviation
standardization
validity
∞ variable
variance (statistics)

∞ variable

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *factors*
RT complex variables
dependent variables
form factors
independent variables
Latin square method
race factors
random variables
real variables
social factors
variability

variable amplitude loading

(added September 1993)
GS loads (forces)
. dynamic loads
. . **variable amplitude loading**
RT cyclic loads
load tests
∞ loading
loading rate

random loads
stress cycles

variable area wings

USE **trailing edge flaps**

variable cycle engines

UF *VCE*
GS engines
. aircraft engines
. . **variable cycle engines**
RT coaxial nozzles
convertible fan-shaft engines
supersonic aircraft
variable stream control engines

variable geometry structures

RT expandable structures
folding structures
inflatable structures
mission adaptive wings
∞ structures

variable lift

USE **lift**

variable mass systems

GS kinetics
. **variable mass systems**
RT equations of motion
∞ mass balance
mass distribution
∞ systems

variable pitch propellers

UF *constant speed propellers*
GS propellers
. **variable pitch propellers**
RT helicopter propeller drive
pitch (inclination)

Variable Specific Impulse Magnetoplasma Rocket

(added December 2000)

USE **VASIMR (propulsion system)**

variable stars

GS celestial bodies
. stars
. . **variable stars**
. . . cataclysmic variables
. . . cepheid variables
. . . flare stars
. . . irregular variable stars
. . . R Coronae Borealis stars
. . . Lambda Tauri stars
. . . Mira variables
. . . Omicron Ceti star
. . . novae
. . . dwarf novae
. . . Hercules nova
. . . semiregular variable stars
. . . supernovae
. . . supernova 1987A
. . . symbiotic stars
. . . T Tauri stars
RT binary stars
companion stars
eclipsing binary stars
periodic variations
solar oscillations
stellar mass
stellar mass ejection
stellar oscillations

variable stream control engines

DEF Advanced, moderate bypass-ratio turbofan configurations that use duct burner thrust augmentation and coannular nozzles for jet noise reduction.

GS engines
. aircraft engines
. . **variable stream control engines**
RT ∞ control
engine control
supersonic aircraft

- supersonic nozzles
variable cycle engines
- variable sweep wings**
UF *M wings*
ogee wings
W wings
GS airfoils
. wings
. . **variable sweep wings**
planforms
. wing planforms
. . **variable sweep wings**
RT arrow wings
Boeing 733 aircraft
delta wings
F-111 aircraft
folding structures
mission adaptive wings
ogee shape
swept forward wings
sweptback wings
- variable thrust**
GS thrust
. **variable thrust**
RT control rockets
high thrust
jet control
jet thrust
low thrust
low thrust propulsion
microthrust
rocket thrust
throttling
thrust augmentation
thrust control
thrust termination
thrust vector control
- ∞ variance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A measure of the precision of a measurement based on summing the squares of the deviations from individual determinations from the average and dividing by the degrees of freedom.
RT analysis of variance
degrees of freedom
multivariate statistical analysis
variance (statistics)
- variance (statistics)**
GS statistical analysis
. **variance (statistics)**
. . analysis of variance
. . multivariate statistical analysis
. . . bivariate analysis
. . . covariance
. . . orthogonality
. . . regression analysis
. . . regression coefficients
RT confidence limits
correlation
Cramer-Rao bounds
distribution moments
experiment design
factor analysis
Gauss-Markov theorem
goodness of fit
heterogeneity
homogeneity
kriging
mean
moments
quality control
range (extremes)
standard deviation
variability
∞ variance
- variation method*
USE **calculus of variations**
- variational principles**
RT calculus of variations
- ∞ dynamics
equilibrium methods
irreversible processes
Onsager phenomenological coefficient
Rayleigh-Ritz method
- variations**
UF *fluctuation*
GS **variations**
. magnetic variations
. . geomagnetic pulsations
. . . geomagnetic micropulsations
. . nocturnal variations
. . periodic variations
. . . alternations
. . . annual variations
. . . diurnal variations
. . . intraseasonal variations
. . . nocturnal variations
. . . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
. . twenty-seven day variation
. wind variations
RT alternatives
asymmetry
deflection
deviation
differences
displacement
distortion
divergence
eccentricity
gradients
micropulsations
perturbation
revisions
substitutes
surges
- variometers**
DEF Instruments for comparing magnetic forces, especially of the Earth's magnetic field. Used for magnetovariographs.
UF *magnetovariographs*
GS measuring instruments
. magnetometers
. . **variometers**
RT geomagnetism
- varistors**
DEF Two electrode semiconductor devices having a voltage dependent nonlinear resistance.
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **varistors**
RT resistors
thermistors
varactor diodes
- varnishes**
RT fillers
finishes
paints
primers (coatings)
protective coatings
sealers
sprayed coatings
- vascular system*
USE **cardiovascular system**
- VASIMR (propulsion system)**
(added November 2000)
DEF A high-power, RF-driven magnetoplasma rocket system capable of I(sp) thrust modulation at constant power. The VASIMR utilizes radiofrequency (RF) power both to generate a high-density plasma in a helicon source and to accelerate the plasma ions to high velocity by ion cyclotron resonance heating (ICRH). The system features a magnetic nozzle, which accelerates the plasma particles by converting their azimuthal energy into directed momentum.
- UF *Variable Specific Impulse Magnetoplasma Rocket*
GS engines
. rocket engines
. . electric rocket engines
. . . plasma engines
. . . . **VASIMR (propulsion system)**
RT magnetic nozzles
plasma heating
plasma propulsion
radio frequency heating
spacecraft propulsion
- vasoconstriction**
RT blood vessels
body temperature
cold tolerance
ischemia
reflexes
sneezing
- vasoconstrictor drugs**
UF *pressors*
GS drugs
. **vasoconstrictor drugs**
. . hypertensin
. . serotonin
RT pharmacology
- vasodilation**
RT blood vessels
body temperature
congestion
reflexes
- vasomotor nervous system*
USE **nervous system**
- Vatican City**
GS cities
. **Vatican City**
nations
. **Vatican City**
RT Europe
Italy
- VATOL aircraft**
SN (VERTICAL ATTITUDE TAKEOFF AND LANDING AIRCRAFT)
DEF Vertical attitude takeoff and landing aircraft. Used for vertical attitude takeoff-landing aircraft and XBQM-180A aircraft.
UF *vertical attitude takeoff-landing aircraft*
XBQM-180A aircraft
RT ∞ aircraft
delta wings
remotely piloted vehicles
vertical landing
vertical takeoff aircraft
- VAX computers**
GS data processing equipment
. computers
. . digital computers
. . . **VAX computers**
. . . . VAX-11 series computers
. VAX-11/780 computer
- VAX-11 series computers**
GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . **VAX-11 series computers**
. VAX-11/780 computer
- VAX-11/780 computer**
GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . VAX-11 series computers
. **VAX-11/780 computer**
- VC-10 aircraft**
UF *Vickers 1100 aircraft*

vector analysis

GS *Vickers VC-10 aircraft*
BAC aircraft
 . **VC-10 aircraft**
commercial aircraft
 . **VC-10 aircraft**
jet aircraft
 . **VC-10 aircraft**
monoplanes
 . **VC-10 aircraft**
passenger aircraft
 . **VC-10 aircraft**
transport aircraft
 . **VC-10 aircraft**
RT ∞ aircraft
 cargo aircraft

VCE
USE **variable cycle engines**

VCO
USE **voltage controlled oscillators**

vector analysis

GS analysis (mathematics)
 . calculus
 . . . **vector analysis**
 . . . collinearity
 . . . coplanarity
 . . . curl (vectors)
 . . . vorticity
 . real variables
 . . **vector analysis**
 . . . collinearity
 . . . coplanarity
 . . . curl (vectors)
 . . . vorticity
geometry
 . **vector analysis**
 . . collinearity
 . . coplanarity
 . . curl (vectors)
 . . . vorticity
RT differential equations
Euler-Cauchy equations
flux vector splitting
gradients
Poynting theorem
resultants
stability derivatives

vector calculus
USE **vector spaces**

vector control
USE **directional control**

vector currents

RT current algebra
parity
radioactive decay
superconductivity

vector dominance model

GS models
 . **vector dominance model**
RT hadrons
high energy interactions
nucleons
photoneutrons
photoproduction

vector mesons

GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **vector mesons**
 rho-mesons
 sigma-mesons
 . . hadrons
 . . . mesons
 **vector mesons**
 rho-mesons
 sigma-mesons
 . nuclear particles
 . . bosons

. . . mesons
. . . . **vector mesons**
. rho-mesons
. sigma-mesons

vector processing (computers)

(added July 1989)
GS data processing
 . **vector processing (computers)**
RT multiprocessing (computers)
parallel processing (computers)
pipelining (computers)

vector quantization

(added June 1989)
RT coding
data compression
digital techniques
image processing
vectors (mathematics)
voice data processing

vector spaces

UF *Grassmann algebra*
vector calculus
GS algebra
 . **vector spaces**
 . . Banach space
 . . Hilbert space
 . . . Sobolev space
 . . matrices (mathematics)
 . . . adjoints
 . . . canonical forms
 . . . eigenvalues
 . . . eigenvectors
 . . . Hessian matrices
 . . . Jordan form
 . . . stiffness matrix
 . . Stokes theorem (vector calculus)
 . . U spin space
 . . vectors (mathematics)
 . . . eigenvectors
 . . . state vectors
 . . . vorticity
RT analysis (mathematics)
Chaplygin equation
Hermitian polynomial
hodographs
Kakutani theorem
linear transformations

vectorcardiography

GS bioengineering
 . biometrics
 . . cardiography
 . . . **vectorcardiography**
RT electrocardiography
phonocardiography

vectors (mathematics)

DEF Quantities such as force, velocity, or acceleration, which have both magnitude and direction at each point in space, as opposed to scalar which has magnitude only. Such quantities may be represented geometrically by an arrow of length proportional to its magnitude, pointing in the assigned direction.

GS algebra
 . vector spaces
 . . **vectors (mathematics)**
 . . . eigenvectors
 . . . state vectors
 . . . vorticity
RT dyadics
flux vector splitting
function space
Schwartz inequality
vector quantization

Vega launch vehicle

UF *Vega rocket vehicle*
GS launch vehicles
 . **Vega launch vehicle**
rocket vehicles
 . multistage rocket vehicles
 . . **Vega launch vehicle**

RT Atlas D ICBM
liquid propellant rocket engines

Vega project

RT flyby missions
Halley's comet
international cooperation
U. S. S. R. space program
Venera satellites
Venus (planet)

Vega rocket vehicle

USE **Vega launch vehicle**

Vegard-Kaplan bands

GS spectra
 . spectral bands
 . . **Vegard-Kaplan bands**
RT ∞ bands
emission spectra
molecular spectra
nitrogen

vegetables

GS **vegetables**
 . potatoes
 . spinach
RT angiosperms
 ∞ food
leguminous plants
planting
seeds

vegetation

GS **vegetation**
 . canopies (vegetation)
RT bioconversion
biomass energy production
Earth resources
locusts
normalized difference vegetation
 index
oases
plants (botany)
rain forests
resources
sea grasses
trees (plants)

vegetation growth

GS growth
 . **vegetation growth**
 . . crop growth
RT agriculture
biochemistry
botany
crop vigor
ecology
fertilizers
gravitropism
hydroponics
irrigation
photosynthetically active radiation
plant roots
plant stress
soil moisture
soil science
soils
vegetative index

vegetative index

DEF Linear combinations of spectral band responses in digital count, reflectance factor, or voltage to determine the vigor, greenness and/or biomass of the vegetation. Observations can be made by satelliteborne, aircraftborne, truck mounted, or hand held spectrometers.

GS ratios
 . indexes (ratios)
 . . **vegetative index**
 . . . leaf area index
 . . . normalized difference vegetation
 index

RT AgRISTARS project
atmospheric attenuation
atmospheric effects

atmospheric optics
 atmospheric scattering
 canopies (vegetation)
 color
 correction
 crop identification
 crop inventories
 geographic distribution
 image enhancement
 imaging techniques
 multispectral band scanners
 radiometric correction
 reflectance
 remote sensing
 satellite imagery
 satellite observation
 spectral reflectance
 vegetation growth

vehicle wheels

GS wheels
 . **vehicle wheels**
 . . nose wheels
 RT aircraft tires
 brakes (for arresting motion)
 landing gear
 mechanical drives
 rollers
 shafts (machine elements)
 suspension systems (vehicles)
 tires
 toroidal wheels
 transmissions (machine elements)
 wheel brakes

∞ vehicles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 UF *craft*
rotating vehicles
 RT amphibious vehicles
 Arcas rocket vehicles
 Arcon rocket vehicle
 Argo rocket vehicles
 Astrobee rocket vehicles
 Atlas Agena launch vehicles
 Atlas launch vehicles
 automated guideway transit vehicles
 automated mixed traffic vehicles
 Automated Transfer Vehicle
 automated transit vehicles
 automobiles
 ∞ ballistic vehicles
 boostglide vehicles
 captured air bubble vehicles
 control configured vehicles
 crawler tractors
 drone vehicles
 electric hybrid vehicles
 electric motor vehicles
 engines
 Europa launch vehicles
 flight test vehicles
 ∞ flight vehicles
 ground effect machines
 heavy lift launch vehicles
 HOTOL launch vehicle
 hovering rocket vehicles
 hydroplanes (vehicles)
 hypersonic vehicles
 intraorbit transfer vehicles
 Juno launch vehicles
 Kappa rocket vehicles
 Lambda rocket vehicles
 launch vehicles
 low observable reentry vehicles
 lunar flying vehicles
 lunar roving vehicles
 lunar surface vehicles
 Lunokhod lunar roving vehicles
 magnetic levitation vehicles
 manned lunar surface vehicles
 Mars roving vehicles
 Marsokhod Mars roving vehicles
 ∞ military vehicles
 missiles

motor vehicles
 multiengine vehicles
 multistage rocket vehicles
 Nike rocket vehicles
 Nike-Hydac rocket vehicle
 Nike-Iroquois rocket vehicle
 Nova launch vehicles
 nuclear engine for rocket vehicles
 orbit transfer vehicles
 Ranger lunar landing vehicles
 recoverable launch vehicles
 recovery vehicles
 reentry vehicles
 remotely piloted vehicles
 research vehicles
 reusable launch vehicles
 rocket vehicles
 roving vehicles
 Saturn launch vehicles
 single stage rocket vehicles
 single stage to orbit vehicles
 Skua rocket vehicles
 ∞ spacecraft
 Standard Launch Vehicles
 surface effect ships
 surface vehicles
 SWATH (ship)
 tanks (combat vehicles)
 Terminal Configured Vehicle Program
 test vehicles
 Thor launch vehicles
 Thorad launch vehicles
 Titan 4 launch vehicle
 Titan launch vehicles
 tracked vehicles
 tractors
 ∞ transport vehicles
 transporter
 underwater vehicles
 unidentified flying objects
 Veronique rocket vehicles
 water vehicles
 ∞ winged vehicles

vehicular tracks

RT idlers
 surface vehicles
 suspension systems (vehicles)
 tracked vehicles
 ∞ tracks
 treads

veins

GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . blood vessels
 **veins**
 RT arteries
 bifurcation (biology)
 transfusion

veins (petrology)

(added June 2001)
 DEF A relatively thin mass of mineral that fills a crack or joint in a host rock.
 RT inclusions
 meteoritic composition
 mineral deposits
 minerals
 rock intrusions
 rocks

Vela satellites

GS artificial satellites
 . **Vela satellites**
 military spacecraft
 . **Vela satellites**
 RT Fishbowl Operation
 high altitude nuclear detection
 high altitude tests
 nuclear explosions
 nuclear radiation
 post-blast nuclear radiation
 radiation detectors
 radiation measuring instruments

satellite observation

velardenite

USE **gehlenite**

velocity

DEF Rate of motion. Rate of motion in a straight line is called linear speed, whereas change of direction per unit time is called angular speed. Used for speed.

UF *speed*

GS **velocity**

. acoustic velocity
 . airspeed
 . angular velocity
 . critical velocity
 . escape velocity
 . exhaust velocity
 . flow velocity
 . . solar wind velocity
 . ground speed
 . group velocity
 . high speed
 . hypersonic speed
 . landing speed
 . light speed
 . low speed
 . orbital velocity
 . phase velocity
 . propagation velocity
 . radial velocity
 . relativistic velocity
 . rotor speed
 . solar velocity
 . subsonic speed
 . supersonic speed
 . terminal velocity
 . tip speed
 . transonic speed
 . wind velocity
 . . solar wind velocity
 . impact velocity

RT acceleration (physics)
 body kinematics
 de Broglie wavelengths
 ∞ dynamics
 Fermat principle
 kinematics
 kinetics
 loading rate
 ∞ motion
 perceptual time constant
 pressure measurement
 relativistic effects
 solitary waves
 time measurement

velocity coupling

DEF The response of the burning propellant surface to the local velocity which would include both mean flow as well as acoustic velocity (both being parallel to the burning surface).

RT burning rate
 combustion stability
 coupling
 propellant combustion

velocity distribution

UF *velocity fields*
velocity profiles
 GS distribution (property)
 . **velocity distribution**
 RT circulation distribution
 flow distribution
 flow velocity
 galactic rotation
 Orr-Sommerfeld equations
 Pohlhausen method
 pressure distribution
 shock wave profiles
 three dimensional boundary layer

velocity errors

GS errors
 . **velocity errors**
 RT escape velocity

velocity measurement

- orbital velocity
 - position errors
- velocity fields*
USE **velocity distribution**
- velocity measurement**
UF *anemometry*
GS mechanical measurement
. **velocity measurement**
. . particle image velocimetry
. . wind velocity measurement
- RT acceleration measurement
accelerometers
anemometers
drag force anemometers
flow measurement
flow velocity
flowmeters
hot-film anemometers
hot-wire anemometers
Hubble constant
Hubble diagram
laser anemometers
laser doppler velocimeters
○ measurement
pitot tubes
pressure measurement
radial velocity
solar wind velocity
sonic anemometers
speed indicators
stroboscopes
tachometers
time measurement
Venturi tubes
vortex precession
- velocity modulation**
GS modulation
. **velocity modulation**
- RT bunching
cavity resonators
electron bunching
electron tubes
- velocity profiles*
USE **velocity distribution**
- veneers**
RT coatings
finishes
laminates
masonry
- Venera 2 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 2 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 2 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 2 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 2 satellite**
- Venera 3 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 3 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 3 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 3 satellite**
unmanned spacecraft
- . space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 3 satellite**
- Venera 4 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 4 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 4 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 4 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 4 satellite**
- Venera 5 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 5 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 5 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 5 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 5 satellite**
- Venera 6 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 6 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 6 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 6 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 6 satellite**
- Venera 7 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 7 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 7 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 7 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 7 satellite**
- Venera 8 satellite**
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 8 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 8 satellite**
unmanned spacecraft
- Soviet spacecraft
. Venera satellites
. . **Venera 8 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 8 satellite**
- RT U. S. S. R. space program
Venus (planet)
- Venera 9 satellite**
DEF One in a series of Soviet Spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 9 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 9 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 9 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 9 satellite**
- Venera 10 satellite**
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 10 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 10 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 10 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 10 satellite**
- RT U. S. S. R. space program
Venus (planet)
- Venera 11 satellite**
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . **Venera 11 satellite**
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . **Venera 11 satellite**
Soviet spacecraft
. Venera satellites
. . **Venera 11 satellite**
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . **Venera 11 satellite**
- RT U. S. S. R. space program
Venus (planet)
Venus atmosphere
Venus surface
- Venera 12 satellite**
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites

- .. Venera satellites
 - ... **Venera 12 satellite**
 - interplanetary spacecraft
 - . Venus probes
 - .. Venera satellites
 - ... **Venera 12 satellite**
 - Soviet spacecraft
 - . Venera satellites
 - .. **Venera 12 satellite**
 - unmanned spacecraft
 - . space probes
 - .. Venus probes
 - ... Venera satellites
 - ... **Venera 12 satellite**
 - RT U. S. S. R. space program
 - Venus (planet)
 - Venus atmosphere
 - Venus surface
- Venera satellites**
- GS artificial satellites
 - . Soviet satellites
 - .. **Venera satellites**
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
 - interplanetary spacecraft
 - . Venus probes
 - .. **Venera satellites**
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
 - Soviet spacecraft
 - . **Venera satellites**
 - .. Venera 2 satellite
 - .. Venera 3 satellite
 - .. Venera 4 satellite
 - .. Venera 5 satellite
 - .. Venera 6 satellite
 - .. Venera 7 satellite
 - .. Venera 8 satellite
 - .. Venera 9 satellite
 - .. Venera 10 satellite
 - .. Venera 11 satellite
 - .. Venera 12 satellite
- unmanned spacecraft
 - . space probes
 - .. Venus probes
 - ... **Venera satellites**
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
- . space probes
 - .. Venus probes
 - ... **Venera satellites**
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
- RT U. S. S. R. space program
- Vega project
- Veneziano model**
- GS models
 - . mathematical models
 - .. **Veneziano model**
 - RT elementary particle interactions
- Venezuela**
- GS nations
 - . **Venezuela**
 - RT South America
- Venn diagrams**
- GS diagrams
 - . **Venn diagrams**
 - RT analysis (mathematics)
 - geometry
 - mathematical logic
- Venom aircraft*
- USE **DH 112 aircraft**
- ventilation**
- RT air conditioning
 - air cooling
 - air filters
 - air flow
 - air intakes
 - air purification
 - blowers
 - comfort
 - cooling
 - cooling systems
 - draft (gas flow)
 - ducts
 - environmental engineering
 - exhaust systems
 - exhausting
 - life support systems
 - refrigerating
 - temperature
 - temperature control
 - temperature distribution
 - ventilators
 - venting
 - vents
- ventilation fans**
- RT blowers
 - cooling
 - cooling systems
 - ducted fans
 - fan blades
 - ∞ fans
 - ventilators
- ventilators**
- RT air ducts
 - air intakes
 - blowers
 - ∞ diffusers
 - exhaust systems
 - ventilation
 - ventilation fans
 - vents
- venting**
- RT breathing vibration
 - cooling
 - ∞ discharge
 - evacuating (vacuum)
 - exhausting
 - flushing
 - purging
 - releasing
 - relief valves
 - ∞ separation
 - ventilation
 - vents
- ventral sections**
- RT abdomen
- vents**
- GS outlets
 - . **vents**
 - RT annular ducts
 - apertures
 - cavities
 - chimneys
 - cooling systems
 - ducts
 - evacuating (vacuum)
 - exhaust systems
 - flues
- gates (openings)
- louvers
- ∞ nozzles
- openings
- ports (openings)
- relief valves
- slotted wind tunnels
- ventilation
- ventilators
- venting
- windows (apertures)
- VentureStar launch vehicle**
- (added June 1999)
 - DEF Reusable single-stage-to-orbit launch vehicle employing linear aerospike engines, and having a payload capacity roughly equivalent to that of the Space Shuttle; developed in coordination with the X-33 advanced technology demonstrator vehicle.
 - GS aerospace vehicles
 - . aerospace planes
 - .. **VentureStar launch vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - .. **VentureStar launch vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . reusable spacecraft
 - ... aerospace planes
 - ... **VentureStar launch vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - .. **VentureStar launch vehicle**
 - RT aerospike engines
 - commercial spacecraft
 - X-33 reusable launch vehicle
- Venturi tubes**
- DEF Short tubes of smaller diameter in the middle than at the ends. When fluids flow through such tubes, the pressure decreases as the diameters become smaller, the amount of decrease being proportional to the speed of flow and the amount of restriction.
 - RT ∞ detectors
 - flow measurement
 - flowmeters
 - gas meters
 - measuring instruments
 - orifices
 - pitot tubes
 - pressure gradients
 - pressure measurement
 - ∞ tubes
 - velocity measurement
- Venus (planet)**
- GS celestial bodies
 - . planets
 - .. terrestrial planets
 - ... **Venus (planet)**
 - RT planetary craters
 - Vega project
 - Venera 8 satellite
 - Venera 10 satellite
 - Venera 11 satellite
 - Venera 12 satellite
- Venus atmosphere**
- GS environments
 - . extraterrestrial environments
 - .. planetary environments
 - ... planetary atmospheres
 - ... **Venus atmosphere**
 - ... Venus clouds
 - RT aerospace environments
 - ionopause
 - planetary ionospheres
 - planetary meteorology
 - Venera 11 satellite
 - Venera 12 satellite

Venus clouds

Venus orbiting imaging radar (spacecraft)

Venus clouds

GS environments

- . extraterrestrial environments
- . . planetary environments
- . . . planetary atmospheres
- Venus atmosphere
- **Venus clouds**

RT atmospheric models

- cloud cover
- cloud physics

∞ clouds

- greenhouse effect

Venus fly trap rocket vehicle

GS rocket vehicles

- . sounding rockets
- . . **Venus fly trap rocket vehicle**

RT cosmic dust

- extraterrestrial matter

Venus orbiting imaging radar (spacecraft)

DEF A spacecraft also known as VOIR whose mission is to obtain synthetic aperture radar (SAR) images of at least 708 of the surface of Venus as well as information on the gravity field of the planet, nature of its inertial composition and dynamics of its atmosphere and interaction with the solar wind.

GS radar

- . **Venus orbiting imaging radar (spacecraft)**

RT Magellan project (NASA)

- Magellan spacecraft (NASA)
- synthetic aperture radar
- Venus atmosphere
- Venus probes
- Venus surface

Venus probes

GS interplanetary spacecraft

- . **Venus probes**
- . . Magellan spacecraft (NASA)
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 5 space probe
- . . . Mariner 10 space probe
- . . . Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe
- Pioneer Venus 2 transporter bus
- . . . Venera satellites
- Venera 2 satellite
- Venera 3 satellite
- Venera 4 satellite
- Venera 5 satellite
- Venera 6 satellite
- Venera 7 satellite
- Venera 8 satellite
- Venera 9 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- . . . Zond 1 space probe
- . . . Zond 3 space probe
- . . . Zond 4 space probe
- . . . Zond 5 space probe
- . . . Zond 6 space probe
- . . . Zond 7 space probe
- . . . Zond 8 space probe
- unmanned spacecraft
- . space probes
- . . **Venus probes**
- . . . Magellan spacecraft (NASA)
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 5 space probe
- . . . Mariner 10 space probe
- . . . Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe

. . . . Pioneer Venus 2 transporter bus

. . . . Venera satellites

. . . . Venera 2 satellite

. . . . Venera 3 satellite

. . . . Venera 4 satellite

. . . . Venera 5 satellite

. . . . Venera 6 satellite

. . . . Venera 7 satellite

. . . . Venera 8 satellite

. . . . Venera 9 satellite

. . . . Venera 10 satellite

. . . . Venera 11 satellite

. . . . Venera 12 satellite

. . . Zond 1 space probe

. . . Zond 3 space probe

. . . Zond 4 space probe

. . . Zond 5 space probe

. . . Zond 6 space probe

. . . Zond 7 space probe

. . . Zond 8 space probe

RT Magellan project (NASA)

- Mariner program
- Mariner Venus 67 spacecraft
- Mars probes
- outer planets explorers
- Sputnik 5 satellite
- Venus orbiting imaging radar (spacecraft)
- Voyager project

Venus radar echoes

GS echoes

- . radar echoes
- . . **Venus radar echoes**

Venus Radar Mapper

USE **Magellan spacecraft (NASA)**

Venus Radar Mapper Project

USE **Magellan project (NASA)**

Venus surface

DEF The surface features and/or composition of the planet Venus.

GS planetary surfaces

- . **Venus surface**

RT cloud cover

- extraterrestrial environments
- Magellan project (NASA)
- Magellan spacecraft (NASA)
- planetary craters
- solar system

∞ surfaces

- terraforming
- topography
- Venera 11 satellite
- Venera 12 satellite
- Venus orbiting imaging radar (spacecraft)

verbal communication

GS communicating

- . **verbal communication**
- . . conversation

RT acoustics

- languages
- lectures
- phonetics
- telephony
- voice communication
- voice data processing
- words (language)

verification (proving)

USE **proving**

vermiculite

DEF An aggregate used in lightweight insulating concrete, formed by heating and expanding a micaceous mineral.

GS clays

- . **vermiculite**
- . . minerals
- . . **vermiculite**

RT insulation

- mica

packaging

- silicates

Vermont

GS nations

- . United States
- . . **Vermont**

RT Lake Champlain Basin (NY-VT)

- St Lawrence Valley (North America)

Verneuil process

DEF Method of single-crystal growth in which powder is dropped through an oxy-hydrogen flame, falling molten on crystal seed.

GS growth

- . crystal growth
- . . **Verneuil process**

RT Czochralski method

- ruby lasers

Vernier engines

DEF Rocket engines of small thrust used primarily to obtain a fine adjustment in the velocity and trajectory of a rocket vehicle just after the thrust cutoff of the last sustainer engine, and used secondarily to add thrust to a booster or sustainer engine.

GS engines

- . rocket engines
- . . **Vernier engines**
- . . . control rockets
- . . . SYNCOM apogee engines
- . . . torpedo engines
- . . **Vernier engines**
- . . . control rockets
- . . . SYNCOM apogee engines

RT electric rocket engines

- electrostatic engines
- hybrid propellant rocket engines
- internal combustion engines
- launch vehicles
- liquid propellant rocket engines
- MA-2 engine
- MA-3 engine
- MA-5 engine
- microrocket engines
- restartable rocket engines
- solid propellant rocket engines
- thrust vector control

vermine

USE **guanosines**

Veronique rocket vehicles

GS rocket vehicles

- . single stage rocket vehicles
- . . **Veronique rocket vehicles**
- . . . sounding rockets
- . . **Veronique rocket vehicles**

RT liquid propellant rocket engines

∞ vehicles

versatility

RT compatibility

- flexibility

vertebrae

GS anatomy

- . musculoskeletal system
- . . bones
- . . . spine
- **vertebrae**

RT intervertebral disks

- neck (anatomy)

vertebral column

USE **spine**

vertebrates

GS animals

- . **vertebrates**
- . . amphibia
- . . . frogs
- . . birds
- . . . chickens
- . . . pigeons

- ... turkeys
- ... waterfowl
- .. fishes
- ... schools (fish)
- ... sharks
- .. mammals
- ... bats
- ... bears
- ... cats
- ... cattle
- ... calves
- ... deer
- ... caribous
- .. dogs
- ... goats
- ... horses
- ... marine mammals
- ... dolphins
- ... manatees
- ... porpoises
- ... seals (animals)
- ... whales
- ... moles
- ... primates
- ... apes
- ... chimpanzees
- ... baboons
- ... human beings
- ... monkeys
- ... rodents
- ... guinea pigs
- ... hamsters
- ... mice
- ... jerboas
- ... pocket mice
- ... rabbits
- ... rats
- ... squirrels
- ... ground squirrels
- ... sheep
- ... swine
- ... wolves
- .. reptiles
- ... lizards
- ... snakes
- ... turtles
- RT homeotherms
- vertical air currents**
- UF *updrafts*
- GS fluid flow
- .. gas flow
- .. air flow
- ... air currents
- ... **vertical air currents**
- RT atmospheric circulation
- convection clouds
- convection currents
- downbursts
- lee waves
- microbursts (meteorology)
- mixing height
- soaring
- turbulence
- wind (meteorology)
- winds aloft
- vertical attitude takeoff-landing aircraft*
- USE **VATOL aircraft**
- vertical distribution**
- GS distribution (property)
- .. spatial distribution
- .. **vertical distribution**
- ... star distribution
- RT electron distribution
- horizontal distribution
- ion distribution
- pressure distribution
- radiation distribution
- temperature distribution
- wind profiles
- vertical fins*
- USE **fins**
- vertical flight**
- RT balloon flight
- climbing flight
- ∞ flight
- flight paths
- hovering
- rocket flight
- transition flight
- V/STOL aircraft
- vertical junction solar cells**
- DEF Solar cells made from wafers on which narrow grooves are formed using a preferential KOH etch. The grooved region is radiation tolerant.
- GS electric generators
- .. direct power generators
- .. photoelectric generators
- ... photovoltaic cells
- ... solar cells
- ... **vertical junction solar cells**
- .. solar generators
- .. solar cells
- ... **vertical junction solar cells**
- electronic equipment
- .. solid state devices
- .. semiconductor devices
- ... photovoltaic cells
- ... solar cells
- ... **vertical junction solar cells**
- photoelectric cells
- .. photovoltaic cells
- .. solar cells
- ... **vertical junction solar cells**
- RT wafers
- vertical landing**
- UF *vertical takeoff and landing*
- VTOL
- GS landing
- .. **vertical landing**
- RT aircraft landing
- spacecraft landing
- STOVL aircraft
- touchdown
- VATOL aircraft
- vertical motion**
- RT falling
- ∞ motion
- touchdown
- vertical motion simulators**
- DEF Vibration machines which produce mechanical oscillations parallel to the vertical axis.
- GS simulators
- .. vibration simulators
- .. **vertical motion simulators**
- RT ∞ motion
- shakers
- shock simulators
- vibratory loads
- vertical orientation**
- DEF The attitude of an object in reference to a plane which is parallel to the direction of gravity (determined with a plumbline).
- RT alignment
- attitude (inclination)
- directional stability
- dynamic stability
- horizontal orientation
- lateral stability
- ∞ orientation
- stabilization
- vertical perception**
- GS perception
- .. sensory perception
- .. **vertical perception**
- RT body sway test
- gravireceptors
- oculogravic illusions
- ∞ orientation
- otolith organs
- ∞ space orientation
- vestibular tests
- vertical stabilizers*
- USE **stabilizers (fluid dynamics)**
- vertical tails*
- USE **stabilizers (fluid dynamics)**
- tail assemblies**
- vertical takeoff**
- UF *vertical takeoff and landing*
- VTOL
- GS takeoff
- .. **vertical takeoff**
- vertical takeoff aircraft**
- UF *VTOL aircraft*
- GS *V/STOL aircraft*
- .. **vertical takeoff aircraft**
- .. flying platforms
- .. SC-1 aircraft
- .. VJ-101 aircraft
- .. VZ-8 aircraft
- .. X-13 aircraft
- .. X-14 aircraft
- .. X-19 aircraft
- .. X-22 aircraft
- .. X-22A aircraft
- .. XC-142 aircraft
- .. XV-4 aircraft
- .. XV-11A aircraft
- RT ∞ aircraft
- Bell 214A helicopter
- CF-700 engine
- circulation control rotors
- compound helicopters
- convertible fan-shaft engines
- Cushioncraft ground effect machine
- fan in wing aircraft
- GETOL aircraft
- helicopters
- lift fans
- lifting rotors
- ∞ military aircraft
- powered lift aircraft
- research aircraft
- rotary wing aircraft
- short takeoff aircraft
- ∞ subsonic aircraft
- T-58 engine
- tilt wing aircraft
- VATOL aircraft
- ∞ winged vehicles
- vertical takeoff and landing*
- USE **vertical landing**
- vertical takeoff**
- vertices*
- USE **apexes**
- vertigo**
- DEF The sensation that the outer world is revolving about the person (objective vertigo) or that he himself is moving in space (subjective vertigo). The word frequently is used erroneously as a synonym for dizziness or giddiness to indicate an unpleasant sensation of disturbed relations to surrounding objects in space.
- GS signs and symptoms
- .. **vertigo**
- RT Barany chair
- ear pressure test
- vestibular tests
- Vertikal rockets**
- (added August 1995)
- GS rocket vehicles
- .. sounding rockets
- .. **Vertikal rockets**
- RT rocket sounding

very high frequencies

Russian Space Program

Vertol military helicopters
USE **Boeing aircraft**

very high frequencies
SN (30 TO 300 MHZ)
GS frequencies
. radio frequencies
. . . **very high frequencies**
. . . P band
RT decametric waves
low frequencies
maximum usable frequency

very high frequency radio equipment
UF *ultra short wave radio equipment*
GS radio equipment
. **very high frequency radio equipment**
RT radio astronomy
ultrahigh frequencies

very high speed integrated circuits
USE **VHSIC (circuits)**

Very Large Array (VLA)
DEF A synthetic aperture radio telescope, consisting of 27 parabolic antennas each of which is 25 meters in diameter. The system when connected together is capable of arcsecond resolution with high sensitivity resulting in the world's most powerful radio telescope. Operated by the National Radio Astronomy Observatory, it is located in Socorro, New Mexico.
GS radio equipment
. radio telescopes
. . **Very Large Array (VLA)**
telescopes
. radio telescopes
. . **Very Large Array (VLA)**
RT antenna arrays
radio astronomy

very large scale integration
DEF A very complex integrated circuit, which contains ten thousand or more individual devices, such as basic logic gates and transistors, placed on a single semiconductor chip. Used for VLSI.
UF VLSI
GS circuits
. integrated circuits
. . **very large scale integration**
microelectronics
. **very large scale integration**
RT application specific integrated circuits
architecture (computers)
chips (electronics)
hardware description languages
large scale integration
molecular electronics
RISC processors
systolic arrays

very large transport aircraft
(added November 1998)
DEF Aircraft capable of a maximum takeoff weight greater than 400 metric tons (881,600 lbs) or having a seating capacity greater than 660.
UF VLTA (aircraft)
GS transport aircraft
. **very large transport aircraft**
RT cargo aircraft
passenger aircraft

very long base interferometry
DEF The simultaneous observation of radio sources by two radio telescopes spaced very far apart to enhance angular resolution. The signals are recorded on magnetic tapes and combined electronically on a computer. Used for VLBI.
UF VLBI
GS interferometry
. **very long base interferometry**

RT astronomical interferometry
diffraction patterns
etalons
interferometers
null zones
Quasat
radio astronomy
radio interferometers
Very Long Baseline Array (VLBA)

Very Long Baseline Array (VLBA)
DEF A transcontinental radio telescope, being developed by the National Radio Astronomy Observatory, to consist of ten dedicated and automated 25-meter (82 foot) diameter antennas distributed from Hawaii to St. Croix, Virgin Islands.
GS radio equipment
. radio telescopes
. . **Very Long Baseline Array (VLBA)**
telescopes
. radio telescopes
. . **Very Long Baseline Array (VLBA)**
RT antenna arrays
radio astronomy
very long base interferometry

very low frequencies
SN (3 TO 30 KHZ)
GS frequencies
. radio frequencies
. . low frequencies
. . . **very low frequencies**
RT audio frequencies
Earth-ionosphere waveguide

very small aperture terminals
USE **VSAT (network)**

∞ **vessels**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blood vessels
∞ capsules
fluid filled shells
liquid filled shells
navy
pressure vessels
ships

Vesta asteroid
GS celestial bodies
. asteroids
. . **Vesta asteroid**
RT asteroid belts
meteoroids
solar system
space debris

vestibular nystagmus
GS eye movements
. nystagmus
. . **vestibular nystagmus**
reflexes
. **vestibular nystagmus**
RT anatomy
eye (anatomy)
ophthalmology

vestibular tests
GS physiological tests
. **vestibular tests**
RT body sway test
Coriolis effect
ear pressure test
head down tilt
head movement
vertical perception
vertigo

vestibules
GS anatomy
. sense organs
. . ear

. . . labyrinth
. . . . **vestibules**
RT morphology
passageways
semicircular canals

vests
RT clothing
garments

veterinary medicine
DEF The branch of medical practice dealing with the treatment of diseases and injuries of animals.
GS medical science
. **veterinary medicine**
RT ∞ biology
diagnosis
diseases
epidemiology
immunology
injuries
∞ medicine
pathology
pharmacology
surgery

VFR (rules)
USE **visual flight rules**

VHDL (computers)
USE **hardware description languages**

VHF omnirange navigation
UF *omnirange navigation*
VOR systems
GS navigation
. radio navigation
. . **VHF omnirange navigation**
RT air navigation
navigation aids
radio direction finders
solar compasses

VHSIC (circuits)
DEF Chips being developed by a DOD program to provide high speed MIL spec VLSI device for use in military systems. Used for very high speed integrated circuits.
UF *very high speed integrated circuits*
GS circuits
. integrated circuits
. . **VHSIC (circuits)**
RT chips (electronics)
large scale integration
signal processing

viability
RT animals
carbon cycle
crop vigor
germination
growth
plants (botany)
seeds

vibration
DEF Motion due to a continuous change in the magnitude of a given force which reverses its direction with time. Motion of an oscillating body during one complete cycle; two oscillations. Used for jitter.
UF jitter
GS **vibration**
. combustion vibration
. forced vibration
. free vibration
. lattice vibrations
. POGO effects
. random vibration
. resonant vibration
. structural vibration
. . bending vibration
. . breathing vibration
. . flutter
. . . panel flutter

- ... subsonic flutter
 - ... supersonic flutter
 - ... transonic flutter
 - .. linear vibration
 - .. missile vibration
 - .. self induced vibration
 - ... panel flutter
 - ... subsonic flutter
 - ... supersonic flutter
 - ... transonic flutter
 - .. torsional vibration
- RT acoustics
airfoil oscillations
amplitudes
antinodes
compacting
cyclic loads
displacement
- ∞ dynamics
elastic waves
fatigue (materials)
flapping
harmonics
isolators
mechanical oscillators
mechanical shock
mistuning (turbomachinery)
modes (standing waves)
- ∞ motion
nodes (standing waves)
nutations
oscillating cylinders
oscillations
oscillators
resonance
shaking
shock resistance
spacecraft motion
standing waves
vibrational stress
vibratory loads
vibratory polishing
- ∞ waves
wing oscillations
- vibration dampers*
USE **vibration isolators**
- vibration damping**
GS damping
.. **vibration damping**
- RT acoustics
attenuation
DAST program
elastic damping
flexible spacecraft
gyrodampers
harmonic control
magnetorheological fluids
molecular relaxation
nonoscillatory action
nonstabilized oscillation
piezoelectric actuators
shock absorbers
smart materials
- vibration effects**
GS **vibration effects**
.. POGO effects
- RT ∞ effects
support interference
vibrational stress
- vibration isolators**
DEF Resilient supports that tend to isolate systems from steady state excitation. Used for vibration dampers and vibration protection.
UF *vibration dampers*
vibration protection
- GS isolators
.. **vibration isolators**
- RT ∞ absorbers
acoustic retrofitting
cushions
- ∞ dampers
dampers (valves)
- damping
energy absorption
noise reduction
oscillation dampers
shock absorbers
springs (elastic)
suspension systems (vehicles)
- vibration measurement**
GS mechanical measurement
.. **vibration measurement**
- RT cepstral analysis
damping tests
frequency analyzers
frequency measurement
- ∞ measurement
stress measurement
- vibration meters**
UF *vibrometers*
- GS measuring instruments
.. **vibration meters**
.. seismographs
.. lunar seismographs
- RT accelerometers
transducers
- vibration mode**
DEF In a system undergoing vibration, a characteristic pattern assumed by the system in which the motion of every particle is simple harmonic with the same frequency. Used for mode of vibration.
UF *mode of vibration*
- GS modes
.. **vibration mode**
.. uncoupled modes
- RT airfoil oscillations
free vibration
linear vibration
mode transformers
transverse waves
- vibration perception**
GS perception
.. sensory perception
.. **vibration perception**
- vibration protection*
USE **vibration isolators**
- vibration simulators**
UF *vibration testing machines*
- GS simulators
.. **vibration simulators**
.. vertical motion simulators
- RT flutter
- ∞ machinery
shakers
shock simulators
vibratory loads
- vibration testing machines*
USE **vibration simulators**
- vibration tests**
GS **vibration tests**
.. damping tests
.. stroking tests
- RT destructive tests
dynamic tests
electronic equipment tests
engine tests
environmental tests
flight tests
flutter
mechanical engineering
oscillations
resonance testing
shock tests
stability tests
static tests
structural vibration
- ∞ tests
- vibrational freezing**
GS phase transformations
.. freezing
.. **vibrational freezing**
- vibrational frequencies (molecular)*
USE **vibrational spectra**
- vibrational frequencies (structural)*
USE **resonant frequencies**
- vibrational relaxation*
USE **molecular relaxation**
- vibrational spectra**
UF *vibrational frequencies (molecular)*
- GS spectra
.. molecular spectra
.. **vibrational spectra**
.. radiation spectra
.. electromagnetic spectra
... **vibrational spectra**
- RT electronic spectra
energy spectra
molecular relaxation
Raman spectra
rotational spectra
vibrational states
- vibrational states**
(added December 1993)
SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES VIBRATION MODES/CONDITIONS OF STRUCTURES OR VEHICLES)
- GS level (quantity)
.. energy levels
.. molecular energy levels
.. **vibrational states**
- RT molecular excitation
vibrational spectra
- vibrational stress**
GS stresses
.. **vibrational stress**
- RT flutter
vibration
vibration effects
vibratory loads
- vibratory loads**
GS loads (forces)
.. dynamic loads
.. **vibratory loads**
- RT aerodynamic loads
cyclic loads
structural design criteria
vertical motion simulators
vibration
vibration simulators
vibrational stress
- vibratory polishing**
GS polishing
.. **vibratory polishing**
- RT metallography
vibration
- vibrocardiography*
USE **phonocardiography**
- vibrometers*
USE **vibration meters**
- VIC method*
USE **vortex in cell technique**
- Vickers 1100 aircraft*
USE **VC-10 aircraft**
- Vickers hardness**
(added October 2001)
DEF The hardness of a material as determined by the Vickers hardness test, which inter-

Victor MK-1 aircraft

prets the degree of penetration made by a load-variable diamond pyramid stylus.

- UF *diamond pyramid hardness*
- GS mechanical properties
 - . hardness
 - . . **Vickers hardness**
- RT hardness tests

Vickers Scimitar aircraft

- USE **Scimitar aircraft**

Vickers Valiant aircraft

- USE **Valiant aircraft**

Vickers VC-10 aircraft

- USE **VC-10 aircraft**

Victor MK-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - . . **Victor MK-1 aircraft**
- Handley Page aircraft
- . **Victor MK-1 aircraft**
- jet aircraft
- . **Victor MK-1 aircraft**
- monoplanes
- . **Victor MK-1 aircraft**
- reconnaissance aircraft
- . **Victor MK-1 aircraft**
- RT ∞ aircraft

video communication

- GS telecommunication
 - . **video communication**
 - . . video conferencing
- RT high definition television
 - multimedia
 - television systems
 - video signals

video compression

- (added September 1993)
- UF *compressed video*
- GS data compression
 - . **video compression**
- RT analog data
 - digital data
 - digital television
 - discrete cosine transform
 - image motion compensation
 - image processing
 - signal encoding
 - video conferencing
 - video data
 - video signals

video conferencing

- (added August 2000)
- UF *video teleconferencing*
- GS telecommunication
 - . teleconferencing
 - . . **video conferencing**
 - . video communication
 - . . **video conferencing**
- RT communication networks
 - conferences
 - television systems
 - video compression
 - video data

video data

- RT analog data
 - ∞ data
 - data converters
 - data transmission
 - digital data
 - display devices
 - high definition television
 - multimedia
 - radar data
 - smear
 - telecommunication
 - television systems
 - video compression
 - video conferencing
 - video disks

video signals

video disks

DEF Disks, usually the size of long-playing stereo records, which store video data. The data is recorded by one of two techniques: the capacitance method, in which the disk has spiral grooves and is read by a contact stylus, and the optical method, which uses lasers in both the recording and playback of the data.

- GS documents
 - . records
 - . . **video disks**
- RT data recorders
 - data recording
 - data storage
 - disks (shapes)
 - magnetic disks
 - memory (computers)
 - optical data storage materials
 - optical disks
 - optical memory (data storage)
 - playbacks
 - video data
 - video equipment

video equipment

- GS **video equipment**
 - . picture tubes
 - . video tape recorders
- RT Advanced Vidicon Camera System (AVCS)
 - audio visual equipment
 - camera tubes
 - cathode ray tubes
 - compensators
 - digital cameras
 - display devices
 - flying spot scanners
 - motion pictures
 - optical equipment
 - oscilloscopes
 - recording heads
 - television equipment
 - video disks
 - vidicons

video landmark acquisition and tracking

DEF Shuttle era system for earth-feature identification, acquisition, and tracking.

- GS tracking (position)
 - . **video landmark acquisition and tracking**
- RT avionics
 - image correlators
 - map matching guidance
 - scene analysis
 - signatures
 - TERCOM
 - terrain analysis
 - tracking filters

video signals

DEF Signals with a bandwidth of over 20 kilohertz.

- RT signal processing
 - signal transmission
- ∞ signals
 - video communication
 - video compression
 - video data

video tape recorders

- (added January 1990)
- GS recording instruments
 - . tape recorders
 - . . **video tape recorders**
 - video equipment
 - . **video tape recorders**
- RT multimedia
 - video tapes

video tapes

- (added April 1989)
- RT audio tapes
 - cinematography

- ∞ films
 - information
 - magnetic tapes
 - motion pictures
 - multimedia
 - photographs
 - photography
- ∞ tapes
 - video tape recorders
 - visual aids

video teleconferencing

(added August 2000)

- USE **video conferencing**

vidicons

DEF Television pickup tubes utilizing photoconductors as the sensing elements.

- GS electron tubes
 - . camera tubes
 - . . **vidicons**
 - . . . return beam vidicons
 - thermicons
- RT Advanced Vidicon Camera System (AVCS)
 - fiber optics
 - pixels
 - video equipment

Vietnam

- UF *North Vietnam*
 - Republic of Vietnam*
 - South Vietnam*
- GS nations
 - . **Vietnam**
- RT Asia
 - Southeast Asia

view effects

- SN (LIMITED TO EFFECTS OF CHANGE IN ANGULAR SIZE OF FIELD OF VIEW UPON RECEPTORS OF RADIATION)
- DEF Effects of change in angular size of field of view upon receptors of radiation.
- RT angular correlation
 - ∞ effects
 - radiant flux density
 - radiation measuring instruments
 - radiative heat transfer
 - viewing

viewing

- GS **viewing**
 - . field of view
- RT display devices
 - periscopes
 - view effects
 - visibility
 - vision

Vigilante aircraft

- USE **A-5 aircraft**

vignetting

- RT defects
 - focusing
 - lenses

Viking 1 spacecraft

- GS interplanetary spacecraft
 - . Mars probes
 - . . Viking spacecraft
 - . . . **Viking 1 spacecraft**
 - Viking lander 1
 - Viking orbiter 1
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . Viking spacecraft
 - **Viking 1 spacecraft**
 - Viking lander 1
 - Viking orbiter 1
- RT interplanetary trajectories
 - space exploration

vinyl polymers

. **vinyl copolymers**
 RT additives
 copolymerization
 ∞ polymers

vinyl cyanide
 USE **acrylonitriles**

vinyl ethylene
 USE **butadiene**

vinyl polymers
 GS **vinyl polymers**
 . polymethyl methacrylate
 . polystyrene
 . polyvinyl chloride
 . polyvinyl fluoride
 . vinyl copolymers
 . . styrofoam (trademark)
 . polyvinyl alcohol
 . vinylidene
 RT ∞ polymers

vinyl radical
 GS radicals
 . **vinyl radical**
 RT free radicals

vinylidene
 UF *polyvinylidene*
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkenes
 ethylene
 **vinylidene**
 vinyl polymers
 . **vinylidene**

violence
 GS **violence**
 . attacking (assaulting)
 RT crime
 disorders
 police
 terrorism
 warfare

viral diseases
 SN (EXCLUDES PLANT DISEASES)
 GS diseases
 . infectious diseases
 . . **viral diseases**
 . . . acquired immunodeficiency
 syndrome
 . . . influenza
 . . . poliomyelitis
 . . . smallpox
 RT encephalitis
 hepatitis
 human immunodeficiency virus
 meningitis
 pneumonia
 viruses

Virgin Islands
 GS landforms
 . islands
 . . West Indies
 . . . **Virgin Islands**
 nations
 . United States
 . . **Virgin Islands**
 RT archipelagoes
 Caribbean region
 Caribbean Sea
 tropical regions

Virginia
 GS nations
 . United States
 . . **Virginia**
 RT Allegheny Plateau (US)
 Assateague Island (MD-VA)
 Chesapeake Bay (US)
 Delmarva Peninsula (DE-MD-VA)

Potomac River Valley (MD-VA-WV)
 Shenandoah Valley (VA)
 Wallops Island

Virgo galactic cluster
 DEF A cluster of galaxies nearest to the Milky Way Galaxy, centered in the constellation Virgo and about 16 million light-years from Earth. Used for Virgo star cluster.
 UF *Virgo star cluster*
 GS celestial bodies
 . galactic clusters
 . . **Virgo galactic cluster**
 . galaxies
 . . **Virgo galactic cluster**
 RT agglomeration
 barred galaxies
 ∞ clusters
 disk galaxies
 elliptical galaxies
 local group (astronomy)
 spiral galaxies
 star clusters
 star distribution
 stars

Virgo star cluster
 USE **Virgo galactic cluster**

virial coefficients
 GS coefficients
 . **virial coefficients**
 RT equations of state
 intermolecular forces
 virial theorem

virial theorem
 GS theorems
 . **virial theorem**
 RT kinetic energy
 kinetic equations
 ∞ mechanics (physics)
 missing mass (astrophysics)
 virial coefficients

virtual memory systems
 RT computer systems design
 data management
 data storage
 magnetic storage

virtual properties
 RT accuracy
 ∞ physical properties
 ∞ properties

virtual reality
 (added February 1992)
 DEF An artificial reality that projects the user into a three dimensional space generated by the computer.
 UF *VR (virtual reality)*
 RT cockpit simulators
 computerized simulation
 environment simulation
 flight simulation
 human-computer interface
 man machine systems
 motion simulation
 simulation
 space environment simulation
 training simulators

virulence
 RT biological weapons
 human immunodeficiency virus
 microorganisms
 toxicity
 viruses

viruses
 GS microorganisms
 . **viruses**
 . . adenoviruses
 . . bacteriophages
 . . human immunodeficiency virus

RT biological weapons
 ∞ blisters
 interferon
 protobiology
 viral diseases
 virulence

viscera
 SN (FOR SPECIFIC ORGANS SEE ANATOMY)
 GS organs
 . **viscera**
 RT abdomen
 anatomy
 peritoneum
 thorax

viscoelastic cylinders
 RT ∞ cylinders
 cylindrical bodies
 cylindrical shells

viscoelastic damping
 DEF The absorption of oscillatory motions by materials which are viscous while exhibiting certain elastic properties.
 GS damping
 . elastic damping
 . . **viscoelastic damping**
 . viscous damping
 . . **viscoelastic damping**
 elastodynamics
 . elastic damping
 . . **viscoelastic damping**

viscoelastic flow
 USE **viscoelasticity**

viscoelasticity
 DEF Property of materials that strain under stress partly elastically and partly viscously, that is, whose strain is partly dependent on time and magnitude of stress. Used for viscoelastic flow.
 UF *viscoelastic flow*
 GS mechanical properties
 . elastic properties
 . . **viscoelasticity**
 . . . photoviscoelasticity
 . . . thermoviscoelasticity
 RT hydroelasticity
 hysteresis
 Maxwell fluids
 nonNewtonian flow
 nonNewtonian fluids
 plastic flow
 relaxation (mechanics)
 squeeze films
 viscoplasticity
 viscoplasticity
 viscous damping

viscometers
 GS measuring instruments
 . **viscometers**
 RT rotating cylinders
 viscometry
 viscosity

viscometry
 RT rotating cylinders
 viscometers
 viscosity
 viscous drag
 viscous flow

viscoplastic flow
 USE **viscoplasticity**

viscoplasticity
 UF *viscoplastic flow*
 GS mechanical properties
 . plastic properties
 . . **viscoplasticity**
 RT hysteresis
 nonNewtonian flow
 nonNewtonian fluids
 plastic anisotropy
 plastic flow

- relaxation (mechanics)
viscoelasticity
viscous damping
- viscopumps**
GS pumps
 . viscopumps
RT viscous flow
- viscosity**
DEF That molecular property of a fluid which enables it to support tangential stresses for a finite time and thus to resist deformation; the ratio of shear stress divided by shearing strain.
GS transport properties
 . viscosity
 . . eddy viscosity
 . . gas viscosity
RT density (mass/volume)
flow characteristics
flow resistance
internal friction
low Reynolds number
∞ motion
∞ physical properties
rheology
similitude law
solubility
Stokes law (fluid mechanics)
superfluidity
surface properties
thermal diffusion
thermal diffusivity
thixotropy
viscometers
viscometry
viscous flow
- Viscount aircraft**
GS BAC aircraft
 . Viscount aircraft
jet aircraft
 . turboprop aircraft
 . . Viscount aircraft
monoplanes
 . Viscount aircraft
passenger aircraft
 . Viscount aircraft
transport aircraft
 . Viscount aircraft
RT ∞ aircraft
- viscous damping**
DEF The dissipation of energy that occurs when a particle in a vibrating system is resisted by a force that has a magnitude proportional to the magnitude of the velocity of the particle and direction opposite to the direction of the particle.
GS damping
 . viscous damping
 . . viscoelastic damping
RT elastic damping
resonance testing
viscoelasticity
viscoplasticity
- viscous drag**
GS dynamic characteristics
 . drag
 . . friction drag
 . . . viscous drag
friction
 . flow resistance
 . . friction drag
 . . . viscous drag
 . skin friction
 . . friction drag
 . . . viscous drag
RT eddy viscosity
Hartmann number
laminar flow
turbulent flow
- viscometry
- viscous flow**
DEF The flow of a fluid through a duct under conditions such that the mean free path is very small in comparison with the smallest dimensions of a transverse section of the duct. This flow may be either laminar or turbulent.
GS fluid flow
 . viscous flow
 . . boundary layer flow
 . . . reattached flow
 . . . secondary flow
 . . . separated flow
 boundary layer separation
 . Couette flow
 . Karman-Bodewadt flow
 . . Stokes flow
RT aerodynamics
barotropic flow
Brinkman number
eddy viscosity
∞ flow
flow characteristics
gas flow
inviscid flow
Knudsen flow
laminar flow
magnetohydrodynamic shear heating
Maxwell fluids
Milne-Thomson method
Navier-Stokes equation
Pohlhausen method
Prandtl number
Reynolds number
turbulent flow
viscometry
viscopumps
viscosity
wedge flow
- viscous fluids**
DEF Fluids whose molecular viscosity is sufficiently large to make the viscous forces a significant part of the total force field in the fluid.
RT flow stability
∞ fluids
Maxwell fluids
Navier-Stokes equation
Newtonian fluids
nonNewtonian fluids
Oseen approximation
semisolids
squeeze films
weightless fluids
- visibility**
UF invisibility
GS visibility
 . low visibility
RT appearance
brightness
ceilings (meteorology)
character recognition
color
contrast
darkening
enhanced vision
fog
glare
haze
human factors engineering
illuminance
image contrast
legibility
light (visible radiation)
light transmission
luminescence
luminosity
night flights (aircraft)
opacity
optical properties
perception
radiance
reading
resolution
retinal adaptation
- sensitivity
smoke
symbols
transmissivity
viewing
vision
visual control
visual observation
whiteout
- visible infrared spin scan radiometer**
DEF A radiometer used for satellite sounding of the atmosphere.
GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 infrared detectors
 infrared radiometers
 visible infrared spin scan radiometer
 . . infrared instruments
 . . . infrared detectors
 infrared radiometers
 visible infrared spin scan radiometer
RT atmospheric sounding
satellite sounding
satellite-borne instruments
- visible radiation*
USE light (visible radiation)
- visible spectrum**
DEF The range of wavelengths of visible radiation; display or graph of the intensity of visible radiation emitted or absorbed by a material as a function of wavelength or some related parameter.
GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . visible spectrum
RT ∞ absorption
absorption spectra
astronomical spectroscopy
auroral spectroscopy
cathodoluminescence
emission spectra
gas spectroscopy
light (visible radiation)
line spectra
molecular spectra
solar spectra
spectral bands
spectroscopy
stellar spectra
- vision**
UF macular vision
GS vision
 . binocular vision
 . color vision
 . enhanced vision
 . monocular vision
 . night vision
 . peripheral vision
 . stereoscopic vision
RT adaptation
anastigmatism
blindness
brightness
choroid membranes
color
conjunctiva
contrast
cornea
dark adaptation
eye (anatomy)
eye dominance
flash blindness
glare
heterophoria
human factors engineering
hyperopia
illusions

visors

- images
 - legibility
 - light adaptation
 - miosis
 - myopia
 - oculomotor nerves
 - ophthalmodynamometry
 - optometry
 - perception
 - phosphene
 - presbyopia
 - pupils
 - resolution
 - retina
 - retinal adaptation
 - retinal images
 - thresholds (perception)
 - viewing
 - visibility
 - visual acuity
- visors**
- RT eye protection
 - radiation protection
 - sunglasses
- visual accommodation**
- RT accommodation
- visual acuity**
- DEF Keeness of perception and sharpness of vision.
 - GS acuity
 - . **visual acuity**
 - . . hyperopia
 - RT peripheral vision
 - Snellen tests
 - vision
- visual aids**
- RT ∞ aids
 - audio visual equipment
 - audio visual material
 - charts
 - diagrams
 - display devices
 - drawings
 - multimedia
 - photographs
 - training devices
 - video tapes
- visual control**
- GS manual control
 - . **visual control**
 - RT aircraft control
 - approach control
 - attitude control
 - ∞ control
 - display devices
 - guidance (motion)
 - missile control
 - remote control
 - runway lights
 - servocontrol
 - spacecraft control
 - visibility
- visual discrimination**
- GS discrimination
 - . sensory discrimination
 - . . **visual discrimination**
 - perception
 - . sensory perception
 - . . visual perception
 - . . . **visual discrimination**
- RT ∞ recovery
- visual displays*
- USE **display devices**
- visual fields**
- RT field of view
 - ∞ fields
 - peripheral vision
 - retina
- retinal images
 - Saccadic eye movements
 - space perception
- visual flight**
- RT air navigation
 - collision avoidance
 - ∞ flight
 - flight conditions
 - flight paths
 - flight safety
 - landing
 - whiteout
- visual flight rules**
- UF *VFR (rules)*
 - GS rules
 - . flight rules
 - . . **visual flight rules**
- visual observation**
- GS observation
 - . **visual observation**
 - RT optical tracking
 - surveillance
 - visibility
 - visual perception
 - visual tasks
- visual perception**
- UF *sight*
 - GS perception
 - . sensory perception
 - . . **visual perception**
 - . . . critical flicker fusion
 - . . . space perception
 - autokinesis
 - . . . visual discrimination
 - RT afterimages
 - blinking
 - brightness discrimination
 - elevator illusion
 - motion perception
 - ∞ orientation
 - perceptual errors
 - ∞ space orientation
 - tachistoscopes
 - thresholds (perception)
 - visual observation
 - visual tasks
- visual photometry**
- DEF A subjective approach to the problem of photometry, wherein the human eye is used as the sensing instrument; to be distinguished from photoelectric photometry.
 - GS optical measurement
 - . photometry
 - . . **visual photometry**
- visual pigments**
- GS pigments
 - . **visual pigments**
 - RT dark adaptation
 - photoreceptors
 - photosensitivity
 - retina
- visual signals**
- RT beacons
 - cues
 - luminaires
 - optical communication
 - ∞ signals
- visual stimuli**
- RT perceptual errors
 - ∞ signals
 - ∞ stimuli
 - visual tasks
 - zeitgebers
- visual tasks**
- GS tasks
 - . **visual tasks**
 - RT eye movements
- human performance
 - visual observation
 - visual perception
 - visual stimuli
- visual tracking*
- USE **optical tracking**
- visualization of flow*
- USE **flow visualization**
- vitamin A*
- USE **retinene**
- vitamin B*
- USE **thiamine**
- vitamin B 2*
- USE **riboflavin**
- vitamin B 6*
- USE **pyridoxine**
- vitamin B 12*
- USE **cyanocobalamin**
- vitamin B complex*
- USE **biotin**
- vitamin C*
- USE **ascorbic acid**
- vitamin D*
- USE **calciferol**
- vitamin E*
- USE **tocopherol**
- vitamin G*
- USE **riboflavin**
- vitamin K*
- USE **phyloquinone**
- vitamin M*
- USE **folic acid**
- vitamin P*
- USE **bioflavonoids**
- vitamins**
- GS **vitamins**
 - . ascorbic acid
 - . bioflavonoids
 - . biotin
 - . calciferol
 - . carnitine
 - . cyanocobalamin
 - . folic acid
 - . nicotinamide
 - . nicotinic acid
 - . phyloquinone
 - . pyridoxine
 - . retinene
 - . riboflavin
 - . thiamine
 - . tocopherol
 - RT ascorbic acid metabolism
 - choline
 - drugs
 - ∞ food
 - ∞ nutrients
- Viterbi decoders**
- GS decoders
 - . **Viterbi decoders**
 - RT coding
 - decoding
 - signal encoding
 - signal processing
- Viton rubber (trademark)**
- GS copolymers
 - . **Viton rubber (trademark)**
 - elastomers

. rubber
 . . synthetic rubbers
 . . . **Viton rubber (trademark)**
 RT fluorohydrocarbons

vitreous materials

RT frit
 glass
 ∞ inorganic materials
 ∞ materials
 metallic glasses
 porcelain
 vitrification

vittrification

DEF Formation of a glassy or noncrystalline material.
 RT ceramics
 glass
 porcelain
 solidification
 vitreous materials

VJ-101 aircraft

GS jet aircraft
 . **VJ-101 aircraft**
 monoplanes
 . **VJ-101 aircraft**
 single engine aircraft
 . **VJ-101 aircraft**
 supersonic aircraft
 . **VJ-101 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **VJ-101 aircraft**
 RT ∞ aircraft

vasov equations

GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **vasov equations**
 RT ∞ equations
 stability

VLBI

USE **very long base interferometry**

VLF emission recorders

RT atmospheric radiation
 atmospheric
 cosmic rays
 electromagnetic radiation
 planetary radiation
 ∞ recorders
 recording instruments

VLSI

USE **very large scale integration**

VLTA (aircraft)

(added November 1998)
 USE **very large transport aircraft**

VOC (organic chemistry)

(added March 2000)
 USE **volatile organic compounds**

vocal cords

GS anatomy
 . respiratory system
 . . larynx
 . . . **vocal cords**
 RT glottis

vocoders

RT bandpass filters
 computers
 digital to voice translators
 frequency modulation
 messages
 radio communication
 scrambling (communication)
 signal reception
 speech baseband compression

voice communication
 voice data processing

voice

RT audio frequencies
 speech
 tongue

voice communication

GS telecommunication
 . communication
 . . **voice communication**
 . . . telephony
 RT acoustics
 conversation
 echo suppressors
 ground-air-ground communication
 multimedia
 radio communication
 radiotelephones
 reentry communication
 scrambling (communication)
 single channel per carrier
 transmission
 single sideband transmission
 speech
 speech baseband compression
 verbal communication
 vocoders
 voice control
 voice data processing
 wireless communication
 words (language)

voice control

SN (DEVICE OPERATION BY VOICE)
 DEF Using the voice to activate devices which respond or operate by means of speech recognition. SN (device operation by voice).
 RT bioengineering
 ∞ control
 robotics
 robots
 speech recognition
 voice communication
 voice data processing

voice data processing

GS data processing
 . **voice data processing**
 . . cepstral analysis
 RT artificial intelligence
 ∞ data
 digital to voice translators
 signal encoding
 single channel per carrier
 transmission
 vector quantization
 verbal communication
 vocoders
 voice communication
 voice control

Voice of America

RT broadcasting
 radio transmission

void ratio

UF *compactness*
 GS ratios
 . **void ratio**
 RT ∞ conductivity
 density (mass/volume)
 free flow
 hole distribution (mechanics)
 packing density
 permeability
 porosity
 reactor cores
 surface properties
 voids

voids

RT buoyancy
 cavities
 crack geometry

crack opening displacement
 defects
 inclusions
 infiltration
 interstices
 percolation
 permeability
 porosity
 void ratio

Voigt effect

RT birefringence
 ∞ effects
 optical paths
 refraction
 Zeeman effect

volatile organic compounds

(added March 2000)
 DEF Any compounds of carbon (excluding carbon oxides, carbonic acid, metallic carbonates and carbides, and carbon-nitrogen compounds) that are readily vaporizable; any of such compounds that participate in atmospheric photochemical reactions, or that are considered indoor, local, regional, or global contaminants.
 UF *VOC (organic chemistry)*
 GS organic compounds
 . **volatile organic compounds**
 RT air pollution
 air quality
 contaminants
 exhaust emission
 indoor air pollution
 ozone
 photochemical reactions

volatility

GS thermodynamic properties
 . thermophysical properties
 . . **volatility**
 RT coal gasification
 evaporation
 flash point
 prevaporization
 vapor phases
 vapor pressure
 vaporizing

volatilization

USE **vaporizing**

volcanic eruptions

(added October 2001)
 DEF The sudden ejection of solid, liquid, or gaseous matter from a volcanic vent or fissure.
 UF *eruptions (volcanology)*
 RT calderas
 effluents
 lava
 magma
 volcanoes
 volcanology

volcanics

USE **volcanology**

volcanoes

DEF Naturally occurring vents or fissures at the Earth's surface through which erupt molten, solid, and gaseous materials.
 UF *active volcanoes*
 GS geology
 . **volcanoes**
 . . Mars volcanoes
 landforms
 . **volcanoes**
 . . Mars volcanoes
 RT basalt
 calderas
 cones (volcanoes)
 effusives
 geomorphology
 geothermal resources
 lava
 mountains

volcanology

orography
paleomagnetism
petrology
Rouse belts
volcanic eruptions
volcanology

volcanology

UF *volcanics*
GS geology
. **volcanology**
RT basalt
calderas
cones (volcanoes)
effusives
geomorphology
lava
Mars volcanoes
mountains
orography
paleomagnetism
petrogenesis
petrology
Rouse belts
volcanic eruptions
volcanoes

voltage

USE **electric potential**

voltage amplifiers

GS amplifiers
. **voltage amplifiers**
RT current amplifiers
feedback amplifiers
magnetic amplifiers
preamplifiers
volt-ampere characteristics

voltage breakdown

USE **electrical faults**

voltage controlled oscillators

DEF An oscillator whose frequency of oscillation can be varied by changing an applied voltage. Used for VCO.

UF *VCO*
GS oscillators
. **voltage controlled oscillators**
RT circuits
electric control
electric networks
frequency modulation
frequency stability
microwave oscillators
voltage regulators

voltage converters (AC to AC)

GS transformers
. **voltage converters (AC to AC)**
RT alternating current
auxiliary power sources
∞ converters
∞ electric equipment
∞ electric power
∞ power supplies

voltage converters (DC to DC)

RT auxiliary power sources
∞ converters
direct current
electric batteries
∞ electric equipment
∞ electric power
∞ power supplies
power supply circuits

voltage generators

RT arc generators
electrostatic generators
function generators
∞ generators

signal generators

voltage measurement

USE **electrical measurement**

voltage regulators

GS control equipment
. regulators
. . . **voltage regulators**
RT avalanche diodes
circuit protection
controllers
current regulators
electric switches
electronic control
power factor controllers
power supply circuits
switching circuits
transformers
transmission loss
voltage controlled oscillators

voltage variation indicators

USE **voltmeters**

volt-ampere characteristics

RT capacitance-voltage characteristics
∞ characteristics
electric current
electric potential
∞ electronics
linear circuits
Ohms law
open circuit voltage
optogalvanic spectroscopy
proximity effect (electricity)
quantum efficiency
short circuit currents
threshold voltage
transconductance
voltage amplifiers

Volterra equations

GS analysis (mathematics)
. functional analysis
. . . integral equations
. . . **Volterra equations**
RT ∞ equations
nonlinearity
∞ radiation

voltmeters

UF *voltage variation indicators*
GS measuring instruments
. **voltmeters**
. . . millivoltmeters
RT ammeters
coulometers
electrometers
potentiometers (instruments)

volume

GS **volume**
. body volume (biology)
RT area
∞ capacity
dimensions
frustums
geometry
isochoric processes
rates (per time)
thickness
volumetric analysis
weight (mass)

volume fraction

USE **concentration (composition)**

volumetric analysis

GS chemical tests
. chemical analysis
. . . **volumetric analysis**
RT analytical chemistry
gas analysis
quantitative analysis

volume

volumetric efficiency

RT energy conversion efficiency
engine design
fuel-air ratio
laser outputs

volumetric strain

GS fatigue (materials)
. **volumetric strain**
RT deformation
structural strain
temperature inversions

vomiting

RT motion sickness
nausea

Von Karman equation

GS flow equations
. **Von Karman equation**
RT ∞ equations
flow stability
Karman vortex street
vortex breakdown
vortex streets
vorticity equations

von Mises theory

USE **stress functions**

von Zeipel method

RT equations of motion
Hamiltonian functions
∞ methodology
perturbation theory

Voodoo aircraft

USE **F-101 aircraft**

VOR systems

USE **VHF omnirange navigation**

Voronoi diagrams

(added October 2000)
DEF In computational geometry, a partitioning of a space containing a finite set of points, P, in such a way that each partition contains a single point in P and the subspace for which it is the nearest point from the set. Some applications include regional planning, image analysis, and robot path planning.

GS diagrams
. **Voronoi diagrams**
RT computational geometry
geometry
grid generation (mathematics)
image analysis
partitions (mathematics)
spatial distribution
topology
trajectory planning

vortex advisory system

DEF Display system which compares measured on-minute-average wind magnitudes and direction with the wind-rose criterion to predict wake vorticity and to indicate to the air traffic controller (with a red or green light) when the interarrival spacings for landings may be reduced to the 3 nautical mile limit.

RT air traffic control
aircraft approach spacing
aircraft wakes
∞ systems
turbulent wakes
vortex alleviation

vortex alleviation

DEF The alteration of airfoil configurations to change the airflow patterns directly behind the wings to eliminate or inhibit the vertical motion which directly affects the aircraft immediately following, during closely spaced landings.

RT aircraft wakes

- drag devices
 - gust alleviators
 - protuberances
 - riblets
 - spoilers
 - vortex advisory system
 - vortices
 - wakes
 - winglets
- vortex avoidance**
- DEF Schemes which involve airborne or ground-based equipment to track, monitor, and/or predict vortex behavior which might affect the approach and landing operations.
 - GS avoidance
 - . **vortex avoidance**
 - RT aerodynamic stability
 - air traffic control
 - aircraft approach spacing
 - aircraft landing
 - buffeting
 - gusts
 - rotation
 - safety
 - turbulent flow
 - vortices
 - winglets
- vortex breakdown**
- RT flow stability
 - turbulent flow
 - Von Karman equation
 - vortex flaps
- vortex columns*
- USE **vortices**
- vortex disturbances*
- USE **vortices**
- vortex filaments**
- DEF The fine-scale structure of turbulent flow; the small non energy containing eddies convected at mean freestream velocities.
 - RT ∞ filaments
 - flow stability
 - fluid dynamics
 - horseshoe vortices
 - turbulence
 - vortex in cell technique
 - vortices
- vortex flaps**
- DEF Leading edge flap designs for highly swept wings, in which the leading edge tabs, which are counter reflected, cause vortices to form on the flap. The trapped vortices cause significantly improved wind flow characteristics.
 - GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **vortex flaps**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **vortex flaps**
 - . aircraft brakes
 - . . wing flaps
 - . . . **vortex flaps**
 - control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **vortex flaps**
 - drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **vortex flaps**
 - RT aerodynamic drag
 - jet flaps
 - leading edge flaps
 - leading edges
 - lift augmentation
 - separated flow
 - trailing edge flaps
 - trailing edges
- vortex breakdown
- vortices
 - wing loading
- vortex flow*
- USE **vortices**
- vortex generation*
- USE **vortex generators**
- vortex generators**
- UF *vortex generation*
 - RT airfoil fences
 - boundary layer control
 - boundary layer separation
 - ∞ generators
 - Hilsch tubes
 - horseshoe vortices
 - inlet flow
 - vortices
 - wing slots
- vortex in cell technique**
- (added April 1993)
 - UF *VIC method*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **vortex in cell technique**
 - RT computational fluid dynamics
 - fast Fourier transformations
 - finite difference theory
 - ∞ methodology
 - particle in cell technique
 - Poisson equation
 - vortex filaments
 - vortices
- vortex injectors**
- GS injectors
 - . **vortex injectors**
- vortex lattice method**
- (added April 1992)
 - RT boundary conditions
 - computational fluid dynamics
 - flow velocity
 - flux vector splitting
 - lattices (mathematics)
 - panel method (fluid dynamics)
 - vortices
- vortex precession**
- RT flow velocity
 - flowmeters
 - precession
 - velocity measurement
 - vortices
- vortex rings**
- RT horseshoe vortices
 - ∞ rings
 - trapped vortices
 - vortices
- vortex shedding**
- DEF Periodic separation of a fluid flowing past an unstreamlined body.
 - GS fluid mechanics
 - . fluid dynamics
 - . . **vortex shedding**
 - RT shedding
 - vortices
- vortex sheets**
- RT aircraft design
 - flow distribution
 - rotating fluids
 - ∞ sheets
 - turbulent wakes
 - vortices
 - vorticity
- vortex streets**
- DEF Two parallel rows of alternately placed vortices along the wake of an obstacle in a fluid
- of moderate Reynolds number.
- GS **vortex streets**
 - . Karman vortex street
 - RT discontinuity
 - ∞ sheets
 - turbulent wakes
 - Von Karman equation
 - vortices
- vortex traps*
- USE **trapped vortices**
- vortex tubes*
- USE **Hilsch tubes**
 - vortices**
- vortex-blade interaction*
- USE **blade-vortex interaction**
- vortices**
- DEF In fluids, circulations drawing their energy from flows of much larger scale and brought about by pressure irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes.
 - UF *eddies*
 - rotational flow*
 - vortex columns*
 - vortex disturbances*
 - vortex flow*
 - vortex tubes*
 - GS **vortices**
 - . horseshoe vortices
 - . trapped vortices
 - . wing tip vortices
 - RT Abrikosov theory
 - agitation
 - Biot-Savart law
 - blade-vortex interaction
 - cavitation flow
 - counterflow
 - ∞ disturbances
 - divergence
 - flow distortion
 - flow stability
 - fluid flow
 - Goertler instability
 - Hilsch tubes
 - Kolmogorov theory
 - large eddy simulation
 - meteorological solenoids
 - mixing
 - planetary waves
 - recirculative fluid flow
 - rotating fluids
 - rotating liquids
 - rotation
 - secondary flow
 - Strouhal number
 - superconductivity
 - superfluidity
 - thrust distribution
 - turbulence
 - turbulent flow
 - turbulent mixing
 - vortex alleviation
 - vortex avoidance
 - vortex filaments
 - vortex flaps
 - vortex generators
 - vortex in cell technique
 - vortex lattice method
 - vortex precession
 - vortex rings
 - vortex shedding
 - vortex sheets
 - vortex streets
 - vorticity
 - wakes
- vorticity**
- UF *enstrophy*
 - GS algebra
 - . vector spaces
 - . . vectors (mathematics)
 - . . . **vorticity**

vorticity equations

- analysis (mathematics)
- . calculus
- . . vector analysis
- . . . curl (vectors)
- **vorticity**
- . real variables
- . . vector analysis
- . . . curl (vectors)
- **vorticity**
- geometry
- . vector analysis
- . . curl (vectors)
- . . . **vorticity**
- RT atmospheric circulation
- Beltrami flow
- Crocco method
- flow stability
- Helmholtz vorticity equation
- horseshoe vortices
- potential flow
- secondary flow
- trapped vortices
- turbulence
- vortex sheets
- vortices

vorticity equations

DEF Dynamic equations for the rate of change on the vorticity of a parcel, obtained by taking the curl of the vector equation of motion.

GS analysis (mathematics)

- . real variables
- . . differential equations
- . . . **vorticity equations**
- Helmholtz vorticity equation
- flow equations
- . **vorticity equations**
- . . Helmholtz vorticity equation

RT ∞ equations

- Karman vortex street
- Von Karman equation

vorticity transport hypothesis

GS hypotheses

- . **vorticity transport hypothesis**

RT conservation equations

- eddy currents
- mixing length flow theory
- turbulent flow

Voskhod 1 spacecraft

GS manned spacecraft

- . voskhod manned spacecraft
- . . **Voskhod 1 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . voskhod manned spacecraft
- . . . **Voskhod 1 spacecraft**
- soft landing spacecraft
- . voskhod manned spacecraft
- . . **Voskhod 1 spacecraft**

Voskhod 2 spacecraft

GS manned spacecraft

- . voskhod manned spacecraft
- . . **Voskhod 2 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . voskhod manned spacecraft
- . . . **Voskhod 2 spacecraft**
- soft landing spacecraft
- . voskhod manned spacecraft
- . . **Voskhod 2 spacecraft**

voskhod manned spacecraft

GS manned spacecraft

- . **voskhod manned spacecraft**
- . . Voskhod 1 spacecraft
- . . Voskhod 2 spacecraft
- reentry vehicles
- . recoverable spacecraft
- . . **voskhod manned spacecraft**
- . . . Voskhod 1 spacecraft
- . . . Voskhod 2 spacecraft
- soft landing spacecraft
- . **voskhod manned spacecraft**

- . . Voskhod 1 spacecraft
- . . Voskhod 2 spacecraft
- RT space capsules

Vostok 1 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 1 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 1 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 1 spacecraft**

Vostok 2 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 2 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 2 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 2 spacecraft**

Vostok 3 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 3 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 3 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 3 spacecraft**

Vostok 4 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 4 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 4 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 4 spacecraft**

Vostok 5 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 5 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 5 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 5 spacecraft**

Vostok 6 spacecraft

GS manned spacecraft

- . Vostok spacecraft
- . . **Vostok 6 spacecraft**
- reentry vehicles
- . recoverable spacecraft
- . . Vostok spacecraft
- . . . **Vostok 6 spacecraft**
- soft landing spacecraft
- . Vostok spacecraft
- . . **Vostok 6 spacecraft**

Vostok spacecraft

GS manned spacecraft

- . **Vostok spacecraft**
- . . Vostok 1 spacecraft
- . . Vostok 2 spacecraft
- . . Vostok 3 spacecraft
- . . Vostok 4 spacecraft
- . . Vostok 5 spacecraft
- . . Vostok 6 spacecraft
- reentry vehicles

- . recoverable spacecraft
- . . **Vostok spacecraft**
- . . . Vostok 1 spacecraft
- . . . Vostok 2 spacecraft
- . . . Vostok 3 spacecraft
- . . . Vostok 4 spacecraft
- . . . Vostok 5 spacecraft
- . . . Vostok 6 spacecraft
- soft landing spacecraft
- . **Vostok spacecraft**
- . . Vostok 1 spacecraft
- . . Vostok 2 spacecraft
- . . Vostok 3 spacecraft
- . . Vostok 4 spacecraft
- . . Vostok 5 spacecraft
- . . Vostok 6 spacecraft
- RT space capsules

voting

RT governments

- law (jurisprudence)
- minorities
- politics
- sovereignty

vowels

RT consonants (speech)

- grammars
- languages
- words (language)

Voyager 1 spacecraft

DEF A spacecraft launched in the 1977 Voyager mission.

GS interplanetary spacecraft

- . **Voyager 1 spacecraft**
- unmanned spacecraft
- . space probes
- . . **Voyager 1 spacecraft**

RT flyby missions

- Grand Tours
- Jupiter (planet)
- Jupiter probes
- Jupiter rings
- ∞ spacecraft

Voyager 2 spacecraft

DEF A spacecraft launched in the 1977 Voyager mission.

GS interplanetary spacecraft

- . **Voyager 2 spacecraft**
- unmanned spacecraft
- . space probes
- . . **Voyager 2 spacecraft**

RT flyby missions

- Grand Tours
- Jupiter (planet)
- Jupiter probes
- Neptune (planet)
- Saturn (planet)
- ∞ spacecraft
- Uranus (planet)

Voyager 1977 mission

DEF The launching of two advanced three-axis attitude stabilized spacecraft for the exploration of Jovian and Saturnian environments including investigation of the gravitational fields, atmospheric dynamics, and magnetospheres of these planets.

GS space missions

- . flyby missions
- . . Grand Tours
- . . . **Voyager 1977 mission**

RT interplanetary spacecraft

- Jupiter (planet)
- Jupiter probes
- ∞ missions
- solar system
- space probes

Voyager project

GS programs

- . NASA programs
- . . NASA space programs
- . . . **Voyager project**

- . projects
 - . . **Voyager project**
 - . space programs
 - . . NASA space programs
 - . . . **Voyager project**
 - RT Mars probes
 - Saturn project
 - space probes
 - unmanned spacecraft
 - Venus probes
- Voyageur helicopter*
- USE **CH-46 helicopter**
- VR (virtual reality)*
- USE **virtual reality**
- VSAT (network)**
- UF *very small aperture terminals*
 - GS data processing equipment
 - . data processing terminals
 - . . **VSAT (network)**
 - networks
 - . communication networks
 - . . **VSAT (network)**
 - . satellite networks
 - . . **VSAT (network)**
 - RT Aloha system
 - apertures
 - ARPA computer network
 - computer networks
 - data links
 - data transmission
 - distributed processing
 - Earth terminals
 - interprocessor communication
 - local area networks
 - microwave transmission
 - needs (data system)
 - personal computers
 - random access
 - superhigh frequencies
 - telecommunication
- VTOL*
- USE **vertical landing**
- vertical takeoff**
- VTOL aircraft*
- USE **vertical takeoff aircraft**
- Vulcan aircraft**
- UF *AVRO 698 aircraft*
 - GS attack aircraft
- . bomber aircraft
 - . . **Vulcan aircraft**
 - Hawker Siddeley aircraft
 - . **Vulcan aircraft**
 - jet aircraft
 - . **Vulcan aircraft**
 - tailless aircraft
 - . **Vulcan aircraft**
 - RT ∞ aircraft
 - AVRO 707 aircraft
 - Harrier aircraft
- vulcanizates*
- USE **vulcanized elastomers**
- vulcanized elastomers**
- UF *gum vulcanizates*
 - vulcanizates*
 - GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . **vulcanized elastomers**
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
 - RT addition resins
 - polyether resins
 - thermoplastic resins
 - vulcanizing
- vulcanizing**
- DEF A chemical reaction in which the physical properties of a rubber are changed in the direction of decreased plastic flow, less surface tackiness, and increased tensile strength by reacting it with sulfur or other suitable agents.
- GS crosslinking
 - . **vulcanizing**
 - RT curing
 - vulcanized elastomers
- vulnerability**
- GS **vulnerability**
 - . nuclear vulnerability
 - RT aircraft reliability
 - aircraft survivability
 - airport security
 - durability
 - integrity
 - life (durability)
 - obstacle avoidance
 - penetration
 - piercing
 - reliability
 - ∞ resistance
- security
 - sensitivity
 - spacecraft defense
 - spacecraft survivability
 - stability
- Vycor**
- GS fibers
 - . synthetic fibers
 - . . **Vycor**
 - glass
 - . **Vycor**
 - semiconductors (materials)
 - . **Vycor**
 - RT glass fibers
 - ∞ materials
 - silicon dioxide
- VZ-2 aircraft**
- GS Boeing aircraft
 - . **VZ-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **VZ-2 aircraft**
 - tilt wing aircraft
 - . **VZ-2 aircraft**
 - V/STOL aircraft
 - . **VZ-2 aircraft**
 - RT ∞ aircraft
- VZ-8 aircraft**
- UF *Airgeep aircraft*
 - GS light aircraft
 - . **VZ-8 aircraft**
 - Piasecki aircraft
 - . **VZ-8 aircraft**
 - research vehicles
 - . research aircraft
 - . . **VZ-8 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **VZ-8 aircraft**
 - RT ∞ aircraft
 - flying platforms
- VZ-10 aircraft*
- USE **XV-4 aircraft**
- VZ-11 aircraft*
- USE **XV-5 aircraft**
- VZ-12 aircraft*
- USE **P-1127 aircraft**

W

W stars

USE **Wolf-Rayet stars**

W wings

USE **variable sweep wings**

W2F aircraft

USE **E-2 aircraft**

Wabash River Basin (IL-IN-OH)

GS landforms
 . structural basins
 . . river basins
 . . . **Wabash River Basin (IL-IN-OH)**
 RT Illinois
 Indiana
 Ohio
 rivers

wadis

DEF A term used in the desert regions of Southwest Asia and Northern Africa for a stream bed or channel, or a steep sided and bouldery ravine, gully or valley, or a dry wash, that is usually dry except during the rainy season and that often forms an oasis.

GS landforms
 . structural basins
 . . river basins
 . . . **wadis**
 RT arid lands
 desertification
 rivers
 streams
 topography
 valleys
 water runoff

wafers

RT microelectronics
 microminiaturization
 miniaturization
 photomasks
 semiconductor devices
 solid state devices
 thin films
 vertical junction solar cells

wage surveys

GS reports
 . **wage surveys**
 surveys
 . **wage surveys**
 RT cost analysis
 cost estimates
 cost reduction
 employee relations
 finance
 personnel

wakefulness

RT alertness
 sleep deprivation

wakes

GS **wakes**
 . aircraft wakes
 . . helicopter wakes
 . . slipstreams
 . . . propeller slipstreams
 . hypersonic wakes
 . laminar wakes
 . near wakes
 . supersonic wakes
 . turbulent wakes
 . . slipstreams
 . . . propeller slipstreams
 RT backwash
 base flow
 bubbles

cavitation flow
 contrails
 downwash
 ∞ draft
 drag
 ground effect (aerodynamics)
 horseshoe vortices
 Strouhal number
 turbulence
 vortex alleviation
 vortices

Wales

(added November 1989)
 GS nations
 . United Kingdom
 . . **Wales**
 RT Europe

walking

GS locomotion
 . **walking**
 RT gait
 physical exercise
 running

walking machines

GS surface vehicles
 . **walking machines**
 RT astronaut maneuvering equipment
 gait
 ∞ machinery
 manned lunar surface vehicles
 prosthetic devices

wall flow

GS fluid flow
 . **wall flow**
 RT boundary layer flow
 channel flow
 conical flow
 discharge coefficient
 ducted flow
 Goertler instability
 heat transmission
 Manning theory
 two dimensional flow
 two dimensional jets

wall jets

RT fluid amplifiers
 jet boundaries
 jet flow
 jet vanes
 ∞ jets

wall pressure

GS pressure
 . **wall pressure**
 RT boundary layers
 pressure distribution
 pressure vessels
 thick walls

wall temperature

GS surface properties
 . surface temperature
 . . **wall temperature**
 temperature
 . surface temperature
 . . **wall temperature**
 RT Brinkman number
 operating temperature
 thick walls

Wallops Island

GS landforms
 . islands
 . . **Wallops Island**

RT Atlantic Ocean
 Virginia

walls

UF *cold walls*
 GS **walls**
 . bulkheads
 . nozzle walls
 . porous walls
 . thick walls
 . thin walls
 . Trombe walls
 . wind tunnel walls
 RT ∞ barriers
 buildings
 curtains
 enclosures
 floors
 gates (openings)
 housings
 limiters (fusion reactors)
 panels
 partitions (structures)
 sandwich structures
 sheaths
 shells (structural forms)
 sides
 studs (structural members)
 substructures
 tiles

Walsh function

GS analysis (mathematics)
 . complex variables
 . . orthogonal functions
 . . . **Walsh function**
 functions (mathematics)
 . orthogonal functions
 . . **Walsh function**
 RT fast Fourier transformations
 Fourier transformation
 functional analysis
 matrices (mathematics)

WAN

USE **wide area networks**

Wankel engines

GS engines
 . internal combustion engines
 . . rotary engines
 . . . **Wankel engines**
 RT aircraft engines
 automobile engines
 piston engines

war games

GS games
 . **war games**
 RT digital simulation
 game theory
 mathematical models
 operations research
 simulation

warfare

GS **warfare**
 . antiship warfare
 . antisubmarine warfare
 . chemical warfare
 . combat
 . electronic warfare
 . nuclear warfare
 RT attacking (assaulting)
 B-1 aircraft
 chemical defense
 evasive actions
 infiltration
 international law
 ordnance

peacetime
politics
strategy
violence

warheads

DEF Originally the parts of the missile carrying the explosive, chemical, or other charge intended to damage the enemy. By extension, the term is sometimes used as synonymous with payload or nose cone.

GS weapons
. **warheads**
. . nuclear warheads
. . precision guided projectiles

RT ammunition
antiship warfare
bombs (ordnance)
explosive devices
explosives
∞ fuses
fuses (ordnance)
missile components
missiles
nose cones
nuclear devices
nuclear weapons
payloads
projectiles
∞ rockets
shaped charges
torpedoes

warm blooded animals

USE **homeotherms**

warm fronts

GS fronts (meteorology)
. **warm fronts**

RT air masses
cold fronts
∞ fronts
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes
weather forecasting

warming

USE **heating**

warning

RT accident prevention
auditory signals
bells
civil defense
collision avoidance
detection
∞ detectors
early warning systems
fire prevention
horns
mine detectors
monitors
protection
safety
safety devices

warning devices

USE **warning systems**

warning signals

USE **warning systems**

Warning Star aircraft

USE **C-121 aircraft**

warning systems

UF *alams*
collision warning devices
warning devices
warning signals

GS **warning systems**
. early warning systems

. . Ballistic Missile Early Warning System

. mine detectors

RT accident prevention
auditory signals
avoidance
bells
civil defense
collision avoidance
detection
∞ detectors
display devices
explosions
false alarms
fire prevention
fires
gas detectors
hazards
head-up displays
horns
monitors
National Severe Storms Project
pollution monitoring
protection
public address systems
safety
safety devices
safety management
sanitation
sirens
sound generators
∞ systems
threat evaluation

warpage

RT bending
buckling
camber
damage
deformation
distortion
growth
heaving
plastic deformation
shrinkage
structural strain
surface distortion
thermal expansion
twisting

washers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT washers (cleaners)
washers (spacers)

washers (cleaners)

RT cleaners
concentrators
extraction
separators
∞ washers
washing

washers (spacers)

GS fasteners
. **washers (spacers)**

RT inserts
separators
spacers
∞ washers

washing

UF *scrubbing*

GS cleaning
. **washing**
. . bathing

RT beneficiation
decontamination
dissolving
distillation
elution
flushing
housekeeping (spacecraft)
purification
scrubbers

∞ separation
washers (cleaners)
waste water

Washington

GS nations
. United States
. . **Washington**

RT Cascade Range (CA-OR-WA)
Columbia River Basin (ID-OR-WA)

washout (radioactivity)

USE **fallout**

WASP sounding rocket

UF *high altitude sounding projectile*
window atmosphere sounding projectile

GS rocket vehicles
. multistage rocket vehicles
. . **WASP sounding rocket**
. sounding rockets
. . **WASP sounding rocket**

RT Loki rocket vehicle
solid propellant rocket engines

Waspaloy

GS alloys
. heat resistant alloys
. . **Waspaloy**
. nickel alloys
. . **Waspaloy**

RT chromium alloys
cobalt alloys
wrought alloys

waste disposal

GS disposal
. **waste disposal**
. . composting
. . hazardous material disposal (in space)
management
. waste management
. . **waste disposal**
. . . composting
. . . hazardous material disposal (in space)

RT air pollution
deep well injection (wastes)
dewatering
dilution
dissipation
drainage
effluents
elimination
environment effects
environment pollution
environment protection
environmental chemistry
environmental cleanup
environmental engineering
environmental surveys
exhaust gases
exhaust systems
garbage
hazardous materials
hazardous wastes
human wastes
incinerators
industrial wastes
landfills
manures
materials handling
metabolic wastes
mines (excavations)
Modular Integrated Utility System
pipelines
plasma core reactors
pollution
ponds
radioactive wastes
sanitation
sewage
sewage treatment
sewers

waste energy utilization

- soil pollution
- solid wastes
- space flight feeding
- ∞ storage
- sumps
- toilets
- utilities
- wastes
- water pollution

waste energy utilization

- GS utilization
 - . **waste energy utilization**
- RT boilers
- burners
- chimneys
- cogeneration
- energy conversion
- exergy
- exhaust gases
- furnaces
- heat transfer
- heating
- incinerators
- lighting equipment
- ovens
- solid wastes
- space heating (buildings)
- waste heat
- wastes

waste heat

- RT energy technology
- heat exchangers
- heat pumps
- waste energy utilization

waste management

(added March 1997)

- GS management
 - . **waste management**
 - . . waste disposal
 - . . . composting
 - . . . hazardous material disposal (in space)
 - . . waste treatment
 - . . . sewage treatment
 - . . waste utilization
- RT environment management
- environmental engineering
- landfills
- life support systems
- materials recovery
- reclamation
- recycling
- sanitation
- underground storage
- wastes

waste treatment

DEF The processing of waste materials (liquid and solid) with chemicals, high temperature, chopping, grinding, and filtering equipment, bacterial action, dryers, separators, for conversion to useful products.

- GS management
 - . waste management
 - . . **waste treatment**
 - . . . sewage treatment
- RT bacteria
- composting
- environmental cleanup
- garbage
- residues
- sludge
- ∞ treatment
- wastes

waste utilization

- GS management
 - . waste management
 - . . **waste utilization**
 - utilization
 - . **waste utilization**
- RT biomass energy production
- composting

- hydrocarbon fuel production
- industrial wastes
- landfills
- manures
- renewable energy
- solid wastes
- wastes

waste water

- GS wastes
 - . liquid wastes
 - . . **waste water**
 - water
 - . **waste water**
- RT bathing
- cleaning
- flushing
- industrial wastes
- residues
- washing
- water cooled reactors

wastes

- GS **wastes**
 - . garbage
 - . industrial wastes
 - . liquid wastes
 - . . urine
 - . . waste water
 - . manures
 - . metabolic wastes
 - . . human wastes
 - . . . feces
 - . . . urine
 - . hazardous wastes
 - . radioactive wastes
 - . sewage
 - . solid wastes
- RT activated sludge
- air pollution
- beneficiation
- by-products
- combustion products
- contaminants
- debris
- effluents
- environment effects
- exhaust gases
- forest fires
- fumes
- gas recovery
- impurities
- leakage
- losses
- nonpoint sources
- organic wastes (fuel conversion)
- pollution
- residues
- scrap
- sewers
- slags
- sludge
- waste disposal
- waste energy utilization
- waste management
- waste treatment
- waste utilization

watches

USE **clocks**

water

DEF Dihydrogen oxide (molecular formula H₂O). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term water substance is often used.

- GS **water**
 - . cold water
 - . deep water
 - . fresh water
 - . heavy water
 - . inland waters
 - . . ground water
 - . light water
 - . nearshore water

- . . coastal water
- . polywater
- . potable water
- . sea water
- . shallow water
- . shoals
- . springs (water)
- . surface water
- . vadose water
- . waste water

RT

- aquifers
- arroyos
- bay ice
- body fluids
- cavitation flow
- fjords
- humidity
- hydrates
- ∞ hydraulics
- hydrodynamics
- hydrogen bonds
- hydrogen compounds
- hydrology
- hydromechanics
- hydrostatics
- ice
- isthmuses
- Lake Erie
- Lake Huron
- lake ice
- Lake Michigan
- Lake Ontario
- Lake Superior
- laterites
- life support systems
- limnology
- liquids
- moderators
- moisture
- moisture content
- muskegs
- oxides
- peninsulas
- pollution
- precipitation (meteorology)
- runway conditions
- slush
- sounds (topographic features)
- steam
- straits
- utilities
- water sampling
- water splitting
- watersheds
- wharves
- windpowered pumps

water balance

- GS balance
 - . material balance
 - . . **water balance**
- RT body fluids
- edema
- ∞ equilibrium
- homeostasis
- hydrometeorology
- lysimeters
- osmosis
- urination

water circulation

- GS circulation
 - . **water circulation**
 - . . water currents
 - . . . ocean currents
 - coastal currents
 - el Nino
 - Gulf Stream
 - Lomonosov current
 - . . thermohaline circulation
- RT lakes
- oceanography
- pollution transport
- wind effects

water color

- GS electromagnetic properties

- . optical properties
- .. color
- ... **water color**
- RT Coastal Zone Color Scanner
- dissolved organic matter
- lakes
- ocean color scanner
- oceans
- rivers
- Sea-viewing Wide Field-of-view Sensor
- water consumption**
- GS consumption
- .. **water consumption**
- RT drought
- irrigation
- seepage
- water content*
- USE **moisture content**
- water cooled reactors**
- UF *physical constants testing reactor*
- GS nuclear reactors
- . liquid cooled reactors
- .. **water cooled reactors**
- ... boiling water reactors
- experimental boiling water reactors
- Halden Boiling Water Reactor
- Los Alamos Water Boiler Reactor
- Pathfinder nuclear reactor
- Spert reactors
- ... heavy water reactors
- heavy water components test reactors
- plutonium recycle test reactor
- zero power reactor 2
- ... light water reactors
- .. NRX reactors
- ... Plum Brook Reactor
- ... pressurized water reactors
- ... spectral shift control reactor
- ... swimming pool reactors
- ... zero power reactors
- zero power reactor 2
- zero power reactor 3
- zero power reactor 6
- zero power reactor 9
- RT chemical reactors
- nuclear engine for rocket vehicles
- ∞ reactors
- waste water
- water cooling*
- USE **liquid cooling**
- water currents**
- DEF Net transport of water along a definable path. Used for currents (oceanography).
- UF *currents (oceanography)*
- GS circulation
- . water circulation
- .. **water currents**
- ... ocean currents
- coastal currents
- el Nino
- Gulf Stream
- Lomonosov current
- RT arroyos
- ∞ currents
- oceanography
- rapids
- sea roughness
- sea states
- surface waves
- tides
- upstream
- water cycle (hydrology)*
- USE **hydrological cycle**
- water deprivation**
- GS deprivation
- . **water deprivation**
- water depth**
- RT cnoidal waves
- coastal water
- lakes
- nearshore water
- oceans
- shallow water
- shoals
- water erosion**
- GS erosion
- . **water erosion**
- RT arroyos
- canyons
- drainage patterns
- flood damage
- rain impact damage
- ravines
- soil erosion
- wind erosion
- water flow**
- GS fluid flow
- . liquid flow
- .. **water flow**
- RT alluvium
- canals
- drainage
- drainage patterns
- flood damage
- floods
- flow measurement
- Great Lakes (North America)
- ground water
- ∞ hydraulics
- hydrodynamics
- hydrology models
- open channel flow
- pipe flow
- rapids
- watersheds
- water hammer**
- RT hydraulic equipment
- hydrodynamics
- pipe flow
- pipelines
- rams (pumps)
- surges
- valves
- water heating**
- DEF The heating of water by any means including solar technology.
- GS heating
- . **water heating**
- RT domestic energy
- geothermal energy extraction
- heat exchangers
- ∞ heaters
- heating equipment
- residential energy
- temperature control
- water immersion**
- RT baths
- liquid cooling
- quenching (cooling)
- sinking
- ∞ soaking
- submerged bodies
- submerging
- underwater tests
- water injection**
- GS injection
- . fluid injection
- .. liquid injection
- ... **water injection**
- RT gas injection
- perforating
- thrust augmentation
- ∞ **water intakes**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT air intakes
- intake systems
- manifolds
- nose inlets
- plenum chambers
- scoops
- side inlets
- water jets*
- USE **hydraulic jets**
- water landing**
- GS landing
- . **water landing**
- RT aircraft landing
- crash landing
- ditching (landing)
- glide landings
- hard landing
- horizontal spacecraft landing
- hydroplaning
- planetary landing
- soft landing
- spacecraft landing
- spacecraft recovery
- splashing
- touchdown
- water loss**
- RT dehydration
- drying
- evaporation
- losses
- water management**
- GS management
- . **water management**
- RT conservation
- drought
- environment management
- floods
- hydrology
- Lake Erie
- Lake Huron
- Lake Michigan
- Lake Ontario
- Lake Superior
- limnology
- potable water
- Pyramid Lake (NV)
- watersheds
- water masers**
- GS emission
- . **water masers**
- stimulated emission devices
- . masers
- .. **water masers**
- RT gas lasers
- gas masers
- interstellar masers
- maser outputs
- water moderated reactors**
- GS nuclear reactors
- . **water moderated reactors**
- .. experimental boiling water reactors
- .. heavy water components test reactors
- .. plutonium recycle test reactor
- RT light water reactors
- water pollution**
- GS pollution
- . environment pollution
- .. **water pollution**
- ... oil pollution
- RT algae
- alkalinity
- biochemical oxygen demand
- clean energy

water pressure

- contamination
- dissolved organic matter
- drought
- environment effects
- environment protection
- environmental chemistry
- environmental cleanup
- environmental quality
- environmental surveys
- inland waters
- landfills
- limnology
- lysimeters
- marine resources
- oil slicks
- phytoplankton
- pollution monitoring
- pollution transport
- purity
- soil pollution
- thermal pollution
- waste disposal
- water sampling

water pressure

- GS pressure
 - . fluid pressure
 - . . **water pressure**
- RT ∞ hydraulics
- hydrodynamics
- hydrostatic pressure
- hydrostatics
- inlet pressure
- pipe flow

water purification

USE **water treatment**

water quality

- GS quality
 - . environmental quality
 - . . **water quality**
- RT alkalinity
- environment effects
- water sampling

water reclamation

- UF *water recovery*
- GS reclamation
 - . materials recovery
 - . . **water reclamation**
- RT conservation
- dewatering
- drought
- pollution

water recovery

USE **water reclamation**

water resources

- GS resources
 - . Earth resources
 - . . **water resources**
 - . . . aquifers
- RT environment effects
- environment management
- Great Lakes (North America)
- ground water
- hydrology
- inland waters
- International Hydrological Decade
- lakes
- limnology
- oceans
- ponds
- potable water
- precipitation (meteorology)
- Pyramid Lake (NV)
- rainmaking
- reservoirs
- sea water
- underwater resources
- wetlands

windpowered pumps

water runoff

- RT drainage
- ground water
- inland waters
- resources management
- rivers
- wadis

water sampling

(added March 1998)

DEF The process of obtaining a representative sample of water from any natural or artificial environment.

- GS sampling
 - . **water sampling**
- RT environmental monitoring
- ground water
- pollution monitoring
- sea water
- surface water
- water
- water pollution
- water quality

water splitting

(added September 1988)

- GS splitting
 - . **water splitting**
- RT electrolysis
- hydrogen fuels
- hydrogen production
- thermochemistry
- water

water tables

- RT aquifers
- drainage
- ground water
- potable water
- springs (water)
- vadose water
- watersheds

water takeoff and landing aircraft

- GS **water takeoff and landing aircraft**
 - . seaplanes
- RT ∞ aircraft
 - amphibious aircraft
 - antisubmarine warfare aircraft
 - commercial aircraft
 - ground effect machines
 - hovercraft ground effect machines
 - light aircraft
 - monoplanes
 - passenger aircraft
 - reconnaissance aircraft
 - S-61 helicopter
 - sea launching
 - submersible aircraft
- ∞ subsonic aircraft
- transport aircraft
- utility aircraft

water temperature

- GS temperature
 - . **water temperature**
 - . . ocean temperature
 - . . . sea surface temperature
- RT surface temperature
- temperature distribution
- thermal pollution

water treatment

- UF *water purification*
- RT activated carbon
- adsorption
- aeration
- agitation
- bentonite
- biochemical oxygen demand
- chlorination
- coagulation
- contaminants
- corrosion prevention

- demineralizing
- desalinization
- environmental cleanup
- filtration
- flocculating
- flotation
- ion exchanging
- material absorption
- pollution
- potable water
- purification
- ∞ screening
- settling
- sewage
- ∞ treatment

water tunnel tests

- RT air water interactions
- cross flow
- flow distribution
- flow visualization
- strakes
- ∞ tests
- water waves
- wind tunnel tests

water tunnels

USE **hydraulic test tunnels**

water vapor

DEF Water (H2O) in gaseous form. Also called aqueous vapor.

- GS vapors
 - . **water vapor**
- RT atmospheric moisture
- dew
- humidity
- mixing ratios
- moisture
- moisture content
- steam

water vehicles

- GS **water vehicles**
 - . boats
 - . . lifeboats
 - . captured air bubble vehicles
 - . ships
 - . . Advanced Range Instrumentation Ship
 - . . aircraft carriers
 - . . cargo ships
 - . . . Savannah nuclear ship
 - . . . tanker ships
 - . . nuclear powered ships
 - . . . Savannah nuclear ship
 - . . satellite communications ships
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . surface effect ships
 - . . SWATH (ship)
 - . underwater vehicles
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . underwater research laboratories
- RT amphibious vehicles
- harbors
- marine transportation
- ∞ military vehicles
- research vehicles
- shipyards
- surface vehicles
- ∞ vehicles

water waves

- GS **water waves**
 - . tidal waves
- RT breakwaters
- capillary waves
- cnoidal waves
- elastohydrodynamics
- frontal waves

gravity waves
 hydrodynamic coefficients
 littoral transport
 ocean dynamics
 ripples
 sea roughness
 sea states
 surface waves
 tsunami waves
 water tunnel tests
 waterwave energy
 waterwave energy conversion
 waterwave powered machines
 ∞ waves

water wheels

GS wheels
 . **water wheels**
 RT hydroelectric power stations
 turbine wheels

waterfowl

GS animals
 . vertebrates
 . . birds
 . . . **waterfowl**
 RT beaches
 coastal ecology
 marine biology
 marine environments
 marshlands
 migration
 oceanography
 wetlands

waterproofing

RT barrier layers
 caulking
 coatings
 hydrophobicity
 insulation
 moisture resistance
 protective coatings
 sealing
 weatherproofing

watersheds

UF *catchment areas*
 GS landforms
 . structural basins
 . . **watersheds**
 RT divides (landforms)
 drainage patterns
 flood control
 floods
 hydrogeology
 hydrology
 International Hydrological Decade
 Missouri River Basin (US)
 mountains
 ponds
 precipitation (meteorology)
 rain
 river basins
 rivers
 storms (meteorology)
 valleys
 water
 water flow
 water management
 water tables

waterwave energy

GS renewable energy
 . **waterwave energy**
 RT clean energy
 Earth resources
 ∞ energy
 oceanography
 tidepower
 water waves
 ∞ waves

waterwave energy conversion

GS energy conversion
 . **waterwave energy conversion**

RT ∞ conversion
 Earth resources
 energy conversion efficiency
 ∞ energy sources
 ocean currents
 ocean surface
 oceanography
 oceans
 renewable energy
 sea roughness
 tide powered generators
 tide powered machines
 tidepower
 tides
 water waves

waterwave powered machines

RT ∞ machinery
 ocean currents
 ocean surface
 sea roughness
 tide powered generators
 tide powered machines
 tidepower
 tides
 water waves

waterways

DEF Navigable streams or canals; also channels for the passage or escape of water.
 GS **waterways**
 . canals
 . harbors
 . . artificial harbors
 RT lakes
 rivers
 straits

wattmeters

DEF Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowattmeters or megawattmeters.
 GS measuring instruments
 . **wattmeters**
 RT electrical measurement
 electrometers

wave amplification

GS amplification
 . **wave amplification**
 RT baroclinic waves
 electromagnetic radiation
 ∞ waves

wave attenuation

GS attenuation
 . **wave attenuation**
 . . acoustic attenuation
 . . . shock wave attenuation
 . . radar attenuation
 . . radio attenuation
 RT atmospheric attenuation
 electromagnetic absorption
 electromagnetic missiles
 infrared absorption
 radar transmission
 radio transmission
 shock wave propagation

wave degradation

GS degradation
 . **wave degradation**
 RT attenuation
 electromagnetic missiles
 scattering
 shock wave interaction

wave diffraction

GS diffraction
 . **wave diffraction**
 RT apodization
 attenuation

crosstalk
 diffraction radiation
 Fresnel integrals
 geometrical theory of diffraction
 holographic optical elements
 ∞ interference
 traveling wave modulation

wave dispersion

RT acoustic properties
 atmospheric refraction
 attenuation
 ∞ coherence
 color
 deflection
 diffraction
 ∞ dispersion
 elastic waves
 electromagnetic radiation
 fading
 light transmission
 optical paths
 optical properties
 radiation distribution
 radio wave refraction
 refraction
 scattering
 sound-sound interactions
 transmission
 transmission loss

wave drag

GS dynamic characteristics
 . drag
 . . pressure drag
 . . . **wave drag**
 interference drag
 RT friction drag
 supersonic drag

wave equations

SN (NOT EQUATIONS OF MOTION)
 GS **wave equations**
 . Dirac equation
 . eikonal equation
 . Klein-Gordon equation
 . Korteweg-Devries equation
 . Lamé wave equations
 . Schroedinger equation
 RT Boltzmann-Vlasov equation
 density wave model
 ∞ equations
 forbidden bands
 ∞ Helmholtz equations
 hyperbolic differential equations
 partial differential equations
 quantum theory

wave excitation

GS excitation
 . **wave excitation**
 . . acoustic excitation
 . . harmonic excitation
 RT diffraction radiation
 stroking tests
 ∞ waves

wave front deformation

GS deformation
 . **wave front deformation**
 RT ∞ interference
 thermal lensing

wave front reconstruction

GS reconstruction
 . **wave front reconstruction**
 RT acoustical holography
 diffractometers
 holographic interferometry
 holographic spectroscopy
 holography
 kinoform
 microwave holography
 photography

wave fronts

white light holography

wave fronts

DEF A continuous surface drawn through the most forward points in wave disturbances that have the same phase.

GS **wave fronts**

. shock fronts

RT

caustic lines

eikonal equation

∞ fronts

Huygens principle

phase coherence

phase velocity

shock discontinuity

∞ waves

wave functions

GS **wave functions**

. molecular orbitals

. Pauli exclusion principle

RT

forbidden transitions

Hartree approximation

perturbation theory

square waves

time functions

wave generation

RT electromagnetic radiation

function generators

∞ generators

harmonic generators

shock wave generators

wave rotors

wave incidence control

RT ∞ control

incident radiation

wave interaction

GS **wave interaction**

. shock wave interaction

. wave-particle interactions

RT

acoustic coupling

coupling

damping

electroacoustic waves

electromagnetic interactions

four-wave mixing

∞ interactions

intermodulation

modulation

orthogonal multiplexing theory

plasma interactions

propagation modes

scattering

shock wave luminescence

shock wave profiles

shock wave propagation

wave motion

USE **waves**

wave oscillators

USE **oscillators**

wave packets

RT longitudinal waves

packets (communication)

plasma waves

quantum mechanics

transverse waves

wave propagation

UF *Kirchhoff-Huygens principle*

GS transmission

. **wave propagation**

. . . acoustic propagation

. . . sound propagation

. . . diffraction propagation

. . . ground wave propagation

. . . ionospheric propagation

. . . ionospheric F-scatter propagation

. . . light scattering

. . . halos

. . . scatter propagation

. . . ionospheric F-scatter propagation

. . . shock wave propagation

. . . transequatorial propagation

RT

acoustic attenuation

acoustic microscopes

atmospheric attenuation

attenuation

automatic picture transmission

beam waveguides

∞ coherence

∞ coherent radiation

∞ conduction

diffraction

double sideband transmission

electromagnetic absorption

electromagnetic missiles

electromagnetic wave transmission

evanescent waves

geometrical acoustics

group velocity

Huygens principle

hydraulic analogies

ion acoustic waves

Lame wave equations

light transmission

lossy media

microwave attenuation

microwave transmission

multipath transmission

nonadiabatic theory

phase velocity

plasma acceleration

plasmaguides

∞ propagation

propagation modes

propagation velocity

pulse diffraction

radar attenuation

radar transmission

radio attenuation

radio transmission

refraction

Sagnac effect

screen effect

shock fronts

shock wave attenuation

short wave radio transmission

single sideband transmission

sound transmission

square waves

stress waves

television transmission

waveforms

whispering gallery modes

Whitham rule

wave radiation

USE **electromagnetic radiation**

wave reflection

GS reflection

. **wave reflection**

. . . Mach reflection

RT

ground effect (communications)

reflected waves

signal reflection

spread reflection

wave resistance

RT blast loads

erosion

impact strength

∞ resistance

structural stability

wave rotors

(added March 1998)

DEF Rotor devices that use gasdynamic waves to transfer energy rather than the motion of solid surfaces. Typically, they consist of a series of passages arranged on a drum which rotates about an axis. Through rotation, the ends of the passages are periodically exposed to various circumferentially arranged ports which initiate the traveling expansion or compression waves within the passages. The particular cir-

cumferential location of the ports determines the thermodynamic cycle of the working fluid.

GS rotating bodies

. rotors

. . . **wave rotors**

RT compression waves

energy transfer

engine parts

gas dynamics

gas generators

gas turbine engines

topping cycle engines

turbomachinery

turboshafts

wave generation

wave scattering

GS scattering

. **wave scattering**

. . . acoustic scattering

. . . reverberation

. . . atmospheric scattering

. . . tropospheric scattering

. . . electromagnetic scattering

. . . ionospheric F-scatter propagation

. . . light scattering

. . . halos

. . . microwave scattering

. . . Mie scattering

. . . Rayleigh scattering

. . . Raman spectra

. . . Thomson scattering

. . . x ray scattering

RT

Faddeev equations

magnetic dispersion

reciprocity theorem

scattering amplitude

scatterometers

shock fronts

waveforms

DEF The graphical representations of waves, showing variation of amplitude with time.

GS **waveforms**

. pulse amplitude

. pulse duration

. sawtooth waveforms

. square waves

RT

form factors

speech baseband compression

time functions

wave propagation

waveguide antennas

GS antennas

. **waveguide antennas**

. . . horn antennas

RT

corrugated waveguides

dielectric waveguides

lens antennas

microstrip antennas

microwave antennas

monopulse antennas

radant

slot antennas

Yagi antennas

waveguide filters

GS electromagnetic wave filters

. electric filters

. . . **waveguide filters**

RT

bandstop filters

dielectric waveguides

microwave filters

radar filters

waveguides

waveguide lasers

DEF Pump sources for deuterium oxide lasers.

GS stimulated emission devices

. lasers

. . . **waveguide lasers**

. . . fiber lasers

RT

aluminum gallium arsenide lasers

carbon dioxide lasers

gallium arsenide lasers
heterojunction devices
infrared lasers
laser modes
laser outputs
optical waveguides
pulsed lasers
quantum well lasers
semiconductor lasers
surface emitting lasers
tube lasers

waveguide tuners

GS tuners
. **waveguide tuners**
RT impedance matching
mode transformers
yttrium-iron garnet

waveguide windows

RT impedance matching
irises (mechanical apertures)
∞ windows

waveguides

GS **waveguides**
. beam waveguides
. circular waveguides
. Earth-ionosphere waveguide
. optical waveguides
. . . optical fibers
. . . . scintillating fibers
. corrugated waveguides
. dielectric waveguides
. plasmaguides
. rectangular waveguides
RT antenna feeds
coaxial cables
communication cables
crossed fields
electromagnetic surface waves
gyrators
irises (mechanical apertures)
microwave switching
microwave transmission
parallel plates
plastic fibers
propagation modes
Smith chart
transmission lines
waveguide filters

wavelength division multiplexing

DEF The process in which each modulating wave modulates a separate subcarrier and the subcarriers are spaced in wavelengths. This term is used in optical communication where wavelength usage is preferred over frequency.

GS transmission
. multiplexing
. . **wavelength division multiplexing**
RT code division multiplexing
demultiplexing
frequency division multiplexing
orthogonal multiplexing theory
time division multiplexing

wavelengths

DEF Distance in the direction of propagation of a periodic wave between two successive points at which the phase is the same (at the same time).

GS **wavelengths**
. de Broglie wavelengths
RT antinodes
harmonics
infrared radiation
laser modes
laser outputs
longitudinal waves
maser outputs
millimeter waves
nodes (standing waves)
spectral emission
standing waves
Stokes law of radiation

submillimeter waves
whispering gallery modes

wavelet analysis

(added September 1993)
UF *wavelet transform*
RT cosine series
Fourier analysis
Fourier transformation
functions (mathematics)
Gabor transformation
image processing
orthonormal functions
signal analysis
signal encoding
signal processing
sine waves
time functions
transformations (mathematics)
∞ waves

wavelet transform

USE **wavelet analysis**

wave-particle interactions

(added July 1991)
GS particle interactions
. **wave-particle interactions**
wave interaction
. **wave-particle interactions**
RT beam interactions
electromagnetic interactions
electrostatic waves
magnetohydrodynamic waves
magnetohydrodynamics
particle acceleration
plasma acceleration
plasma interactions
plasma waves
plasma-electromagnetic interaction
plasma-particle interactions
space plasmas

waveriders

GS aerodynamic configurations
. **waveriders**
RT airfoils
caret wings
delta wings
hypersonic flight
hypersonic vehicles
lifting bodies

∞ **waves**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *crests*
wave motion
RT baroclinic waves
breakwaters
cnoidal waves
corrugating
cylindrical waves
detonation waves
dilatational waves
eikonal equation
elastic waves
electroacoustic waves
electromagnetic radiation
electromagnetic surface waves
evanescent waves
frontal waves
gravitational waves
internal waves
ionic waves
Kelvin waves
kilometric waves
littoral transport
longitudinal waves
nodes (standing waves)
plane waves
planetary waves
refracted waves
seismic waves
SH waves
shock waves

sine waves
sound waves
spherical waves
square waves
standing waves
stress waves
surface waves
surges
tidal waves
transverse waves
tropospheric waves
vibration
water waves
waterwave energy
wave amplification
wave excitation
wave fronts
wavelet analysis

waxes

GS **waxes**
. ceresin
RT alkanes
coatings
crude oil
finishes
phase change materials

weak energy interactions

GS decay
. **weak energy interactions**
. . weak interactions (field theory)
particle interactions
. elementary particle interactions
. . **weak energy interactions**
. . . weak interactions (field theory)
RT beta particles
grand unified theory
gravitinos
∞ interactions
particle theory

weak interactions (field theory)

DEF One class of the fundamental interactions among elementary particles responsible for beta decay of nuclei, and for the decay of elementary particles with lifetimes greater than about 10⁻¹⁰ seconds such as muons, K mesons, and lambda hyperons; it is several orders of magnitude weaker than the strong and electromagnetic interactions and fails to conserve strangeness or parity. Used for beta interactions.

UF *beta interactions*
GS decay
. weak energy interactions
. . **weak interactions (field theory)**
nuclear reactions
. nuclear interactions
. . **weak interactions (field theory)**
particle interactions
. elementary particle interactions
. . . weak energy interactions
. . . **weak interactions (field theory)**
. nuclear interactions
. . **weak interactions (field theory)**
RT CP violation
electroweak interactions (field theory)
electroweak model
field theory (physics)
grand unified theory
∞ interactions
standard model (particle physics)
strong interactions (field theory)
∞ theories

weakly interacting massive particles

(added November 1999)
DEF Hypothetical elementary particles predicted by supersymmetry theories, that interact only through gravity and weak-type interactions; postulated to account for dark matter in the Universe.

UF *cosmions*
WIMPs (astronomy)
GS particles

weapon system 107A-1

- . elementary particles
- . . hypothetical particles
- . . . **weakly interacting massive particles**
- RT dark matter
- missing mass (astrophysics)
- solar neutrinos

weapon system 107A-1

- GS weapon systems
- . **weapon system 107A-1**

weapon system 107A-2

- GS weapon systems
- . **weapon system 107A-2**

weapon system 133A

- GS weapon systems
- . **weapon system 133A**

weapon system 133B

- GS weapon systems
- . **weapon system 133B**

weapon system 315A

- GS weapon systems
- . **weapon system 315A**

weapon system management

- GS management
- . **weapon system management**
- RT project management
- ∞ systems

weapon systems

DEF A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency.

- GS **weapon systems**
- . ground operational support system
- . laser weapons
- . missile systems
- . . Nike X systems
- . . Safeguard system
- . Sentinel system
- . Success project
- . Typhon weapon system
- . weapon system 107A-1
- . weapon system 107A-2
- . weapon system 133A
- . weapon system 133B
- . weapon system 315A
- RT air to surface missiles
- antiship missiles
- fire control
- Harpoon missile
- ∞ military aircraft
- military spacecraft
- missile launchers
- missiles
- mobile missile launchers
- nuclear weapons
- ordnance
- ∞ rockets
- space weapons
- ∞ systems
- weapons
- weapons development

weapons

- GS **weapons**
- . guns (ordnance)
- . . artillery
- . . . howitzers
- . . . precision guided projectiles
- . . rifles
- . laser weapons
- . mines (ordnance)
- . nuclear weapons
- . . fission weapons
- . . fusion weapons
- . space weapons
- . warheads
- . . nuclear warheads
- . . precision guided projectiles

- . biological weapons
- RT ammunition
- antiquities
- antiship warfare
- armed forces (foreign)
- armed forces (United States)
- ∞ ballistic vehicles
- disarmament
- fire control
- gunnery training
- military technology
- missiles
- ordnance
- Patriot missile
- projectiles
- shaped charges
- shrapnel
- tanks (combat vehicles)
- Tomahawk missiles
- torpedoes
- weapon systems
- weapons delivery
- wing-fuselage stores

weapons delivery

DEF Total requirements for locating the target, establishing the release conditions, and maintaining to the target (if required); includes the detection, recognition, and acquisition of the target, the weapons release as well as guidance.

- GS delivery
- . **weapons delivery**
- RT air defense
- ∞ aircraft
- defense program
- military technology
- missile defense
- nuclear weapons
- ∞ rockets
- space weapons
- weapons

weapons development

- GS product development
- . **weapons development**
- RT research and development
- weapon systems

weapons industry

- GS industries
- . defense industry
- . . **weapons industry**
- RT armed forces (United States)
- military technology

wear

DEF Damage to a solid surface, generally involving progressive loss of material, due to relative motion between that surface and a contacting substance or substances.

- RT abrasion
- chipping
- corrosion
- damage
- depreciation
- deterioration
- durability
- erosion
- failure
- flaking
- fretting corrosion
- friction
- grinding (material removal)
- hardness
- removal
- scoring
- sliding friction
- spalling
- surface finishing
- ∞ surfaces
- system failures
- tribology

wear resistance

wear inhibitors

- GS inhibitors
- . **wear inhibitors**
- RT retardants
- wear resistance

wear resistance

- GS mechanical properties
- . **wear resistance**
- . . abrasion resistance
- RT abrasion
- boundary lubrication
- coefficient of friction
- deterioration
- hardness
- lubricant tests
- ∞ resistance
- sliding friction
- toughness
- wear
- wear inhibitors
- wear tests

wear tests

- RT cumulative damage
- destructive tests
- erosion
- ferrography
- fretting
- friction
- hardness tests
- ∞ materials tests
- quality control
- spalling
- static tests
- ∞ tests
- tribometers
- wear resistance

weather

- UF *weather conditions*
- GS **weather**
- . cold weather
- . hot weather
- RT aircraft accidents
- aircraft hazards
- aircraft safety
- Alpine meteorology
- annual variations
- anvil clouds
- Atmospheric & Oceanographic Inform Sys
- atmospheric pressure
- atmospheric temperature
- cap clouds
- cirrocumulus clouds
- cirrostratus clouds
- climate
- climatology
- clouds (meteorology)
- flight hazards
- flight plans
- Global Atmospheric Research Program
- long term effects
- meteorological parameters
- meteorology
- METEOSAT satellite
- navigation aids
- precipitation (meteorology)
- runway conditions
- seasons
- solar compasses
- space terrestrial interactions
- space weather
- wind (meteorology)

weather charts

- USE **meteorological charts**

weather conditions

- USE **weather**

weather control

- USE **weather modification**

weather data recorders

- GS data recorders

- . **weather data recorders**
measuring instruments
- . meteorological instruments
- . . **weather data recorders**
recording instruments
- . **weather data recorders**
- RT automatic weather stations
- ∞ data
telemetry
- weather forecasting**
- GS meteorology
- . **weather forecasting**
- . . long range weather forecasting
- . . nowcasting
- . . numerical weather forecasting
- . . statistical weather forecasting
predictions
- . forecasting
- . . **weather forecasting**
- . . . long range weather forecasting
- . . . nowcasting
- . . . numerical weather forecasting
- . . . statistical weather forecasting
- RT air masses
- atmospheric models
- cirrus shields
- cloud cover
- cockpit weather information systems
- cold fronts
- environmental monitoring
- flight conditions
- flood predictions
- GARP Atlantic Tropical Experiment
- hindcasting
- humidity
- meteorological balloons
- meteorological flight
- meteorological radar
- meteorological satellites
- meteorological services
- nephanalysis
- precipitation (meteorology)
- snowstorms
- storms
- storms (meteorology)
- synoptic meteorology
- warm fronts
- wind (meteorology)
- weather fronts*
- USE **fronts (meteorology)**
- weather maps*
- USE **meteorological charts**
- weather modification**
- UF *weather control*
- GS **weather modification**
- . cloud dispersal
- . cloud seeding
- . fog dispersal
- . lightning suppression
- . rainmaking
- . storm enhancement
- . storm suppression
- RT artificial clouds
- cloud physics
- ∞ control
- environmental control
- heat islands
- snowstorms
- weather radar*
- USE **meteorological radar**
- weather reconnaissance aircraft**
- GS reconnaissance aircraft
- . **weather reconnaissance aircraft**
- RT ∞ aircraft
- Global Atmospheric Research
Program
- meteorological instruments
- observation aircraft
- weather stations**
- UF *meteorological stations*
- GS stations
- . **weather stations**
- . . automatic weather stations
- RT ground stations
- instrument packages
- integrated global ocean station
systems
- meteorological instruments
- meteorological satellites
- meteorological services
- ocean data acquisitions systems
- weathering**
- DEF The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost water and heat.
- GS exposure
- . **weathering**
- . . space weathering
- RT corrosion
- corrosion tests
- curing
- damage
- degradation
- deterioration
- Earth atmosphere
- erosion
- mechanical properties
- rusting
- soil erosion
- weatherproofing**
- RT coatings
- cold weather
- corrosion prevention
- moisture resistance
- packaging
- preserving
- waterproofing
- weaving**
- RT fabrics
- sewing
- woven composites
- web sites*
(added March 2001)
- USE **websites**
- webbing**
- RT fabrics
- mesh
- ∞ webs
- webs (sheets)
- Weber test**
- GS physiological tests
- . **Weber test**
- RT auditory perception
- binaural hearing
- Weber-Fechner law**
- DEF An approximate psychological law relating the degree of response or sensation of a sense organ and the intensity of the stimulus. The law asserts that equal increments of sensation are associated with equal increments of the logarithm of the stimulus, or that the just noticeable difference in any sensation results from a change in the stimulus which bears a constant ratio to the value of the stimulus.
- GS laws
- . **Weber-Fechner law**
- ∞ **webs**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT membranes
- mesh
- webbing
- webs (sheets)
- webs (supports)
- webs (membranes)*
- USE **membranes**
- webs (sheets)**
- SN (EXCLUDES POLYMERIC FILMS AND STRUCTURAL REINFORCEMENTS)
- RT diaphragms (mechanics)
- elastic sheets
- fabrics
- ∞ films
- membranes
- netting (materials/structures)
- paper (material)
- papers
- ∞ rovings
- ∞ sheets
- webbing
- ∞ webs
- webs (supports)
- webs (supports)**
- GS **webs (supports)**
- . girder webs
- RT diaphragms (mechanics)
- elastic sheets
- membrane structures
- membranes
- ribs (supports)
- skin (structural member)
- stiffening
- ∞ webs
- webs (sheets)
- websites**
(added March 2001)
- DEF Locations on the World Wide Web providing a collection of linked resources, usually including a homepage, and prepared and maintained as a collection of information by a person, group, or organization.
- UF *web sites*
- GS resources
- . Internet resources
- . . **websites**
- RT electronic bulletin boards
- electronic commerce
- information dissemination
- information resources management
- information systems
- internets
- on-line systems
- World Wide Web
- wedge flow**
- GS fluid flow
- . **wedge flow**
- RT Blasius flow
- conical flow
- Falkner-Skan equation
- flow geometry
- laminar flow
- shock waves
- supersonic flow
- three dimensional flow
- two dimensional flow
- viscous flow
- wedges**
- RT aerodynamic configurations
- airfoil profiles
- airfoils
- Weibel instability**
- DEF An instability of collisionless plasmas characterized by the unstable growth of transverse electromagnetic waves and large magnetic field fluctuation brought about by an anisotropic distribution of electron velocities.
- GS dynamic characteristics
- . dynamic stability
- . . motion stability
- . . . flow stability
- magnetohydrodynamic stability

Weibull density functions

- **Weibel instability**
 - . flow characteristics
 - . flow stability
 - . . . magnetohydrodynamic stability
 - **Weibel instability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - magnetohydrodynamic stability
 - **Weibel instability**
- RT plasma interactions
- Weibull density functions**
 - GS functions (mathematics)
 - . probability density functions
 - . . **Weibull density functions**
 - statistical analysis
 - . probability density functions
 - . . **Weibull density functions**
 - RT exponential functions
 - fatigue tests
 - sampling
- Weierstrass functions**
 - GS analysis (mathematics)
 - . real variables
 - . . **Weierstrass functions**
 - RT elliptic functions
 - Jacobi integral
- ∞ **weight**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - DEF The force exerted on a body by gravity.
 - RT atomic weights
 - biomass
 - coefficients
 - payloads
 - weight (mass)
- weight (mass)**
 - UF *weight factors*
 - GS **weight (mass)**
 - . atomic weights
 - . biomass
 - . body weight
 - . organ weight
 - . structural weight
 - RT center of mass
 - ∞ force
 - gravitation
 - loads (forces)
 - low molecular weights
 - mascons
 - mass
 - molecular weight
 - payloads
 - pressure
 - volume
 - ∞ weight
- weight analysis**
 - RT ∞ analyzing
 - NEW MOONS project
 - preflight analysis
 - structural weight
 - systems analysis
- weight factors*
- USE **weight (mass)**
- weight indicators**
 - UF *wind tunnel balances*
 - GS measuring instruments
 - . indicating instruments
 - . . **weight indicators**
 - . . . microbalances
 - . . . strain gage balances
 - . . . thermobalances
 - RT balance
 - mechanical measurement
 - pressure gages
 - pressure measurement
 - ∞ scale
 - strain gages
- tensometers
- weight measurement**
 - UF *microweighing*
 - RT density (mass/volume)
 - hydrometers
 - ∞ measurement
- weight reduction**
 - RT aircraft design
 - materials selection
 - spacecraft design
 - structural design
 - structural weight
 - systems analysis
- weighting functions**
 - GS analysis (mathematics)
 - . real variables
 - . . measure and integration
 - . . . **weighting functions**
 - functions (mathematics)
 - . **weighting functions**
 - RT statistical mechanics
- weightless fluids**
 - RT ∞ fluids
 - viscous fluids
- weightlessness**
 - DEF A condition in which no acceleration, whether of gravity or other force, can be detected by an observer within the system in question. Used for zero gravity.
 - UF *zero gravity*
 - RT aerospace medicine
 - artificial gravity
 - astronaut performance
 - ∞ astronautics
 - bioprocessing
 - blackout prevention
 - body weight
 - bone demineralization
 - clinorotation
 - containerless melts
 - disorientation
 - drop towers
 - electrolyte metabolism
 - environments
 - extravehicular activity
 - flight stress (biology)
 - free fall
 - gravitation
 - gravitational effects
 - intravehicular activity
 - life support systems
 - low weight
 - lower body negative pressure
 - microgravity
 - neutral buoyancy simulation
 - parabolic flight
 - space adaptation syndrome
 - space flight stress
 - space manufacturing
 - Space Processing Applications
 - Rocket
 - spaceborne experiments
 - spacecraft environments
 - suborbital flight
- weightlessness simulation**
 - GS simulation
 - . environment simulation
 - . . space environment simulation
 - . . . **weightlessness simulation**
 - neutral buoyancy simulation
 - RT clinorotation
 - clinostats
 - flight simulation
 - head down tilt
 - head up tilt
 - hindlimb suspension
 - Langley complex coordinator
 - parabolic flight
- submerging
- Weinberg-Salam Gauge Model*
- USE **electroweak model**
- weld strength**
 - GS mechanical properties
 - . **weld strength**
 - RT ∞ strength
 - weldability
 - welded joints
- weld tests**
 - RT fatigue tests
 - ∞ tests
 - welded joints
- weldability**
 - RT brittleness
 - ductility
 - heat affected zone
 - weld strength
- welded joints**
 - GS joints (junctions)
 - . metal joints
 - . . **welded joints**
 - . . . spot welds
 - RT beads
 - bonded joints
 - butt joints
 - friction stir welding
 - lap joints
 - riveted joints
 - weld strength
 - weld tests
 - welding
- welded structures**
 - GS **welded structures**
 - . steel structures
 - RT rigid structures
 - ∞ structures
- welding**
 - DEF Joining two or more pieces of metal by applying heat, pressure, or both, with or without filler material to produce a localized union through fusion or recrystallization across the interface.
 - GS **welding**
 - . fusion welding
 - . . electric welding
 - . . . arc welding
 - gas tungsten arc welding
 - plasma arc welding
 - electroslag welding
 - . . . flash welding
 - . . electron beam welding
 - . . gas welding
 - . . . brazing
 - low temperature brazing
 - . . laser welding
 - . pressure welding
 - . . cold welding
 - . . diffusion welding
 - . . explosive welding
 - . . friction welding
 - . . . friction stir welding
 - . . ultrasonic welding
 - RT backups
 - beads
 - bonding
 - construction
 - fillets
 - flame plating
 - fluxes
 - fusibility
 - heat affected zone
 - ∞ joining
 - metal bonding
 - metal-metal bonding
 - sealing
 - soldering
 - torches

- welded joints
- welding machines**
 RT ∞ electric equipment
 electric welding
 ∞ machinery
 torches
- wells**
 RT aquifers
 drilling
 ground water
 limnology
 oases
 springs (water)
 square wells
 stratigraphy
- Wentzel-Kramer-Brillouin method**
 UF *WKB approximation*
 RT de Broglie wavelengths
 ∞ methodology
 perturbation theory
 Plancks constant
 Schroedinger equation
- Weser aircraft**
 RT ∞ aircraft
 helicopters
 rotary wing aircraft
 V/STOL aircraft
- West comet**
 DEF A comet discovered in 1976. .
 GS celestial bodies
 . comets
 . . **West comet**
 RT solar system
- West Ford project**
 GS programs
 . projects
 . . **West Ford project**
- West Germany**
 UF *Federal Republic of Germany*
 GS nations
 . **West Germany**
 RT Alps Mountains (Europe)
 Azur satellite
 Central Europe
 East Germany
 Europe
 German Infrared Laboratory
 German space program
 Germany
- West Indies**
 GS landforms
 . islands
 . . **West Indies**
 . . . Antigua and Barbuda
 . . . Bahamas
 . . . Barbados
 . . . Cuba
 . . . Dominica
 . . . Grenada
 . . . Guadeloupe
 . . . Haiti
 . . . Jamaica
 . . . Lesser Antilles
 . . . Martinique
 . . . Puerto Rico
 . . . Trinidad and Tobago
 . . . Virgin Islands
 RT Atlantic Ocean
 Caribbean region
- West Virginia**
 GS nations
 . United States
 . . **West Virginia**
 RT Allegheny Plateau (US)
 Ohio River (US)
- Potomac River Valley (MD-VA-WV)
- Westar satellites**
 GS artificial satellites
 . communication satellites
 . . **Westar satellites**
 RT point to point communication
 telecommunication
 telegraph systems
- Western hemisphere**
 RT Earth (planet)
 Eastern Hemisphere
 geography
- Westland aircraft**
 GS **Westland aircraft**
 . P-531 helicopter
 . Westland Whirlwind helicopter
 RT ∞ aircraft
 helicopters
 rotary wing aircraft
 V/STOL aircraft
- Westland ground effect machines**
 UF *SR-N2 ground effect machine*
SR-N3 ground effect machine
SR-N5 ground effect machine
Westland SR-N2 ground effect machine
Westland SR-N2 hovercraft
Westland SR-N3 ground effect machine
Westland SR-N3 hovercraft
Westland SR-N5 ground effect machine
 GS ground effect machines
 . **Westland ground effect machines**
 RT ∞ aircraft
- Westland MK-10 helicopter*
 USE **Westland Whirlwind helicopter**
- Westland P-531 helicopter*
 USE **P-531 helicopter**
- Westland SR-N2 ground effect machine*
 USE **Westland ground effect machines**
- Westland SR-N2 hovercraft*
 USE **Westland ground effect machines**
- Westland SR-N3 ground effect machine*
 USE **Westland ground effect machines**
- Westland SR-N3 hovercraft*
 USE **Westland ground effect machines**
- Westland SR-N5 ground effect machine*
 USE **Westland ground effect machines**
- Westland Whirlwind helicopter**
 UF *Westland MK-10 helicopter*
Whirlwind MK-10 helicopter
 GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **Westland Whirlwind helicopter**
 Westland aircraft
 . **Westland Whirlwind helicopter**
 RT ∞ aircraft
- wet cells**
 GS electrochemical cells
 . electric batteries
 . . **wet cells**
 RT ∞ electric cells
 electrolytes
 fuel cells
 nonaqueous electrolytes
 primary batteries
- wet spinning**
 DEF The production of synthetic and man-
- made filaments by extruding the chemical solution through spinnerets into a chemical bath where they coagulate.
 RT extruding
 fibers
 ∞ filaments
 ∞ processing
 synthetic fibers
 textiles
 wetting
- wetlands**
 DEF Lands which have the water table at, near, or above the land surface, or which are saturated for long enough periods to promote hydrophylic vegetation and various kinds of biological activity which are adapted to the wet environment.
 GS land
 . **wetlands**
 . . marshlands
 RT coastal currents
 coastal ecology
 coastal plains
 coastal water
 environment effects
 fisheries
 marine biology
 marine environments
 marine resources
 nearshore water
 oceanography
 oil pollution
 sea grasses
 shorelines
 tides
 water resources
 waterfowl
 wildlife
- wetness*
 USE **moisture content**
- wettability**
 RT adhesion
 adhesion tests
 formations
 hydrophobicity
 hygroscopicity
 permeability
 porosity
 surface properties
 wetting
- wetting**
 RT cooling
 dipping
 foaming
 hydrophobicity
 interfacial tension
 ∞ saturation
 ∞ soaking
 soaps
 spraying
 sprinkling
 submerging
 wet spinning
 wettability
- whales**
 GS animals
 . vertebrates
 . . mammals
 . . . marine mammals
 **whales**
- wharves**
 UF *piers*
 RT cargo ships
 dams
 Earth resources
 freighters
 harbors
 marine technology
 materials handling
 ∞ ports

wheat

rivers
ship terminals
tanker ships
terminal facilities
water

wheat

GS farm crops
. grains (food)
. . . **wheat**
RT crop growth
crop vigor
∞ crops
rice

Wheatstone bridges

GS circuits
. electric bridges
. . wire bridge circuits
. . . **Wheatstone bridges**
RT measuring instruments
ohmmeters

wheel brakes

GS brakes (for arresting motion)
. **wheel brakes**
RT aircraft brakes
aircraft safety
antiskid devices
controllability
friction
hydraulic equipment
landing gear
tires
vehicle wheels

wheelchairs

DEF Four wheeled ambulatory devices for persons with minimal or no use of lower extremities which can be either manually or electrically powered. They are often individually fitted.
RT disabilities
human factors engineering
locomotion
ramps (structures)

wheels

DEF Rims fitted with disks for affixment to axles.
GS **wheels**
. counter-rotating wheels
. flywheels
. reaction wheels
. toroidal wheels
. turbine wheels
. vehicle wheels
. . nose wheels
. water wheels
RT bearings
brakes (for arresting motion)
gears
hubs
landing gear
pulleys
rollers
rotors
shafts (machine elements)
spokes
tires

whip antennas

DEF Thin flexible monopole antennas.
GS antennas
. omnidirectional antennas
. . monopole antennas
. . . **whip antennas**
RT radio antennas

whiplash injuries

GS injuries
. **whiplash injuries**
RT back injuries

crash injuries

whirl

USE **rotation**

whirl instability

USE **rotary stability**

whirl towers

RT helicopter design
hovering
hovering stability
parachutes
rotary wings
rotor aerodynamics
spin tests

whirling

USE **rotation**

whirling tests

USE **spin tests**

Whirlwind MK-10 helicopter

USE **Westland Whirlwind helicopter**

whisker composites

UF *metal whisker reinforcement*
GS composite materials
. **whisker composites**
RT aramid fiber composites
eutectic alloys
metal matrix composites
reinforcing fibers

whiskers (crystals)

GS crystals
. **whiskers (crystals)**
RT dendritic crystals
fibers
∞ filaments

whispering gallery modes

(added September 1988)
DEF Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude.
GS modes
. propagation modes
. . **whispering gallery modes**
RT acoustic frequencies
acoustic propagation
electromagnetic radiation
electromagnetic wave transmission
wave propagation
wavelengths

whistler recorders

GS communication equipment
. radio receivers
. . **whistler recorders**
radio equipment
. radio receivers
. . **whistler recorders**
receivers
. radio receivers
. . **whistler recorders**
recording instruments
. **whistler recorders**
RT sonograms

whistlers

DEF Radiofrequency electromagnetic signals generated by some lightning discharges.
GS atmospheric radiation
. ionospheric noise
. . **whistlers**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospheric
. . . . **whistlers**
. . . ionospheric noise
. . . . **whistlers**
electromagnetic radiation
. radio waves

. . sky waves
. . . **whistlers**
RT dawn chorus
electromagnetic fields
lightning
microwaves
radio signals
sonograms

white blood cells

USE **leukocytes**

white dwarf stars

GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **white dwarf stars**
RT cataclysmic variables
degenerate matter
dwarf novae
dwarf stars
red dwarf stars
subdwarf stars
supernova remnants
Wolf-Rayet stars

white holes (astronomy)

DEF Time-reversed black holes, expanding sources with growing intensity and photon energy.
GS celestial bodies
. stars
. . **white holes (astronomy)**
RT black holes (astronomy)
cosmology
electromagnetic radiation
event horizon
gravitational collapse
gravitational lenses
light emission
naked singularities
supernova remnants

white light holography

GS imagery
. photography
. . holography
. . . **white light holography**
RT data storage
holographic optical elements
wave front reconstruction

white noise

DEF A sound or electromagnetic wave whose spectrum is continuous and uniform as a function of frequency. Used for spectral noise.
UF *spectral noise*
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **white noise**
. . . . thermal noise
RT electromagnetic noise measurement
jamming
∞ noise
noise (sound)
noise spectra
random noise
signal to noise ratios
spectral bands

whiteout

RT visibility
visual flight

Whitham rule

GS rules
. **Whitham rule**
RT shock waves
wave propagation

Whittaker functions

GS analysis (mathematics)
. real variables
. . **Whittaker functions**

- functions (mathematics)
 . **Whittaker functions**
 RT differential equations
- wicks**
 RT fuses (ordnance)
- wide angle lenses**
 GS lenses
 . **wide angle lenses**
 optical equipment
 . **wide angle lenses**
 RT all sky photography
 cameras
 panoramic cameras
- wide area networks**
 (added August 1995)
 UF WAN
 GS networks
 . communication networks
 . . **wide area networks**
 . computer networks
 . . **wide area networks**
 RT distributed processing
 local area networks
 packets (communication)
 telecommunication
- wideband*
 USE **broadband**
- wideband communication**
 GS telecommunication
 . **wideband communication**
 RT broadband amplifiers
 code division multiple access
 multiple access
 point to point communication
 time division multiple access
 tropospheric scattering
- Widmanstatten structure**
 GS crystal structure
 . **Widmanstatten structure**
 microstructure
 . **Widmanstatten structure**
 RT iron meteorites
 metallography
 meteoritic microstructures
 ∞ patterns
- width**
 GS dimensions
 . **width**
 RT bandwidth
 ∞ span
- Wiener filtering**
 RT electric filters
 optimization
 statistical analysis
- Wiener Hopf equations**
 GS analysis (mathematics)
 . functional analysis
 . . integral equations
 . . . **Wiener Hopf equations**
 RT ∞ equations
- WIG vehicles*
 (added December 1999)
 USE **wing-in-ground effect vehicles**
- wiggler magnets**
 DEF Components used in the production of coherent x rays by the pumping of a gas with synchrotron radiation in combination with low energy photon beams.
 GS magnets
 . **wiggler magnets**
 reflectors
 . **wiggler magnets**
 RT diffraction radiation
 free electron lasers
 laser pumping
- tunable lasers
- Wightman theory*
 USE **field theory (physics)**
quantum theory
relativistic theory
- Wigner coefficient**
 GS coefficients
 . **Wigner coefficient**
 RT angular momentum
 ∞ mechanics (physics)
- Wild 2 comet**
 (added March 1999)
 DEF Periodic comet, discovered January 1978, relatively new to the inner Solar System due to a shift in its orbit caused by the gravitational influence of Jupiter.
 GS celestial bodies
 . comets
 . . **Wild 2 comet**
 RT Stardust Mission
- wilderness**
 RT deserts
 forests
 land management
 plains
 remote regions
 rural areas
- wildlife**
 GS animals
 . **wildlife**
 RT birds
 endangered species
 environment effects
 fishes
 habitats
 wetlands
- wildlife radiolocation**
 GS tracking (position)
 . radio tracking
 . . **wildlife radiolocation**
 RT animals
 bioinstrumentation
 biotelemetry
 radio transmitters
 remote sensors
 satellite instruments
 satellite observation
 triangulation
- Williston Basin (North America)**
 GS landforms
 . structural basins
 . . **Williston Basin (North America)**
 RT Canada
 Montana
 North America
 North Dakota
- WIMPs (astronomy)*
 (added November 1999)
 USE **weakly interacting massive particles**
- winches**
 RT cranes
 elevators (lifts)
 ∞ lifts
 pulleys
- wind (meteorology)**
 DEF A natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface.
 GS **wind (meteorology)**
 . circumpolar westerlies
 . ground wind
 . gusts
 . monsoons
 . sea breeze
 . squalls
- . winds aloft
 . . geostrophic wind
 . . jet streams (meteorology)
- RT aeolian tones
 aerology
 air currents
 air pollution
 Alpine meteorology
 anemometers
 atmospheric circulation
 barotropic flow
 ∞ barriers
 blowing
 climatology
 cyclones
 gravity waves
 hot-film anemometers
 jimsphere balloons
 marine meteorology
 meridional flow
 mesoscale phenomena
 meteorology
 mixing height
 pressure ice
 ripples
 storm damage
 storms
 storms (meteorology)
 thunderstorms
 tidal waves
 tornadoes
 upwelling water
 vertical air currents
 weather
 weather forecasting
 windmills (windpowered machines)
 windpower utilization
 windpowered generators
 zonal flow (meteorology)
- wind circulation*
 USE **atmospheric circulation**
- wind direction**
 DEF The direction from which the wind is blowing, measured in points of the compass or in azimuth degree.
 RT atmospheric circulation
 ground wind
 meridional flow
 meteorological parameters
 sea breeze
 smoke trails
 upstream
 upwelling water
 windmills (windpowered machines)
 windpowered generators
 zonal flow (meteorology)
- wind effects**
 RT atmospheric effects
 dunes
 dust storms
 ∞ effects
 erosion
 ground wind
 pressure effects
 sea breeze
 sea roughness
 sea states
 soil erosion
 turbulence
 water circulation
- wind energy*
 USE **windpower utilization**
- wind erosion**
 GS erosion
 . **wind erosion**
 RT atmospheric effects
 ground wind
 sea breeze

wind measurement

water erosion

wind measurement

- GS mechanical measurement
 - . **wind measurement**
 - . . wind velocity measurement
- RT aerodynamics
 - anemometers
 - hot-film anemometers
- ∞ measurement
 - meteorological parameters
 - meteorology
 - QuikSCAT satellite
 - rawinsondes
 - sea breeze
 - smoke trails

wind pressure

- GS pressure
 - . **wind pressure**
- RT dynamic loads
 - ground wind
 - gust loads
 - loads (forces)
 - windpower utilization
 - windpowered generators

wind profiles

- RT atmospheric circulation
 - ground wind
- ∞ profiles
 - radial distribution
 - smoke trails
 - vertical distribution
 - zonal flow (meteorology)

Wind River Range (WY)

- GS landforms
 - . mountains
 - . . **Wind River Range (WY)**
- RT Wyoming

wind shear

- DEF A sharp change in wind speed and direction over a short distance
- UF *Dungeys wind shear mechanism*
- RT aviation meteorology
 - barotropic flow
 - clear air turbulence
 - downbursts
 - geostrophic wind
 - ground wind
 - microbursts (meteorology)

wind tunnel apparatus

- UF *wind tunnel balances*
- GS **wind tunnel apparatus**
 - . wind tunnel drives
 - . wind tunnel nozzles
- RT ∞ equipment
 - supersonic test apparatus

wind tunnel balances

- USE **weight indicators**
 - wind tunnel apparatus**

wind tunnel calibration

- GS calibrating
 - . **wind tunnel calibration**
- RT measuring instruments
 - pressure measurement
 - scaling laws
 - temperature measurement

wind tunnel drives

- GS wind tunnel apparatus
 - . **wind tunnel drives**
- RT ∞ drives
 - ∞ fans
 - mechanical drives
 - plasma generators
 - pressure chambers
 - vacuum chambers

wind tunnel models

- GS models

. wind tunnel models

- . . powered models
- RT aerodynamic configurations
 - aircraft models
 - dynamic models
 - flow visualization
- ∞ missile simulators
 - pylon mounting
 - scale models
 - semispan models
 - shadowgraph photography
- ∞ test equipment

wind tunnel nozzles

- GS wind tunnel apparatus
 - . **wind tunnel nozzles**
- RT conical nozzles
 - convergent-divergent nozzles
 - divergent nozzles
 - hypersonic nozzles
- ∞ nozzles
 - supersonic nozzles
 - transonic nozzles

wind tunnel stability tests

- GS stability tests
 - . **wind tunnel stability tests**
- RT aerodynamic stability
 - aircraft stability
 - missile tests
 - spacecraft stability
- ∞ tests

wind tunnel tests

- RT aerodynamic characteristics
 - air data systems
 - density measurement
 - flow distribution
 - pressure measurement
- ∞ tests
 - trisonic wind tunnels
 - water tunnel tests

wind tunnel walls

- GS walls
 - . **wind tunnel walls**
- RT pressure vessels
 - reinforced shells

wind tunnels

DEF Tubelike structures or passages, sometimes continuous, together with their adjuncts, in which high speed movements of air or other gases are produced, as by fans, and within which objects such as engines or aircraft, airfoils, rockets (or models of these objects), are placed to investigate the airflow about them and the aerodynamic forces acting upon them.

- GS test facilities
 - . **wind tunnels**
 - . . blowdown wind tunnels
 - . . combustion wind tunnels
 - . . cryogenic wind tunnels
 - . . hypersonic wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . hypervelocity wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . low density wind tunnels
 - . . low speed wind tunnels
 - . . . subsonic wind tunnels
 - . . rectangular wind tunnels
 - . . slotted wind tunnels
 - . . supersonic wind tunnels
 - . . transonic wind tunnels
 - . . trisonic wind tunnels
- RT aerodynamics
 - exhaust flow simulation
 - flight simulators
 - gas guns
 - gas streams

- hypersonic flow
- spikes (aerodynamic configurations)
- supersonic flow
- test chambers
- ∞ test equipment
- transonic flow
- ∞ tunnels

wind turbines

- DEF Machines which convert wind energy into electricity.
- GS turbomachinery
 - . turbines
 - . . **wind turbines**
 - . . . tip vanes
- RT turbogenerators
 - wind velocity
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators

wind vanes

- GS display devices
 - . flow direction indicators
 - . . **wind vanes**
 - . measuring instruments
 - . indicating instruments
 - . . flow direction indicators
 - . . . **wind vanes**
 - . meteorological instruments
 - . . **wind vanes**
 - . vanes
 - . **wind vanes**
- RT anemometers
 - hot-film anemometers

wind variations

- GS variations
 - . **wind variations**
- RT annual variations
 - atmospheric turbulence
 - diurnal variations
 - seasons

wind velocity

- GS rates (per time)
 - . **wind velocity**
 - . . solar wind velocity
 - velocity
 - . **wind velocity**
 - . . solar wind velocity
- RT airspeed
 - anemometers
 - flow measurement
 - Fujita method
 - ground wind
 - hot-film anemometers
 - meteorological parameters
 - sea roughness
 - wind turbines
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators

wind velocity measurement

- GS mechanical measurement
 - . velocity measurement
 - . . **wind velocity measurement**
 - . wind measurement
 - . . **wind velocity measurement**
- RT anemometers
 - hot-film anemometers

Wind/GGS spacecraft

(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. The main purpose of the Wind spacecraft is to measure the incoming solar wind, magnetic fields, and particles, although early in its mission Wind observed the Earth foreshock region. The spacecraft was launched in November 1994.

- GS artificial satellites
 - . geophysical satellites

- . . **Wind/GGS spacecraft**
- . scientific satellites
- . . **Wind/GGS spacecraft**
- RT Earth magnetosphere
- gamma rays
- interplanetary magnetic fields
- Polar/GGS spacecraft
- solar corpuscular radiation
- solar terrestrial interactions
- solar wind
- space plasmas
- winding**
- GS **winding**
- . filament winding
- . helical windings
- . wire winding
- RT cold working
- leveling
- metal working
- spindles
- spiral wrapping
- stretching
- twisting
- windmilling*
- USE **autorotation**
- windmills (windpowered machines)**
- RT electric generators
- gears
- ground wind
- ∞ machinery
- mechanical drives
- ∞ power transmission
- ∞ pumping
- wind (meteorology)
- wind direction
- wind turbines
- wind velocity
- windpower utilization
- windpowered generators
- windpowered pumps
- window atmosphere sounding projectile*
- USE **WASP sounding rocket**
- ∞ **windows**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT infrared windows
- ports (openings)
- waveguide windows
- windows (apertures)
- windows (intervals)
- windows (apertures)**
- SN (EXCLUDES INTERVALS IN TIME, FREQUENCY, ENERGY AND SO ON)
- RT apertures
- ∞ barriers
- curtains
- doors
- ducts
- openings
- optical materials
- ports (openings)
- separators
- shielding
- vents
- ∞ windows
- windshields
- windows (computer programs)**
- (added July 1993)
- GS interfaces
- . graphical user interface
- . . **windows (computer programs)**
- RT computer graphics
- operating systems (computers)
- real time operation
- windows (intervals)**
- SN (EXCLUDES INTERVALS IN SPACE CONTINUUM)
- GS **windows (intervals)**
- . laser windows
- . launch windows
- RT bandwidth
- burning time
- countdown
- energy bands
- flight time
- testing time
- time measurement
- ∞ windows
- windpower utilization**
- UF *wind energy*
- GS renewable energy
- . **windpower utilization**
- utilization
- . **windpower utilization**
- RT air currents
- air masses
- atmospheric circulation
- clean energy
- Earth resources
- ground wind
- sea breeze
- vanes
- wind (meteorology)
- wind pressure
- wind turbines
- wind velocity
- windmills (windpowered machines)
- windpowered generators
- windpowered pumps
- windpowered generators**
- RT electric generators
- ∞ generators
- ground wind
- vanes
- wind (meteorology)
- wind direction
- wind pressure
- wind turbines
- wind velocity
- windmills (windpowered machines)
- windpower utilization
- windpowered pumps**
- GS pumps
- . **windpowered pumps**
- RT ponds
- ∞ pumping
- reservoirs
- vanes
- water
- water resources
- windmills (windpowered machines)
- windpower utilization
- winds aloft**
- GS wind (meteorology)
- . **winds aloft**
- . . geostrophic wind
- . . jet streams (meteorology)
- RT circumpolar westerlies
- sea breeze
- vertical air currents
- windscreens*
- USE **windshields**
- windshields**
- UF *windscreens*
- RT aircraft compartments
- canopies
- cockpits
- environmental control
- locomotives
- shielding
- windows (apertures)
- wines**
- GS liquids
- . potable liquids
- . . beverages
- . . . **wines**
- RT vineyards
- wing camber**
- GS camber
- . **wing camber**
- RT cambered wings
- conical camber
- mission adaptive wings
- wing flaps**
- UF *jet augmented wing flaps*
- GS airfoils
- . flaps (control surfaces)
- . . **wing flaps**
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- brakes (for arresting motion)
- . aerodynamic brakes
- . . **wing flaps**
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . aircraft brakes
- . . **wing flaps**
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . control surfaces
- . flaps (control surfaces)
- . . **wing flaps**
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . drag devices
- . aerodynamic brakes
- . . **wing flaps**
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- RT externally blown flaps
- jet flaps
- split flaps
- wing flow method tests**
- RT flight tests
- fluid flow
- ground tests
- ∞ methodology
- ∞ tests
- transonic wind tunnels
- wing icing*
- USE **aircraft icing**
- wing loading**
- GS aerodynamic forces
- . **wing loading**
- loads (forces)
- . dynamic loads
- . . **wing loading**
- RT aerodynamic loads
- aeroelasticity
- edge loading
- force distribution
- gust loads
- leading edge thrust
- static loads
- sweep effect
- vortex flaps
- wing nacelle configurations**
- DEF Aerodynamic configurations involving various arrangements of wings and nacelles (over-the-wing, etc.).
- UF *nacelle wing configurations*
- GS aerodynamic configurations
- . **wing nacelle configurations**
- RT ∞ aircraft
- airframes

wing oscillations

externally blown flaps

wing oscillations

- GS oscillations
 - . airfoil oscillations
 - . . **wing oscillations**
 - . . . wing rock
- RT aerodynamic stability
 - aeroelastic research wings
 - flapping
 - flutter
 - stable oscillations
 - undamped oscillations
 - unsteady aerodynamics
 - vibration

wing panels

- GS panels
 - . **wing panels**
 - structural members
 - . **wing panels**
- RT curved panels
 - rectangular panels
 - wings

wing planforms

- GS planforms
 - . **wing planforms**
 - . . channel wings
 - . . infinite span wings
 - . . swept forward wings
 - . . . trapezoidal wings
 - . . sweptback wings
 - . . . arrow wings
 - . . . delta wings
 - . . . trapezoidal wings
 - . . variable sweep wings
- RT HP-115 aircraft
 - low aspect ratio wings
 - monoplanes
 - oblique wings
 - rectangular planforms
 - slender wings
 - swept wings
 - swing wings
 - thrust distribution
 - unswept wings

wing profiles

- GS airfoil profiles
 - . **wing profiles**
 - . . wing span
- RT aerodynamic interference
 - GAW-1 airfoil
 - GAW-2 airfoil
 - mission adaptive wings
 - monoplanes
 - supercritical wings
 - swing wings
 - wings

wing rock

- (added October 1997)
- DEF A high angle-of-attack, nonlinear, dynamic phenomenon of limited cycle motion predominantly in roll.
- GS oscillations
 - . airfoil oscillations
 - . . wing oscillations
 - . . . **wing rock**
- RT aerodynamic stability
 - aircraft stability
 - angle of attack
 - delta wings
 - lateral oscillation
 - leading edges
 - roll
 - slender wings

wing roots

- RT aerodynamic configurations
 - aircraft configurations
 - drooped airfoils
 - fairings

∞ roots

wing slats

USE **leading edge slats**

wing slots

- GS slots
 - . **wing slots**
- RT boundary layer control
 - leading edge slats
 - tangential blowing
 - vortex generators

wing span

- GS airfoil profiles
 - . wing profiles
 - . . **wing span**
- RT ∞ span
 - spanwise blowing
 - wings

wing tanks

- GS tanks (containers)
 - . fuel tanks
 - . . **wing tanks**
- RT ∞ containers
 - external store separation
 - external stores
 - external tanks
 - jettison systems
 - wing-fuselage stores

wing tip vortices

- GS vortices
 - . **wing tip vortices**
- RT blade-vortex interaction
 - flow distortion
 - horseshoe vortices
 - rotating fluids

wing tips

- GS tips
 - . **wing tips**
- RT airfoil profiles
 - blade tips
 - joined wings
 - wings

wing-body and tail configurations

(added August 1998)
USE **body-wing and tail configurations**

wing-body configurations

(added August 1998)
USE **body-wing configurations**

∞ winged vehicles

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ aircraft
 - B-1 aircraft
 - drone vehicles
 - Firebee 2 target drone aircraft
 - gliders
 - hang gliders
 - hypersonic vehicles
 - jet aircraft
 - launch vehicles
 - leading edge flaps
 - man powered aircraft
 - missiles
 - monoplanes
 - recoverable launch vehicles
 - recoverable spacecraft
 - reentry vehicles
 - research aircraft
 - rocket vehicles
 - short takeoff aircraft
 - supercritical wings
 - ultralight aircraft
- ∞ vehicles
 - vertical takeoff aircraft

wings

wing-fuselage stores

- UF *fuselage-wing stores*
- RT external store separation
 - external stores
 - fuselages
 - nacelles
 - Pods (external stores)
 - protuberances
- ∞ storage
 - storage tanks
 - tanks (containers)
 - weapons
 - wing tanks

wing-in-ground effect vehicles

- (added December 1999)
- DEF Vehicles designed to fly about half their mean chord above the surface, taking advantage of the reduced drag and increased lift caused by ground effect. These vehicles, also known as WIGs or WIGEs, normally operate above a water surface.
- UF *ekranoplanes*
 - WIG vehicles*
- GS ground effect machines
 - . **wing-in-ground effect vehicles**
- RT ground effect (aerodynamics)
 - surface effect ships

winglets

- DEF In aerospace engineering, small nearly vertical, winglike surfaces mounted rearward above the wing tips to reduce drag coefficients at lifting conditions.
- RT drag reduction
 - fins
 - protuberances
 - vortex alleviation
 - vortex avoidance
 - wings

wings

- UF *cantilever wings*
- GS airfoils
 - . **wings**
 - . . aeroelastic research wings
 - . . cambered wings
 - . . caret wings
 - . . channel wings
 - . . cruciform wings
 - . . fixed wings
 - . . flexible wings
 - . . . parawings
 - . . GAW-1 airfoil
 - . . GAW-2 airfoil
 - . . joined wings
 - . . low aspect ratio wings
 - . . . delta wings
 - . . . trapezoidal wings
 - . . mission adaptive wings
 - . . oblique wings
 - . . rigid wings
 - . . rotary wings
 - . . . circulation control rotors
 - . . . lifting rotors
 - bearingless rotors
 - . . . rigid rotors
 - . . . tilting rotors
 - . . . tip driven rotors
 - . . . x wing rotors
 - . . slender wings
 - . . . infinite span wings
 - . . supercritical wings
 - . . swept wings
 - . . . swept forward wings
 - trapezoidal wings
 - . . . sweptback wings
 - arrow wings
 - delta wings
 - trapezoidal wings
 - . . swing wings
 - . . thin wings
 - . . . infinite span wings
 - . . twisted wings

- . . . uncambered wings
 . . . ring wings
 . . . unswept wings
 . . . infinite span wings
 . . . rectangular wings
 . . . ring wings
 . . . variable sweep wings
 RT aircraft construction materials
 aircraft parts
 aircraft structures
 airfoil fences
 airframes
 aspect ratio
 blunt trailing edges
 body-wing and tail configurations
 body-wing configurations
 coatings
 control surfaces
 drooped airfoils
 dual wing configurations
 leading edge flaps
 missile components
 porous boundary layer control
 rotors
 spoilers
 wing panels
 wing profiles
 wing span
 wing tips
 ∞ winged vehicles
 winglets
- winter**
 GS seasons
 . **winter**
 RT autumn
 cold weather
 equinoxes
 pressure ice
 solstices
 spring (season)
 summer
- wire**
 DEF A rod or filament of drawn or rolled metal whose length is great in comparison with the major axis of its cross section.
 GS **wire**
 . electric wire
 . exploding wires
 . guy wires
 RT billets
 cables (ropes)
 ∞ coils
 cordage
 fasteners
 ∞ filaments
 flat conductors
 jumpers
 reinforcement (structures)
 rods
 wiring
- wire bridge circuits**
 GS circuits
 . electric bridges
 . . **wire bridge circuits**
 . . . Wheatstone bridges
 RT electric wire
 exploding wires
- wire cloth**
 UF *wire mesh*
 RT fabrics
 reinforcement (structures)
 ∞ screens
 sieves
- wire grid lenses**
 GS lenses
 . **wire grid lenses**
 reticles
 . **wire grid lenses**
 RT ∞ grids
 lens antennas
 magnetic lenses
- turnstile antennas
- wire mesh*
 USE **wire cloth**
- wire winding**
 GS winding
 . **wire winding**
 RT magnet coils
 wiring
- wireless communication**
 UF *carrier systems*
 GS telecommunication
 . **wireless communication**
 RT aircraft communication
 closed circuit television
 communication satellites
 data links
 data transmission
 digital spacecraft television
 facsimile communication
 Iridium network
 optical communication
 radio telemetry
 signal transmission
 space communication
 spacecraft communication
 telemetry
 voice communication
- wiring**
 SN (PROCESS--AS DISTINGUISHED FROM MATERIAL)
 UF *electric wiring*
wiring systems
 RT bundles
 circuits
 electrical insulation
 flat conductors
 splicing
 transmission lines
 wire
 wire winding
- wiring systems*
 USE **wiring**
- Wisconsin**
 GS nations
 . United States
 . . **Wisconsin**
- Wiswesser notations**
 GS classifications
 . indexes (documentation)
 . . **Wiswesser notations**
 coding
 . **Wiswesser notations**
 RT ∞ chemical compounds
 ∞ chemistry
 identifying
 molecular structure
 ∞ reference systems
- WKB approximation*
 USE **Wentzel-Kramer-Brillouin method**
- wolfram*
 USE **tungsten**
- Wolf-Rayet stars**
 DEF Very luminous, very hot (as high as 50,000K) stars whose spectra have broad emission lines (mainly He I and He II, which are presumed to originate from material ejected from the stars at very high velocities. Some W-R spectra show emission lines due to carbon CWC stars; others show emission lines due to nitrogen (WN stars). Used for W stars and W-R stars.
 UF *W stars*
W-R stars
 GS celestial bodies
 . stars
 . . early stars
 . . . hot stars
- . . . **Wolf-Rayet stars**
 RT A stars
 astrophysics
 B stars
 carbon stars
 celestial mechanics
 ejecta
 helium
 nitrogen
 O stars
 stellar envelopes
 stellar luminosity
 stellar mass ejection
 white dwarf stars
- wolves**
 GS animals
 . vertebrates
 . . mammals
 . . . **wolves**
 RT dogs
- women*
 USE **females**
- wood**
 GS **wood**
 . cork (materials)
 . plywood
 RT balsa
 cellulose
 Masonite (trademark)
 organic materials
 paper (material)
 plants (botany)
 slivers
 trees (plants)
 wooden structures
- wooden structures**
 RT plywood
 ∞ structures
 wood
- wool**
 SN (LIMITED TO ANIMAL FIBERS)
 GS fabrics
 . **wool**
 fibers
 . **wool**
 RT felts
 hair
 keratins
 organic materials
 sheep
 yarns
- word processing**
 DEF The use of a computer, often with a CRT under full-screen control, to facilitate the recording, storage, editing, updating, and organization of information in the form of words, especially sentential information.
 RT computer techniques
 data processing
 office automation
 words (language)
- words (language)**
 RT abbreviations
 consonants (speech)
 conversation
 English language
 grammars
 languages
 messages
 orthography
 phonemes
 phonemics
 phonetics
 semantics
 sentences
 speech
 terminology
 terms
 thesauri

work

verbal communication
voice communication
vowels
word processing

work

GS **work**
. physical work
RT ∞ energy
heat
horsepower
kinetic energy
occupation
physical factors

work capacity

RT hyperkinesia
orbital workers
physical fitness
physical work
workloads (psychophysiology)

work functions

UF *Schottky effect*
RT electron emission
∞ functions
ionization potentials
perveance
photoelectric emission
Schottky diodes
thermionic emission

work hardening

GS hardening (materials)
. **work hardening**
. . strain hardening
RT cold hardening
mechanical twinning
metal working
peening
shot peening
work softening

work softening

DEF The phenomena of a drop in the yield strength of a metal when it has been strained or cold worked at low temperature and subsequently strained at an elevated temperature to cause the dislocations to become unstable.

GS softening
. **work softening**
RT microstructure
plastic deformation
work hardening

Workhorse helicopter

USE **CH-21 helicopter**

working fluids

DEF Fluids (gas or liquid) used as the medium for the transfer of energy from one part of a system to another.

RT consumables (spacecraft)
ferrofluids
fluid power
fluid transmission lines
∞ fluids
high temperature fluids
hydraulic fluids
jet condensers
phase change materials
sulfur hexafluoride
transmission fluids

workloads (psychophysiology)

RT fatigue (biology)
human performance
mental performance
physical work
psychomotor performance
psychophysiology
stress (psychology)
work capacity

work-rest cycle

GS cycles

. **work-rest cycle**
RT fatigue (biology)
relaxation (physiology)

workstations

GS stations
. **workstations**
. . crew workstations
. . . crew experiment stations
. . . crew observation stations
RT human factors engineering
man machine systems
productivity
UNIX (operating system)

world

USE **Earth (planet)**

world data centers

RT ∞ centers
∞ data
data retrieval
data storage
International Geophysical Year
libraries
transoceanic systems

World Meteorological Organization

GS organizations
. **World Meteorological Organization**
RT international cooperation
meteorology
United Nations

World Weather Watch

USE **meteorological services**

World Wide Web

(added July 1995)
UF *WWW*
GS networks
. communication networks
. . internets
. . . **World Wide Web**
. computer networks
. . internets
. . . **World Wide Web**
RT computer conferencing
electronic bulletin boards
electronic commerce
information transfer
Java (programming language)
protocol (computers)
websites

worms

GS animals
. invertebrates
. . **worms**
. . . flatworms
RT infestation
larvae
Rotifera

wound healing

GS healing
. **wound healing**
RT injuries

woven composites

(added November 1992)
GS composite materials
. fiber composites
. . **woven composites**
RT braided composites
carbon fiber reinforced plastics
epoxy matrix composites
fabrics
glass fiber reinforced plastics
graphite-epoxy composites
reinforcing fibers
three dimensional composites

weaving

W-R stars

USE **Wolf-Rayet stars**

Wrangell Mountains (AK)

GS landforms
. mountains
. . **Wrangell Mountains (AK)**
RT Alaska

∞ wrap

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT composite wrapping
packaging

wraparound contact solar cells

USE **solar cells**

wreckage

RT accident investigation
accidents
crashes
sabotage
spacecraft breakup

wrenches

GS tools
. **wrenches**

wrinkling

GS **wrinkling**
. flange wrinkling
RT buckling
deformation
distortion
kinking
∞ ridges

wrist

GS anatomy
. musculoskeletal system
. . joints (anatomy)
. . . **wrist**
RT arm (anatomy)
hand (anatomy)

wrought alloys

GS alloys
. **wrought alloys**
RT Rene 41
Rene 63
Rene 77
Waspaloy

WU-2 aircraft

USE **U-2 aircraft**

wurtzite

GS chalcogenides
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **wurtzite**
minerals
. **wurtzite**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **wurtzite**
zinc compounds
. zinc sulfides
. . **wurtzite**

WWW

USE **World Wide Web**

WWW (meteorology)

USE **meteorological services**

Wyoming

GS nations
. United States

. . **Wyoming**
RT Bighorn Mountains (MT-WY)
Black Hills (SD-WY)

Wind River Range (WY)
Yellowstone National Park
(ID-MT-WY)

X

X band

USE **superhigh frequencies**

X mesons

- GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - meson resonance
 - **X mesons**
 - . . fermions
 - . . . meson resonance
 - **X mesons**
 - . . hadrons
 - . . . mesons
 - meson resonance
 - **X mesons**
 - . . nuclear particles
 - . . bosons
 - . . . mesons
 - meson resonance
 - **X mesons**
- resonance
- . meson resonance
- . . **X mesons**

x ray absorption

- GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **x ray absorption**
- RT ∞ absorption
 - electron spectroscopy
 - x ray detectors

x ray analysis

- SN (EXCLUDES X RAY STRESS ANALYSIS)
- GS **x ray analysis**
 - . Laue method
 - . . x ray spectroscopy
- RT ∞ analyzing
 - chemical analysis
 - crystallography
 - defects
 - fluoroscopy
 - lattice parameters
 - ∞ materials tests
 - microanalysis
 - microbeams
 - radiography
 - radiology
 - stereochemistry
 - tomography

x ray apparatus

- GS medical equipment
 - . **x ray apparatus**
 - . . lixiscopes
 - . . . x ray tubes
- RT ∞ equipment
 - radiography
 - x ray detectors

x ray astronomy

- GS astronomy
 - . **x ray astronomy**
- RT cosmic x rays
 - Exosat satellite
 - gamma ray astronomy
 - gamma ray bursts
 - Ginga satellite
 - Granat satellite
 - grazing incidence telescopes
 - HEAO 4
 - lixiscopes
 - radiography
 - ROSAT mission
 - SAS-3
 - Tenma satellite
 - Uhuru satellite
 - ultraviolet telescopes

X Ray Astrophysics Facility

- x ray binaries
- x ray detectors
- x ray sources
- x ray stars
- XMM-Newton telescope

X Ray Astrophysics Facility

DEF Free-flying x ray observatory that is shuttle-launched, maintainable in orbit, and retrievable. Used for Advanced X Ray Astrophysics Facility and AXAF.

UF *Advanced X Ray Astrophysics Facility AXAF*

Chandra X Ray Astrophysics Facility

- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **X Ray Astrophysics Facility** observatories
 - . . astronomical observatories
 - . . . astronomical satellites
 - **X Ray Astrophysics Facility** payloads
 - . . Space Shuttle payloads
 - . . . **X Ray Astrophysics Facility** telescopes
 - . . spaceborne telescopes
 - . . . **X Ray Astrophysics Facility**
 - . . x ray telescopes
 - . . . **X Ray Astrophysics Facility** astrophysics
- RT ∞ facilities
 - spaceborne astronomy
 - x ray astronomy
 - XMM-Newton telescope

x ray binaries

DEF Bright galactic x ray sources consisting of a compact star (neutron star or black hole) accreting matter from a close companion star.

- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - **x ray binaries**
 - . . . x ray stars
 - **x ray binaries**
 - . . x ray sources
 - . . . x ray stars
 - **x ray binaries**
- RT accretion disks
 - astrophysics
 - black holes (astronomy)
 - companion stars
 - cosmic x rays
 - eclipsing binary stars
 - neutron stars
 - stellar mass accretion
 - x ray astronomy
 - x rays

x ray density measurement

- GS density measurement
 - . **x ray density measurement**
- RT flux density

x ray detectors

- (added April 1992)
- GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . **x ray detectors**
- RT bolometers
 - infrared detectors
 - multi-anode microchannel arrays
 - photodiodes
 - photometers
 - radiometers
 - ultraviolet detectors
 - x ray absorption

- x ray apparatus
- x ray astronomy
- x ray spectroscopy
- x ray telescopes
- x rays

x ray diffraction

- GS diffraction
 - . **x ray diffraction**
- RT crystallography
 - electron diffraction
 - Laue method
 - metallography
 - radiography
 - x ray optics

x ray fluorescence

- GS emission
 - . light emission
 - . . luminescence
 - . . . fluorescence
 - **x ray fluorescence**
 - photoluminescence
 - **x ray fluorescence**
- RT radiography

x ray imagery

DEF Reproduction of an object by means of focusing penetrating electromagnetic radiation (wavelengths ranging from 10-5 to 103 angstroms) coming from the object or reflected by the object. Analogous to infrared imagery, radar imagery and microwave imagery using the IR, radar and microwave frequencies.

- GS imagery
 - . **x ray imagery**
- RT imaging techniques
 - infrared imagery
 - lixiscopes
 - microwave imagery
 - radar imagery
 - radiography

x ray inspection

- GS inspection
 - . **x ray inspection**
- RT nondestructive tests
 - radiography
- ∞ tests

x ray irradiation

- GS irradiation
 - . **x ray irradiation**

x ray lasers

- GS stimulated emission devices
 - . lasers
 - . . **x ray lasers**
- RT electron transitions
 - laser outputs

X Ray Multi-Mirror Mission

(added August 2000)
USE **XMM-Newton telescope**

x ray optics

(added January 1994)
DEF The study and application of x ray properties and phenomena that are similar to the optical characteristics of visible light.

- RT geometrical optics
 - grazing incidence
 - mirrors
- ∞ optics
 - x ray diffraction
 - x ray telescopes
 - x rays

x ray scattering

- GS scattering

- . wave scattering
 - . . electromagnetic scattering
 - . . . **x ray scattering**
 - RT form factors
- x ray sources**
- GS **x ray sources**
 - . x ray stars
 - . . soft gamma repeaters
 - . . x ray binaries
 - RT cooling flows (astrophysics)
 - cosmic x rays
 - Exosat satellite
 - galactic bulge
 - gamma ray sources (astronomy)
 - magnetars
 - ∞ radiation
 - ROSAT mission
 - x ray astronomy
 - x rays
- x ray spectra**
- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **x ray spectra**
 - RT Ginga satellite
 - North Polar Spur (astronomy)
 - quasars
 - solar spectra
 - stellar spectra
 - Tenma satellite
 - x ray spectrometers
- X ray spectrography*
- USE **x ray spectroscopy**
- x ray spectrometers**
(added October 1996)
- GS measuring instruments
 - . spectrometers
 - . . **x ray spectrometers**
 - RT spectroscopy
 - x ray spectra
 - x ray telescopes
- X ray spectrometry*
- USE **x ray spectroscopy**
- X Ray Spectropolarimetry Payload*
- USE **EXPOS (Spacelab payload)**
- x ray spectroscopy**
- UF *X ray spectrography*
 - X ray spectrometry*
 - GS spectroscopy
 - . **x ray spectroscopy**
 - x ray analysis
 - . **x ray spectroscopy**
 - RT astronomical spectroscopy
 - coordination number
 - ∞ materials tests
 - molecular spectroscopy
 - radio spectroscopy
 - radiography
 - spectroscopic analysis
 - ultraviolet spectroscopy
 - vacuum spectroscopy
 - x ray detectors
- x ray stars**
- DEF Stars with strong emission in the x ray portion of the electromagnetic spectrum. Used for extars.
 - UF *extars*
 - GS celestial bodies
 - . stars
 - . . **x ray stars**
 - . . . soft gamma repeaters
 - . . . x ray binaries
 - x ray sources
 - . **x ray stars**
 - . . soft gamma repeaters
 - . . x ray binaries
 - RT emission spectra
 - Ginga satellite
- neutron stars
 - radiation sources
 - stellar radiation
 - Tenma satellite
 - Uhuru satellite
 - x ray astronomy
 - x ray telescopes
 - x rays
- x ray stress analysis**
- GS stress analysis
 - . **x ray stress analysis**
 - RT stresses
 - temperature inversions
- x ray stress measurement**
- GS mechanical measurement
 - . stress measurement
 - . . **x ray stress measurement**
- x ray telescopes**
- GS telescopes
 - . **x ray telescopes**
 - . . X Ray Astrophysics Facility
 - . . XMM-Newton telescope
 - RT grazing incidence telescopes
 - Kvant modules
 - radiography
 - ROSAT mission
 - x ray detectors
 - x ray optics
 - x ray spectrometers
 - x ray stars
- X Ray Timing Explorer**
- DEF An Explorer satellite planned for late 1993 or 1994 to consist of three experiments: a large area proportional counter, an all sky monitor, and a high energy x ray timing experiment. The package is designed to measure the time variability of x ray sources and broad band spectra.
 - UF *Rossi X Ray Timing Explorer*
 - RXTE (satellite)*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **X Ray Timing Explorer**
- x ray tubes**
- DEF Vacuum tubes designed to produce x rays by accelerating electrons to a high velocity by means of an electrostatic field, then suddenly stopping them by collision with a target.
 - GS medical equipment
 - . x ray apparatus
 - . . **x ray tubes**
 - RT electron tubes
 - radiography
- x rays**
- DEF Nonnuclear electromagnetic radiation of very short wavelength, lying within the interval of 0. 1 to 100 angstroms (between gamma rays, and ultraviolet radiation).
 - GS electromagnetic radiation
 - . **x rays**
 - . . cosmic x rays
 - . . solar x-rays
 - ionizing radiation
 - . **x rays**
 - . . cosmic x rays
 - . . solar x-rays
 - RT auroras
 - blackout (propagation)
 - bremsstrahlung
 - cosmic rays
 - emission spectra
 - extraterrestrial radiation
 - far ultraviolet radiation
 - gamma rays
 - monochromatic radiation
 - radiography
 - radiology
 - synchrotron radiation
- system generated electromagnetic pulses
 - x ray binaries
 - x ray detectors
 - x ray optics
 - x ray sources
 - x ray stars
- x wing rotors**
- DEF A new VTOL concept utilizing the stopped rotor X-wing aircraft.
 - GS airfoils
 - . wings
 - . . rotary wings
 - . . . **x wing rotors**
 - rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **x wing rotors**
 - RT circulation control rotors
 - ∞ rotor blades
- X-1 aircraft**
- GS Bell aircraft
 - . **X-1 aircraft**
 - monoplanes
 - . **X-1 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-1 aircraft**
 - rocket vehicles
 - . rocket planes
 - . . **X-1 aircraft**
 - supersonic aircraft
 - . **X-1 aircraft**
 - RT ∞ aircraft
- X-2 aircraft**
- GS Bell aircraft
 - . **X-2 aircraft**
 - monoplanes
 - . **X-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-2 aircraft**
 - rocket vehicles
 - . rocket planes
 - . . **X-2 aircraft**
 - supersonic aircraft
 - . **X-2 aircraft**
 - RT ∞ aircraft
- X-3 aircraft**
- GS jet aircraft
 - . **X-3 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **X-3 aircraft**
 - monoplanes
 - . **X-3 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-3 aircraft**
 - supersonic aircraft
 - . **X-3 aircraft**
 - RT ∞ aircraft
- X-5 aircraft**
- GS Bell aircraft
 - . **X-5 aircraft**
 - jet aircraft
 - . **X-5 aircraft**
 - monoplanes
 - . **X-5 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-5 aircraft**
 - RT ∞ aircraft
- X-13 aircraft**
- GS jet aircraft
 - . **X-13 aircraft**
 - monoplanes
 - . **X-13 aircraft**
 - research vehicles
 - . research aircraft

X-14 aircraft

- . . X-13 aircraft
- Ryan aircraft
- . X-13 aircraft
- V/STOL aircraft
- . vertical takeoff aircraft
- . . X-13 aircraft
- RT ∞ aircraft

X-14 aircraft

- GS Bell aircraft
- . X-14 aircraft
- jet aircraft
- . X-14 aircraft
- monoplanes
- . X-14 aircraft
- research vehicles
- . research aircraft
- . . X-14 aircraft
- V/STOL aircraft
- . vertical takeoff aircraft
- . . X-14 aircraft
- RT ∞ aircraft

X-15 aircraft

- GS North American aircraft
- . X-15 aircraft
- research vehicles
- . research aircraft
- . . X-15 aircraft
- rocket vehicles
- . rocket planes
- . . X-15 aircraft
- supersonic aircraft
- . X-15 aircraft
- RT ∞ aircraft
- XLR-99 engine

X-17 reentry vehicle

- GS reentry vehicles
- . X-17 reentry vehicle
- RT rocket vehicles
- solid propellant rocket engines

X-19 aircraft

- GS Curtiss-Wright aircraft
- . X-19 aircraft
- research vehicles
- . research aircraft
- . . X-19 aircraft
- tandem wing aircraft
- . X-19 aircraft
- V/STOL aircraft
- . vertical takeoff aircraft
- . . X-19 aircraft
- RT ∞ aircraft

X-20 aircraft

- UF *Dyna-Soar space glider*
- GS Boeing aircraft
- . X-20 aircraft
- gliders
- . boostglide vehicles
- . . X-20 aircraft
- hypersonic gliders
- . . X-20 aircraft
- hypersonic vehicles
- . hypersonic aircraft
- . . hypersonic gliders
- . . . X-20 aircraft
- lifting bodies
- . lifting reentry vehicles
- . . X-20 aircraft
- maneuverable spacecraft
- . X-20 aircraft
- reentry vehicles
- . boostglide vehicles
- . . X-20 aircraft
- maneuverable reentry bodies
- . . lifting reentry vehicles
- . . . X-20 aircraft
- research vehicles
- . research aircraft
- . . X-20 aircraft
- RT aerospace planes
- ∞ aircraft
- manned spacecraft

soft landing spacecraft

X-21 aircraft

- GS jet aircraft
- . X-21 aircraft
- monoplanes
- . X-21 aircraft
- Northrop aircraft
- . X-21 aircraft
- research vehicles
- . research aircraft
- . . X-21 aircraft
- RT ∞ aircraft
- boundary layer control
- laminar boundary layer

X-21A aircraft

- GS jet aircraft
- . X-21A aircraft
- monoplanes
- . X-21A aircraft
- Northrop aircraft
- . X-21A aircraft
- research vehicles
- . research aircraft
- . . X-21A aircraft
- RT ∞ aircraft
- laminar flow

X-22 aircraft

- GS Bell aircraft
- . X-22 aircraft
- research vehicles
- . research aircraft
- . . X-22 aircraft
- V/STOL aircraft
- . vertical takeoff aircraft
- . . X-22 aircraft
- RT ∞ aircraft
- tandem wing aircraft
- tilt wing aircraft

X-22A aircraft

- GS research vehicles
- . research aircraft
- . . X-22A aircraft
- tandem wing aircraft
- . X-22A aircraft
- V/STOL aircraft
- . vertical takeoff aircraft
- . . X-22A aircraft
- RT ∞ aircraft

X-24 aircraft

- GS lifting bodies
- . lifting reentry vehicles
- . . X-24 aircraft
- reentry vehicles
- . maneuverable reentry bodies
- . . lifting reentry vehicles
- . . . X-24 aircraft
- research vehicles
- . research aircraft
- . . X-24 aircraft
- RT ∞ aircraft

X-29 aircraft

- RT ∞ aircraft
- swept forward wings

X-30 vehicle

- GS aerospace vehicles
- . aerospace planes
- . . X-30 vehicle
- hypersonic vehicles
- . X-30 vehicle
- maneuverable spacecraft
- . aerospace planes
- . . X-30 vehicle
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . aerospace planes
- X-30 vehicle
- research vehicles
- . X-30 vehicle

soft landing spacecraft

. aerospace planes

. . X-30 vehicle

- RT National Aerospace Plane Program
- single stage to orbit vehicles
- ∞ spacecraft
- transatmospheric vehicles

X-31 aircraft

- (added June 1994)
- DEF A research aircraft (single-engine, delta-wing/canard configuration) designed to demonstrate enhanced fighter maneuverability (EFM) and post-stall controllability through the use of thrust vector control at very high angle-of-attack.
- GS jet aircraft
- . X-31 aircraft
- monoplanes
- . X-31 aircraft
- research vehicles
- . research aircraft
- . . X-31 aircraft
- RT ∞ aircraft
- aircraft maneuvers
- canard configurations
- fighter aircraft
- thrust vector control

X-32 aircraft

- (added October 1998)
- DEF Experimental supersonic strike fighter developed to be configured as a conventional or short takeoff/vertical landing vehicle. Developed as part of the Joint Strike Fighter (JSF) program.
- GS Boeing aircraft
- . X-32 aircraft
- jet aircraft
- . X-32 aircraft
- research vehicles
- . research aircraft
- . . X-32 aircraft
- supersonic aircraft
- . X-32 aircraft
- V/STOL aircraft
- . X-32 aircraft

X-33 reusable launch vehicle

- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
- . . X-33 reusable launch vehicle
- RT liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft
- VentureStar launch vehicle

X-34 reusable launch vehicle

- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
- . . X-34 reusable launch vehicle
- RT air launching
- Boeing 747 aircraft
- liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft

X-35 aircraft

- (added October 1998)
- DEF Experimental strike fighter incorporating a vertical lift fan for short takeoff/vertical landing capability. Developed as part of the Joint Strike Fighter (JSF) program.
- GS jet aircraft
- . X-35 aircraft
- Lockheed aircraft
- . X-35 aircraft
- research vehicles
- . research aircraft
- . . X-35 aircraft
- V/STOL aircraft
- . X-35 aircraft

X-36 aircraft

- (added March 1996)

GS McDonnell Douglas aircraft
 . **X-36 aircraft**
 research vehicles
 . research aircraft
 . . **X-36 aircraft**
 tailless aircraft
 . **X-36 aircraft**

RT ∞ aircraft
 B-2 aircraft
 flight test vehicles

X-37 vehicle*(added March 2000)*

DEF NASA/Boeing experimental space plane developed to demonstrate airframe, propulsion, and operations technologies for reduced-cost reusable launch vehicles. The unpiloted X-37 can be carried into orbit by the Space Shuttle or launched by an expendable rocket, and flies in both orbital and reentry environments, operating at speeds up to 25 times the speed of sound.

GS aerospace vehicles
 . aerospace planes
 . . **X-37 vehicle**
 hypersonic vehicles
 . **X-37 vehicle**
 maneuverable spacecraft
 . aerospace planes
 . . **X-37 vehicle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . aerospace planes
 **X-37 vehicle**
 research vehicles
 . **X-37 vehicle**
 soft landing spacecraft
 . aerospace planes
 . . **X-37 vehicle**

RT reusable launch vehicles
 ∞ spacecraft
 X-40A vehicle

X-38 crew return vehicle*(added December 1996)*

GS recovery vehicles
 . **X-38 crew return vehicle**

RT Assured Crew Return Vehicle
 escape capsules
 lifeboats
 rescue operations
 return to Earth space flight
 space stations

X-40A vehicle*(added September 2001)*

DEF NASA/Boeing 80-percent scale model demonstrator of the X-37 pilotless space plane, intended to evaluate systems and technologies to be used in future reusable space or launch vehicles.

GS aerospace vehicles
 . aerospace planes
 . . **X-40A vehicle**
 maneuverable spacecraft
 . aerospace planes
 . . **X-40A vehicle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . aerospace planes
 **X-40A vehicle**
 research vehicles
 . **X-40A vehicle**
 soft landing spacecraft
 . aerospace planes
 . . **X-40A vehicle**

RT reusable launch vehicles
 X-37 vehicle

X-43 vehicle*(added September 1999)*

DEF The experimental research vehicle of the NASA Hyper-X program designed to flight validate key propulsion and related technologies

for air-breathing hypersonic aircraft.

GS aerospace vehicles
 . **X-43 vehicle**
 hypersonic vehicles
 . **X-43 vehicle**
 research vehicles
 . **X-43 vehicle**

RT hypersonic flight
 Pegasus air-launched booster
 supersonic combustion ramjet
 engines

X-45 aircraft*(added February 2003)*

DEF An unmanned combat air vehicle (UCAV) demonstrator developed to test the use of such aircraft in enemy air-defense suppression and other strike missions. The vehicle was developed as part of a joint DARPA/U. S. Air Force/Boeing program.

GS pilotless aircraft
 . **X-45 aircraft**
 research vehicles
 . research aircraft
 . . **X-45 aircraft**
 tailless aircraft
 . **X-45 aircraft**

RT Boeing aircraft
 ∞ military aircraft
 stealth technology

X-248 engine

UF *Altair engine*

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-248 engine**

RT Blue Scout rocket vehicle
 Scout launch vehicle
 vanguard 2 launch vehicle

X-254 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-254 engine**

RT Antares rocket vehicle
 Blue Scout rocket vehicle
 Scout launch vehicle

X-258 engines

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-258 engines**
 X-258-B1 engine

RT Scout launch vehicle

X-258-B1 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . X-258 engines
 **X-258-B1 engine**

X-259 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-259 engine**

RT Scout launch vehicle

X-405 engine

GS engines
 . rocket engines
 . . booster rocket engines
 . . . **X-405 engine**
 . . liquid propellant rocket engines
 . . . **X-405 engine**

RT Vanguard project

xanthic acids

GS acids
 . **xanthic acids**

RT organic liquids

xanthines

GS fungicides
 . **xanthines**
 . . caffeine
 . . guanines
 . . uric acid
 nitrogen compounds
 . **xanthines**
 . . caffeine
 . . guanines
 . . uric acid
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . purines
 **xanthines**
 caffeine
 guanines
 uric acid

XB-47 aircraft

USE **B-47 aircraft**

XB-70 aircraft

USE **B-70 aircraft**

XBQM-180A aircraft

USE **VATOL aircraft**

XC-142 aircraft

UF *C-142 aircraft*

GS Fairchild-Hiller aircraft
 . **XC-142 aircraft**
 jet aircraft
 . **XC-142 aircraft**
 Ling-Temco-Vought aircraft
 . **XC-142 aircraft**
 monoplanes
 . **XC-142 aircraft**
 Ryan aircraft
 . **XC-142 aircraft**
 tilt wing aircraft
 . **XC-142 aircraft**
 transport aircraft
 . **XC-142 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **XC-142 aircraft**

RT ∞ aircraft
 turboprop engines

xenon

GS chemical elements
 . rare gases
 . . **xenon**
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 gases
 . rare gases
 . . **xenon**
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135

xenon 129

GS chemical elements
 . nuclides
 . . isotopes
 . . . xenon isotopes
 **xenon 129**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 129**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes

. . . . xenon 129
xenon 133
 GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **xenon 133**
 . . . xenon isotopes
 **xenon 133**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 133**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 133**
xenon 135
 GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **xenon 135**
 . . . xenon isotopes
 **xenon 135**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 135**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 135**
xenon chloride lasers
 DEF Rare gas-halide lasers using XeCl as
 the active material.
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . rare gas-halide lasers
 **xenon chloride lasers**
 RT electron transitions
 excimer lasers
 laser materials
 laser outputs
 ultraviolet lasers
xenon compounds
 RT ∞ chemical compounds
 ∞ rare gas compounds
xenon fluoride lasers
 DEF Lasers using XeF as the active mate-
 rial.
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . rare gas-halide lasers
 **xenon fluoride lasers**
 RT electron transitions
 excimer lasers
 laser materials
 laser outputs
xenon isotopes
 GS chemical elements
 . nuclides
 . isotopes
 . . . **xenon isotopes**
 xenon 129
 xenon 133
 xenon 135
 . rare gases
 . . xenon
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 gases
 . rare gases
 . . xenon

. . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
xenon lamps
 GS lighting equipment
 . luminaires
 . . **xenon lamps**
 RT arc lamps
 flash lamps
 infrared radiation
 mercury lamps
xerogels
 (*added July 1997*)
 GS gels
 . **xerogels**
 RT aerogels
 porous materials
 silica gel
 silicon dioxide
 sol-gel processes
xerography
 GS imagery
 . reproduction (copying)
 . . **xerography**
 RT electrostatic charge
 photographs
 photography
XH-51 helicopter
 UF *aerogyro helicopters*
 CL-595 helicopter
 H-51 helicopter
 Lockheed 186 helicopter
 Lockheed CL-595 helicopter
 GS Lockheed aircraft
 . **XH-51 helicopter**
 research vehicles
 . research aircraft
 . . **XH-51 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . rigid rotor helicopters
 **XH-51 helicopter**
xi hyperons
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 hyperons
 **xi hyperons**
 **xi hyperons**
 . . fermions
 . . . baryons
 hyperons
 **xi hyperons**
 . . hadrons
 . . . baryons
 hyperons
 **xi hyperons**
 . . . mesons
 hyperons
 **xi hyperons**
 . nuclear particles
 . . bosons
 . . . mesons
 hyperons
 **xi hyperons**
 . . . **xi hyperons**
 . . . **xi hyperons**
XJ-34-WE-32 engine
 USE **J-34 engine**
XJ-79-GE-1 engine
 USE **J-79 engine**
XLR-99 engine
 GS engines
 . rocket engines
 . . liquid propellant rocket engines
 . . . **XLR-99 engine**

RT X-15 aircraft
XM-6 squib
 USE **squibs**
XM-8 squib
 USE **squibs**
XM-33 engine
 UF *TX-33-39 engine*
 GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **XM-33 engine**
 RT Blue Scout rocket vehicle
 EXOS sounding rocket
 Little Joe 2 launch vehicle
 polaris missiles
 Scout launch vehicle
 TX-354 engine
XMM (telescope)
 (*added August 2000*)
 USE **XMM-Newton telescope**
XMM-Newton telescope
 (*added August 2000*)
 DEF Spaceborne x-ray telescope, launched
 in December 1999, providing simultaneous,
 high-throughput non-dispersive spectroscopic
 imaging (EPIC instrument), medium-resolution
 dispersive spectroscopy (Reflection Grating
 Spectrometer), and optical/UV imaging and tim-
 ing from a co-aligned instrument (Optical Moni-
 tor).
 UF *X Ray Multi-Mirror Mission*
 XMM (telescope)
 GS artificial satellites
 . ESA satellites
 . . **XMM-Newton telescope**
 . scientific satellites
 . . astronomical satellites
 . . . **XMM-Newton telescope**
 ESA spacecraft
 . ESA satellites
 . . **XMM-Newton telescope**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **XMM-Newton telescope**
 telescopes
 . spaceborne telescopes
 . . **XMM-Newton telescope**
 . x ray telescopes
 . . **XMM-Newton telescope**
 RT x ray astronomy
 X Ray Astrophysics Facility
XV-3 aircraft
 UF *V-3 aircraft*
 GS Bell aircraft
 . **XV-3 aircraft**
 V/STOL aircraft
 . **XV-3 aircraft**
 RT ∞ aircraft
 tilting rotors
XV-4 aircraft
 UF *Hummingbird aircraft*
 Lockheed XV-4A aircraft
 V-4 aircraft
 VZ-10 aircraft
 GS jet aircraft
 . **XV-4 aircraft**
 Lockheed aircraft
 . **XV-4 aircraft**
 monoplanes
 . **XV-4 aircraft**
 research vehicles
 . research aircraft
 . . **XV-4 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **XV-4 aircraft**

- RT ∞ aircraft
- XV-5 aircraft**
- UF *V-5 aircraft*
 - VZ-11 aircraft*
 - XV-5A aircraft*
 - GS fan in wing aircraft
 - . **XV-5 aircraft**
 - jet aircraft
 - . **XV-5 aircraft**
 - monoplanes
 - . **XV-5 aircraft**
 - research vehicles
 - . research aircraft
 - . . **XV-5 aircraft**
 - Ryan aircraft
 - . **XV-5 aircraft**
 - V/STOL aircraft
 - . **XV-5 aircraft**
 - RT ∞ aircraft
- XV-5A aircraft*
- USE **XV-5 aircraft**
- XV-6A aircraft*
- USE **P-1127 aircraft**
- XV-8A aircraft**
- GS research vehicles
 - . research aircraft
 - . . **XV-8A aircraft**
 - Ryan aircraft
 - . **XV-8A aircraft**
 - utility aircraft
 - . **XV-8A aircraft**
- V/STOL aircraft
- . **XV-8A aircraft**
 - flexible wings
- XV-9A aircraft**
- UF *V-9 aircraft*
 - GS Hughes aircraft
 - . **XV-9A aircraft**
 - jet aircraft
 - . **XV-9A aircraft**
 - research vehicles
 - . research aircraft
 - . . **XV-9A aircraft**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **XV-9A aircraft**
 - RT ∞ aircraft
 - tip driven rotors
- XV-11A aircraft**
- GS research vehicles
 - . research aircraft
 - . . **XV-11A aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **XV-11A aircraft**
 - RT ∞ aircraft
 - lift fans
 - shrouded propellers
- XV-15 aircraft**
- DEF Experimental model of a tilt-rotor air-
- craft built by Bell Aircraft Company.
- GS Bell aircraft
 - . **XV-15 aircraft**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . tilt rotor aircraft
 - . . . **XV-15 aircraft**
 - RT ∞ aircraft
 - helicopters
 - Tilt Rotor Research Aircraft Program
- x-y plotters**
- GS recording instruments
 - . plotters
 - . . **x-y plotters**
 - RT digital to analog converters
- xylene**
- DEF A mixture of Carbon 8 aromatic hydrocarbons.
 - GS organic compounds
 - . hydrocarbons
 - . . **xylene**
 - RT toluene
- xylose**
- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . monosaccharides
 - pentose
 - **xylose**

Y

YAG (*garnet*)

USE **yttrium-aluminum garnet**

YAG lasers

GS electronic equipment
 . solid state devices
 . . solid state lasers
 . . . **YAG lasers**
 stimulated emission devices
 . lasers
 . . solid state lasers
 . . . **YAG lasers**

RT laser heating
 laser materials
 laser outputs
 yttrium-aluminum garnet

Yagi antennas

DEF Directional antennas used on some types of radar and radio equipment consisting of an array of elemental, single wire dipole antennas and reflectors.

GS antennas
 . directional antennas
 . . **Yagi antennas**
 arrays
 . antenna arrays
 . . linear arrays
 . . . endfire arrays
 **Yagi antennas**

RT antenna design
 dipole antennas
 directors (antenna elements)
 parasitic elements (antennas)
 waveguide antennas

Yak 40 aircraft

GS general aviation aircraft
 . **Yak 40 aircraft**
 jet aircraft
 . **Yak 40 aircraft**
 passenger aircraft
 . **Yak 40 aircraft**
 Yakovlev aircraft
 . **Yak 40 aircraft**

RT ∞ aircraft

YAK aircraft

USE **Yakovlev aircraft**

Yakovlev aircraft

(added September 1995)
 UF *YAK aircraft*
 GS **Yakovlev aircraft**
 . Yak 40 aircraft

RT ∞ aircraft

Yang-Mills fields

DEF Types of fields based upon Yang-Mills theory.

RT electromagnetic fields
 field theory (physics)
 gauge theory
 gravitational fields
 perturbation theory
 Yang-Mills theory

Yang-Mills theory

DEF Mathematical idea for describing interactions among elementary particles which is based on the idea of gauge invariance under a non Abelian group. Used for Casimir energy.

RT field theory (physics)
 gauge theory
 perturbation theory
 space-time functions
 statistical analysis
 supergravity
 theoretical physics
 ∞ theories

Yang-Mills fields

yarns

RT cordage
 cotton
 fibers
 ∞ rovings
 strands
 wool

YAV-8B aircraft

USE **Harrier aircraft**

yaw

UF *damping in yaw*
fish tailing
yawmeters

GS attitude (inclination)
 . **yaw**

RT aerodynamic stability
 coning motion
 directional control
 directional stability
 lateral oscillation
 ∞ motion
 pitch (inclination)
 roll
 rotation
 sideslip
 skidding
 turning flight
 yawing moments

yawing moments

DEF Moments that tend to rotate aircraft, airfoils, rockets, or spacecraft about a vertical axis.

GS moments
 . stability derivatives
 . . **yawing moments**

RT aerodynamic coefficients
 lateral oscillation
 moments of inertia
 pitching moments
 rolling moments
 torque
 yaw

yawmeters

USE **attitude indicators**

yaw

Y-Ba-Cu-O superconductors

USE **YBCO superconductors**

YBCO superconductors

(added September 1992)

UF *Y-Ba-Cu-O superconductors*

GS chalcogenides
 . oxides
 . . metal oxides
 . . . mixed oxides
 **YBCO superconductors**
 conductors
 . superconductors (materials)
 . . high temperature superconductors
 . . . **YBCO superconductors**

RT barium oxides
 ceramics
 cermets
 copper oxides
 cuprates
 low temperature physics
 superconducting films
 superconductivity
 thin films
 yttrium oxides

YC-14 aircraft

GS transport aircraft

. cargo aircraft
 . . **YC-14 aircraft**

RT ∞ aircraft
 Boeing aircraft
 ∞ military aircraft

YC-15 aircraft

USE **C-15 aircraft**

YC-123 aircraft

USE **C-123 aircraft**

yeast

GS plants (botany)
 . fungi
 . . **yeast**

RT ∞ food

Yellowstone National Park (ID-MT-WY)

GS land
 . parks
 . . national parks
 . . . **Yellowstone National Park**
 (ID-MT-WY)

RT Idaho
 Montana
 Wyoming

Yemen

GS nations
 . **Yemen**

RT Asia

YF-12 aircraft

GS attack aircraft
 . fighter aircraft
 . . **YF-12 aircraft**

RT ∞ aircraft
 aircraft design
 ∞ interceptors
 jet aircraft
 ∞ military aircraft
 reconnaissance aircraft
 research aircraft

YF-16 aircraft

USE **F-16 aircraft**

YF-17 aircraft

USE **F-17 aircraft**

YF-22 aircraft

USE **F-22 aircraft**

YF-102 aircraft

USE **F-102 aircraft**

YHU-1 helicopter

USE **UH-1 helicopter**

yield

RT losses
 output

yield point

UF *damage threshold*
Luder bands

GS mechanical properties
 . plastic properties
 . . **yield point**

RT microyield strength
 Tresca flow

yield strength

DEF The stress at which a material exhibits a specific limiting deviation from the proportionality of stress to strain. This deviation is expressed in terms of strain.

GS mechanical properties

- . **yield strength**
 - . . load carrying capacity
 - . . microyield strength
- RT ductile-brittle transition
 - elastic properties
 - fracture strength
 - high strength
 - J integral
 - plastic deformation
 - ∞ strength
 - stresses
 - stress-strain diagrams
 - stress-strain relationships
 - temperature inversions
- YIG (garnet)*
 - USE **yttrium-iron garnet**
- YJ73 turbojet engine*
 - USE **J-73 engine**
- YJ-73-GE-3 engine*
 - USE **J-73 engine**
- YJ-79 engine*
 - USE **J-79 engine**
- YJ-85 engine*
 - USE **J-85 engine**
- YJ-93 engine*
 - USE **J-93 engine**
- YJ-93-GE-3 engine*
 - USE **J-93 engine**
- YLF lasers**
 - (added August 1990)
 - UF *yttrium lithium fluoride lasers*
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **YLF lasers**
 - . . solid state lasers
 - . . . **YLF lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **YLF lasers**
 - . . solid state lasers
 - . . . **YLF lasers**
 - RT infrared lasers
- YLR-91-AJ-1 engine**
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **YLR-91-AJ-1 engine**
 - RT Titan ICBM
- yokes**
 - RT beam waveguides
 - connectors
 - couplers
 - couples
 - deflection
 - directional couplers
 - ferromagnetic materials
 - ∞ joining
 - linkages
 - magnet coils
- Young modulus*
 - USE **modulus of elasticity**
- Young-Helmholtz theory**
 - RT color vision
 - photoreceptors
 - ∞ theories
- youth**
 - RT growth
- human beings
- yo-yo devices**
 - RT angular acceleration
 - gyroscopic stability
 - satellite rotation
 - spin
 - spin reduction
- yrast state**
 - (added December 2001)
 - DEF An energy state in which the energy level of a nucleus is less than that of all other states with the same spin.
 - GS level (quantity)
 - . energy levels
 - . . **yrast state**
 - RT ground state
 - nuclear spin
 - nuclei (nuclear physics)
- YS-11 aircraft**
 - UF *Nihon YS-11 aircraft*
 - GS jet aircraft
 - . turboprop aircraft
 - . . **YS-11 aircraft**
 - monoplanes
 - . **YS-11 aircraft**
 - Nihon aircraft
 - . **YS-11 aircraft**
 - passenger aircraft
 - . **YS-11 aircraft**
 - transport aircraft
 - . **YS-11 aircraft**
- YSZ
 - USE **yttria-stabilized zirconia**
- YT-2 aircraft*
 - USE **T-2 aircraft**
- ytterbium**
 - GS chemical elements
 - . rare earth elements
 - . . **ytterbium**
 - . . . ytterbium isotopes
 - metals
 - . rare earth elements
 - . . **ytterbium**
 - . . . ytterbium isotopes
- ytterbium compounds**
 - GS rare earth compounds
 - . **ytterbium compounds**
 - RT ∞ chemical compounds
 - ∞ metal compounds
- ytterbium isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **ytterbium isotopes**
 - . rare earth elements
 - . . ytterbium
 - . . . **ytterbium isotopes**
 - metals
 - . rare earth elements
 - . . ytterbium
 - . . . **ytterbium isotopes**
- yttria-stabilized zirconia**
 - (added February 1994)
 - UF YSZ
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . zirconium oxides
 - **yttria-stabilized zirconia**
 - zirconium compounds
 - . zirconium oxides
 - . . **yttria-stabilized zirconia**
 - RT ceramics
 - thin films
- yttrium oxides
- yttrium**
 - GS chemical elements
 - . rare earth elements
 - . . **yttrium**
 - . . . yttrium isotopes
 - metals
 - . rare earth elements
 - . . **yttrium**
 - . . . yttrium isotopes
 - transition metals
 - . . **yttrium**
 - . . . yttrium isotopes
- yttrium alloys**
 - GS alloys
 - . **yttrium alloys**
 - RT rare earth alloys
- yttrium compounds**
 - GS **yttrium compounds**
 - . yttrium oxides
 - . yttrium-aluminum garnet
 - . yttrium-iron garnet
 - RT ∞ chemical compounds
 - ∞ Group 3B compounds
 - ∞ metal compounds
- yttrium isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **yttrium isotopes**
 - . rare earth elements
 - . . yttrium
 - . . . **yttrium isotopes**
 - metals
 - . rare earth elements
 - . . yttrium
 - . . . **yttrium isotopes**
 - transition metals
 - . . yttrium
 - . . . **yttrium isotopes**
- yttrium lithium fluoride lasers*
 - USE **YLF lasers**
- yttrium oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **yttrium oxides**
 - yttrium compounds
 - . **yttrium oxides**
 - RT high temperature superconductors
 - YBCO superconductors
 - yttria-stabilized zirconia
- yttrium-aluminum garnet**
 - UF *YAG (garnet)*
 - GS minerals
 - . garnets
 - . . **yttrium-aluminum garnet**
 - silicon compounds
 - . silicates
 - . . garnets
 - . . . **yttrium-aluminum garnet**
 - yttrium compounds
 - . **yttrium-aluminum garnet**
 - RT ferrites
 - magnetostatic amplifiers
 - YAG lasers
- yttrium-iron garnet**
 - UF *YIG (garnet)*
 - GS minerals
 - . garnets
 - . . **yttrium-iron garnet**
 - silicon compounds
 - . silicates
 - . . garnets
 - . . . **yttrium-iron garnet**
 - yttrium compounds
 - . **yttrium-iron garnet**
 - RT ferrites

Yugoslavia

magnetostatic amplifiers
waveguide tuners

Yugoslavia

GS nations
. **Yugoslavia**
RT Adriatic Sea
Bosnia and Herzegovina
Croatia
Europe

Serbska Republic

YUH-1 helicopter
USE **UH-1 helicopter**

YUH-60A helicopter
USE **UH-60A helicopter**

YUH-61A helicopter
USE **UH-61A helicopter**

Yukawa potential
RT meson-nucleon interactions

∞ potential

Yukon aircraft
USE **CL-44 aircraft**

Yukon Territory
GS nations
. Canada
.. **Yukon Territory**

Z

Z1 truss structure

(added October 2000)

USE **Integrated Truss Structure Z1**

Z-37 aircraft

UF *Omnipol Z-37 aircraft*

GS monoplanes
 . **Z-37 aircraft**
 utility aircraft
 . **Z-37 aircraft**

Zaire

(added November 1997)

USE **Democratic Republic of Congo**

Zambia

GS nations
 . **Zambia**
 RT Africa

Zarya control module

(added November 1998)

DEF Component of the International Space Station providing propulsion, steering, and communications during the early assembly stages of the station; later serving as a docking port and fuel tank. Zarya was built by Russia under contract to the U. S. and is owned by the U. S.

GS modules
 . space station modules
 . . **Zarya control module**
 RT International Space Station

Zeeman effect

RT ∞ effects
 magnetic fields
 spectroscopy
 spectrum analysis
 Stark effect
 Voigt effect

zeitgebers

(added December 2001)

DEF Environmental cues that help keep circadian and other biological rhythms; includes sunlight, noise, social interactions, and the use of clocks.

GS cues
 . **zeitgebers**
 RT activity cycles (biology)
 circadian rhythms
 darkness
 desynchronization (biology)
 phenology
 physiological responses
 rhythm (biology)
 ∞ stimuli
 visual stimuli

Zener diodes

USE **avalanche diodes**

Zener effect

RT barrier layers
 carrier density (solid state)
 ∞ carriers
 ∞ effects
 electric discharges
 field emission

Zenit launch vehicles

(added January 1999)

GS launch vehicles
 . **Zenit launch vehicles**
 RT sea launching
 Ukrainian space program

zenith

DEF That point of the celestial sphere vertically overhead. The point 180 deg. from the

zenith is called the nadir.

RT antipodes
 apexes
 celestial sphere
 maxima
 noon
 solar position

zeolites

GS silicon compounds
 . silicates
 . . **zeolites**
 RT ion exchange resins
 minerals

zero angle of attack

GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . angle of attack
 **zero angle of attack**

zero crossings

USE **roots of equations**

zero force curves

RT curvature
 ∞ curves
 ∞ force

zero gravity

USE **weightlessness**

zero lift

GS aerodynamic characteristics
 . lift
 . . **zero lift**
 aerodynamic forces
 . lift
 . . **zero lift**
 dynamic characteristics
 . lift
 . . **zero lift**
 RT aerodynamic stalling
 boundary layer separation
 distribution (property)

zero point energy

DEF Kinetic energy retained by molecules of a substance at a temperature of absolute zero.

RT absolute zero
 field theory (physics)
 kinetic energy
 thermodynamic properties

zero power reactor 2

GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . heavy water reactors
 **zero power reactor 2**
 . . . zero power reactors
 **zero power reactor 2**
 . nuclear research and test reactors
 . . **zero power reactor 2**

zero power reactor 3

GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . zero power reactors
 **zero power reactor 3**
 . nuclear research and test reactors
 . . **zero power reactor 3**

zero power reactor 6

GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors

. . . zero power reactors
 **zero power reactor 6**
 . nuclear research and test reactors
 . . **zero power reactor 6**

zero power reactor 9

GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . zero power reactors
 **zero power reactor 9**
 . nuclear research and test reactors
 . . **zero power reactor 9**

zero power reactors

UF *ZPR reactors*
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **zero power reactors**
 zero power reactor 2
 zero power reactor 3
 zero power reactor 6
 zero power reactor 9

zero sound

GS acoustic properties
 . sound intensity
 . . **zero sound**
 rates (per time)
 . flux density
 . . sound intensity
 . . . **zero sound**
 RT acoustic attenuation
 acoustics
 anechoic chambers
 reflection
 silencers
 subaudible frequencies

zero sum games

(added October 1998)

GS games
 . **zero sum games**
 RT differential games
 Markov processes
 optimal control
 pursuit-evasion games
 saddle points (game theory)

zero-g ACPL (Spacelab)

USE **Atmospheric Cloud Physics Lab (Spacelab)**

Zeta Aurigae star

GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 eclipsing binary stars
 **Zeta Aurigae star**
 RT Auriga constellation

zeta pinch

DEF Type of plasma pinch produced by an electric current applied axially to a plasma cylinder in a controlled fusion reactor.

GS pinch effect
 . plasma pinch
 . . **zeta pinch**
 RT controlled fusion
 magnetohydrodynamic stability
 plasma compression
 plasma control
 plasma electrodes
 plasma focus
 Q devices
 rotating plasmas
 screw pinch

theta pinch

zeta thermonuclear reactor
 RT pinch effect
 thermonuclear power generation
 thermonuclear reactions

Zeus missile
 USE **Nike-Zeus missile**

Ziegler catalyst
 GS catalysts
 . **Ziegler catalyst**
 RT polymerization

Zimbabwe
 UF *Rhodesia*
 GS nations
 . **Zimbabwe**
 RT Africa

zinc
 GS chemical elements
 . **zinc**
 . . zinc isotopes
 metals
 . transition metals
 . . **zinc**
 . . . zinc isotopes
 RT heavy metals

zinc alloys
 GS alloys
 . **zinc alloys**
 RT bearing alloys
 solders

zinc antimonides
 GS antimony compounds
 . antimonides
 . . **zinc antimonides**
 zinc compounds
 . **zinc antimonides**

zinc chlorides
 DEF Reaction products of hydrochloric acid and zinc; white crystals soluble in water and alcohol and with a melting point of 290 degrees C.
 GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **zinc chlorides**
 . halides
 . . chlorides
 . . . **zinc chlorides**
 . . metal halides
 . . . **zinc chlorides**
 zinc compounds
 . **zinc chlorides**

zinc coatings
 UF *galvanizing*
 GS coatings
 . metal coatings
 . . **zinc coatings**
 RT protective coatings

zinc compounds
 GS **zinc compounds**
 . zinc antimonides
 . zinc chlorides
 . zinc fluorides
 . zinc oxides
 . zinc selenides
 . zinc sulfides
 . . wurtzite
 . . zinblend
 . zinc tellurides
 . zinc tungstates
 RT ∞ chemical compounds
 ∞ Group 2B compounds
 ∞ metal compounds

zinc fluorides
 GS halogen compounds

. fluorine compounds
 . . fluorides
 . . . metal fluorides
 **zinc fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **zinc fluorides**
 . . metal halides
 . . . metal fluorides
 **zinc fluorides**
 zinc compounds
 . **zinc fluorides**

zinc isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **zinc isotopes**
 . zinc
 . . **zinc isotopes**
 metals
 . transition metals
 . . zinc
 . . . **zinc isotopes**

zinc nickel batteries
 USE **nickel zinc batteries**

zinc oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **zinc oxides**
 zinc compounds
 . **zinc oxides**

zinc selenides
 GS chalcogenides
 . selenides
 . . **zinc selenides**
 selenium compounds
 . selenides
 . . **zinc selenides**
 zinc compounds
 . **zinc selenides**
 RT Schottky diodes

zinc silver batteries
 USE **silver zinc batteries**

zinc silver oxide batteries
 USE **silver zinc batteries**

zinc sulfides
 GS chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . **zinc sulfides**
 wurtzite
 zinblend
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . **zinc sulfides**
 wurtzite
 zinblend
 zinc compounds
 . **zinc sulfides**
 . . wurtzite
 . . zinblend

zinc tellurides
 GS chalcogenides
 . tellurides
 . . **zinc tellurides**
 tellurium compounds
 . tellurides
 . . **zinc tellurides**
 zinc compounds
 . **zinc tellurides**

zinc tungstates
 GS tungsten compounds
 . tungstates
 . . **zinc tungstates**

zinc compounds
 . **zinc tungstates**

zinblend
 DEF Zinc sulfide, ZnS; a cubic crystal. Used for sphalerite.
 UF *sphalerite*
 GS chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . zinc sulfides
 **zinblend**
 minerals
 . **zinblend**
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . zinc sulfides
 **zinblend**
 zinc compounds
 . zinc sulfides
 . . **zinblend**

zinc-bromide batteries
 DEF Electric cells in which during charge, zinc is plated on the anode and bromine is evolved at the cathode. The bromine is transferred to an external chamber for mixing and storing with an organic liquid complexing oil. During discharge, the zinc is oxidized at the anode and the complexed bromine is reduced at the cathode.
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **zinc-bromide batteries**
 RT zinc-chlorine batteries

zinc-chlorine batteries
 DEF Candidate electric cells under development for electric vehicles.
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **zinc-chlorine batteries**
 RT zinc-bromide batteries

zinc-oxygen batteries
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . metal air batteries
 **zinc-oxygen batteries**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . metal air batteries
 **zinc-oxygen batteries**

zippers
 DEF Slide fasteners consisting of interlockable elements each attached to one of the opposing edges of two tapes and a movable part called a 'slider' that spans the interlockable elements, which when moved in one direction causes the elements one tape to interlock with the elements on the other tape, and when moved in the opposite direction causes the elements to disengage.
 GS fasteners
 . **zippers**
 RT holders

Zircaloy 2 (trademark)
 GS alloys
 . zirconium alloys
 . . Zircalloys (trademark)
 . . . **Zircaloy 2 (trademark)**

Zircalloys (trademark)
 GS alloys
 . zirconium alloys
 . . **Zircalloys (trademark)**
 . . . Zircaloy 2 (trademark)
 RT iron alloys

- tin alloys
- zirconates**
 - GS zirconium compounds
 - . **zirconates**
 - . . . barium zirconates
 - . . . strontium zirconates
- zirconia*
- USE **zirconium oxides**
- zirconium**
 - GS chemical elements
 - . **zirconium**
 - . . . zirconium isotopes
 - zirconium 95
 - metals
 - . transition metals
 - . . **zirconium**
 - . . . zirconium isotopes
 - zirconium 95
- zirconium 95**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **zirconium 95**
 - zirconium isotopes
 - **zirconium 95**
 - zirconium
 - . zirconium isotopes
 - . . **zirconium 95**
 - metals
 - . transition metals
 - . . zirconium
 - . . . zirconium isotopes
 - **zirconium 95**
- zirconium alloys**
 - GS alloys
 - . **zirconium alloys**
 - . . Zircalloys (trademark)
 - . . . Zircaloy 2 (trademark)
 - RT hafnium alloys
 - . lithium alloys
- zirconium carbides**
 - GS carbon compounds
 - . carbides
 - . . **zirconium carbides**
 - zirconium compounds
 - . **zirconium carbides**
- zirconium compounds**
 - GS **zirconium compounds**
 - . zirconates
 - . . barium zirconates
 - . . strontium zirconates
 - . zirconium carbides
 - . zirconium hydrides
 - . zirconium iodides
 - . zirconium nitrides
 - . zirconium oxides
 - . . yttria-stabilized zirconia
 - . zirconium titanates
 - . . lead zirconate titanates
 - RT ∞ chemical compounds
 - ∞ Group 4B compounds
 - ∞ metal compounds
- zirconium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . . **zirconium hydrides**
 - zirconium compounds
 - . **zirconium hydrides**
- zirconium iodides**
 - GS halogen compounds
 - . halides
 - . . metal halides
 - . . . **zirconium iodides**
 - . iodine compounds
 - . . iodides
 - . . . **zirconium iodides**
- zirconium compounds
 - . **zirconium iodides**
- zirconium isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **zirconium isotopes**
 - zirconium 95
 - metals
 - . transition metals
 - . . zirconium
 - . . . **zirconium isotopes**
 - zirconium 95
- zirconium nitrides**
 - GS nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **zirconium nitrides**
 - zirconium compounds
 - . **zirconium nitrides**
- zirconium oxides**
 - UF *zirconia*
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **zirconium oxides**
 - yttria-stabilized zirconia
 - zirconium compounds
 - . **zirconium oxides**
 - . . yttria-stabilized zirconia
- zirconium titanates**
 - GS titanium compounds
 - . titanates
 - . . **zirconium titanates**
 - . . . lead zirconate titanates
 - zirconium compounds
 - . **zirconium titanates**
 - . . lead zirconate titanates
- zodiac**
 - RT constellations
 - . ecliptic
 - . Scorpius constellation
 - . Scutum constellation
- zodiacal dust**
 - GS celestial bodies
 - . meteoroids
 - . . micrometeoroids
 - . . . meteoroid dust clouds
 - **zodiacal dust**
 - extraterrestrial matter
 - . interstellar matter
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
 - media
 - . interplanetary medium
 - . . interplanetary dust
 - . . . meteoroid dust clouds
 - **zodiacal dust**
 - particles
 - . dust
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
 - RT Explorer satellites
 - . micrometeorites
 - . Poynting-Robertson effect
 - . terrestrial dust belt
- zodiacal light**
 - GS electromagnetic radiation
 - . light (visible radiation)
 - . . **zodiacal light**
 - extraterrestrial radiation
 - . **zodiacal light**
- RT gegenschein
 - . Helios Project
 - . micrometeoroids
 - . night sky
 - . polarized light
 - . Poynting-Robertson effect
 - . sky brightness
 - . solar radiation
 - . sunlight
- zonal circulation*
- USE **zonal flow (meteorology)**
- Zonal Earth Energy Budget Experiment*
- USE **LZEEBE satellite**
- zonal flow (meteorology)**
 - DEF The flow of air along a latitude circle; more specifically, the latitudinal (east or west) of existing flow. Used for zonal circulation.
 - UF *zonal circulation*
 - GS circulation
 - . atmospheric circulation
 - . . **zonal flow (meteorology)**
 - RT air currents
 - . annual variations
 - . baroclinic instability
 - . baroclinic waves
 - . circumpolar westerlies
 - . climatology
 - . intertropical convergent zones
 - . jet streams (meteorology)
 - . Madden-Julian Oscillation
 - . meridional flow
 - . meteorology
 - . middle atmosphere
 - . mixing height
 - . planetary waves
 - . quasi-biennial oscillation
 - . wind (meteorology)
 - . wind direction
 - . wind profiles
- zonal harmonics**
 - GS analysis (mathematics)
 - . functional analysis
 - . . harmonic analysis
 - . . . **zonal harmonics**
 - harmonics
 - . **zonal harmonics**
- Zond 1 space probe**
 - GS interplanetary spacecraft
 - . Venus probes
 - . . **Zond 1 space probe**
 - . Zond space probes
 - . . **Zond 1 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 1 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Venus probes
 - . . . **Zond 1 space probe**
 - . Zond space probes
 - . . **Zond 1 space probe**
- Zond 2 space probe**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Zond 2 space probe**
 - . Zond space probes
 - . . **Zond 2 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 2 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Zond 2 space probe**
 - . Zond space probes
 - . . **Zond 2 space probe**
- Zond 3 space probe**
 - GS interplanetary spacecraft
 - . Venus probes

Zond 4 space probe

- . . **Zond 3 space probe**
- . Zond space probes
- . . **Zond 3 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 3 space probe**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 3 space probe**
- . Zond space probes
- . . **Zond 3 space probe**

Zond 4 space probe

- GS interplanetary spacecraft
- . Venus probes
- . . **Zond 4 space probe**
- . Zond space probes
- . . **Zond 4 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 4 space probe**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 4 space probe**
- . Zond space probes
- . . **Zond 4 space probe**

Zond 5 space probe

- GS interplanetary spacecraft
- . Venus probes
- . . **Zond 5 space probe**
- . Zond space probes
- . . **Zond 5 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 5 space probe**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 5 space probe**
- . Zond space probes
- . . **Zond 5 space probe**

Zond 6 space probe

- GS interplanetary spacecraft
- . Venus probes
- . . **Zond 6 space probe**
- . Zond space probes
- . . **Zond 6 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 6 space probe**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 6 space probe**
- . Zond space probes
- . . **Zond 6 space probe**

Zond 7 space probe

- GS interplanetary spacecraft
- . Venus probes
- . . **Zond 7 space probe**
- . Zond space probes
- . . **Zond 7 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 7 space probe**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 7 space probe**
- . Zond space probes
- . . **Zond 7 space probe**

Zond 8 space probe

- GS interplanetary spacecraft
- . Venus probes
- . . **Zond 8 space probe**
- . Zond space probes
- . . **Zond 8 space probe**
- Soviet spacecraft
- . Zond space probes
- . . **Zond 8 space probe**

- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Zond 8 space probe**
- . Zond space probes
- . . **Zond 8 space probe**

Zond space probes

- GS interplanetary spacecraft
- . **Zond space probes**
- . . Zond 1 space probe
- . . Zond 2 space probe
- . . Zond 3 space probe
- . . Zond 4 space probe
- . . Zond 5 space probe
- . . Zond 6 space probe
- . . Zond 7 space probe
- . . Zond 8 space probe
- Soviet spacecraft
- . **Zond space probes**
- . . Zond 1 space probe
- . . Zond 2 space probe
- . . Zond 3 space probe
- . . Zond 4 space probe
- . . Zond 5 space probe
- . . Zond 6 space probe
- . . Zond 7 space probe
- . . Zond 8 space probe
- unmanned spacecraft
- . **Zond space probes**
- . . Zond 1 space probe
- . . Zond 2 space probe
- . . Zond 3 space probe
- . . Zond 4 space probe
- . . Zond 5 space probe
- . . Zond 6 space probe
- . . Zond 7 space probe
- . . Zond 8 space probe
- RT Mars probes

zone melting

- UF *zone refining*
- GS phase transformations
- . freezing
- . . **zone melting**
- . melting
- . . **zone melting**
- RT arc melting
- crystallization
- float zones
- purification
- refining
- ∞ separation
- ultrapure metals
- vacuum melting

zone refining

- USE **zone melting**

zones

- USE **regions**

∞ zoology

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT animals
- botany
- entomology
- ∞ science
- taxonomy

zoom lenses

- GS lenses
- . **zoom lenses**
- RT lens design

zooplankton

- DEF The aggregate of passively floating or drifting animal organisms in aquatic ecosystems.
- GS animals
- . **zooplankton**
- plankton
- . **zooplankton**
- RT marine biology

- phytoplankton

ZPR reactors

- USE **zero power reactors**

Zuni rocket vehicle

- GS rocket vehicles
- . single stage rocket vehicles
- . . **Zuni rocket vehicle**
- RT solid propellant rocket engines

Zvezda Service Module

- (added June 2000)
- USE **Service Module (ISS)**

zwitterionic compounds

- (added October 2001)
- USE **zwitterions**

zwitterions

- (added October 2001)
- DEF Ionic compounds that include both positive- and negative-charge components but are neutral overall.
- UF *dipolar ions*
- zwitterionic compounds*
- RT amino acids
- ∞ chemical compounds
- ∞ dipoles
- electric dipoles
- polarization characteristics
- polymerization
- surfactants

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16. Abstract The <i>NASA Thesaurus</i> contains the authorized subject terms by which the documents in the NASA Aeronautics & Space Database are indexed and retrieved. The scope of this controlled vocabulary includes not only aerospace engineering, but all supporting areas of engineering and physics, the natural space sciences (astronomy, astrophysics, planetary science), Earth sciences, and to some extent, the biological sciences. Volume 1 – <i>Hierarchical Listing With Definitions</i> contains over 18,100 subject terms, 4,171 definitions, and more than 4,400 USE cross references. The <i>Hierarchical Listing</i> presents full hierarchical structure for each term along with related term' lists, and can serve as an orthographic authority. Volume 2 – <i>Rotated Term Display</i> is a ready-reference tool which provides over 47,400 additional 'access points' to the thesaurus terminology. It contains the postable and nonpostable terms found in the <i>Hierarchical Listing</i> arranged in a KWIC (key-in-word context) index.					
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