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THE HIGH ENERGY PHYSICS INDEX

Keywords 1987

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# Keywords by Subjects

This list contains only the regular keywords. Upper-case headings and underscored terms in parantheses are not keywords. For standardized non-keywords the alphabetical list should be consulted.

## PARTICLES

(the old names of particles are kept through 1987)

### gauge boson

photon

### W

W<sup>+</sup>

W<sup>-</sup>

Z<sup>0</sup>

### (leptons)

neutrino

neutrino/e

neutrino/mu

neutrino/tau

neutrino/L

antineutrino

antineutrino/e

antineutrino/mu

antineutrino/tau

antineutrino/L

electron

positron

muon

muon<sup>+</sup>

muon<sup>-</sup>

tau

tau<sup>+</sup>

tau<sup>-</sup>

### (mesons)

pi

pi<sup>+</sup>

pi<sup>-</sup>

pi<sup>0</sup>

eta

K

K<sup>+</sup>

K<sup>-</sup>

K<sup>0</sup>

K<sup>0</sup>(L)

K<sup>0</sup>(S)

anti-K

anti-K<sup>0</sup>

D

D<sup>+</sup>

D<sup>-</sup>

D<sup>0</sup>

anti-D

anti-D<sup>0</sup>

F

F<sup>+</sup>

F<sup>-</sup>

B

B<sup>+</sup>

B<sup>-</sup>

B<sup>0</sup>

anti-B

anti-B<sup>0</sup>

### (nucleons)

p

anti-p

n

anti-n

### (hyperons)

Lambda

Antilambda

Sigma

Sigma<sup>+</sup>

Sigma<sup>-</sup>

Sigma<sup>0</sup>

Antisigma

Antisigma<sup>+</sup>

Antisigma<sup>-</sup>

Antisigma<sup>0</sup>

Xi

Xi<sup>-</sup>

Xi<sup>0</sup>

Antixi

Antixi<sup>-</sup>

Antixi<sup>0</sup>

Omega<sup>-</sup>

Antioomega<sup>-</sup>

### (charmed baryons)

Lambda/c<sup>+</sup>

Antilambda/c<sup>+</sup>

Sigma/c

A<sup>+</sup>

### (meson resonances)

rho(770)

rho(770)<sup>+</sup>

rho(770)<sup>-</sup>

rho(770)<sup>0</sup>

omega(783)

eta(958)

S\*(975)

delta(980)

Phi(1020)

H(1190)

B(1235)

A1(1270)

f(1270)

D(1285)

epsilon(1300)

pi(1300)

A2(1320)

E(1420)

iota(1440)

f(1525)

f0(1590)

rho(1600)

omega(1670)

A3(1680)

Phi(1680)

g(1690)

Theta(1690)

Phi(1850)

h(2030)

K\*(892)

Q1(1280)

kappa(1350)

Q2(1400)

K\*(1430)

L(1770)

K\*(1780)

K\*(2060)

D\*(2010)

psi mesons

eta/c(2980)

J/psi(3100)

chi(3415)

chi(3510)

chi(3555)

psi(3685)

psi(3770)

psi(4030)

psi(4160)

psi(4415)

upsilon mesons

Upsilon(9460)

chi/b(9875)

chi/b(9895)

chi/b(9915)

Upsilon(10020)

chi/b(10235)

chi/b(10255)

chi/b(10270)

Upsilon(10350)

Upsilon(10570)

Upsilon(10870)

Upsilon(11020)

### (baryon resonances)

N(1440)

N(1520)

N(1535)

N(1650)

N(1675)

N(1680)

N(1700)

N(1710)

N(1720)

N(2190)

N(2220)

N(2250)

N(2600)

Delta(1232)

Delta(1232)<sup>+</sup>

Delta(1232)<sup>++</sup>

Delta(1232)<sup>-</sup>

Delta(1232)<sup>0</sup>

Delta(1620)

Delta(1700)

Delta(1900)

Delta(1905)

Delta(1910)

Delta(1920)

Delta(1930)

Delta(1950)

Delta(2420)

Lambda(1405)

Lambda(1520)

Lambda(1600)

Lambda(1670)

Lambda(1690)

Lambda(1800)  
Lambda(1820)  
Lambda(1830)  
Lambda(1890)  
Lambda(2100)  
Lambda(2110)  
Lambda(2350)

Sigma(1385)  
Sigma(1660)  
Sigma(1670)  
Sigma(1750)  
Sigma(1775)  
Sigma(1915)  
Sigma(1940)  
Sigma(2030)  
Sigma(2250)

Xi(1530)  
Xi(1820)  
Xi(2030)

(other keywords)

particle  
  antiparticle  
  charged particle  
    negative particle  
    positive particle  
  neutral particle  
  new particle  
  postulated particle  
    mass enhancement  
    search for

pseudoscalar particle  
scalar particle

fermion  
  antifermion

boson  
  intermediate boson

lepton  
  antilepton  
  heavy lepton

hadron  
  meson  
  meson resonance  
    axial-vector meson  
    pseudoscalar meson  
    scalar meson  
    tensor meson  
    vector meson  
  baryon  
    antibaryon  
    nucleon  
    antinucleon  
    nucleon resonance  
    baryon resonance  
  baryonium

strange particle  
  hyperon  
    antihyperon  
  strange meson

charmed particle  
  charmed meson  
  charmed baryon

beautiful particle  
  beautiful meson  
  beautiful baryon

truthful particle  
  truthful meson  
  truthful baryon

chi mesons

colored particle

quark  
  antiquark  
  quarkonium

gluon  
  glueball

nucleus  
  excited nucleus  
  hyperfragment  
  light nucleus  
    deuteron  
  superfragment  
nuclide

atom  
  ion  
  muonium  
  positronium

*(for two-particle combinations  
see alphabetical list)*

PARTICLE PROPERTIES

charge  
electric moment  
isospin  
magnetic moment  
mass  
  mass difference  
  mass ratio  
parity  
quantum number  
  B-L number  
  baryon number  
  electron number  
  fermion number  
  lepton number  
  muon number

spin  
  helicity  
  polarization

INTERACTIONS

gravitation

gravitational radiation

weak interaction

charged current  
neutral current

electromagnetic interaction

bremsstrahlung  
Compton scattering  
ionization  
photoelectron  
radiative correction

electroweak interaction

strong interaction

charge exchange

(other keywords)

absorption  
backscatter  
capture  
decay  
diffraction  
diffusion  
exchange  
final-state interaction  
fragmentation function  
inclusive reaction  
multiple production  
  jet  
  multiplicity  
multiple scattering  
potential scattering  
production  
recoil  
scattering  
structure function

INSTRUMENTS AND METHODS

(accelerators)

accelerator  
betatron  
cyclotron  
  synchro-cyclotron  
linear accelerator  
linear collider  
microtron  
storage ring  
synchrotron  
  electron synchrotron  
  proton synchrotron

(internal and external beams)

beam  
  beam cooling  
  beam damping  
  beam dynamics  
  beam emittance  
  beam focusing  
  beam instability  
  beam loading  
  beam loss  
  beam monitoring  
  beam optics  
  beam oscillation  
    betatron oscillation  
    synchrotron oscillation  
  beam transport  
  bunching  
  ejection  
  injection  
  luminosity  
particle separator  
particle source  
synchrotron radiation

(track measuring)

bubble chamber  
  bubble chamber(hydrogen)  
  bubble chamber(deuterium)  
  bubble chamber(heavy liquid)  
drift chamber  
nuclear emulsion  
proportional chamber  
spark chamber  
streamer chamber  
  
tracks  
  track photography

counters and detectors

calorimeter  
  shower detector  
  total-absorption counter  
colliding beam detector  
four-pi-detector  
hodoscope  
magnetic detector  
spectrometer  
  forward spectrometer  
  magnetic spectrometer

Cherenkov counter  
ionization chamber  
scintillation counter  
semiconductor detector  
solid-state counter

(electronics and computers)

analog-to-digital converter  
communications  
  CAMAC system  
  FASTBUS system  
computer  
electronics  
fast logic  
microprocessor  
programming  
time-to-digital converter  
trigger

(data analysis)

data analysis method  
  amplitude analysis  
  event shape analysis  
  multidimensional analysis  
  partial wave analysis  
  statistical analysis  
particle identification  
track data analysis

(other keywords)

alignment  
background  
calibration  
control system  
data acquisition  
magnet  
  bending magnet  
  coil  
  quadrupole lens  
measurement  
monitoring

power supply  
RF system  
  microwaves  
superconducting  
target  
vacuum system

THEORY OF PARTICLES  
AND FIELDS

field theory

axiomatic field theory  
gauge field theory  
grand unified theory  
lattice field theory  
quantum chromodynamics  
quantum electrodynamics  
quantum gravity  
unified field theory

Bethe-Salpeter equation  
Dyson-Schwinger equation  
expansion  
  expansion 1/d  
  expansion 1/N  
Feynman graph  
field equations  
field theoretical model  
Langevin equation  
light cone behavior  
Lippmann-Schwinger equation  
propagator  
quantization  
renormalization  
  renormalization group  
scaling  
Schroedinger equation  
supersymmetry  
  supergravity

particle physics

bootstrap  
current algebra  
dispersion relations  
duality  
hadron spectroscopy  
model  
Regge poles  
spectral representation  
symmetry  
  mixing angle  
  multiplet  
  symmetry breaking  
unitarity  
universality

(other keywords)

conservation law  
coupling  
  coupling constant  
invariance  
inverse scattering method  
n-point function  
partial wave  
S-matrix  
scattering amplitude  
selection rule  
spinor  
sum rule  
two-point function  
vertex function  
violation

NUCLEAR PHYSICS

nuclear force  
nuclear matter  
nuclear model  
nuclear physics  
nuclear properties  
nuclear reaction  
  fission  
  fusion  
radioactivity

GENERAL PHYSICS

angular distribution  
angular momentum  
anomaly  
astrophysics  
atomic physics  
binding energy  
bound state  
chemistry  
correction  
correlation  
  angular correlation  
  correlation function  
cosmic radiation  
cross section  
  channel cross section  
  differential cross section  
  total cross section  
  yield  
current  
dependence  
effect

electromagnetic field  
  electric field  
  magnetic field  
energy  
  transverse energy  
energy levels  
energy loss  
entropy  
excited state  
final state  
form factor  
flux  
fundamental constant  
forces  
interference  
kinematics  
many-body problem  
  three-body problem  
matter  
  antimatter  
mechanics  
moment  
momentum  
  longitudinal momentum  
  transverse momentum  
momentum transfer  
optics  
perturbation theory  
plasma  
potential  
quantum mechanics  
radiation  
relativity theory  
resonance  
showers  
spectra  
  energy spectrum  
  mass spectrum  
  momentum spectrum  
statistical mechanics  
  thermodynamics  
temperature  
threshold  
time  
velocity

OTHER FIELDS

(mathematics)

algebra  
approximation  
differential equations  
functional analysis  
group theory  
mathematical methods  
numerical mathematics  
statistics  
transformation

(engineering)

buildings  
cryogenics  
electrical engineering  
heat engineering  
mechanical engineering  
power engineering  
safety  
  dosimetry  
  radiation protection  
shielding

molecular biology

nuclear medicine

MATERIALS

*(for elements see  
alphabetical list)*

crystal  
elements  
gas  
inorganic compounds  
liquid  
metal  
mineral  
organic compounds  
plastics  
semiconductor  
solids

MODAL KEYWORDS

activity report  
bibliography  
book  
conference  
data compilation  
lectures  
manual  
proposal  
proposed experiment  
review  
thesis

# Guide

*for the Use of the HIGH ENERGY PHYSICS INDEX Keywords 1987*

The terms in this keyword list are used by the DESY Documentation Service for the indexing of papers on high energy (beam energy above 400 MeV) and particle physics, accelerator and detector technology and quantum field theory.

## *1. Purpose of Keywords Assignment*

Our keywords serve the following purposes:

they allow the generation of a subject index for the biweekly periodical HIGH ENERGY PHYSICS INDEX (HEP),

they are important for computerized information retrieval and SDI (Selective Dissemination of Information) service at DESY and other high-energy physics centers.

The total keywords assigned to a paper may also be useful as a sort of abstract.

## *2. Form of Keyword Assignment*

Keywords may be used singly or coupled by comma and blank (for example: 'field theory' (single) and 'field theory, nonabelian' (coupled)). While the first term is generally a regular keyword, the second term may be a keyword or a non-keyword. Regular keywords are shown in this list ordered by subject (page i) and ordered alphabetically (page 1).

Non-keywords which are frequently used are standardized; they are contained in the alphabetical list (see also point 10).

## *3. Depth of Indexing*

Papers on peripheral topics will usually have fewer keywords per paper than papers on high energy physics. Examples of peripheral topics are quantum mechanics, statistical mechanics, gravitation, astrophysics, and nuclear physics with beam energy above 400 MeV/nucleon.

## *4. Classification*

Beside of indexing the selected papers are classified with 16 topical fields, one main and any number of secondary fields. For example: Experimental papers on electroproduction of charmed particles are assigned to the main field ((E)) and the secondary field ((C)); books on field theory are assigned to the main field ((3)) and the secondary field ((Z)).

The 16 topical fields are the following:

### I. Experimental Physics

- ((A)) general (also cosmic radiation, nuclear physics, and gravitational radiation)
- ((B)) weak interactions
- ((C)) electromagnetic interactions, photoproduction
- ((D)) strong interactions
- ((E)) charm, beauty, truth

### II. Technology and Techniques in High Energy Physics

- ((F)) accelerators
- ((G)) detecting systems, experimental methods and data analysis methods

### III. Theoretical Physics

- ((T)) general (also relativistic quantum mechanics, mathematics, statistical mechanics, cosmic radiation, nuclear physics, and gravitational radiation)
- ((U)) weak interactions
- ((V)) electromagnetic interactions, photoproduction
- ((W)) strong interactions
- ((X)) charm, beauty, truth
- ((Y)) symmetry principles (also current algebra)
- ((Z)) quantum field theory

### IV. Monographs and Conference Proceedings

- ((3)) books
- ((4)) conferences

#### 5. Two-Particle Initial State

Most of the combinations of any two particles (but not all) in the list are single regular keywords. They are to be used for the description of the initial state of interactions. The particles are arranged in order of rising masses, in case of same masses in order of charges: positive particle before negative particle (except 'electron positron' and 'anti-p p').

#### 6. Particle Spectra and Other Particle Combinations

Particles or particle combinations in final or intermediate states in conjunction with the keywords

angular correlation, angular distribution, bound state, correlation, coupling, coupling constant, energy spectrum, final state, interference, mass difference, mass ratio, mass spectrum, mixing angle, momentum spectrum, particle identification, universality, vertex function, yield

follow the keyword and are listed in parentheses in the order of falling masses, in case of same masses in the order charge (+ -).

Examples:

angular distribution, (photon)	<u>but</u> :
final state, (n p Oepton)	K0 anti-K0, interference
bound state, (nucleon 2pi)	D0 anti-D0, interference
mass spectrum, (pi <sup>+</sup> pi <sup>-</sup> pi <sup>0</sup> )	B0 anti-B0, interference

#### 7. Reaction Equations

Reactions of two particles or decay modes of a particle are given as in the following examples:

anti-p p → K<sup>0</sup> K<sup>-</sup> pi<sup>+</sup>  
p p → p anything  
Delta(1232)<sup>0</sup> → p pi<sup>-</sup>  
photon deuteron → 2p pi<sup>-</sup> (n)pi<sup>0</sup> anything<sup>0</sup>

Particles on the left-hand side are arranged in the order of beam and target, particles on the right-hand side are arranged in the order of falling masses, in case of same masses in the order of charge (+ -).

#### 8. Resonances

Meson and baryon resonances are generally named as in the Particle Data Group Tables (the new naming has not yet been implemented, however); charge states are indicated only for the rho(770) and the Delta(1232).

For new and yet unnamed resonances the mass (in MeV) may be given in parentheses, e.g. mass enhancement, (1440).



### 9. Energy Declarations

Energy resp. momentum is given in the same way as in the paper, but always in GeV. Additionally papers are assigned to energy-ranges:

Range	E(cms) [GeV]	E(beam) [GeV] target: nucleon		
		beam: e <sup>-</sup> , photon, pi	beam: K	beam: p
((1))	0.0 - 3.0	0.0 - 4.32	0.0 - 4.20	0.0 - 3.85
((2))	- 10.0	- 52.8	- 52.7	- 52.3
((3))	- 30.0	- 479.	- 479.	- 478.
((4))	- 100.0	....	- 5325.	....
((5))	- 300.0	....	- 47900.	....
((6))	- 1000.0	....	- 532500.	....
((7))	> 1000.0	....	> 532500.	....

For asymmetric colliders the centre-of-mass energy is  $E(\text{cms}) = 2 \cdot \sqrt{E_1 \cdot E_2}$ .

Neutrino electron scattering (fixed target) up to neutrino energies of 8800 GeV is in the energy range ((1)).

No energy range is given in case of nucleus nucleus interactions. Additional information on momentum transfer, limited angular range, etc. may be included. The general rules are illustrated by the following examples:

- 1.5-2.7 GeV-cms, ((1))
- 1.75, 3.00, 4.50 GeV/c, ((1)), ((2))
- 351 GeV (pi), 280 GeV (p), ((3))
- 27.7 GeV/c/nucleon, 8.4 GeV-cms/nucleon
- < 45 GeV-cms, 2-5 degrees, ((3)), ((4))
- approx. 200 GeV/c,  $0.5 < |t| < 2.5 \text{ GeV}^2$ , ((3))

### 10. Alphabetical Keyword List

There are three kinds of entries in the alphabetical list:

- regular keywords (boldface and blank space in column 1);
- standardized non-keywords ("\*" in column 1); these terms are generally coupled to regular keywords. There are also non-keywords which have not been standardized; they are not contained in this keyword list;
- terms which are not used ("- " in column 1).

Comments or rules of use are given in parentheses. "Restricted use" means that a keyword is used only in cases where it is of central importance in the paper considered.

Entries are ordered in the following sorting sequence:

blank . ( + | \* ) ; - / < > , : ' 0 . . . 9 aA . . . zZ

# New Names

## of Particles

The new naming of particles introduced by the Particle Data Group is not implemented in the HEP for the year 1987. The following list shows the new particles names as they are intended for future use in the HEP and the corresponding old names as still used this year.

<u>Future HEP name</u>	<u>HEP name 1987</u>	<u>Future HEP name</u>	<u>HEP name 1987</u>
a0(980)	delta(980)	f2(1720)	Theta(1690)
a1(1270)	A1(1270)	*f2(1810)	*f(1815)
a2(1320)	A2(1320)	*f2(2150)	*epsilon(2150)
*a3(2050)	*A(2050)	*f2(2240)	*g/t(2240)
*a4(2040)	*delta(2040)	f4(2030)	h(2030)
*a6(2450)	*delta(2450)	*f4(2300)	*epsilon(2300)
b1(1235)	B(1235)	*f6(2510)	*r(2510)
chi/b0(9875)	chi/b(9875)	h1(1190)	H(1190)
chi/b0(10235)	chi/b(10235)	K*0(1350)	kappa(1350)
chi/b1(9895)	chi/b(9895)	K*2(1430)	K*(1430)
chi/b1(10255)	chi/b(10255)	K*3(1780)	K*(1780)
chi/b2(9915)	chi/b(9915)	K*4(2060)	K*(2060)
chi/b2(10270)	chi/b(10270)	K1(1280)	Q1(1280)
chi0(3415)	chi(3415)	K1(1400)	Q2(1400)
chi1(3510)	chi(3510)	*K2(1580)	*L(1580)
chi2(3550)	chi(3555)	K2(1770)	L(1770)
D/s	F	*K2(2250)	*K(2200)
D/s+	F+	*Omega/c0	*T0
*D/s*(2110)	*F*(2140)	omega3(1670)	omega(1670)
D/s-	F-	Phi/J(1850)	Phi(1850)
eta(1440)	iota(1440)	pi2(1680)	A3(1680)
*f0(1240)	*g/s(1240)	*pi2(2100)	*A(2100)
f0(1300)	epsilon(1300)	rho3(1690)	g(1690)
f0(1590)	G(1590)	*rho3(2250)	*rho(2250)
*f0(1730)	*S(1730)	*rho5(2350)	*rho(2350)
f0(975)	S*(975)	*X(1700)	*eta(1700)
f1(1285)	D(1285)	*X(1935)	*S(1935)
f1(1420)	E(1420)	*X(2220)	*xi(2220)
*f1(1530)	*D(1530)	Xi/c+	A+
f2(1270)	f(1270)	*Xi/c0	*A0
f2(1525)	f(1525)		

(PDG: f'2(1525))

\*0 (for spin 0 use 'spinless')  
\*1 (e.g. 'spin, 1')  
\*1/2 (e.g. 'spin, 1/2')  
\*2 (e.g. 'spin, 2')

\*3 (e.g. 'spin, 3')  
\*3/2 (e.g. 'spin, 3/2')  
\*5/2 (e.g. 'spin, 5/2')



- \*A(2050) (postulated particle, A(2050))
- \*A(2100) (postulated particle, A(2100))
- A+ (csu - baryon)
- \*A0 ('postulated particle, A0'; csd - baryon)
- A1(1270)
- A2(1320)
- A3(1680)
- Abelian field theory (field theory)
- \*aberration
- absorption
- absorptive model (model, absorption)
- \*acceleration (used for astrophysics and cosmic radiation; also 'experimental methods, acceleration')
- accelerator
- \*acceptance (e.g. 'spectrometer, acceptance' or 'accelerator, acceptance')
- \*accumulator (for accelerators only)
- acoplanarity (planarity)
- \*acoustic (spark chamber, acoustic)
- actinium
- \*action (restricted use; 'gauge field theory, action'; see also 'effective action')
- action-at-a-distance (axiomatic field theory)
- activity report
- ADC (analog-to-digital converter)
- \*adiabatic
- Adler-Bell-Gross-Jackiw (current algebra)
- Adler-Weisberger relation ('model, PCAC' and 'current algebra')
- \*admixture
- ADONE (Frascati Stor)
- \*aerogel (Cherenkov counter, aerogel)
- \*AFS (at CERN Stor; 'four-pi-detector, AFS')
- AGS (Brookhaven PS)
- \*Aharonov-Bohm (effect, Aharonov-Bohm)
- \*air (showers, air)
- \*ALEPH (at LEP; 'magnetic detector, ALEPH')
- algebra
- alignment (see also 'polarization')
- \*alloy
- alpha particle (helium)
- \*Altarelli-Parisi equation (quantum chromodynamics, Altarelli-Parisi equation)
- aluminum
- americium
- \*amplifier (e.g. 'microwaves, amplifier')
- amplitude analysis
- \*Amsterdam MEA (0.5 GeV electrons)
- \*AMY (at TRISTAN; 'magnetic detector, AMY')
- analog-to-digital converter
- \*analytic properties (restricted use)
- analyticity (analytic properties)
- \*analyzing power (polarization, analyzing power)
- angular correlation
- \*angular dependence
- angular distribution
- angular momentum
- \*angular resolution (e.g. 'scintillation counter, angular resolution')
- anharmonic oscillator (model, oscillator)
- \*anisotropy (cosmic radiation, anisotropy)
- \*annihilation
- anomalon (use 'postulated particle' and 'total cross section, anomaly')
- anomaly
- anti-B
- anti-B0
- anti-D
- anti-D0
- anti-K
- anti-K nucleon
- anti-K0
- anti-n
- anti-n deuteron
- anti-n light nucleus
- \*anti-N N(1200-3600) (postulated particle, anti-N N(1200-3600))
- anti-n nucleus
- anti-p
- anti-p deuteron
- anti-p light nucleus
- anti-p n
- anti-p nucleon
- anti-p nucleus
- anti-p p
- antibaryon
- antifermion
- antihyperon
- Antilambda
- \*Antilambda/b0 (postulated particle, Antilambda/b0)
- Antilambda/c+
- antilepton
- antimatter
- antimony
- antineutrino
- antineutrino baryon
- antineutrino deuteron
- antineutrino electron
- antineutrino light nucleus
- antineutrino meson
- antineutrino n
- antineutrino nucleon
- antineutrino nucleus
- antineutrino p
- antineutrino quark
- antineutrino/e
- antineutrino/L (i.e. heavy lepton antineutrino)
- antineutrino/mu
- antineutrino/tau
- antineutrino production (neutrino production)
- antineutron (anti-n)
- antinucleon
- antinucleon nucleus
- \*antinucleus
- Antiomega-
- antiparticle
- antiproton (anti-p)
- antiquark
- Antisigma
- Antisigma+
- Antisigma-

Antisigma0  
 Antixi  
 Antixi-  
 Antixi0  
 \*anything (only in reactions)  
 \*anything+ (only in reactions)  
 \*anything- (only in reactions)  
 \*anything0 (only in reactions)  
 -aperture (usually 'beam, width')  
 approximation  
 -Argand plot (partial wave analysis)  
 argon  
 \*Argonne GEM (2 GeV electron microtron)  
 \*Argonne PS (12.7 GeV protons)  
 \*Argonne RCS (0.45 GeV proton  
 synchrotron)  
 \*ARGUS (at DORIS II; 'magnetic detector,  
 ARGUS')  
 arsenic  
 -ARUS (Erevan ES)  
 \*associated production  
 astatine  
 astrophysics  
 \*asymmetry  
 \*asymptotic behavior (for asymptotic  
 behavior at high energies use 'high

energy behavior', at low energies use  
 'infrared problem'.)  
 \*asymptotic completeness (scattering,  
 asymptotic completeness)  
 \*asymptotic expansion ('transformation,  
 asymptotic expansion', see also  
 'transformation, Borel')  
 \*asymptotic freedom ('field theory,  
 asymptotic freedom'; for low energies  
 use 'field theory, infrared problem')  
 \*at rest (in energy category '0 GeV' is  
 added)  
 atom  
 -atomic number (mass number)  
 atomic physics  
 \*avalanche ('drift chamber, avalanche' or  
 'proportional chamber, avalanche')  
 \*axial  
 -Axial Field Spectrometer  
 (four-pi-detector, AFS)  
 \*axial gauge (gauge field theory, axial  
 gauge)  
 \*axial-vector (current, axial-vector)  
 axial-vector meson  
 axiomatic field theory  
 \*axion (postulated particle, axion)

- B  
 B anti-B  
 B(1235)  
 B+  
 \*B\*(5320) ('postulated particle, B\*(5320);  
 excited B)  
 B-  
 B-L number  
 B0  
 B0 anti-B0  
 background  
 \*background field (e.g. 'field theory,  
 background field')  
 \*background gauge (gauge field theory,  
 background gauge)  
 -background radiation (radiation,  
 background)  
 backscatter (see also 'scattering,  
 wide-angle')  
 \*Baecklund (transformation, Baecklund)  
 \*bag (model, bag)  
 barium  
 baryon  
 baryon antibaryon  
 baryon baryon  
 baryon number  
 baryon resonance (see also 'nucleon  
 resonance')  
 -baryon-to-entropy ratio (baryon,  
 asymmetry)  
 -baryonic number (baryon number)  
 baryonium (see also 'postulated particle,  
 anti-N N(1200-3600)')  
 \*Batavia PS (400 GeV protons)  
 \*Batavia TEVATRON Coll (2000 GeV-cms  
 protons)  
 \*Batavia TEVATRON PS (1000 GeV protons)  
 -Bates Linac (MIT Linac)  
 beam  
 -beam blowup (beam instability)  
 -beam chopper (bunching)  
 beam cooling (for proton beams; see also  
 'electron cooling' or 'stochastic  
 cooling'; for electron beams use 'beam  
 damping')  
 beam damping (for electron beams; for  
 proton beams use 'beam cooling')  
 \*beam dump (e.g. 'experimental methods,  
 beam dump')  
 beam dynamics  
 beam emittance  
 beam focusing  
 beam instability  
 -beam lines (beam transport)  
 beam loading (not used for 'injection')  
 beam loss  
 beam monitoring  
 beam optics  
 beam oscillation (For longitudinal beam  
 oscillation use 'synchrotron oscillation';  
 for transverse beam oscillation use  
 'betatron oscillation'.)  
 -beam polarization (Use 'beam,  
 polarization' for measurement of  
 polarization degree. See also 'polarized  
 beam')  
 \*beam profile  
 beam transport  
 \*beam-beam (scattering, beam-beam)  
 \*beat-wave (e.g. 'accelerator, beat-wave')  
 beautiful baryon  
 beautiful meson  
 beautiful particle (for hidden beauty use  
 'quarkonium, beauty' or e.g. 'upsilon  
 mesons')  
 \*beauty ('quark, beauty' or 'quarkonium,  
 beauty')  
 \*Becchi-Rouet-Stora (transformation,  
 Becchi-Rouet-Stora)  
 -Beijing Stor (Peking Stor)  
 bending magnet  
 \*bent crystal  
 \*Berkeley Bevalac (2 GeV/A ions)  
 \*Berkeley PS  
 berkelium  
 \*Berlin BESSY Stor (synchrotron radiation)  
 beryllium  
 -BESSY (Berlin BESSY Stor)  
 -beta decay (semileptonic decay)  
 \*beta function ('beam optics, beta  
 function' or 'renormalization, beta  
 function')  
 betatron  
 betatron oscillation  
 \*Bethe-Heitler (approximation,  
 Bethe-Heitler)  
 Bethe-Salpeter equation  
 -BEVATRON (Berkeley PS)  
 -BGO (scintillation counter,  
 bismuth-germanate)  
 -Bhabha scattering (electron positron,  
 elastic scattering)  
 \*Bianchi identity (field theory, Bianchi  
 identity)  
 bibliography  
 binding energy  
 -biology (molecular biology)  
 bismuth  
 \*bismuth-germanate (scintillation  
 counter, bismuth-germanate)  
 \*Bjorken (scaling, Bjorken)  
 \*black hole (astrophysics, black hole)  
 \*block spin ('transformation, block spin' or  
 'renormalization group, block spin')  
 -Blumlein line ('power supply' and  
 'streamer chamber')  
 \*Bogolyubov (transformation, Bogolyubov)  
 \*Bonn ELSA Stor (3.5 GeV electrons;  
 stretcher ring)  
 \*Bonn ES (2.5 GeV electrons)  
 book  
 \*booster  
 bootstrap  
 \*Borel ('transformation, Borel'; see also  
 'transformation, asymptotic  
 expansion')  
 \*Born (approximation, Born)  
 boron  
 -Bose statistics (boson, statistics)

boson  
boson boson  
\*bosonization (e.g. 'field theory,  
bosonization')  
-bottom (quark, beauty)  
-bound (see 'upper limit' or 'lower limit')  
bound state  
\*boundary condition  
-BPHZ (renormalization, regularization)  
\*branching ratio  
-breakup ('fission' or 'dissociation')  
\*Breit-Wigner (model, Breit-Wigner)  
bremsstrahlung

-broken symmetry ('symmetry breaking'  
or 'symmetry, spontaneously broken'  
or 'symmetry, dynamically broken')  
bromine  
\*Brookhaven CBA Stor (heavy ion collider)  
\*Brookhaven PS (33 GeV protons)  
-BRS (transformation, Becchi-Rouet-Stora)  
bubble chamber  
bubble chamber(deuterium)  
bubble chamber(heavy liquid)  
bubble chamber(hydrogen)  
buildings  
bunching



- C invariance (invariance, charge conjugation)
- \*C\* (algebra, C\*)
- C-parity (quantum number; charge conjugation)
- \*Cabibbo (model, Cabibbo)
- \*Cabibbo angle (weak interaction, Cabibbo angle)
- cadmium
- calcium
- calibration
- californium
- \*Callan-Gross (sum rule, Callan-Gross)
- \*Callan-Symanzik equation (renormalization group, Callan-Symanzik equation)
- Callan-Treiman relation (use 'current algebra')
- calorimeter (use more specific term if possible)
- CAMAC system
- capture (see also 'radiative capture')
- CAR ('algebra, commutation relations' (restricted use))
- carbon
- \*cascade ('model, cascade' or 'nucleus, cascade'; see also 'showers', 'cascade decay' and 'intranuclear cascade')
- \*cascade decay
- \*Casimir (e.g. 'effect, Casimir' or 'energy, Casimir')
- catalysis (for proton decay via magnetic monopole use 'effect, Rubakov')
- \*causality (e.g. 'field theory, causality')
- cavity (RF system)
- CCR ('algebra, commutation relations' (restricted use))
- \*CDF (at TEVATRON Coll; 'magnetic detector, CDF')
- CEBAF (Newport News CEBAF Linac)
- \*CELLO (at PETRA; 'magnetic detector, CELLO')
- \*centauro
- \*central charge (e.g. 'supersymmetry, central charge')
- \*central region (inclusive reaction, central region)
- \*ceramics
- cerium
- \*CERN Cycl (at Geneva)
- \*CERN LEAR (at Geneva; low energy antiprotons)
- \*CERN LEP Stor (at Geneva; ~200 GeV-cms e+e-)
- \*CERN SPS (at Geneva; 400 GeV protons)
- \*CERN SPS Coll (at Geneva; 540/900 GeV-cms anti-p p)
- \*CERN Stor (ISR, at Geneva; 63 GeV-cms protons (d, He))
- \*CERN1 PS (at Geneva; 28 GeV protons)
- cesium
- CESR (Cornell CESR Stor)
- channel (not used)
- channel cross section
- \*channeling (e.g. 'crystal, channeling')
- \*chaotic behavior
- charge
- \*charge conjugation ('invariance, charge conjugation' or 'violation, charge conjugation' or 'quantum number, charge conjugation')
- \*charge correlation (e.g. 'jet, charge correlation')
- \*charge distribution (for beams and nuclei; for particles use 'form factor, electric')
- charge exchange
- charged current
- charged particle
- \*charm ('quark, charm' or 'quarkonium, charm')
- charmed baryon
- charmed meson
- charmed particle (for hidden charm use 'quarkonium, charm' or e.g. 'psi mesons')
- \*chemical (only 'potential, chemical')
- chemicals (use 'elements', 'inorganic compounds', 'mineral', etc.)
- chemistry
- \*Cherenkov (radiation, Cherenkov)
- Cherenkov counter
- Chew-Frautschi plot (Regge poles)
- \*Chew-Low (model, Chew-Low)
- chi mesons (for chi/c and chi/b)
- chi(3415) (chi0)
- chi(3510) (chi1, also called PC(3510))
- chi(3555) (chi2)
- chi/b(10235) (2P0 state)
- chi/b(10255) (2P1 state)
- chi/b(10270) (2P2 state)
- chi/b(9875) (1P0 state)
- chi/b(9895) (1P1 state)
- chi/b(9915) (1P2 state)
- Chilton PS (see 'Rutherford ISIS PS')
- \*chiral (generally 'symmetry, chiral')
- chlorine
- \*Chou-Yang (model, Chou-Yang)
- \*chromaticity (e.g. 'beam optics, chromaticity', 'correction, chromaticity')
- chromium
- CIM (model, constituent interchange)
- \*classical (field theory, classical)
- \*Clebsch-Gordan coefficients (group theory, Clebsch-Gordan coefficients)
- \*CLEO (at CESR; 'magnetic detector, CLEO')
- \*Clifford (algebra, Clifford)
- closed-loop diagram (Feynman graph, higher-order)
- closed-orbit correction (correction, orbit)
- \*closure (approximation, closure)
- \*cluster (e.g. 'model, cluster')
- cluster analysis (event shape analysis, cluster)
- cobalt
- \*coherent interaction
- \*coherent state (e.g. 'quantum mechanics, coherent state')
- coil

-coincidence ('fast logic' or 'trigger' or 'associated production')

-Coleman-Glashow formula (baryon, mass difference)

-Coleman-Weinberg instability (symmetry breaking)

\*collective (used only in connection with accelerators)

\*collective phenomena ('field theory, collective phenomena' or 'nuclear physics, collective phenomena' or 'nuclear matter, collective phenomena')

-collider ('storage ring' or 'linear collider')

colliding beam detector (use only in instrumental papers)

\*colliding beams (for accelerator use 'storage ring' or 'linear collider')

\*color (quark, color)

colored particle

communications

\*commutation relations (e.g. 'algebra, commutation relations'; restricted use)

-commutator (commutation relations)

-compactification (see 'spontaneous compactification')

\*completely integrable (e.g. 'field theory, completely integrable')

\*composite (e.g. 'model, composite')

Compton scattering

computer

\*concrete (e.g. 'shielding, concrete')

\*condensation (e.g. 'pi, condensation' or 'n, condensation')

conference

\*confinement (e.g. 'quark, confinement', 'potential, confinement')

\*conformal (invariance, conformal)

conservation law

-conserved vector current (model, CVC)

-conspiracy (Regge poles, forward scattering)

\*constituent interchange (model, constituent interchange)

\*constructive (field theory, constructive)

-contamination ('dosimetry' or 'background' or 'admixture')

\*continuum limit (lattice field theory, continuum limit)

control system

-coplanar (planar)

-coplanarity (planarity)

copper

\*Cornell CESR Stor (16 GeV-cms e-e-)

correction

correlation

correlation function

-correlation length (correlation, length)

cosmic radiation

-cosmological constant (astrophysics, fundamental constant)

-cosmology (astrophysics)

\*costs

-Cottingham formula (mass difference)

\*Coulomb (e.g. 'potential, Coulomb' or 'gas, Coulomb')

\*Coulomb gauge (gauge field theory, Coulomb gauge)

\*Coulomb scattering

counters and detectors (use more specific term if possible)

\*coupled channel (partial wave analysis, coupled channel)

coupling (restricted use)

coupling constant (restricted use)

-covariance ('invariance, Lorentz' (restricted use))

\*CP ('invariance, CP' or 'violation, CP')

\*CP(1) (field theoretical model, CP(1))

\*CP(N-1) (field theoretical model, CP(N-1))

\*CPT ('invariance, CPT' or 'violation, CPT')

-critical exponent (critical phenomena)

\*critical phenomena ('field theory, critical phenomena' or e.g. 'thermodynamics, critical phenomena')

-critical point (critical phenomena)

cross section (restricted use, see also 'total cross section' or 'differential cross section' or 'channel cross section')

\*crossing (symmetry, crossing)

cryogenics

crystal

\*Crystal Ball (at DORIS II; 'four-pi-detector, Crystal Ball')

\*cumulative production (e.g. 'pi, cumulative production')

curium

current (restricted use, see also 'neutral current', 'charged current')

current algebra

\*current-current (e.g. 'model, current-current' or 'interference, current-current')

\*CUSB (at CESR; 'four-pi-detector, CUSB')

\*CVC (model, CVC)

cyclotron

- D  
D anti-D  
D(1285)  
\*D(1530) (postulated particle, D(1530))  
D+  
D\*(2010)  
\*D\*(2420) (postulated particle, D\*(2420))  
D-  
D0 (meson; for the detector use 'DZERO')  
D0 anti-D0  
\*Dalitz plot (multidimensional analysis, Dalitz plot)  
\*damage (radiation, damage)  
-damping ('energy loss' or 'beam damping')  
\*Daresbury ES (synchrotron radiation)  
-dark matter (astrophysics, missing-mass)  
\*Darmstadt ESR (1.3 GeV/A ions)  
**data acquisition**  
-data analysis ('statistical analysis', 'multidimensional analysis', 'partial wave analysis', 'data compilation', 'data analysis method', 'track data analysis', 'interpretation of experiments')  
**data analysis method** (restricted use)  
**data compilation**  
-data processing ('computer' or 'programming')  
-DC-1 (Dubna Cycl)  
-DCI (Orsay Stor)  
\*de Sitter ('group theory, de Sitter' or 'algebra, de Sitter')  
decay (restricted use, if possible use more specific term, e.g. 'hadronic decay')  
\*decay modes (e.g. 'pi+', 'decay modes')  
-decay rate (use 'branching ratio' or 'width' or 'lifetime')  
-decay width (width)  
\*Deck (effect, Deck)  
\*decoupling (coupling, decoupling)  
\*deep inelastic scattering  
\*deep underground (counters and detectors, deep underground)  
-deep-water (deep underground)  
-delay line (use 'time delay')  
\*DELCO (at PEP; 'magnetic detector, DELCO')  
\*DELPHI (at LEP; 'magnetic detector, DELPHI')  
\*Delta ('nucleon resonance, Delta' (I=3/2, mass > 3000 MeV or unspecified mass))  
Delta(1232) (partial wave P'33)  
Delta(1232)+  
Delta(1232)++  
Delta(1232)-  
Delta(1232)0  
\*Delta(1550) (partial wave P'31; 'postulated particle, Delta(1550)')  
\*Delta(1600) (partial wave P''33; 'postulated particle, Delta(1600)')  
Delta(1620) (partial wave S'31)  
Delta(1700) (partial wave D33)  
Delta(1900) (partial wave S''31)  
Delta(1905) (partial wave F35)  
Delta(1910) (partial wave F''31)  
Delta(1920) (partial wave P''33)  
Delta(1930) (partial wave D35)  
\*Delta(1940) (partial wave D''33; 'postulated particle, Delta(1940)')  
Delta(1950) (partial wave F37)  
\*Delta(2000) (partial wave F'35; 'postulated particle, Delta(2000)')  
\*delta(2040) (postulated particle, delta(2040))  
\*Delta(2150) (partial wave S''31; 'postulated particle, Delta(2150)')  
\*Delta(2200) (partial wave G37; 'postulated particle, Delta(2200)')  
\*Delta(2300) (partial wave H39; 'postulated particle, Delta(2300)')  
\*Delta(2350) (partial wave D'35; 'postulated particle, Delta(2350)')  
\*Delta(2390) (partial wave F''37; 'postulated particle, Delta(2390)')  
\*Delta(2400) (partial wave G39; 'postulated particle, Delta(2400)')  
Delta(2420) (partial wave H311)  
\*delta(2450) (postulated particle, delta(2450))  
\*Delta(2750) (partial wave I313; 'postulated particle, Delta(2750)')  
\*Delta(2950) (partial wave K315; 'postulated particle, Delta(2950)')  
delta(980)  
\*density  
\*density matrix (generally 'spin, density matrix')  
dependence (restricted use)  
\*depolarization (polarization, depolarization)  
\*DESY DORIS II Stor (at Hamburg; 10 GeV-cms e+e-)  
\*DESY ES (at Hamburg; 7.5 GeV electrons)  
\*DESY HERA Stor (at Hamburg; ~300 GeV-cms ep)  
\*DESY PETRA Stor (at Hamburg; 47 GeV-cms e+e-)  
-detection ('measurement' or 'particle identification' or a specific detector)  
-detector ('counters and detectors' or use more specific keyword)  
deuterium (see also 'deuteron')  
deuteron (see also 'deuterium')  
deuteron deuteron  
deuteron light nucleus  
deuteron nucleus  
-deviation (use 'difference')  
\*dibaryon ('baryon resonance, dibaryon'; see also specific particles like 'N N(2170)', 'Lambda N(2130)')  
\*dielectric  
\*difference (see also 'mass difference')  
**differential cross section**  
**differential equations**  
\*differential geometry (mathematical methods, differential geometry)  
**diffraction**  
-diffraction dissociation (diffraction, dissociation)  
-diffractive production ('diffraction' or if important 'diffraction, production')

## diffusion

- dilatation (symmetry, dilation)
- \*dilation (symmetry, dilation)
- \*dilaton (e.g. 'postulated particle, dilaton')
- \*dilepton (e.g. 'final state, dilepton')
- \*dilute gas (approximation, dilute gas)
- \*dimensional reduction (e.g. 'field theory, dimensional reduction')
- \*dimuon (e.g. 'mass spectrum, dimuon')
- \*dip (differential cross section, dip)
- dipion (use 'two-pion' or 'final state, (2pi)')
- dipole ('form factor' or 'magnetic moment')
- dipole magnet (bending magnet)
- \*diquark (quark, diquark)
- \*Dirac (field equations, Dirac)
- \*Dirac-Kaehler (field equations, Dirac-Kaehler)
- \*direct production
- \*discrete (e.g. 'symmetry, discrete')
- discriminator (analog-to-digital converter)
- \*dispersion
- dispersion relations
- \*dissociation (diffraction, dissociation)
- \*distorted wave Born (approximation, distorted wave Born)
- \*distorted wave impulse (approximation, distorted wave impulse)
- distribution function (for quark use 'quark, energy spectrum')
- \*DM1 (at Orsay; 'magnetic detector, DM1')
- \*DM2 (at Orsay; 'magnetic detector, DM2')
- \*domain wall
- DORIS II (DESY DORIS II Stor)
- dosimetry
- double absorption (use 'absorption' and 'final-state interaction')
- double beam (two-beam)
- double capture (capture, multiple)
- double exchange ('Regge poles, multi-Regge' or 'radiative correction' or 'final-state interaction' or 'charge exchange, multiple' or 'exchange, two-particle')
- double scattering ('exchange' or 'multiple scattering')
- double spectral function ('Mandelstam representation' or 'spectral representation')
- double-arm spectrometer (e.g. 'magnetic spectrometer')
- doublet (use 'pair')
- \*down ('quark, down' or 'quarkonium, down')
- \*Drell-Yan ('model, Drell-Yan' or 'scattering, Drell-Yan' or 'Feynman graph, Drell-Yan')
- drift chamber
- \*drift tube (see also 'flash tube')
- \*drift velocity (only in connection with detectors)
- \*droplet ('model, droplet' or 'experimental methods, droplet')
- dual diffraction ('diffraction' and 'duality')
- dual model ('model, dual resonance' or 'duality')
- \*dual resonance (model, dual resonance) duality (usually without 'Regge poles')
- \*Dubna Cycl (1 GeV/A deuterons; also called DC-1)
- \*Dubna PS (10 GeV protons, 20 GeV/A ions)
- \*Dubna SPIN (1.5 GeV/A ion synchrotron)
- DWBA (approximation, distorted wave Born)
- \*dynamically broken ('symmetry, dynamically broken'; see also 'symmetry, spontaneously broken')
- \*dyon (field equations, dyon)
- Dyson-Schwinger equation
- dysprosium
- \*DZERO (at TEVATRON Coll; 'four-pi-detector, DZERO')

- E(1420)**  
 \*E(6) (e.g. 'symmetry, E(6)')  
 \*E(7) (e.g. 'symmetry, E(7)')  
 \*E(8) (e.g. 'symmetry, E(8)')  
 \*E(8) x E(8) (e.g. 'symmetry, E(8) x E(8)')  
 \*E(8) x E(8) (e.g. 'symmetry, E(8) x E(8)')  
 \*e+e-(1100-2200) (postulated particle, e+e-(1100-2200))  
 effect (restricted use)  
 \*effective action (if possible use 'effective Hamiltonians' or 'effective Lagrangians')  
 \*effective Hamiltonians ('field theory, effective Hamiltonians' or 'gauge field theory, effective Hamiltonians')  
 \*effective Lagrangians ('current algebra, effective Lagrangians', or 'field theory, effective Lagrangians')  
 -effective mass (mass spectrum)  
 \*effective potential (approximation, effective potential)  
 \*effective range (approximation, effective range)  
 \*efficiency (e.g. 'counters and detectors, efficiency')  
 \*Eguchi-Kawai (field theoretical model, Eguchi-Kawai)  
 \*EHS (at SPS; 'four-pi-detector, EHS')  
 -eigenstate (see 'energy eigenstate')  
 \*eight-dimensional (e.g. 'field theory, eight-dimensional')  
 \*eikonal (approximation, eikonal)  
 \*Einstein (field equations, Einstein)  
 \*Einstein-Maxwell (field equations, Einstein-Maxwell)  
 einsteinium  
 ejection  
 \*elastic scattering  
 -elastic total cross section (channel cross section, elastic scattering)  
 \*electric (see also 'electromagnetic', 'electrostatic')  
 electric field  
 electric moment  
 electrical engineering  
 \*electrofission (fission due to electrons or muons)  
 \*electromagnetic  
 \*electromagnetic component (cosmic radiation, electromagnetic component)  
 \*electromagnetic decay (see also 'radiative decay')  
 electromagnetic field  
 -electromagnetic form factor (form factor)  
 electromagnetic interaction  
 electron (also used when charge is irrelevant)  
 \*electron cooling (beam cooling, electron cooling)  
 electron deuteron  
 electron electron (also used when charge is irrelevant)  
 electron hadron  
 electron light nucleus  
 electron meson  
 electron muon  
 electron muon+  
 electron muon-  
 electron n  
 electron nucleon  
 electron nucleus  
 electron number  
 electron p  
 electron pi  
 electron positron  
 electron quark  
 electron synchrotron  
 electronics (restricted use)  
 \*electroproduction (for particle production by electrons or muons)  
 \*electrostatic  
 electroweak interaction  
 -elementary length (fundamental constant, length)  
 elements  
 \*eleven-dimensional (e.g. 'field theory, eleven-dimensional')  
 -ELSA (Bonn ELSA Stor)  
 -EMC effect (use 'nucleon, structure function' and 'dependence, mass number')  
 \*emission  
 -emulsion chamber (nuclear emulsion)  
 energy  
 \*energy dependence  
 \*energy eigenstate (e.g. 'quantum mechanics, energy eigenstate'. Not used for energy levels or excited states.)  
 \*energy flow (jet, energy flow)  
 energy levels  
 energy loss  
 \*energy resolution (e.g. 'counters and detectors, energy resolution')  
 energy spectrum  
 \*energy-momentum (tensor, energy-momentum)  
 \*enhancement (e.g. 'differential cross section, enhancement'; see also 'mass enhancement')  
 entropy  
 \*epsilon expansion (approximation, epsilon expansion)  
 epsilon(1300)  
 \*epsilon(2150) (postulated particle, epsilon(2150))  
 \*epsilon(2300) (postulated particle, epsilon(2300))  
 -equilibrium ('statistical mechanics' or 'thermodynamics')  
 \*equivalent photon (approximation, equivalent photon)  
 erbium  
 \*Erevan ES (6 GeV electrons)  
 eta  
 \*eta(1275) (postulated particle, eta(1275))  
 \*eta(1700) (postulated particle, eta(1700))  
 eta(958)  
 \*eta/b (postulated particle, eta/b)

eta/c(2980)  
\*eta/c(3590) (postulated particle,  
eta/c(3590))  
\*eta/t (postulated particle, eta/t)  
-ETC (model, technicolor)  
\*Euclidean (field theory, Euclidean)  
europium  
-evaporation model (multiple production)  
event shape analysis  
\*exceptional group (e.g. 'group theory,  
exceptional group')  
exchange  
excited nucleus  
excited state  
\*exclusive reaction  
\*exotic ('resonance, exotic' or 'meson  
resonance, exotic' or 'baryon  
resonance, exotic' or 'atom, exotic')

expansion (see also 'asymptotic  
expansion', 'epsilon expansion')  
expansion 1/d  
expansion 1/N  
\*experimental equipment  
\*experimental methods  
\*experimental results  
\*extended particle (model, extended  
particle)  
-extended technicolor (model, technicolor)  
\*extensive (showers, extensive)  
\*external ('symmetry, external' or 'beam,  
external')  
\*external field ('field theory, external field'  
(restricted use))  
-extraction (ejection)

- F  
**f(1270)**  
**f(1525)**  
**\*f(1815)** (postulated particle, **f(1815)**)  
**F+**  
**\*F\*(2140)** (postulated particle, **F\*(2140)**)  
**F-**  
**f0(1590)**  
**\*f2(1410)** (postulated particle, **f2(1410)**)  
**\*factorization**  
**-Faddeev equations** (many-body problem)  
**fast logic** (see also 'trigger')  
**FASTBUS system**  
**\*feedback** (used only in connection with accelerators)  
**-FEL** (radiation, undulator)  
**-Fermi coupling** (weak interaction, current-current)  
**\*Fermi gas** (model, Fermi gas)  
**-Fermi motion correction** ('nuclear physics, correction'; for partons use e.g. 'quark, momentum')  
**-Fermi statistics** (fermion, statistics)  
**-Fermilab** (see 'Batavia ...')  
**fermion**  
**fermion antifermion**  
**fermion boson**  
**fermion fermion**  
**\*fermion magnetic monopole** (scattering, fermion magnetic monopole)  
**fermion number**  
**\*fermionization** (e.g. 'field theory, fermionization')  
**fermium**  
**\*ferromagnet** ('model, ferromagnet' or 'magnet, ferromagnet')  
**-FESR** (sum rule, finite energy)  
**\*Feynman** (scaling, Feynman)  
**-Feynman fluid** ('scaling, Feynman' or 'model, fluid')  
**-Feynman gas** ('scaling, Feynman' or 'model, gas')  
**\*Feynman gauge** (gauge field theory, Feynman gauge)  
**Feynman graph** (restricted use)  
**-Feynman integral** (Feynman graph)  
**-Feynman path** ('field theory, path integral' or 'perturbation theory, path integral')  
**-Feynman rule** ('Feynman graph' or 'perturbation theory')  
**\*fibre** ('optics, fibre' or 'scintillation counter, fibre')  
**\*fibre bundle** (field theory, fibre bundle)  
**field equations**  
**field theoretical model**  
**field theory** (see also 'gauge field theory' or 'field theoretical model' or 'unified field theory' or 'lattice field theory' or 'grand unified theory')  
**final state** (restricted use, examples: 'final state, (p 2pi)'; 'final state, dimuon')  
**final-state interaction**  
**\*fine structure**  
**\*finite** (e.g. 'field theory, finite')  
**\*finite energy** (sum rule, finite energy)  
**\*finite size** (e.g. 'effect, finite size')  
**\*finite temperature** (field theory, finite temperature)  
**\*fireball** (model, fireball)  
**fission**  
**-fit** ('interpretation of experiments, parametrization' or 'statistical analysis, parametrization' or, for new methods, 'data analysis method')  
**\*five-dimensional** (e.g. 'field theory, five-dimensional')  
**\*flash tube** (spark chamber, flash tube)  
**\*flavor** (quark, flavor)  
**\*flavor changing** ('current, flavor changing' or 'decay, flavor changing')  
**-flow** ('energy flow' or 'particle flow')  
**\*fluid** (only used for 'model, fluid'; otherwise use 'liquid')  
**fluorine**  
**flux**  
**\*flux tube** (model, flux tube)  
**-FNAL** (see 'Batavia ...')  
**\*Fokker-Planck** (differential equations, Fokker-Planck)  
**\*Foldy-Wouthuysen** (transformation, Foldy-Wouthuysen)  
**forces**  
**form factor** (no specifier is used for electromagnetic form factor, otherwise 'form factor, electric' or 'form factor, magnetic')  
**\*formula** (see also 'mass formula')  
**\*forward scattering** (used only for zero-degree scattering, otherwise use 'small-angle')  
**forward spectrometer**  
**-forward-backward asymmetry** (angular distribution, asymmetry)  
**\*four-dimensional** (e.g. 'field theory, four-dimensional')  
**\*four-fermion interaction** (model, four-fermion interaction)  
**four-pi-detector** (restricted use)  
**\*fractionally charged**  
**\*fragmentation** ('beam, fragmentation' or 'target, fragmentation' or, more general, 'multiple production, fragmentation')  
**fragmentation function**  
**francium**  
**\*Frascati ES**  
**\*Frascati Stor** (3 GeV-cms e+e-)  
**-free electron laser** (radiation, undulator)  
**-free path** (path length)  
**-free quark** (use 'quark, search for')  
**\*Friedman** (model, Friedman)  
**\*Froissart bound** (total cross section, Froissart bound)  
**functional analysis**  
**fundamental constant**  
**-fundamental length** (fundamental constant, length)  
**fusion** (see also 'capture')

- \*G parity (e.g. 'violation, G parity')
- \*G(1590) (postulated particle, G(1590))
- g(1690)
- g-2 (magnetic moment)
- \*g/s(1240) (postulated particle, g/s(1240))
- \*g/t(2240) (postulated particle, g/t(2240))
- gadolinium
- \*Galilei (invariance, Galilei)
- gallium
- \*GAMS (at Serpukhov and CERN; 'calorimeter, GAMS')
- gas
- \*gauge ('invariance, gauge' or 'transformation, gauge'; see also 'gauge field theory')
- gauge boson
- gauge field theory
- \*gaugino (postulated particle, gaugino)
- \*Gauss law
- \*Gell-Mann-Low (renormalization group, Gell-Mann-Low)
- \*Gell-Mann-Okubo ('model, Gell-Mann-Okubo'; see also 'mass formula')
- \*general (relativity theory, general)
- generalized vector dominance (model, vector dominance)
- \*geometrical (e.g. 'scaling, geometrical')
- \*geophysics
- \*Georgi-Glashow (model, Georgi-Glashow)
- germanium
- \*ghost (gauge field theory, ghost)
- giant resonance (excited nucleus, collective phenomena)
- GIM (model, Glashow-Iliopoulos-Maiani)
- \*Glashow-Iliopoulos-Maiani (model, Glashow-Iliopoulos-Maiani)
- \*glass
- \*Glauber ('model, Glauber' or 'correction, Glauber')
- glueball
- \*gluino (postulated particle, gluino)
- gluon
- gluon gluon
- gluon photon (photon gluon)
- gluon quark (quark gluon)
- gluonium (glueball)
- gold
- Goldberger-Treiman relation ('model, PCAC' and 'pi, decay')
- \*Goldstino (postulated particle, Goldstino)
- Goldstone boson (use 'postulated particle, Goldstone particle' or 'boson, Goldstone particle')
- Goldstone model (symmetry, spontaneously broken)
- \*Goldstone particle (e.g. 'postulated particle, Goldstone particle')
- \*Goldstone theorem (field theory, Goldstone theorem)
- grand unified theory
- \*Grassmann (algebra, Grassmann)
- gravitation
- gravitational radiation
- gravitational waves (gravitational radiation)
- \*gravitino (postulated particle, gravitino)
- \*graviton (postulated particle, graviton)
- Green function (use 'n-point function' or 'propagator' or 'vertex function' or 'two-point function')
- Gribov-Pomeranchuk (partial wave, analytic properties)
- \*Gross-Neveu (field theoretical model, Gross-Neveu)
- \*ground state ('nucleus, ground state' or 'quarkonium, ground state')
- group theory
- GUT (grand unified theory)



- \*H baryon (di-Lambda; 'postulated particle, H baryon')
- H(1190)
- h(2030)
- \*H1 (at HERA; 'magnetic detector, H1')
- hadron
- hadron deuteron
- hadron hadron
- hadron light nucleus
- hadron nucleon
- hadron nucleus
- hadron resonance (use 'meson resonance' or 'baryon resonance' or 'nucleon resonance')
- hadron spectroscopy (not used for apparatus)
- \*hadronic
- \*hadronic atom (atom, hadronic atom)
- \*hadronic component (cosmic radiation, hadronic component)
- \*hadronic decay (use for strong decays only; otherwise use 'nonleptonic decay')
- \*hadronization (e.g. 'quark, hadronization')
- \*hadroproduction
- hafnium
- \*Hall (effect, Hall)
- \*Hamiltonian formalism ('lattice field theory, Hamiltonian formalism'; not used for Hamiltonians)
- Han-Nambu (quark, integer charged)
- \*hard core (model, hard core)
- hard meson (current algebra, effective Lagrangians)
- hard photon (radiative correction)
- hard pion (current algebra, effective Lagrangians)
- \*hard scattering ('model, hard scattering'; see also 'model, constituent interchange' or 'model, parton')
- \*hardware
- harmonic oscillator (model, oscillator)
- \*Hartree-Fock ('approximation, Hartree-Fock')
- \*Hawking (e.g. 'radiation, Hawking')
- health physics (use 'nuclear medicine' or 'dosimetry')
- heat engineering
- \*heavy
- \*heavy ion
- heavy lepton
- \*Heisenberg (field theoretical model, Heisenberg)
- helicity
- helium
- HERA (DESY HERA Stor)
- \*hierarchy problem (gauge field theory, hierarchy problem)
- \*Higgs ('model, Higgs' or 'potential, Higgs')
- \*Higgs particle (postulated particle, Higgs particle)
- Higgs-Kibble (field theoretical model, Salam-Weinberg)
- \*Higgsino (postulated particle, Higgsino)
- \*high (e.g. 'momentum transfer, high')
- \*high energy behavior (for theoretical models)
- \*higher-dimensional (e.g. 'field theory, higher-dimensional'. See also e.g. 'six-dimensional')
- \*higher-order (e.g. 'correction, higher-order')
- \*higher-twist (effect, higher-twist)
- Hilbert space (functional analysis, linear spaces)
- \*history (e.g. 'particle physics, history')
- hodoscope
- hodoscope chamber (spark chamber, flash tube)
- \*hollow beam
- holmium
- \*holography
- \*hopping parameter (expansion, hopping parameter)
- \*horizontal symmetry (gauge field theory, horizontal symmetry)
- \*HRS (at PEP; 'magnetic spectrometer, HRS')
- \*hydrodynamical (model, hydrodynamical)
- hydrogen
- \*hypercharge
- \*hypercolor
- \*hyperfine structure
- hyperfragment
- hypernucleus (hyperfragment)
- hyperon
- hyperon deuteron
- hyperon hyperon
- hyperon light nucleus
- hyperon nucleus
- \*hyperonic atom (atom, hyperonic atom)
- \*hyperphoton (postulated particle, hyperphoton)

- IHEP (Serpukhov PS)
- \*Iizuka-Okubo-Zweig (selection rule, Iizuka-Okubo-Zweig)
- image chamber ('proportional chamber, time projection' or 'drift chamber, time projection')
- \*imaging (see also 'ring imaging')
- \*impact parameter (e.g. 'model, impact parameter'; for track data analysis see 'path length')
- \*impedance
- \*impulse (approximation, impulse)
- inclusive reaction
- \*incoherent interaction
- \*indefinite metric ('field theory, indefinite metric' or 'axiomatic field theory, indefinite metric')
- \*index theorem (e.g. 'mathematical methods, index theorem')
- \*Indiana Cycl (at Bloomington; 0.2 GeV protons)
- indium
- \*induction (e.g. 'linear accelerator, induction', 'electromagnetic field, induction')
- \*inelastic scattering
- \*inflationary universe (model, inflationary universe)
- \*infrared problem ('field theory, infrared problem' or 'quantum electrodynamics, infrared problem')
- injection
- inorganic compounds
- \*instanton ('field equations, instanton'; for one-dimensional instantons use 'effect, tunnelling')
- instanton solution (field equations, instanton)
- \*integer charged (see also 'multiply charged')
- integral representation (spectral representation)
- intensity (see 'yield' or 'flux' or 'current')
- \*interaction (restricted use, if possible use more specific term)
- \*interface
- interference
- intermediate boson (see also 'W', 'W+', 'W-' or 'Z0')
- intermediate state (see 'exchange' or 'final state' or 'cascade decay')
- \*internal ('symmetry, internal' or 'target, internal')
- internuclear cascade (nucleus, cascade)
- \*interpretation of experiments (the name of a detector may be appended)
- intersection area (beam transport, colliding beams)
- \*intranuclear cascade (model, intranuclear cascade)
- intrinsic momentum (for partons use e.g. 'quark, momentum')
- \*introductory (restricted use)
- invariance
- invariant phase space (model, statistical)
- inverse free-electron laser accelerator (accelerator, laser)
- inverse scattering method
- iodine
- ion (see also 'heavy ion')
- ionization
- ionization chamber
- iota(1440)
- iridium
- iron
- \*Ising (statistical mechanics, Ising)
- ISIS (Rutherford ISIS PS)
- \*isobar ('model, isobar'; for the nucleon isobar use 'nucleon resonance')
- \*isobar doorway (model, isobar doorway)
- \*isochronous (cyclotron, isochronous)
- \*isoscalar
- isospin
- isotope (nuclide)
- \*isovector
- ISR (CERN Stor)
- ITEF PS (Moscow ITEF PS)

J/psi(3100)

\*JADE (at PETRA; 'magnetic detector, JADE')

jet

\*Jona-Lasinio-Nambu (model,  
Jona-Lasinio-Nambu)

\*Jordan (algebra, Jordan)

-Jost function (potential scattering)

-Jost-Lehmann-Dyson representation  
(spectral representation)

-JWKB (approximation, WKB)

K  
 K anti-K  
 K deuteron  
 K K  
 K light nucleus  
 K n  
 K nucleon  
 K nucleus  
 K p  
 \*K(1400) ('postulated particle, K(1400)'  
 (JP = 0-))  
 \*K(1830) ('postulated particle, K(1830)'  
 (JP = 0-))  
 \*K(2200) ('postulated particle, K(2200)'  
 (JP = 2-))  
 K+  
 K+ deuteron  
 K+ K-  
 K+ light nucleus  
 K+ n  
 K+ nucleon  
 K+ nucleus  
 K+ p  
 \*K\*(1410) (postulated particle, K\*(1410))  
 K\*(1430)  
 K\*(1780)  
 \*K\*(1790) (postulated particle, K\*(1790))  
 K\*(2060)  
 K\*(892)  
 K-  
 K- deuteron  
 K- light nucleus  
 K- n  
 K- nucleon  
 K- nucleus  
 K- p  
 K0  
 K0 anti-K0  
 K0 deuteron  
 K0 light nucleus  
 K0 n  
 K0 nucleon  
 K0 nucleus  
 K0 p  
 K0(L)  
 K0(S)  
 \*K3(2320) (postulated particle, K3(2320))  
 \*K4(2500) (postulated particle, K4(2500))  
 \*Kac-Moody (algebra, Kac-Moody)  
 \*Kaehler ('potential, Kaehler'; see also  
 'field equations, Dirac-Kaehler')  
 \*Kaluza-Klein (field theoretical model,  
 Kaluza-Klein)  
 kappa(1350)  
 \*KEK GEMINI (at Tsukuba; 0.8 GeV protons,  
 meson factory)  
 \*KEK Linac (at Tsukuba; 2.5 GeV electrons)  
 \*KEK PF Stor (at Tsukuba; synchrotron  
 radiation)  
 \*KEK PS (at Tsukuba; 12 GeV protons)  
 \*KEK TRISTAN Stor (at Tsukuba; 60  
 GeV-cms e+e-)  
 \*Kharkov Linac (2 GeV electrons, 0.4 GeV  
 protons)  
 -Kibble-Higgs (field theoretical model,  
 Salam-Weinberg)  
 -kicker magnet (magnet, pulsed)  
 kinematics  
 \*kink (field equations, kink)  
 \*Klein-Gordon (field equations,  
 Klein-Gordon)  
 -klystron (microwaves, amplifier)  
 \*KNO (scaling, KNO)  
 -knock-out (emission)  
 -Koba-Nielsen (model, dual resonance)  
 -Koba-Nielsen-Olesen scaling (scaling,  
 KNO)  
 \*Kobayashi-Maskawa ('field theoretical  
 model, Kobayashi-Maskawa' or 'mixing  
 angle, Kobayashi-Maskawa')  
 \*Korteweg-de Vries (field equations,  
 Korteweg-de Vries)  
 krypton

- \*L(1580) (postulated particle, L(1580))
- L(1770)
- \*L3 (at LEP; 'magnetic detector, L3')
- \*ladder (approximation, ladder)
- Lagrangian formalism ('field theory, Euclidean'; see also 'effective Lagrangians')
- Lamb shift ('radiative correction' and 'atom, energy levels')
- Lambda
- Lambda Antilambda
- Lambda deuteron
- Lambda Lambda
- Lambda light nucleus
- \*Lambda N(2130) (dibaryon resonance; 'postulated particle, Lambda N(2130)')
- Lambda nucleus
- \*Lambda parameter (e.g. 'gauge field theory, Lambda parameter')
- Lambda(1405) (partial wave S'01)
- Lambda(1520) (partial wave D'03)
- Lambda(1600) (partial wave P'01)
- Lambda(1670) (partial wave S''01)
- Lambda(1690) (partial wave D''03)
- Lambda(1800) (partial wave S'''01 or P''01)
- Lambda(1820) (partial wave F'05)
- Lambda(1830) (partial wave D05)
- Lambda(1890) (partial wave P03)
- \*Lambda(2000) (postulated particle, Lambda(2000))
- \*Lambda(2020) (partial wave F07; 'postulated particle, Lambda(2020)')
- Lambda(2100) (partial wave G07)
- Lambda(2110) (partial wave F''05)
- \*Lambda(2325) (partial wave D''03; 'postulated particle, Lambda(2325)')
- Lambda(2350)
- \*Lambda(2585) (postulated particle, Lambda(2585))
- \*Lambda/b0 ('postulated particle, Lambda/b0', mass 5500)
- Lambda/c+
- \*LAMPF Linac (at Los Alamos; meson factory; 0.8 GeV protons)
- \*Landau gauge (gauge field theory, Landau gauge)
- Langevin equation
- lanthanum
- large-angle (wide-angle)
- \*laser (for free electron laser use 'radiation, undulator')
- \*LASS (at SLAC Linac; 'magnetic spectrometer, LASS')
- \*lattice (e.g. 'symmetry, lattice' or 'storage ring, lattice')
- lattice field theory
- lawrencium
- lead
- \*lead-glass (e.g. 'total-absorption counter, lead-glass')
- \*leading logarithm (approximation, leading logarithm)
- \*leading particle (multiple production, leading particle)
- LEAR (CERN LEAR)
- least-squares analysis (statistical analysis)
- lectures
- LED (semiconductor, optical)
- \*Lee (field theoretical model, Lee)
- \*left-handed (current, left-handed)
- left-right symmetry (use specific model, e.g. 'gauge field theory, SU(2) x SU(2) x U(1)' or 'gauge field theory, SU(2) x U(1) x U(1)')
- \*length ('fundamental constant, length' or 'correlation, length'; see also 'scattering length', 'path length')
- \*Leningrad Cycl (1 GeV protons; was 'Leningrad Nucl Inst Cycl')
- LEP (CERN LEP Stor)
- lepton
- lepton antilepton
- lepton baryon
- lepton deuteron
- lepton hadron
- lepton K
- lepton lepton
- lepton light nucleus
- lepton n
- lepton nucleon
- lepton nucleus
- lepton number
- lepton p
- lepton quark
- \*leptonic
- \*leptonic decay
- leptonic number (lepton number)
- \*leptoproduction (see also 'electroproduction' or 'neutrino production')
- \*leptoquark (postulated particle, leptoquark)
- \*Lie ('group theory, Lie' or 'algebra, Lie')
- \*lifetime
- light cone behavior
- \*light cone gauge (gauge field theory, light cone gauge)
- light nucleus (up to mass number 20 (incl.))
- light nucleus light nucleus
- light nucleus nucleus
- limit ('lower limit', 'upper limit')
- limiting fragmentation (model, fragmentation)
- \*linear
- linear accelerator
- linear collider
- \*linear spaces (functional analysis, linear spaces)
- \*Liouville (field equations, Liouville)
- Lippmann-Schwinger equation
- liquid (see also 'model, fluid')
- \*liquid argon ('scintillation counter, liquid argon' or 'calorimeter, liquid argon')
- lithium
- live target (counters and detectors, target)
- locality (axiomatic field theory)
- \*long-range (e.g. 'correlation, long-range')

- \*longitudinal
- longitudinal beam oscillation  
(synchrotron oscillation)
- longitudinal momentum
- loop diagram (Feynman graph,  
higher-order)
- \*Lorentz ('group theory, Lorentz'  
(restricted use) or 'invariance, Lorentz'  
(restricted use) or 'transformation,  
Lorentz')
- \*Lorentz gauge (gauge field theory, Lorentz  
gauge)
- Los Alamos Linac (LAMPF Linac)
- \*Los Alamos PSR (0.8 GeV proton storage  
ring)
- \*low (e.g. 'momentum transfer, low')
- \*low-energy theorem (field theory,  
low-energy theorem)
- \*lower limit (e.g. 'mass, lower limit')
- luminosity
- \*Lund ES (1.2 GeV electrons)
- lutetium

- \*MAC (at PEP; 'magnetic detector, MAC')
- magnesium
- magnet
- \*magnetic
- magnetic charge (charge, magnetic)
- magnetic detector (Often used connected with the name of the detector. For small-angle detectors see also 'magnetic spectrometer')
- magnetic field
- magnetic moment
- \*magnetic monopole ('postulated particle, magnetic monopole'. See also 'fermion magnetic monopole', 'nucleon magnetic monopole'.)
- magnetic spectrometer (see also 'magnetic detector')
- \*Mainz Linac (0.35 GeV electrons)
- \*Majorana (e.g. 'lepton, Majorana')
- \*Majoron (postulated particle, Majoron)
- \*Mandelstam representation
- manganese
- manual
- many-body problem
- \*MARK II (at PEP and SLC; 'magnetic detector, MARK II')
- \*MARK III (at SPEAR; 'magnetic detector, MARK III')
- \*MARK J (at PETRA; 'magnetic detector, MARK J')
- mass
- mass difference
- mass enhancement
- \*mass formula
- \*mass generation (field theory, mass generation)
- \*mass number
- mass ratio
- mass spectrum (restricted use)
- mass splitting (mass difference)
- \*massive
- \*massless
- mathematical methods
- matter
- maximum-likelihood method (statistical analysis)
- \*Maxwell (field equations, Maxwell)
- \*mean field (approximation, mean field)
- mean free path (path length)
- measurement
- mechanical engineering
- mechanics
- medicine (see 'nuclear medicine')
- mendelevium
- mercury
- \*meron (field equations, meron)
- \*mesic atom (atom, mesic atom)
- meson
- meson baryon
- meson deuteron
- \*meson dominance ('model, meson dominance'; used for scalar, pseudoscalar and tensor mesons; see also 'vector dominance')
- meson light nucleus
- meson meson
- meson n
- meson nucleon
- meson nucleus
- meson p
- meson quark
- meson resonance
- metal
- microcomputer (microprocessor)
- microprocessor
- \*microstrip (semiconductor detector, microstrip)
- microtron
- microwaves
- Millikan experiment (experimental methods, droplet)
- mineral
- Minkowski space (field theory)
- \*mirror particle (e.g. 'fermion, mirror particle')
- \*missing-energy (e.g. 'energy spectrum, missing-energy')
- \*missing-mass (e.g. 'mass spectrum, missing-mass')
- missing-momentum (e.g. 'momentum, missing-energy' or 'transverse momentum, missing-energy')
- \*MIT Linac (at Bates; 0.8/1.0 GeV electrons)
- mixing ('interference' (restricted use))
- mixing angle
- model
- modular invariance (invariance, reparametrization)
- modulation ('time variation' or 'oscillation')
- Moeller scattering ('electron electron, elastic scattering' or 'positron positron, elastic scattering')
- molecular biology
- \*molecule
- molybdenum
- moment
- momentum
- \*momentum dependence
- \*momentum resolution (e.g. 'counters and detectors, momentum resolution')
- momentum spectrum
- momentum transfer
- monitoring (see also 'beam monitoring')
- \*monochromatic beam (photon, monochromatic beam)
- \*monopole ('field equations, monopole'; see also 'magnetic monopole', 'soliton', 'instanton')
- monopole solution (field equations, monopole)
- \*Monte Carlo (numerical calculations, Monte Carlo)
- \*Moscow ITEP PS (10 GeV protons)
- \*multi-Regge ('Regge poles, multi-Regge' or 'exchange, multi-Regge')
- multidimensional analysis
- \*multigluon (exchange, multigluon)
- multiloop (Feynman graph, higher-order)

-multiparticle scattering (use 'many-body  
 problem' or 'multiple production' but  
 not 'multiple scattering')  
 \*multiperipheral (model, multiperipheral)  
 \*multiple  
 multiple production  
 multiple scattering  
 multiplet  
 multiplicity  
 \*multiply charged  
 \*multipole (e.g. 'partial wave analysis,  
 multipole' or 'magnetic moment,  
 multipole' or 'magnetic field,  
 multipole'. For magnet use 'quadrupole  
 lens, special focusing')  
 -multipomeron ('pomeron' and  
 'multi-Regge')  
 \*multiprocessor (e.g. 'microprocessor,  
 multiprocessor')  
 \*multiquark (quark, multiquark)  
 -multireggeon ('Regge poles, multi-Regge'  
 or 'exchange, multi-Regge')  
 -multiwire proportional chamber (propor-  
 tional chamber)  
 muon  
 muon deuteron

muon hadron  
 muon light nucleus  
 muon n  
 muon nucleon  
 muon nucleus  
 muon number  
 muon p  
 muon+  
 muon+ deuteron  
 muon+ light nucleus  
 muon+ muon-  
 muon+ n  
 muon+ nucleon  
 muon+ nucleus  
 muon+ p  
 muon-  
 muon- deuteron  
 muon- light nucleus  
 muon- n  
 muon- nucleon  
 muon- nucleus  
 muon- p  
 \*muonic atom (atom, muonic atom)  
 muonium  
 -muoproduction (electroproduction)  
 -MWPC (proportional chamber)



- n** (denominates neutron)  
**n anti-n**  
**n deuteron**  
**n Lambda**  
**n light nucleus**  
**n n**  
 \*N N(2170) (dibaryon resonance, 'postulated particle, N N(2170)')  
 \*N N(2250) (dibaryon resonance, 'postulated particle, N N(2250)')  
**n nucleus**  
**n Sigma**  
 N(1440) (partial wave P'11)  
 N(1520) (partial wave D'13)  
 N(1535) (partial wave S'11)  
 \*N(1540) (partial wave P'13; 'postulated particle, N(1540)')  
 N(1650) (partial wave S''11)  
 N(1675) (partial wave D'15)  
 N(1680) (partial wave F'15)  
 N(1700) (partial wave D''13)  
 N(1710) (partial wave P''11)  
 N(1720) (partial wave P''13)  
 \*N(1960) (postulated particle, N(1960))  
 \*N(1990) (partial wave F17; 'postulated particle, N(1990)')  
 \*N(2000) (partial wave F''15; 'postulated particle, N(2000)')  
 \*N(2080) (partial wave D'''13; 'postulated particle, N(2080)')  
 \*N(2090) (partial wave S'''11; 'postulated particle, N(2090)')  
 \*N(2100) (partial wave S''''11 or P''''11; 'postulated particle, N(2100)')  
 N(2190) (partial wave G17)  
 \*N(2200) (partial wave D''15; 'postulated particle, N(2200)')  
 N(2220) (partial wave H19)  
 N(2250) (partial wave G'19)  
 N(2600) (partial wave I111)  
 \*N(2700) (partial wave K113; 'postulated particle, N(2700)')  
 -N(3000 and greater) (use 'nucleon resonance')  
 -N\* (use 'nucleon resonance' for  $I=1/2$ )  
**n-point function**  
 -N/D method (partial wave, dispersion relations)  
 -NaI (see 'sodium-iodide')  
 -Nambu-Goldstone (symmetry, spontaneously broken)  
 -NAP Stor (Novosibirsk NAP Stor)  
 \*narrow resonance (approximation, narrow resonance)  
**negative particle**  
**neodymium**  
**neon**  
**neptunium**  
 -network (communications)  
**neutral current**  
**neutral particle**  
 -neutral weak current (neutral current)  
**neutrino**  
**neutrino antineutrino**  
**neutrino deuteron**  
**neutrino electron**  
**neutrino hadron**  
**neutrino lepton**  
**neutrino light nucleus**  
**neutrino muon**  
**neutrino n**  
**neutrino neutrino**  
**neutrino nucleon**  
**neutrino nucleus**  
**neutrino p**  
**neutrino pi**  
**neutrino quark**  
**neutrino/e**  
**neutrino/L** (used for the heavy lepton neutrino)  
**neutrino/mu**  
**neutrino/tau**  
 -neutrinoless double-beta decay (semileptonic decay, (0neutrino))  
 \*neutrino production (used for production by neutrinos or antineutrinos)  
 -neutron (use 'n')  
 \*Neveu-Schwarz ('algebra, Neveu-Schwarz' or 'model, Neveu-Schwarz')  
 \*new interaction (model, new interaction)  
**new particle**  
 \*Newport News CEBAF Linac (4 GeV electrons)  
**nickel**  
 \*Nicolai map (mathematical methods, Nicolai map)  
**niobium**  
**nitrogen**  
 \*no keywords (very restricted use)  
**nobelium**  
 -Noether's theorem ('group theory' and 'conservation law')  
 \*nonabelian ('field theory, nonabelian'; not used together with 'gauge field theory, Yang-Mills')  
 \*nondiffractive  
 \*nonleptonic decay (used for weak decays only)  
 \*nonlinear  
 \*nonlocal (e.g. 'field theory, nonlocal')  
 \*nonperturbative  
 \*nonpolynomial (field theoretical model, nonpolynomial)  
 \*nonrelativistic  
 \*nonrenormalizable (field theoretical model, nonrenormalizable)  
 \*Novosibirsk NAP Stor  
 \*Novosibirsk Stor2 (1.4 GeV-cms e+e-)  
 \*Novosibirsk Stor3 (~4 GeV-cms e+e-)  
 \*Novosibirsk Stor4 (14 GeV-cms e+e-)  
 -nuclear cascade ('nucleus, cascade'; see also 'model, intranuclear cascade')  
**nuclear emulsion**  
**nuclear force**  
**nuclear matter**  
**nuclear medicine**  
**nuclear model** (restricted use)  
**nuclear physics**  
**nuclear properties**  
**nuclear reaction**

-nuclear resonance (excited nucleus)  
-nuclear structure ('nuclear properties' or  
'nuclear model')  
nucleon  
nucleon antinucleon  
nucleon deuteron  
nucleon hyperon  
-nucleon isobar (nucleon resonance)  
nucleon Lambda  
nucleon light nucleus  
\*nucleon magnetic monopole (scattering,  
nucleon magnetic monopole)

nucleon n  
nucleon nucleon  
nucleon nucleus  
nucleon quark  
nucleon resonance  
nucleon Sigma  
nucleus  
nucleus nucleus  
nuclide  
\*numerical calculations  
numerical mathematics

- \*O(10) (e.g. 'symmetry, O(10)')
- \*O(2) (e.g. 'symmetry, O(2)')
- \*O(3) (e.g. 'symmetry, O(3)')
- \*O(32) (e.g. 'symmetry, O(32)')
- \*O(4) (e.g. 'symmetry, O(4)')
- \*O(N) (e.g. 'symmetry, O(N)')
- OBE (exchange, one-boson)
- \*octet (quark, octet)
- \*octonion (algebra, octonion)
- octupole lens (quadrupole lens, special focusing)
- \*off-line (e.g. 'trigger, off-line')
- \*off-shell (model, off-shell)
- Okubo-Zweig rule (selection rule, Iizuka-Okubo-Zweig)
- Okubo-Zweig-Iizuka rule (selection rule, Iizuka-Okubo-Zweig)
- \*OMEGA (at SPS; 'magnetic detector, OMEGA')
- omega(1670)
- omega(783)
- Omega-
- \*on-line (e.g. 'computer, on-line')
- \*on-shell (model, on-shell)
- \*one-boson (exchange, one-boson)
- \*one-dimensional (e.g. 'field theory, one-dimensional')
- one-loop approximation ('Feynman graph, higher-order')
- \*one-meson (exchange, one-meson)
- \*one-particle (exchange, one-particle)
- \*one-photon (exchange, one-photon)
- \*one-pion (exchange, one-pion)
- \*OPAL (at LEP; 'magnetic detector, OPAL')
- OPE ('exchange, one-pion' or 'operator product expansion')
- \*operator algebra (restricted use)
- \*operator product expansion (field theory, operator product expansion)
- \*optical ('model, optical' or 'potential, optical' or 'semiconductor, optical')
- \*optical theorem (e.g. 'total cross section, optical theorem' or 'scattering amplitude, optical theorem')
- optics
- \*orbit
- orbit calculations ('beam optics, orbit' or 'beam transport, orbit' or 'programming, orbit')
- organic compounds
- \*Orsay Cycl (0.5 GeV electrons)
- \*Orsay Linac (2.3 GeV electrons)
- \*Orsay Stor (7.2 GeV-cms e+e-)
- \*oscillation (e.g. 'neutrino, oscillation'; see also 'beam oscillation')
- \*oscillator (model, oscillator)
- osmium
- \*OSp(N,M) (e.g. 'symmetry, OSp(N,M)')
- oxygen
- OZI (selection rule, Iizuka-Okubo-Zweig)



- p (denominates proton)
- p anti-n
- p antinucleon
- p baryon
- p deuteron
- p hyperon
- P invariance (parity)
- p Lambda
- p light nucleus
- p n
- p nucleon
- p nucleus
- p Omega-
- p p
- p Sigma
- p Sigma+
- p Sigma-
- p Sigma0
- P violation (parity, violation)
- p Xi
- p Xi-
- p Xi0
- P-wave (partial wave)
- \*Pade (approximation, Pade)
- \*pair
- \*pair production
- palladium
- \*parametrization (see also 'reparametrization')
- \*parastatistics (statistics, parastatistics)
- parity
- partial wave
- partial wave analysis
- partially conserved axial-vector current (model, PCAC)
- particle
- particle antiparticle
- \*particle flow
- particle identification
- \*particle nucleus (denominates an initial state)
- particle physics (restricted use)
- particle separator (see also 'separated beam')
- particle source (for accelerators and cosmic radiation)
- \*parton ('model, parton'; see also 'model, quark parton')
- \*path integral ('field theory, path integral' or 'perturbation theory, path integral')
- \*path length
- \*Pati-Salam (field theoretical model, Pati-Salam)
- pattern recognition (track data analysis)
- PC(3510) (chi(3510))
- \*PCAC (model, PCAC)
- \*Peking Stor (5 GeV-cms e+e-)
- Penning trap (e.g. 'magnetic field, confinement')
- PEP (SLAC PEP Stor)
- \*performance
- \*peripheral (model, peripheral)
- permanent magnet (magnet, ferromagnet)
- perturbation theory
- PETRA (DESY PETRA Stor)
- Peyrou plot ('transverse momentum' and 'longitudinal momentum')
- phase shift ('partial wave' or 'partial wave analysis')
- \*phase space ('kinematics, phase space' or 'statistical analysis, phase space')
- phase transition (see 'critical phenomena')
- phenomenology (not used)
- Phi(1020)
- Phi(1680)
- Phi(1850)
- phi-to-the-nth model (field theoretical model, scalar)
- phosphorus
- \*photino (postulated particle, photino)
- photoabsorption (photon, absorption)
- photodiode (if possible use 'semiconductor, optical')
- photodisintegration (photofission)
- photoelectron (e.g. 'photoelectron, amplifier', 'photoelectron, yield')
- photoexcitation (use 'photon, absorption' and 'excited nucleus')
- \*photofission
- photomultiplier (photoelectron, amplifier)
- photon
- photon baryon
- photon deuteron
- photon electron
- \*photon gluon (fusion, photon gluon)
- photon hadron
- photon lepton
- photon light nucleus
- photon meson
- photon n
- photon nucleon
- photon nucleus
- photon p
- photon photon
- photon pi
- photon quark
- \*photoproduction
- phototransistor (semiconductor, optical)
- pi
- pi deuteron
- pi K
- pi light nucleus
- pi n
- pi nucleon
- pi nucleus
- pi p
- pi pi
- pi quark
- pi(1300)
- \*pi(1770) (postulated particle, pi(1770))
- pi(2050) (A(2050))
- pi(2100) (A(2100))
- pi+
- pi+ deuteron
- pi+ light nucleus
- pi+ n
- pi+ nucleon

pi+ nucleus  
 pi+ p  
 pi+ pi-  
 pi-  
 pi- deuteron  
 pi- light nucleus  
 pi- n  
 pi- nucleon  
 pi- nucleus  
 pi- p  
 pi0  
 pi0 deuteron  
 pi0 light nucleus  
 pi0 n  
 pi0 nucleon  
 pi0 nucleus  
 pi0 p  
 pi0 pi+  
 pi0 pi-  
 -pionic form factor (vertex function)  
 \*pionization (multiple production, pionization)  
 \*planar (Feynman graph, planar)  
 \*planarity (event shape analysis, planarity)  
 plasma  
 plastics (e.g. 'plastics, track sensitive')  
 platinum  
 \*PLUTO (at PETRA; 'magnetic detector, PLUTO')  
 plutonium  
 \*Poincare (only 'gauge field theory, Poincare'; else use 'Lorentz')  
 -Poincare group (group theory, Lorentz)  
 \*polarizability  
 polarization  
 \*polarized beam (e.g. 'electron, polarized beam')  
 \*polarized target (e.g. 'nucleon, polarized target')  
 \*pole (e.g. 'approximation, pole')  
 -pole dominance ('model, pole' or 'model, resonance')  
 polonium  
 \*Polyakov loop ('gauge field theory, Polyakov loop' or 'lattice field theory, Polyakov loop')  
 \*Pomeranchuk theorem (total cross section, Pomeranchuk theorem)  
 \*pomeron (e.g. 'exchange, pomeron')  
 \*position dependence (e.g. 'efficiency, position dependence')  
 \*position sensitive (e.g. 'proportional chamber, position sensitive')  
 positive particle  
 -positivity (axiomatic field theory)  
 positron  
 positron deuteron  
 positron hadron  
 positron light nucleus  
 positron n  
 positron nucleon  
 positron nucleus  
 positron p  
 positronium  
 postulated particle  
 potassium  
 potential (see also 'separable potential')  
 potential scattering  
 \*Potts (model, Potts)  
 power engineering  
 power supply  
 praseodymium  
 -preon (model, composite)  
 \*preprocessing  
 -prequark ('lepton, composite' or 'quark, composite')  
 \*pressure  
 \*Primakoff (effect, Primakoff)  
 \*primary (cosmic radiation, primary)  
 -probability ('statistical analysis' or 'statistics')  
 production (restricted use, if possible use more specific term)  
 -production cross section (channel cross section)  
 programming  
 -project (use 'proposed' or 'proposed experiment')  
 promethium  
 -prompt particle (see 'direct production')  
 propagator  
 proportional chamber  
 proposal (only for submitted proposals)  
 \*proposed ('experimental equipment, proposed' or e.g. 'accelerator, proposed')  
 proposed experiment  
 protactinium  
 -protection ('safety, damage', 'radiation protection' or 'shielding')  
 -proton (p)  
 proton synchrotron  
 \*pseudoparticle (field equations, pseudoparticle)  
 -pseudopotential (quasipotential)  
 \*pseudoscalar (restricted use)  
 pseudoscalar meson  
 -pseudoscalar meson dominance (model, meson dominance)  
 pseudoscalar particle  
 \*pseudovector ((restricted use); see also 'vector meson')  
 psi mesons  
 -psi(3100) (J/psi(3100))  
 psi(3685)  
 psi(3770)  
 psi(4030)  
 psi(4160)  
 psi(4415)  
 \*PT ('invariance, PT' or 'violation, PT')  
 \*pulse stretcher (e.g. 'accelerator, pulse stretcher')  
 \*pulsed (e.g. 'magnet, pulsed' or 'microwaves, pulsed')

- Q1(1280)**  
**Q2(1400)**  
 -QCD (quantum chromodynamics)  
 -QED (quantum electrodynamics)  
 -QFT (field theory)  
**quadrupole lens**  
 -quadrupole moment (e.g. 'magnetic moment, multipole')  
**quantization**  
**quantum chromodynamics**  
**quantum electrodynamics**  
 -quantum field theory (field theory)  
**quantum gravity**  
**quantum mechanics**  
**quantum number**  
 -quantum statistics (statistical mechanics)  
**quark**  
**quark antiquark**  
**quark gluon** (see also 'field theory, asymptotic freedom')  
 -quark line rule (selection rule, Iizuka-Okubo-Zweig)
- quark model ('quark, model' for composite models only; otherwise use 'quark' or 'model, quark parton')  
 \*quark parton ('model, quark parton' or 'nuclear model, quark parton')  
**quark quark**  
 -quark rearrangement (model, constituent interchange)  
 -quark recombination (quark, recombination)  
**quarkonium**  
 \*quartet (quark, quartet)  
 \*quasiclassical (approximation, quasiclassical)  
 -quasielastic scattering (use 'inelastic scattering')  
 -quasiparticle ('model, Fermi gas'; see also 'pseudoparticle')  
 \*quasipotential (model, quasipotential)  
 \*quaternion (algebra, quaternion)  
 \*quenching ('approximation, quenching' or 'magnet, quenching' or 'avalanche, quenching')

- \*R parity
- \*r(2510) (postulated particle, r(2510))
- radiation
- radiation dose (dosimetry)
- radiation protection (see also 'shielding', 'safety')
- \*radiative capture
- radiative correction
- \*radiative decay (see also 'electromagnetic decay')
- radioactivity
- radiochemistry ('radioactivity' and 'chemistry')
- radium
- radon
- \*Ramond ('algebra, Ramond' or 'model, Ramond')
- \*random field (field theory, random field)
- \*random phase (approximation, random phase)
- \*random surface (e.g. 'lattice field theory, random surface')
- \*random walk (e.g. 'statistical mechanics, random walk')
- range-energy relation (use 'energy loss' or 'path length')
- \*rapidity
- \*Rarita-Schwinger (field equations, Rarita-Schwinger)
- \*ratio (e.g. 'total cross section, ratio'; see also 'mass ratio')
- reaction amplitude ('scattering amplitude' (restricted use))
- \*readout (e.g. 'experimental equipment, readout' or 'optics, readout')
- real time ('control system' or 'computer, on-line')
- recoil
- \*recombination (usually 'quark, recombination')
- \*reflection
- \*regeneration (KO, regeneration)
- \*Regge (e.g. 'field theoretical model, Regge' or 'particle, Regge'. See also 'multi-Regge')
- Regge poles
- Regge trajectories (Regge poles)
- \*regularization (renormalization, regularization)
- \*relativistic
- relativity theory
- \*renormalizable (field theoretical model, renormalizable)
- renormalization
- renormalization group
- \*reparametrization (invariance, reparametrization)
- \*representation ('group theory, representation'; see also 'Mandelstam representation' and 'spectral representation')
- rescattering ('multiple scattering' or 'final-state interaction')
- \*resolution (e.g. 'counters and detectors, resolution'; see also 'angular resolution', 'energy resolution', 'momentum resolution', 'spatial resolution', 'time resolution')
- resonance (if possible use more specific term, like 'meson resonance'. See also 'beam instability')
- resonance dominance (use 'vector dominance' or 'meson dominance')
- review
- RF cavity (RF system)
- RF field ('RF system' or 'microwaves' or 'electromagnetic field')
- RF separator (use 'particle separator' and possibly 'beam transport')
- RF system
- rhenium
- rho dominance model (model, vector dominance)
- \*rho(1250) (postulated particle, rho(1250))
- rho(1600)
- \*rho(2150) (postulated particle, rho(2150))
- \*rho(2250) (postulated particle, rho(2250))
- \*rho(2350) (postulated particle, rho(2350))
- rho(770)
- rho(770)+
- rho(770)-
- rho(770)0
- rhodium
- \*right-handed (current, right-handed)
- \*ring imaging (Cherenkov counter, ring imaging)
- \*rishon (model, rishon)
- Roper resonance (N(1440))
- \*rotational ('symmetry, rotational' or 'excited state, rotational')
- \*rotator ('model, rotator' or 'spin, rotator')
- RPA (approximation, random phase)
- \*Rubakov (effect, Rubakov)
- rubidium
- ruthenium
- \*Rutherford ISIS PS (0.8 GeV protons)



- \*S(1730) (postulated particle, S(1730))
- \*S(1935) (postulated particle, S(1935))
- S\*(975) (also called 'S(975)')
- S-matrix
- S-wave (partial wave)
- \*Saclay Linac
- \*Saclay PS (3 GeV protons)
- safety (for nuclear aspects use 'dosimetry', 'shielding' or 'radiation protection')
- \*Salam-Weinberg (field theoretical model, Salam-Weinberg)
- samarium
- \*sandwich (scintillation counter, sandwich)
- \*satellite (used in connection with cosmic radiation experiments)
- SATURNE (Saclay PS)
- Saxon-Woods ('potential' or 'potential scattering')
- \*scalar (restricted use)
- scalar meson
- scalar meson dominance (model, meson dominance)
- scalar particle
- scale invariance (scaling)
- scaling
- scandium
- scattering (restricted use)
- scattering amplitude (restricted use; see also 'S-matrix')
- \*scattering length
- Schrodinger equation
- \*Schwinger (field theoretical model, Schwinger)
- Schwinger source theory (field theory)
- \*Schwinger terms
- scintillation counter
- \*screening ('effect, screening' or 'correction, screening'; see also 'shadowing')
- \*sea (quark, sea)
- \*seagull (effect, seagull)
- search for (only for experimental searches for postulated particles)
- second quantization (quantization)
- \*second-class current (weak interaction, second-class current)
- \*secondary beam (see also 'separated beam')
- \*secondary radiation (cosmic radiation, secondary radiation)
- sector-focusing cyclotron (cyclotron, isochronous)
- selection rule
- \*selectron (postulated particle, selectron)
- selenium
- self-consistent calculation ('bootstrap' or, if quantum mechanics, 'approximation, Hartree-Fock')
- self-coupling (not used)
- self-dual solution (field equations, instanton)
- self-energy (propagator, renormalization)
- self-interaction (renormalization)
- self-quenching streamer (avalanche, quenching)
- semiclassical ('approximation, quasiclassical' or 'approximation, WKB')
- semiconductor
- semiconductor detector (see also 'solid-state counter')
- semiinclusive reaction (use 'inclusive reaction')
- \*semileptonic decay
- \*separable potential (model, separable potential)
- \*separated beam
- separator (particle separator)
- \*septum (magnet, septum)
- \*Serpukhov PS (70 GeV protons, 3.5 GeV/A ions)
- \*Serpukhov UNK Stor (600/3000 GeV protons; 2200 GeV-cms pp)
- \*seven-dimensional (e.g. 'field theory, seven-dimensional')
- \*sextet (quark, sextet)
- sextupole lens (quadrupole lens, special focusing)
- \*sfermion (postulated particle, sfermion)
- SFM (magnetic detector, Split Field)
- shadow scattering ('model, optical' or 'model, vector dominance')
- \*shadowing ('effect, shadowing' or 'correction, shadowing'; see also 'screening')
- \*shell (model, shell)
- shielding (see also 'radiation protection')
- \*shock waves (model, shock waves)
- \*short-distance behavior (field theory, short-distance behavior)
- \*short-range (e.g. 'correlation, short-range')
- shower detector
- showers
- shrinkage (e.g. 'high energy behavior')
- \*sigma ('field theoretical model, sigma'; see also 'CP(N-1)')
- Sigma (only for the hyperon)
- Sigma Antisigma
- Sigma deuteron
- Sigma light nucleus
- sigma model (field theoretical model, sigma)
- Sigma nucleus
- Sigma(1385) (partial wave P'13)
- \*Sigma(1480) (postulated particle, Sigma(1480))
- \*Sigma(1560) (postulated particle, Sigma(1560))
- \*Sigma(1580) (partial wave D'13; 'postulated particle, Sigma(1580)')
- \*Sigma(1620) (partial wave S'11; 'postulated particle, Sigma(1620)')
- Sigma(1680) (partial wave P'11)
- Sigma(1670) (partial wave D''13)
- \*Sigma(1670) (postulated particle, Sigma(1670))
- \*Sigma(1690) (postulated particle, Sigma(1690))

**Sigma(1750)** (partial wave S''11)  
**\*Sigma(1770)** (partial wave P''11;  
'postulated particle, Sigma(1770)')  
**Sigma(1775)** (partial wave D15)  
**\*Sigma(1840)** (partial wave P''13;  
'postulated particle, Sigma(1840)')  
**\*Sigma(1880)** (partial wave P''11;  
'postulated particle, Sigma(1880)')  
**Sigma(1915)** (partial wave F'15)  
**Sigma(1940)** (partial wave D''13)  
**\*Sigma(2000)** (partial wave S''11;  
'postulated particle, Sigma(2000)')  
**Sigma(2030)** (partial wave F17)  
**\*Sigma(2070)** (partial wave F''15;  
'postulated particle, Sigma(2070)')  
**\*Sigma(2080)** (partial wave P''13;  
'postulated particle, Sigma(2080)')  
**\*Sigma(2100)** (partial wave G17; 'postulated  
particle, Sigma(2100)')  
**Sigma(2250)**  
**\*Sigma(2455)** (postulated particle,  
Sigma(2455))  
**\*Sigma(2620)** (postulated particle,  
Sigma(2620))  
**\*Sigma(3000)** (postulated particle,  
Sigma(3000))  
**\*Sigma(3170)** (postulated particle,  
Sigma(3170))  
**Sigma+**  
**Sigma-**  
**Sigma/c**  
**\*Sigma/c\*(2600)** (postulated particle,  
Sigma/c\*(2600))  
**Sigma0**  
**silicon**  
**silver**  
**\*SIN Cycl** (at Villigen; meson factory; 0.6  
GeV protons)  
**\*sine-Gordon** (field equations,  
sine-Gordon)  
**-single particle** (see 'one-particle'; also  
'inclusive reaction')  
**-single-loop approximation** (Feynman  
graph, higher-order)  
**\*sinh-Gordon** (field equations,  
sinh-Gordon)  
**\*six-dimensional** (e.g. 'field theory,  
six-dimensional')  
**-skeleton** (Feynman graph)  
**\*Skyrme** (e.g. 'model, Skyrme', 'particle,  
Skyrme')  
**-Skyrmion** (particle, Skyrme)  
**\*SL(2,C)** (e.g. 'symmetry, SL(2,C)')  
**\*SL(2,R)** (e.g. 'symmetry, SL(2,R)')  
**\*SL(4,R)** (e.g. 'symmetry, SL(4,R)')  
**\*SL(N,C)** (e.g. 'symmetry, SL(N,C)')  
**\*SL(N,R)** (e.g. 'symmetry, SL(N,R)')  
**\*SLAC Linac** (at Stanford; 25 GeV electrons)  
**\*SLAC PEP Stor** (at Stanford; 29 GeV-cms  
e+e-)  
**\*SLAC SLC Linac** (at Stanford; 100 GeV-cms  
e+e-, linear collider)  
**\*SLAC SPEAR Stor** (at Stanford; 8 GeV-cms  
e+e-)

**\*Slavnov identity** (gauge field theory,  
Slavnov identity)  
**-Slavnov-Taylor identity** (gauge field  
theory, Slavnov identity)  
**-SLC** (SLAC SLC Linac)  
**\*SLD** (at SLC; 'magnetic detector, SLD')  
**\*slepton** (postulated particle, slepton)  
**\*slope**  
**\*small-angle**  
**\*smuon** (postulated particle, smuon)  
**\*sneutrino** (postulated particle, sneutrino)  
**\*SO(10)** (e.g. 'symmetry, SO(10)')  
**\*SO(14)** (e.g. 'symmetry, SO(14)')  
**\*SO(18)** (e.g. 'symmetry, SO(18)')  
**\*SO(2)** (e.g. 'symmetry, SO(2)')  
**\*SO(3)** (e.g. 'symmetry, SO(3)')  
**\*SO(3,2)** (e.g. 'symmetry, SO(3,2)')  
**\*SO(32)** (e.g. 'symmetry, SO(32)')  
**\*SO(4)** (e.g. 'symmetry, SO(4)')  
**\*SO(5)** (e.g. 'symmetry, SO(5)')  
**\*SO(7)** (e.g. 'symmetry, SO(7)')  
**\*SO(8)** (e.g. 'symmetry, SO(8)')  
**\*SO(N)** (e.g. 'symmetry, SO(N)')  
**\*SO(N,M)** (e.g. 'symmetry, SO(N,M)')  
**sodium**  
**\*sodium-iodide** (e.g. 'scintillation counter,  
sodium-iodide')  
**-soft photon** (radiative correction)  
**-soft pions** ('current algebra, effective  
Lagrangians' or 'model, PCAC')  
**-software** (programming)  
**\*solar**  
**\*solenoid** (magnet, solenoid)  
**solid-state counter** (see also  
'semiconductor detector')  
**solids**  
**\*soliton** (field equations, soliton)  
**\*solution** (e.g. 'field equations, solution')  
**-Sommerfeld-Watson transformation**  
(Regge poles)  
**-source** ('field theory' or 'particle source')  
**-source algebra** (current algebra)  
**\*Sp(N)** (e.g. 'symmetry, Sp(N)')  
**\*space**  
**\*space charge** (for accelerators only)  
**\*space-time** (field theory, space-time)  
**-spallation** (fission)  
**spark chamber**  
**\*sparticle** (postulated particle, sparticle)  
**\*spatial distribution** ('cosmic radiation,  
spatial distribution', or 'showers,  
spatial distribution')  
**\*spatial resolution** (e.g. 'drift chamber,  
spatial resolution')  
**-SPEAR** (SLAC SPEAR Stor)  
**\*special focusing** ('quadrupole lens, special  
focusing'; see also 'beam focusing')  
**\*spectator** ('model, spectator', possibly  
also 'deuteron, model')  
**spectra**  
**-spectral function** ('spectral  
representation' or 'Mandelstam  
representation')  
**spectral representation**

- spectrometer** (restricted use)  
 -spectroscopy (if possible, use 'hadron spectroscopy')  
 \*sphericity ('jet, sphericity'; see also 'event shape analysis')  
**spin**  
 -spin flip (amplitude analysis)  
 \*Spin(N) (e.g. 'symmetry, Spin(N)')  
 -spin-orbit ('spin, orbit' or 'fine structure')  
 -spin-parity analysis (partial wave analysis)  
 -spin-spin correlation (spin, correlation)  
 -spin-spin interaction (hyperfine structure)  
 \*spinless ((restricted use), not used for bosons)  
**spinor**  
 -spinor field theory (field theory, spinor)  
 \*Split-Field (at CERN Stor; 'magnetic detector, Split-Field')  
 -splitting (mass difference)  
 \*spontaneous compactification (e.g. 'field theory, spontaneous compactification')  
 \*spontaneously broken (symmetry, spontaneously broken)  
 \*squark (postulated particle, squark)  
 -SQUID (superconducting, interference)  
 \*SSC Coll (proposed; 40000 GeV-cms protons)  
 \*stability (see also 'beam instability')  
 \*stacking (injection, stacking)  
 -static model (model, Chew-Low)  
 -stationary phase (mathematical methods, path integral)  
 \*statistical  
**statistical analysis**  
**statistical mechanics**  
 -statistical tensor (spin, density matrix)  
 statistics (e.g. 'statistics, parastatistics', 'spin, statistics'; if appropriate use 'statistical analysis')  
 -status report (activity report)  
 -steel (use 'iron')  
 \*stochastic  
 \*stochastic cooling (beam cooling, stochastic cooling)  
**storage ring** (for accelerator aspects only; for experimental results use 'colliding beams')  
 -strange baryon (hyperon)  
**strange meson**  
**strange particle**  
 \*strangeness ('quark, strangeness' or 'quarkonium, strangeness')  
 -straton (quark)  
**streamer chamber**  
 -streamer tube (streamer chamber, drift tube)  
 -stress-energy (see 'energy-momentum')  
 -stretcher (pulse stretcher)  
 \*string (model, string)  
 \*string tension (lattice field theory, string tension)  
 \*strong coupling ('model, strong coupling' or 'expansion, strong coupling')
- strong interaction**  
**strontium**  
**structure function**  
 \*SU(1,1) (e.g. 'symmetry, SU(1,1)')  
 \*SU(10) (e.g. 'symmetry, SU(10)')  
 \*SU(16) (e.g. 'symmetry, SU(16)')  
 \*SU(2) (e.g. 'symmetry, SU(2)')  
 \*SU(2) x SU(2) (e.g. 'symmetry, SU(2) x SU(2)')  
 \*SU(2) x SU(2) x U(1) (e.g. 'symmetry, SU(2) x SU(2) x U(1)')  
 \*SU(2) x U(1) (e.g. 'symmetry, SU(2) x U(1)')  
 \*SU(2) x U(1) x U(1) (e.g. 'symmetry, SU(2) x U(1) x U(1)')  
 \*SU(2,2) (e.g. 'symmetry, SU(2,2)')  
 \*SU(3) (e.g. 'symmetry, SU(3)')  
 \*SU(3) x SU(2) x SU(2) x U(1) (e.g. 'symmetry, SU(3) x SU(2) x SU(2) x U(1)')  
 \*SU(3) x SU(2) x U(1) (e.g. 'symmetry, SU(3) x SU(2) x U(1)')  
 \*SU(3) x SU(2) x U(1) x U(1) (e.g. 'symmetry, SU(3) x SU(2) x U(1) x U(1)')  
 \*SU(3) x SU(3) (e.g. 'symmetry, SU(3) x SU(3)')  
 \*SU(3) x U(1) (e.g. 'symmetry, SU(3) x U(1)')  
 \*SU(4) (e.g. 'symmetry, SU(4)')  
 \*SU(4) x SU(2) x SU(2) (e.g. 'symmetry, SU(4) x SU(2) x SU(2)')  
 \*SU(4) x SU(4) (e.g. 'symmetry, SU(4) x SU(4)')  
 \*SU(5) (e.g. 'symmetry, SU(5)')  
 \*SU(6) (e.g. 'symmetry, SU(6)')  
 \*SU(7) (e.g. 'symmetry, SU(7)')  
 \*SU(8) (e.g. 'symmetry, SU(8)')  
 \*SU(9) (e.g. 'symmetry, SU(9)')  
 \*SU(N) (e.g. 'symmetry, SU(N)')  
 \*SU(N) x SU(N) (e.g. 'symmetry, SU(N) x SU(N)')  
 \*SU(N,1) (e.g. 'symmetry, SU(N,1)')  
 -substructure (see 'composite')  
**sulfur**  
**sum rule**  
**superconducting**  
 \*superfield (supersymmetry, superfield)  
**superfragment** (charmed or beautiful nucleus)  
**supergravity**  
 -supermultiplet ('multiplet' and 'supersymmetry')  
 \*superselection rule (sum rule, superselection rule)  
**supersymmetry**  
 \*superweak interaction (weak interaction, superweak interaction)  
 \*surface (e.g. 'forces, surface', 'electromagnetic field, surface')  
 -SVZ (quantum chromodynamics, sum rule)  
**symmetry**  
**symmetry breaking**  
**synchro-cyclotron**  
 -synchrophasotron ('synchrotron' or 'proton synchrotron' or 'electron synchrotron')

**synchrotron** (see also 'electron  
synchrotron', 'proton synchrotron')

**synchrotron oscillation**  
**synchrotron radiation**

- T-invariance (invariance, time reversal)
- T-matrix (S-matrix)
- \*T0 (css - baryon, mass 2740; 'postulated particle, T0')
- \*tables
- \*tachyon (postulated particle, tachyon)
- \*tadpole (Feynman graph, tadpole)
- \*tagged beam ('photon, tagged beam' or 'electron, tagged beam')
- tagged quark flavor (particle identification, flavor)
- \*talk
- tantalum
- target
- target polarization (Use 'target, polarization' for measurement of polarization degree. See also 'polarized target'.)
- \*TASSO (at PETRA; 'magnetic detector, TASSO')
- tau
- tau+
- tau-
- TCP (see 'CPT')
- TDC (time-to-digital converter)
- technetium
- \*technicolor ('model, technicolor' or 'particle, technicolor')
- \*technipion (postulated particle, technipion)
- technology (use more specific keyword)
- telescope (use more specific keyword)
- tellurium
- temperature
- \*temporal gauge (gauge field theory, temporal gauge)
- \*ten-dimensional (field theory, ten-dimensional)
- \*tensor (restricted use)
- tensor calculus (mathematical methods, tensor)
- tensor meson
- tensor meson dominance (model, meson dominance)
- terbium
- TEVATRON ('Batavia TEVATRON PS' or 'Batavia TEVATRON Coll')
- thallium
- theory of elementary particles (particle physics)
- \*thermodynamical (model, thermodynamical)
- thermodynamics
- thesis (including masters' theses)
- Theta(1690)
- \*Thirring (field theoretical model, Thirring)
- thorium
- three-body problem
- \*three-dimensional (e.g. 'field theory, three-dimensional')
- three-point function (vertex function)
- threshold
- \*thrust ('jet, thrust'; see also 'event shape analysis')
- thulium
- time
- \*time delay (for instrumental papers)
- \*time dependence
- \*time projection ('proportional chamber, time projection' or 'drift chamber, time projection')
- \*time resolution (e.g. 'spectrometer, time resolution')
- \*time reversal ('invariance, time reversal' or 'violation, time reversal')
- \*time variation (only used for cosmic radiation or fundamental constants)
- \*time-of-flight (fast logic, time-of-flight)
- time-to-digital converter
- time-to-pulse-height converter (fast logic)
- tin
- titanium
- \*Toda (lattice, Toda)
- \*Tokyo ES (1.3 GeV electrons)
- top (quark, truth)
- \*TOPAZ (at TRISTAN; 'magnetic detector, TOPAZ')
- \*topological (charge, topological)
- topological cross section (channel cross section)
- topological expansion (expansion, topological)
- \*torsion
- total cross section (see also 'channel cross section')
- total hadronic cross section (for e+e- annihilation use 'cross section, hadronic')
- total-absorption counter
- \*TPC (at PEP; 'magnetic detector, TPC'. For time-to-pulse-height converter use 'fast logic'. for time projection chamber see 'time projection')
- track data analysis
- track following (track data analysis)
- track measuring (use 'track data analysis, on-line' or 'track data analysis, off-line')
- track photography
- \*track sensitive (only used for tracks visualized in matter, e.g. 'plastics, track sensitive')
- tracks
- trajectory ('Regge poles'; for particle trajectory, see 'tracks')
- \*transfer matrix
- transformation
- \*transition
- \*transition radiation (e.g. 'counters and detectors, transition radiation'; not used for radiative decay)
- transmission (absorption)
- \*transuranium (elements, transuranium)
- \*transverse
- transverse beam oscillation (betatron oscillation)
- transverse energy
- transverse momentum

- \*tree (approximation, tree)
- Treiman-Yang test (decay, angular distribution)
- triangle anomaly (current algebra, anomaly)
- triangle graph (Feynman graph)
- trigger
- triple-pomeron coupling (coupling, pomeron)
- triple-Regge (see 'multi-Regge' or 'triple-Regge limit')
- \*triple-Regge limit (inclusive reaction, triple-Regge limit)
- \*triplet (quark, triplet)
- TRISTAN (KEK TRISTAN Stor)
- tritium
- \*TRIUMF Cycl (at Vancouver; meson factory; 0.5 GeV protons)
- \*truth ('quark, truth' or 'quarkonium, truth'; also 'search for, truth')
- truthful baryon

- truthful meson
- truthful particle (for hidden truth use 'quarkonium, truth')
- Tsukuba (see 'KEK ...')
- \*tumbling
- tungsten
- \*tunneling (effect, tunneling)
- \*twistor (e.g. 'mathematical methods, twistor')
- \*two-beam (e.g. 'accelerator, two-beam'; see also 'scattering, beam-beam')
- two-body (see 'two-particle')
- \*two-dimensional (e.g. 'field theory, two-dimensional')
- \*Two-Gamma (at PEP; 'magnetic detector, Two-Gamma')
- two-loop (Feynman graph, higher-order)
- \*two-particle (exchange, two-particle)
- \*two-photon (exchange, two-photon)
- \*two-pion (exchange, two-pion)
- two-point function

\*U(1) (e.g. 'symmetry, U(1)')  
 \*U(1) problem (field theory, U(1) problem)  
 \*U(1) x U(1) (e.g. 'symmetry, U(1) x U(1)')  
 \*U(2) (e.g. 'symmetry, U(2)')  
 \*U(3) (e.g. 'symmetry, U(3)')  
 \*U(3) x U(3) (e.g. 'symmetry, U(3) x U(3)')  
 \*U(6) (e.g. 'symmetry, U(6)')  
 \*U(N) (e.g. 'symmetry, U(N)')  
 \*U(N) x U(N) (e.g. 'symmetry, U(N) x U(N)')  
 \*UA1 (at CERN SPS Coll; 'magnetic detector, UA1')  
 \*UA2 (at CERN SPS Coll; 'magnetic detector, UA2')  
 \*UA4 (at CERN SPS Coll; 'forward spectrometer, UA4')  
 \*UA5 (at CERN SPS Coll; 'four-pi-detector, UA5')  
 -ultraviolet divergence (renormalization)  
 \*uncertainty relations  
 -underground (deep underground)

\*undulator (radiation, undulator)  
 unified field theory (kinds of interaction which are unified are added; see also 'grand unified theory')  
 unitarity (restricted use)  
 universality  
 -UNK (Serpukhov UNK Stor)  
 \*up (quark, up)  
 \*upper limit (e.g. 'branching ratio, upper limit')  
**upsilon mesons**  
 Upsilon(10020) (2S state)  
 Upsilon(10350) (3S state)  
 Upsilon(10570) (4S state)  
 Upsilon(10870) (5S state)  
 Upsilon(11020) (6S state)  
 Upsilon(9460) (1S state)  
 uranium  
 \*USp(N) (e.g. 'symmetry, USp(N)')

- V-A theory (model, weak interaction)
- vacuum chamber (vacuum system)
- \*vacuum polarization (e.g. 'field theory, vacuum polarization')
- \*vacuum state (e.g. 'field theory, vacuum state')
- vacuum system
- \*valence (quark, valence)
- \*validity test (restricted use for general tests but not for interpretations; e.g. 'quantum electrodynamics, validity test')
- \*van der Waals (forces, van der Waals)
- vanadium
- \*variational ('mathematical methods, variational' or 'numerical calculations, variational')
- \*vector
- vector boson (see 'intermediate boson' or 'vector meson' or 'gauge boson')
- \*vector dominance (model, vector dominance)
- vector meson
- velocity
- \*Veneziano (model, Veneziano)
- \*VENUS (at TRISTAN; 'magnetic detector, VENUS')
- VEPP-2 (Novosibirsk Stor2)
- VEPP-3 (Novosibirsk Stor3)
- VEPP-4 (Novosibirsk Stor4)
- \*vertex (only for instruments and track data analysis)
- vertex function
- veto (use e.g. 'final state, (Olepton)')
- Villigen (SIN Cycl)
- violation
- \*Virasoro (e.g. 'algebra, Virasoro')
- virtual (not used)
- \*von Neumann (algebra, von Neumann)
- \*vortex (e.g. 'field theory, vortex')



- W**  
**W+**  
**W-**  
 \*wake field (e.g. 'electromagnetic field, wake field')  
 -wake field transformer (transformation, wake field)  
 \*Ward identity (e.g. 'field theory, Ward identity')  
 \*Ward-Takahashi identity (e.g. 'quantum electrodynamics, Ward-Takahashi identity')  
 \*water  
 -wave equation (quantum mechanics)  
 \*wave function (very restricted use; e.g. 'deuteron, wave function')  
 -wave packet (quantum mechanics)  
 -waveguide ('RF system' or 'linear accelerator' or 'microwaves')  
 \*weak coupling (e.g. 'expansion, weak coupling')  
 -weak current ('charged current' or 'neutral current')  
 weak interaction  
 \*Weinberg angle (electroweak interaction, Weinberg angle)  
 -Weizsaecker-Williams (approximation, equivalent photon)  
 \*Wess-Zumino (field theoretical model, Wess-Zumino)  
 \*Wess-Zumino term (field theory, Wess-Zumino term)  
 \*Weyl (algebra, Weyl)  
 \*wide-angle ('spectrometer, wide-angle' or, e.g., 'scattering, wide-angle')  
 \*width (used for resonances or enhancements; see also 'dispersion', 'diffusion' or 'beam profile')  
 \*wiggler (magnet, wiggler)  
 -Wightman fields (axiomatic field theory)  
 -Wilson expansion (field theory, operator product expansion)  
 \*Wilson loop (gauge field theory, Wilson loop)  
 \*Wino (postulated particle, Wino)  
 \*wire ('spark chamber, wire' or 'superconducting, wire')  
 \*Witten index (e.g. 'supersymmetry, Witten index')  
 \*WKB (approximation, WKB)  
 -Woods-Saxon ('potential' or 'potential scattering')

## X

\*X(1900-3600) (postulated particle,  
X(1900-3600))

\*x-dependence (use more specific term if  
possible)

xenon

Xi

Xi(1530) (partial wave P13)

\*Xi(1630) (postulated particle, Xi(1630))

\*Xi(1680) (postulated particle, Xi(1680))

Xi(1820)

\*Xi(1940) (postulated particle, Xi(1940))  
Xi(2030)

\*Xi(2120) (postulated particle, Xi(2120))

\*xi(2220) (postulated particle, xi(2220))

\*Xi(2250) (postulated particle, Xi(2250))

\*Xi(2370) (postulated particle, Xi(2370))

\*Xi(2500) (postulated particle, Xi(2500))

Xi-

Xi0

\*XY (field theoretical model, XY)

## Y

-Y\* (baryon resonance, hyperon)

\*y-dependence (use more specific term if  
possible)

\*Yang-Mills (gauge field theory, Yang-Mills)

yield (usually with particles in  
parentheses)

ytterbium

yttrium

\*Yukawa (potential, Yukawa)

## Z

\*Z(2) (e.g. 'symmetry, Z(2)')

\*Z(3) (e.g. 'symmetry, Z(3)')

\*Z(4) (e.g. 'symmetry, Z(4)')

\*Z(N) (e.g. 'symmetry, Z(N)')

Z0

\*Z0(1780) (partial wave P01; 'postulated  
particle, Z0(1780)')

\*Z0(1865) (partial wave D03; 'postulated  
particle, Z0(1865)')

\*Z1(1725) (partial wave P11; 'postulated  
particle, Z1(1725)')

\*Z1(1900) (partial wave P13; 'postulated  
particle, Z1(1900)')

\*Z1(2150) (postulated particle, Z1(2150))

\*Z1(2500) (postulated particle, Z1(2500))

\*ZEUS (at HERA; 'magnetic detector, ZEUS')

-ZGS (Argonne PS)

zinc

\*Zino (postulated particle, Zino)

zirconium

-Zweig rule (selection rule,

Iizuka-Okubo-Zweig)