

Internal Report  
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THE HIGH ENERGY PHYSICS INDEX KEYWORDS 1984

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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.

<u>PARTICLES</u>		<u>(meson resonances)</u>	<u>(baryon resonances)</u>
	<b>B</b>		
<u>photon</u>	B <sup>+</sup>	rho(770)	N(1440)
	B <sup>-</sup>	rho(770) <sup>+</sup>	N(1520)
	B <sup>0</sup>	rho(770) <sup>-</sup>	N(1535)
<u>(leptons)</u>	anti-B	rho(770) <sup>0</sup>	N(1650)
	anti-B <sup>0</sup>	omega(783)	N(1675)
neutrino		eta(958)	N(1680)
neutrino/e	<u>(weak bosons)</u>	S*(975)	N(1700)
neutrino/mu		delta(980)	N(1710)
neutrino/tau	<b>W</b>	Phi(1020)	N(1720)
neutrino/L	W <sup>+</sup>	H(1190)	N(1990)
antineutrino	W <sup>-</sup>	A1(1270)	N(2190)
antineutrino/e		epsilon(1300)	N(2200)
antineutrino/mu	Z <sup>0</sup>	B(1235)	N(2220)
antineutrino/tau		f(1270)	N(2250)
antineutrino/L	<u>(nucleons)</u>	D(1285)	N(2600)
electron		pi(1300)	N(3030)
positron	<b>P</b>	A2(1320)	
muon	anti-p	E(1420)	Delta(1232)
muon <sup>+</sup>	n	f(1515)	Delta(1232) <sup>+</sup>
muon <sup>-</sup>	anti-n	rho(1600)	Delta(1232) <sup>++</sup>
tau		omega(1670)	Delta(1232) <sup>-</sup>
tau <sup>+</sup>	<u>(hyperons)</u>	A3(1680)	Delta(1232) <sup>0</sup>
tau <sup>-</sup>		Phi(1680)	Delta(1600)
	<b>Lambda</b>	g(1690)	Delta(1620)
<u>(mesons)</u>	Antilambda	h(2040)	Delta(1700)
			Delta(1900)
pi	<b>Sigma</b>	K*(892)	Delta(1905)
pi <sup>+</sup>	Sigma <sup>+</sup>	Q1(1280)	Delta(1910)
pi <sup>-</sup>	Sigma <sup>-</sup>	kappa(1350)	Delta(1920)
pi <sup>0</sup>	Sigma <sup>0</sup>	Q2(1400)	Delta(1930)
eta	Antisigma	K*(1430)	Delta(1950)
	Antisigma <sup>+</sup>	L(1770)	Delta(2160)
	Antisigma <sup>-</sup>	K*(1780)	Delta(2420)
	Antisigma <sup>0</sup>		Delta(2850)
K		D*(2010)	Delta(3230)
K <sup>+</sup>	<b>Xi</b>	eta/c(2980)	
K <sup>-</sup>	Xi <sup>-</sup>		Lambda(1405)
K <sup>0</sup>	Xi <sup>0</sup>	psi mesons	Lambda(1520)
K <sup>0</sup> (L)	Antixi	J/psi(3100)	Lambda(1600)
K <sup>0</sup> (S)	Antixi <sup>-</sup>	chi(3415)	Lambda(1670)
anti-K	Antixi <sup>0</sup>	chi/PC(3510)	Lambda(1690)
anti-K <sup>0</sup>		chi(3555)	Lambda(1800)
	<b>Omega<sup>-</sup></b>	psi(3685)	Lambda(1820)
	Antiomega <sup>-</sup>	psi(3770)	Lambda(1830)
D		psi(4030)	Lambda(1890)
D <sup>+</sup>	<u>(charmed baryons)</u>	psi(4160)	Lambda(2100)
D <sup>-</sup>		psi(4415)	Lambda(2110)
D <sup>0</sup>			Lambda(2350)
anti-D		upsilon mesons	Lambda(2585)
anti-D <sup>0</sup>		Upsilon(9460)	
	<b>Lambda/c<sup>+</sup></b>	Upsilon(10020)	Sigma(1385)
F	Antilambda/c <sup>+</sup>	Upsilon(10350)	Sigma(1660)
F <sup>+</sup>	<b>Sigma/c(2430)</b>	Upsilon(10570)	Sigma(1670)
F <sup>-</sup>			Sigma(1750)

Sigma(1775)	strange particle	muon number
Sigma(1915)	hyperon	strangeness
Sigma(1940)	strange meson	spin
Sigma(2030)		helicity
Sigma(2250)	charmed particle	polarization
Sigma(2455)	charmed meson	
Sigma(2620)	charmed baryon	
Xi(1530)	beautiful particle	<i>INTERACTIONS</i>
Xi(1820)	beautiful meson	
Xi(2030)	beautiful baryon	
		<u>gravitation</u>
<u>(dibaryon resonances)</u>	truthful particle	gravitational radiation
	truthful meson	
	truthful baryon	
N N(2170)	colored particle	<u>weak interaction</u>
N N(2250)		
Lambda N(2130)	quark	charged current
	antiquark	neutral current
	gluon	
<u>(other keywords)</u>	glueball	<u>electromagnetic interaction</u>
particle	nucleus	bremsstrahlung
antiparticle	light nucleus	Compton scattering
charged particle	deuteron	hyperfine structure
negative particle	deuteron	ionization
positive particle	tritium	photoelectron
neutral particle	excited nucleus	radiative correction
new particle	hyperfragment	
postulated particle	superfragment	
mass enhancement	nuclide	<u>electroweak interaction</u>
search for		
scalar particle	atom	
	ion	<u>strong interaction</u>
fermion	muonium	charge exchange
antifermion	positronium	
boson	<i>(for two-particle combinations</i>	
intermediate boson	<i>see alphabetical list)</i>	<u>(other keywords)</u>
lepton		absorption
antilepton		backscatter
heavy lepton	<i>PARTICLE PROPERTIES</i>	capture
hadron	charge	decay
meson	electric moment	diffraction
meson resonance	isospin	diffusion
axial-vector meson	magnetic moment	emission
pseudoscalar meson	mass	exchange
scalar meson	mass difference	final-state interaction
tensor meson	mass ratio	fragmentation function
vector meson	parity	inclusive reaction
baryonium	quantum number	multiple production
baryon	B-L number	multiplicity
antibaryon	baryon number	multiple scattering
nucleon	electron number	potential scattering
antinucleon	fermion number	production
nucleon resonance	lepton number	recoil
baryon resonance		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)

aberration  
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  
  orbit  
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

colliding beam detector  
four-pi-detector  
magnetic detector  
spectrometer  
  forward spectrometer  
  magnetic spectrometer  
calorimeter  
  shower detector  
  total-absorption counter  
hodoscope  
  
Cherenkov counter  
ionization chamber  
scintillation counter  
semiconductor detector  
solid-state counter

(electronics and computers)

analog-to-digital converter  
CAMAC system  
computer  
digital logic  
electronics  
fast logic  
FASTBUS system  
interface  
microprocessor  
preprocessing  
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  
coil  
control system  
data acquisition  
feedback  
magnet  
  bending magnet  
  pulsed magnet

quadrupole lens  
measurement  
monitoring  
power supply  
RF system  
  microwaves  
superconducting  
target  
vacuum system

*THEORY OF PARTICLES  
AND FIELDS*

field theory

axiomatic field theory  
dual field theory  
gauge field theory  
grand unified theory  
lattice field theory  
quantum chromodynamics  
quantum electrodynamics  
quantum flavordynamics  
quantum gravity  
Reggeon field theory  
unified field theory

Bethe-Salpeter equation  
expansion  
  expansion 1/d  
  expansion 1/N  
Feynman graph  
field equations  
field theoretical model  
gauge boson  
light cone behavior  
propagator  
quantization  
renormalization  
  renormalization group  
scaling  
supersymmetry  
supergravity

particle physics

bootstrap  
current algebra  
dispersion relations  
duality  
model  
Regge poles  
  Regge cut  
  pomeron  
spectral representation  
  Mandelstam representation  
symmetry  
  hadron spectroscopy  
  mass formula

multiplet  
symmetry breaking  
unitarity

(other keywords)

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

*NUCLEAR PHYSICS*

charge distribution  
nuclear force  
nuclear matter  
nuclear model  
nuclear physics  
nuclear properties  
nuclear reaction  
  fission  
    electrofission  
    photofission  
  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  
current  
density  
dependence  
effect  
electromagnetic field  
  electric field  
  magnetic field  
energy  
energy levels  
energy loss  
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  
velocity

*OTHER FIELDS*

(mathematics)

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

(engineering)

buildings  
communications  
electrical engineering  
heat engineering  
  low temperature  
mechanical engineering  
power engineering  
safety  
  health physics  
  dosimetry  
  radiation protection  
  shielding

molecular biology

nuclear medicine

*MATERIALS*

*(for elements see  
alphabetical list)*

alloy  
ceramics  
compounds  
  inorganic compounds  
  organic compounds  
concrete  
crystal  
elements  
gas  
glass  
liquid  
metal  
mineral  
plastics  
semiconductor  
solids  
water

*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 1984*

The terms in this keyword list are used by the DESY Documentation Service for the indexing of papers on high energy (beam energy above 100 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 100 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 spectrum, momentum spectrum, vertex function

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)  
final state, (n p 0lepton)  
bound state, (nucleon 2pi)  
mass spectrum, (pi<sup>+</sup> pi<sup>-</sup> pi<sup>0</sup>)

#### 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; 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.	....

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/nucleon  
 < 45 GeV-cms, 2-5 degrees, ((3)), ((4))  
 approx. 200 GeV/c,  $0.5 < |t| < 2.5 \text{ (GeV/c)**2}$ , ((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 . ( + \* ) ; - / < > , : ' aA . . . zZ 0 . . . 9



- Abelian field theory (field theory)
- aberration**
- absorption**
- absorptive correction ('correction, absorption'; used only for experimental correction)
- absorptive model (model, absorption)
- 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)
- \*Adler (sum rule, Adler)
- Adler condition ('model, PCAC' and 'current algebra')
- 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)
- \*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. 'RF system, amplifier')
- amplitude analysis**
- 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-K0 deuteron**
- anti-K0 light nucleus**
- anti-K0 n**
- anti-K0 nucleon**
- anti-K0 nucleus**
- anti-K0 p**
- anti-n**
- anti-n deuteron**
- anti-n light nucleus**
- \*anti-N N(1400-3600) (postulated particle, anti-N N(1400-3600))
- 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**
- Antilambda**
- \*Antilambda/b0 (postulated particle, Antilambda/b0)
- Antilambda/c+**
- antilepton**
- antimatter**
- antimony**
- antineutrino**
- antineutrino antineutrino**
- antineutrino baryon**
- antineutrino deuteron**
- antineutrino electron**
- antineutrino light nucleus**
- antineutrino meson**
- antineutrino muon**
- 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 deuteron**
- antinucleon light nucleus**
- 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)  
 approximation  
 -Argand plot (partial wave analysis)  
 argon  
 \*Argonne PS  
 \*ARGUS (at DESY DORIS II Stor; '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)  
 A1(1270)  
 A2(1320)  
 A3(1680)

- B**  
**B anti-B**  
**B(1235)**  
**B+**  
**B-**  
**B-L number**  
**background**  
 \*background field (e.g. 'field theory, background field')  
 \*background gauge (gauge field theory, background gauge)  
 -background radiation (radiation, background)  
**backscatter**  
 -backward scattering ('backscatter' or 'scattering, wide-angle')  
 \*Baecklund (transformation, Baecklund)  
 \*bag (model, bag)  
**barium**  
**baryon**  
**baryon antibaryon**  
**baryon baryon**  
**baryon deuteron**  
**baryon light nucleus**  
**baryon nucleon**  
**baryon nucleus**  
**baryon number**  
**baryon quark**  
**baryon resonance**  
**baryon vector meson**  
 -baryon-to-entropy ratio (baryon, asymmetry)  
 -baryonic number (baryon number)  
**baryonium**  
 \*Batavia PS  
 \*Batavia TEVATRON PS  
**beam**  
 -beam blowup (beam instability)  
 -beam calibration (beam monitoring)  
 -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** (see also '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 transport**  
 \*beam-beam (scattering, beam-beam)  
**beautiful baryon**  
 -beautiful hadron (use 'beautiful meson' or 'beautiful baryon')  
**beautiful meson**  
**beautiful particle**  
 \*beautionium (quark, beautionium)  
 \*beauty (quark, beauty)  
 \*Becchi-Rouet-Stora (transformation, Becchi-Rouet-Stora)  
 -Beijing Stor (Peking Stor)  
**bending magnet**  
 \*Berkeley Bevalac  
 \*Berkeley Cycl  
 \*Berkeley PS  
**berkelium**  
 \*Berlin BESSY Stor  
**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)  
 -Bhabha scattering (electron positron, elastic scattering)  
 \*Bianchi identity (field theory, Bianchi identity)  
**bibliography**  
**binding energy**  
 -biology (molecular biology)  
**bismuth**  
 \*Bjorken (scaling, Bjorken)  
 \*Bjorken limit (high energy behavior, Bjorken limit)  
 -Bjorken model (high energy behavior, Bjorken limit)  
 -Bjorken-Johnson-Low (high energy behavior, Bjorken limit)  
 -black hole (gravitation)  
 \*Bloom-Gilman ('sum rule, Bloom-Gilman' or 'duality, Bloom-Gilman')  
 -Blumlein line ('power supply' and 'streamer chamber')  
 \*Bonn ELSA Stor  
 \*Bonn ES  
**book**  
 \*booster  
**bootstrap**  
 \*Borel ('transformation, Borel'; see also 'transformation, asymptotic expansion')  
 \*Born (approximation, Born)  
**boron**  
 -Bose statistics (boson, statistics)  
**boson**  
**boson boson**  
 -bottom (quark, beauty)

-bound (see 'upper limit' or 'lower limit')  
bound state  
\*boundary condition  
-BPHZ (renormalization, regularization)  
\*branching ratio  
-breakup (fission)  
\*Breit-Wigner (model, Breit-Wigner)  
bremsstrahlung  
-broken symmetry ('symmetry breaking'  
or 'symmetry, spontaneously broken'  
or 'symmetry, dynamically broken')  
bromine  
\*Brookhaven CBA Stor  
\*Brookhaven ISABELLE Stor

\*Brookhaven Linac  
\*Brookhaven PS  
-BRS (transformation,  
Becchi-Rouet-Stora)  
bubble chamber  
bubble chamber(deuterium)  
bubble chamber(heavy liquid)  
-bubble chamber(helium) (use 'bubble  
chamber' and 'helium')  
bubble chamber(hydrogen)  
buildings  
bunching  
B0  
B0 anti-B0

- 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 (current algebra, Callan-Treiman relation)
- calorimeter (use more specific term if possible)
- \*Caltech ES
- CAMAC system
- \*Cambridge ES
- capture
- CAR ('algebra, commutation relations' (restricted use))
- carbon
- \*cascade ('model, cascade' or 'nucleus, cascade'; see also 'showers' and 'cascade decay')
- \*cascade decay
- cascade evaporation model (model, cascade)
- \*Casimir (e.g. 'effect, Casimir' or 'energy, Casimir')
- \*causality (e.g. 'field theory, causality')
- cavity (RF system)
- CCR ('algebra, commutation relations' (restricted use))
- \*CELLO (at PETRA; 'magnetic detector, CELLO')
- \*centauro
- \*central charge (e.g. 'supersymmetry, central charge')
- \*central region (inclusive reaction, central region)
- ceramics
- cerium
- \*CERN Cycl
- \*CERN LEAR
- \*CERN LEP Stor
- \*CERN Muon Stor
- \*CERN SPS
- \*CERN SPS Coll (p anti-p collider, 540 GeV-cms)
- \*CERN Stor (ISR)
- \*CERN1 PS
- cesium
- CESR (Cornell CESR Stor)
- channel (not used)
- channel cross section (used for the integrated differential cross section of a channel)
- \*channeling (e.g. 'crystal, channeling')
- charge
- \*charge conjugation ('invariance, charge conjugation' or 'violation, charge conjugation' or 'quantum number, charge conjugation')
- \*charge correlation (jet, charge correlation)
- charge distribution (see also 'form factor')
- charge exchange
- charged current
- charged particle
- \*charm (quark, charm)
- \*charm changing (current, charm changing)
- charmed baryon
- charmed hadron (use 'charmed meson' or 'charmed baryon' or 'charmed particle')
- charmed meson
- charmed particle
- \*charmonium (quark, charmonium)
- chemicals (use e.g. 'elements', 'compounds')
- chemistry
- \*Cherenkov (radiation, Cherenkov)
- Cherenkov counter
- Chew-Frautschi plot (Regge poles)
- \*Chew-Low (model, Chew-Low)
- chi(3415)
- chi(3510) (chi/PC(3510))
- chi(3555)
- \*chi/b (postulated particle, chi/b)
- chi/PC(3510)
- \*Chicago Cycl
- Chilton PS (NIMROD PS)
- \*chiral (generally 'symmetry, chiral')
- chlorine
- \*Chou-Yang (model, Chou-Yang)
- \*chromatic correction ('accelerator, chromatic correction' or 'beam optics, chromatic correction')
- \*chromaticity (beam, chromaticity)
- chromium
- CIM (model, constituent interchange)
- \*classical (field theory, classical)
- \*Clebsch-Gordan coefficients (group theory, Clebsch-Gordan coefficients)
- \*CLEO (at Cornell; '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 (multidimensional analysis, cluster analysis)
- cluster expansion (expansion, cluster)
- cobalt
- \*coherent interaction
- \*coherent production
- \*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; see also 'collective phenomena')
- \*collective phenomena ('field theory, collective phenomena' or 'nuclear physics, collective phenomena')
- \*collective tube (model, collective tube)
- colliding beam detector (use only in instrumental papers)
- \*colliding beams
- \*color (quark, color)
- colored particle
- communications
- \*commutation relations (e.g. 'algebra, commutation relations'; restricted use)
- commutator (commutation relations)
- \*completely integrable (e.g. 'field theory, completely integrable')
- \*composite (e.g. 'model, composite')
- compounds
- Compton scattering
- computer
- concrete
- \*condensation (e.g. 'pi, condensation' or 'n, condensation')
- conference
- \*confinement (quark, 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
- \*Cornell ES
- correction
- correlation
- correlation function
- correlation length (correlation, length)
- cosmic radiation
- cosmology (astrophysics)
- cosmological constant (astrophysics, fundamental constant)
- \*costs
- Cottingham formula (mass difference)
- \*Coulomb (e.g. 'potential, Coulomb' or 'gas, Coulomb')
- Coulomb dissociation (nuclear reaction, Coulomb scattering)
- \*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(N-1) (field theoretical model, CP(N-1))
- \*CP(1) (field theoretical model, CP(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 ('low temperature' or 'superconducting')
- crystal
- \*Crystal Ball (at DORIS II; 'four-pi-detector, Crystal Ball')
- \*cumulative production (e.g. 'hadron nucleus, cumulative production')
- curium
- current (restricted use, see also 'neutral current', 'charged current' or 'weak current')
- current algebra
- current commutators (current algebra, commutation relations)
- current conservation law (current, conservation law)
- \*current-current (e.g. 'model, current-current' or 'interference, current-current')
- current-current mixing (interference, current-current)
- \*CUSB (at Cornell CESR; 'magnetic detector, CUSB')
- \*CVC (model, CVC)
- cyclotron



- D  
 D anti-D  
 D(1285)  
 D+  
 D\*(2010)  
 D-  
 \*D/F ratio (coupling constant, D/F ratio)  
 \*Dalitz plot (multidimensional analysis, Dalitz plot)  
 \*damage (radiation, damage)  
 -damping ('energy loss' or 'beam damping')  
 -Daresbury ES (NINA ES)  
 \*DASP (at DORIS; 'magnetic detector, DASP')  
 data acquisition  
 -data analysis ('statistical analysis' or 'multidimensional analysis' or 'partial wave analysis' or 'data compilation' or 'data analysis method' or 'interpretation of experiments')  
 data analysis method (restricted use)  
 -data collection (data compilation)  
 data compilation  
 -data handling (programming)  
 -data processing ('computer' or 'programming')  
 -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)  
 -Deck model (effect, Deck)  
 \*decoupling (coupling, decoupling)  
 \*deep inelastic scattering (also 'model, deep inelastic scattering')  
 \*deep underground (counters and detectors, deep underground)  
 -deep-water (deep underground)  
 \*delay line (e.g. 'proportional chamber, delay line')  
 \*Delbrueck (scattering, Delbrueck)  
 \*DELCO (at PEP; 'magnetic detector, DELCO')  
 \*DELPHI (at LEP; 'magnetic detector, DELPHI')  
 \*Delta ('nucleon resonance, Delta' (I=3/2, mass > 1232 MeV))  
 Delta(1232) (partial wave P'31)  
 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)  
 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 P''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(2150) (partial wave S'''31; 'postulated particle, Delta(2150)')  
 Delta(2160)  
 \*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(2400) (partial wave G39 or F''37; 'postulated particle, Delta(2400)')  
 Delta(2420) (partial wave H311)  
 \*Delta(2500) (postulated particle, Delta(2500))  
 \*Delta(2750) (partial wave I313; 'postulated particle, Delta(2750)')  
 Delta(2850)  
 \*Delta(2950) (partial wave K315; 'postulated particle, Delta(2950)')  
 Delta(3230)  
 \*delta(2030) (postulated particle, delta(2030))  
 \*delta(2450) (postulated particle, delta(2450))  
 delta(980)  
 density  
 \*density matrix (generally 'spin, density matrix')  
 dependence (restricted use)  
 \*depolarization (polarization, depolarization)  
 \*DESY DORIS II Stor (at Hamburg)  
 \*DESY DORIS Stor (at Hamburg)  
 \*DESY ES (at Hamburg)  
 \*DESY HERA Stor (at Hamburg)  
 \*DESY PETRA Stor (at Hamburg)  
 -detection ('measurement' or 'particle identification' or a specific detector)  
 -detector (use more specific keyword)  
 deuterium (see also 'deuteron')  
 deuteron (see also 'deuterium')  
 deuteron deuteron  
 deuteron light nucleus  
 deuteron nucleus  
 \*dibaryon (baryon resonance, dibaryon)  
 \*difference  
 differential cross section  
 \*differential geometry (mathematical methods, differential geometry)  
 diffraction  
 -diffraction dissociation (diffraction, dissociation)  
 -diffraction scattering (diffraction)  
 -diffractive production (diffraction, production)  
 diffusion  
 digital logic ('digital logic, readout' or 'digital logic, interface')

- dilatation (symmetry, dilation)
- \*dilation (symmetry, dilation)
- \*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 particle ('fermion', see also 'field equations, Dirac' or 'magnetic monopole')
- \*Dirac-Kaehler (field equations, Dirac-Kaehler)
- \*direct production
- discharge chamber (spark chamber)
- discriminator (analog-to-digital converter)
- \*dispersion
- dispersion relations
- dispersion theory (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')
- DORIS (DESY DORIS Stor)
- DORIS II (DESY DORIS II Stor)
- dosimetry
- double absorption (use 'absorption' and 'final-state interaction')
- double capture (capture, multiple)
- double exchange ('Regge poles, multi-Regge' or 'radiative correction' or 'final-state interaction' or 'charge exchange, multiple' or 'exchange, multiple')
- double excitation (excited state)
- double pair production (multiple production, pair production)
- double peripheral (model, peripheral)
- double Regge exchange (Regge poles, multi-Regge)
- 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)
- \*Drell-Yan (model, Drell-Yan)
- \*Drell-Yan-West (model, Drell-Yan-West)
- drift chamber
- \*drift velocity (only in connection with detectors)
- \*droplet ('model, droplet' or 'experimental methods, droplet')
- dual diffraction ('diffraction' and 'duality')
- dual field theory (see also 'duality')
- dual model ('model, dual resonance' or 'duality')
- \*dual resonance (model, dual resonance)
- dual-loop model (dual field theory, higher-order)
- duality (usually without 'Regge poles')
- \*Dubna Cycl
- \*Dubna PS
- DWBA (approximation, distorted wave Born)
- \*dynamically broken ('symmetry, dynamically broken'; see also 'symmetry, spontaneously broken')
- \*dyon (field equations, dyon)
- \*Dyson-Schwinger (field equations, Dyson-Schwinger)
- dysprosium
- D0
- D0 anti-D0

## E(1420)

\*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)  
 -eigenstate (see 'energy eigenstate')  
 \*eight-dimensional (e.g. 'field theory, eight-dimensional')  
 \*eikonal ('approximation, eikonal' or 'Regge cut')  
 \*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  
 -electromagnetic mixing ('interference, electromagnetic' (restricted use))  
 electron (also used when charge is irrelevant)  
 electron baryon  
 electron boson  
 \*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 ring (accelerator, electron ring)  
 electron synchrotron  
 electronics (restricted use)  
 \*electroproduction (normally used when particles are produced by electrons or muons; for  $q^2 = 0$  see 'photoproduction')  
 \*electrostatic  
 -electrostatic separator (particle separator)  
 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 (use 'nuclear emulsion' and possibly 'total-absorption counter')  
 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)  
 -energy-range relation (energy loss)  
 \*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  
 \*eta/b (postulated particle, eta/b)  
 eta/c(2980)  
 \*eta/c(3590) (postulated particle, eta/c(3590))  
 \*eta(1275) (postulated particle, eta(1275))  
 eta  
 eta(958)  
 -ETC (model, technicolor)  
 \*Euclidean (field theory, Euclidean)  
 europium  
 -evaporation model (multiple production)  
 event shape analysis (see also 'cluster analysis')  
 \*exceptional group (for E2, E6, G2 etc.: 'gauge field theory, exceptional group')  
 exchange  
 \*exchange degeneracy (used in connection with Regge poles)

-excitation ('excited state' or 'excited nucleus')  
 excited nucleus  
 excited state  
 \*exclusive reaction  
 \*exotic ('resonance, exotic' or 'meson resonance, exotic' or 'baryon resonance, exotic' or 'atom, exotic')  
 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 meson dominance (model, f meson dominance)
- f(1270)
- f(1515)
- F
- F+
- \*F\*(2140) (postulated particle, F\*(2140))
- F-
- F/D ratio (coupling constant, D/F ratio)
- \*factorization
- Faddeev equations (many-body problem)
- fast logic (see also 'trigger')
- FASTBUS system
- feedback (used only in connection with accelerators)
- Fermi coupling (weak interaction, current-current)
- \*Fermi gas (model, Fermi gas)
- Fermi motion correction (nuclear physics, correction)
- Fermi statistics (fermion, statistics)
- Fermilab (see 'Batavia ...')
- fermion
- fermion antifermion
- fermion boson
- fermion fermion
- fermion intermediate boson
- fermion number
- fermium
- \*ferromagnet (model, 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 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 'dual field theory' or 'Reggeon field theory' or 'lattice field theory' or 'grand unified theory')
- Fierz crossing symmetry (model, four-fermion interaction)
- final state (restricted use, examples: 'final state, (p 2pi)'; 'final state, dimuon')
- final-state interaction
- \*fine structure (atomic physics, fine structure)
- \*finite energy (sum rule, finite energy)
- \*finite mass (sum rule, finite mass)
- \*finite momentum
- \*finite size (e.g. 'effect, finite size')
- \*finite temperature (field theory, finite temperature)
- \*fireball (model, fireball)
- \*firestreak (model, firestreak)
- fission
- fit ('interpretation of experiments, parametrization' or 'statistical analysis, parametrization'. For new methods 'data analysis method' is used.)
- \*five-dimensional (e.g. 'field theory, five-dimensional')
- \*fixed-angle
- \*flash tube (spark chamber, flash tube)
- \*flavor (quark, flavor)
- \*flavor changing (current, flavor changing)
- \*fluid (only used for 'model, fluid'; otherwise use 'liquid')
- fluorine
- flux
- \*flux tube (model, flux tube)
- FNAL (Batavia PS)
- \*Foldy-Wouthuysen (transformation, Foldy-Wouthuysen)
- forces
- form factor (if appropriate, specifiers are added (example: 'form factor, magnetic'); no specifier is used for electromagnetic form factors)
- \*forward scattering (used only for zero-degree scattering, otherwise see '..., 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
- free path (path length)
- free quark (use 'quark, search for')
- \*Friedman (model, Friedman)
- \*Froissart bound (high energy behavior, Froissart bound)
- \*Froissart-Gribov (partial wave, Froissart-Gribov)
- functional analysis
- fundamental constant
- fundamental length (fundamental constant, length)
- fusion

- \*G parity (quantum number, G parity)
- g(1690)
- g-2 (magnetic moment)
- gadolinium
- gallium
- gas
- \*gauge ('invariance, gauge' or 'transformation, gauge'; see also 'gauge field theory')
- gauge boson (only in connection with a more specific term)
- gauge field theory
- \*gaugino (postulated particle, gaugino)
- \*Gell-Mann-Low (renormalization group, Gell-Mann-Low)
- \*Gell-Mann-Oakes-Renner (model, Gell-Mann-Oakes-Renner)
- \*Gell-Mann-Okubo ('model, Gell-Mann-Okubo' or 'mass formula, Gell-Mann-Okubo')
- \*Gell-Mann-Zweig (quark, Gell-Mann-Zweig)
- \*general (relativity theory, general)
- generalized vector dominance (model, vector dominance)
- \*geometrical (e.g. 'scaling, geometrical')
- \*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)
- glueball
- \*gluino (postulated particle, gluino)
- gluon
- gluon gluon
- gluon photon (photon gluon)
- gluonium (glueball)
- gold
- Goldberger-Treiman relation ('model, PCAC' and 'pi, decay')
- \*Goldstino (postulated particle, Goldstino)
- \*Goldstone boson (postulated particle, Goldstone boson)
- Goldstone model (symmetry, spontaneously broken)
- \*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 (model, Gribov)
- Gribov-Pomeranchuk (partial wave, analytic properties)
- \*Gross-Neveu (field theoretical model, Gross-Neveu)
- group theory
- GUT (grand unified theory)

- H(1190)  
 h(2040)  
 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  
 \*Hamiltonian formalism ('lattice field theory, Hamiltonian formalism'; not used for Hamiltonians)  
 \*Han-Nambu (quark, Han-Nambu)  
 \*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' for self-consistent calculations in quantum mechanics)  
 health physics (see also 'nuclear medicine' or 'dosimetry')  
 heat engineering  
 \*heavy  
 \*heavy ion  
 heavy lepton  
 -heavy lepton antineutrino (antineutrino/L)  
 -heavy lepton neutrino (neutrino/L)  
 \*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 (momentum transfer, high)  
 \*high energy behavior (only for theoretical models; used only when high energy behavior is not implicated by other keywords given)  
 \*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)  
 holmium  
 \*hopping parameter (expansion, hopping parameter)  
 \*horizontal symmetry (gauge field theory, horizontal symmetry)  
 \*HRS (at PEP; 'magnetic spectrometer, HRS)  
 -hybrid model ('model, absorption' and 'Regge poles')  
 \*hydrodynamical (model, hydrodynamical)  
 hydrogen  
 \*hypercharge ('quantum number, hypercharge'. see also 'strangeness')  
 hyperfine structure  
 hyperfragment  
 -hypernucleus (hyperfragment)  
 hyperon  
 hyperon antihyperon  
 hyperon deuteron  
 hyperon hyperon  
 hyperon light nucleus  
 hyperon nucleus  
 hyperon quark  
 \*hyperonic atom

- IHEP (Serpukhov PS)
- \*Iizuka-Okubo-Zweig (selection rule, Iizuka-Okubo-Zweig)
- image chamber ('proportional chamber, time projection' or 'drift chamber, time projection')
- imaging (for Cherenkov counter use 'ring imaging')
- \*impact parameter (e.g. 'model, impact parameter'; for track data analysis see 'path length')
- \*impulse (approximation, impulse)
- inclusive reaction
- \*incoherent interaction
- \*incoherent production
- \*indefinite metric ('field theory, indefinite metric' or 'axiomatic field theory, indefinite metric')
- \*independent emission (model, independent emission)
- \*independent particle (model, independent particle)
- \*Indiana Cycl (at Bloomington)
- indium
- \*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, tunneling')
- instanton solution (field equations, instanton)
- \*integer charged (restricted use)
- integral representation (spectral representation)
- intensity (see 'yield' or 'flux' or 'current')
- \*interaction (restricted use, if possible use more specific term)
- interface (interface, readout)
- interference
- intermediate boson (see also 'W', 'W+', 'W-' or 'Z0')
- intermediate state (see 'exchange' or 'final state' or 'cascade decay')
- \*internal (symmetry, internal)
- internuclear cascade (nucleus, cascade)
- \*interpretation of experiments
- \*intranuclear cascade (model, intranuclear cascade)
- \*introductory (restricted use)
- invariance
- invariant phase space (model, statistical)
- \*inverse
- inverse scattering method
- iodine
- ion (see also 'heavy ion')
- ion ring accelerator (accelerator, ion)
- ionization
- ionization chamber
- \*iota(1440) (postulated particle, iota(1440))
- iridium
- iron
- ISABELLE (Brookhaven ISABELLE Stor)
- \*Ising (statistical mechanics, Ising)
- \*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)

-Jost function (potential scattering)

-Jost-Lehmann-Dyson representation  
(spectral representation)

-JWKB (approximation, WKB)

## K

K  
 K anti-K  
 K baryon  
 K deuteron  
 K K  
 K light nucleus  
 K n  
 K nucleon  
 K nucleus  
 K p  
 \*K(1400) (postulated particle, K(1400))  
 K+  
 K+ deuteron  
 K+ K+  
 K+ K-  
 K+ light nucleus  
 K+ n  
 K+ nucleon  
 K+ nucleus  
 K+ p  
 K\*(1430)  
 \*K\*(1650) (postulated particle, K\*(1650))  
 K\*(1780)  
 \*K\*(2060) (postulated particle, K\*(2060))  
 \*K\*(2200) (postulated particle, K\*(2200))  
 K\*(892)  
 K-  
 K- deuteron  
 K- K-  
 K- light nucleus  
 K- n  
 K- nucleon  
 K- nucleus  
 K- p  
 \*Kac-Moody (algebra, Kac-Moody)  
 -Kaehler (field equations, Dirac-Kaehler)  
 \*Kaluza-Klein (field theoretical model,  
 Kaluza-Klein)  
 kappa(1350)  
 \*KEK GEMINI (at Tsukuba, Japan)  
 \*KEK Linac (at Tsukuba, Japan)  
 \*KEK PF Stor (at Tsukuba, Japan)  
 \*KEK PS (at Tsukuba, Japan)  
 \*KEK TRISTAN Stor (at Tsukuba, Japan)  
 \*Kharkov Linac  
 -Kibble-Higgs (field theoretical model,  
 Salam-Weinberg)  
 -kicker magnet (pulsed magnet)  
 kinematics  
 \*kink (field equations, kink)  
 -kink solution (field equations, kink)  
 \*Klein-Gordon (field equations,  
 Klein-Gordon)  
 -klystron (RF system)  
 \*KNO (scaling, KNO)  
 -knock-out (emission)  
 -Koba-Nielsen (model, dual resonance)  
 -Koba-Nielsen-Olesen scaling (scaling,  
 KNO)  
 \*Kobayashi-Maskawa (field theoretical  
 model, Kobayashi-Maskawa)  
 \*Korteweg-de Vries (field equations,  
 Korteweg-de Vries)  
 krypton  
 K0  
 K0 anti-K0  
 K0 deuteron  
 K0 K+  
 K0 K-  
 K0 K0  
 K0 light nucleus  
 K0 n  
 K0 nucleon  
 K0 nucleus  
 K0 p  
 K0(L)  
 \*K0(L)-K0(S) (mass difference,  
 K0(L)-K0(S))  
 K0(S)

- \*L(1580) (postulated particle, L(1580))
- L(1770)
- \*ladder (approximation, ladder)
- Lagrangian formalism ('field theory, Euclidean'; see also 'effective Lagrangians')
- Lamb shift ('radiative correction' and 'atom, energy levels'. Possibly also: 'quantum electrodynamics, validity test'.)
- Lambda
- Lambda Antilambda
- Lambda deuteron
- Lambda Lambda
- Lambda light nucleus
- Lambda N(2130) (dibaryon resonance)
- 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 G09)
- \*Lambda(1800) (postulated particle, Lambda(1800))
- 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)
- \*Lambda/b0 (postulated particle, Lambda/b0)
- Lambda/c+
- \*LAMPF Linac (at Los Alamos)
- \*Landau gauge (gauge field theory, Landau gauge)
- \*Langevin equation (lattice field theory, Langevin equation)
- lanthanum
- large-angle (wide-angle)
- \*laser (generally, 'optics, laser')
- \*LASS (at SLAC; 'magnetic spectrometer, LASS')
- \*lattice (e.g. 'approximation, lattice' or '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)
- leakage (tunneling)
- 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)')
- \*LENA (at DORIS; 'four-pi detector, LENA')
- \*length ('fundamental constant, length' or 'correlation, length'; see also 'scattering length')
- \*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 meson
- lepton n
- lepton nucleon
- lepton nucleus
- lepton number
- lepton p
- lepton pi
- lepton quark
- \*leptonic
- \*leptonic decay
- leptonic number (lepton number)
- \*leptoproduction (see also 'electroproduction' or 'neutrino production')
- \*Lie ('group theory, Lie' or 'algebra, Lie')
- \*lifetime (e.g. 'pi0, 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 accelerator
- linear amplifier (amplifier)
- linear collider
- \*linear spaces (functional analysis, linear spaces)
- \*Liouville (field equations, Liouville)
- \*Lippmann-Schwinger (field equations, Lippmann-Schwinger)
- liquid
- \*liquid argon (total-absorption counter, liquid argon)

**lithium**

- live target (counters and detectors, target)
- locality (axiomatic field theory)
- localization (axiomatic field theory)
- location detection (see 'position sensitive' or 'track data analysis')
- \*long-range (e.g. 'correlation, long-range')
- \*longitudinal (restricted use)
- longitudinal beam oscillation (synchrotron oscillation)
- longitudinal momentum**
- \*longitudinal phase space (multidimensional analysis, longitudinal phase space)
- 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)
- \*low (e.g. 'momentum transfer, low')
- low temperature**
- \*low-energy theorem (field theory, low-energy theorem)
- \*lower limit (e.g. 'mass, lower limit')
- LPS analysis ('multiple production, longitudinal phase space' or 'multidimensional analysis, longitudinal phase space')
- luminosity**
- \*Lund ES
- lutetium**

- \*M I T Linac
- \*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)
- magnetic spectrometer** (see also 'magnetic detector')
- \*Majorana (e.g. 'lepton, Majorana')
- \*Majoron (postulated particle, Majoron)
- Mandelstam representation**
- manganese**
- manual**
- many-body problem**
- \*MARK I (at SPEAR; 'magnetic detector, MARK I')
- \*MARK II (at PEP; '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 ('health physics' or 'nuclear medicine')
- membran model (model, bag)
- mendelevium**
- mercury**
- \*meron (field equations, meron)
- meron solution (field equations, meron)
- \*mesic atom (atom, mesic atom)
- mesic molecule (molecule, 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**
- meson resonance light nucleus**
- meson resonance nucleon**
- meson resonance nucleus**
- meson vector meson**
- metal**
- microcomputer (microprocessor)
- microprocessor**
- microtron**
- microwaves**
- Millikan experiment (experimental methods, droplet)
- mineral**
- Minkowski space (field theory)
- \*mirror particle (e.g. 'fermion, mirror particle')
- \*missing-energy (e.g. 'spectra, missing-energy')
- \*missing-mass (e.g. 'spectra, missing-mass')
- mixing ('interference' (restricted use))
- \*mixing angle (multiplet, mixing angle)
- model**
- Moeller scattering ('electron electron, elastic scattering' or 'positron positron, elastic scattering')
- molecular biology**
- \*molecular physics
- \*molecule
- molybdenum**
- moment**
- momentum**
- \*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 I T E F P S
- \*Moscow Linac
- \*Moscow R I P S
- \*multi-Regge (Regge poles, multi-Regge)
- \*multiboson (exchange, multiboson)
- multidimensional analysis**
- \*multigloun (exchange, multigloun)

- multiloop (Feynman graph, higher-order)
- \*multimeson (exchange, multimeson)
- multiparticle scattering (use 'many-body problem' or 'multiple production' but not 'multiple scattering')
- \*multiperipheral (model, multiperipheral)
- \*multiphoton ('exchange, multiphoton' and 'perturbation theory')
- \*multipion (exchange, multipion)
- \*multiple
  - multiple production
  - multiple scattering
- multiplet
- multiplicity
- \*multiply charged
- \*multipole (e.g. 'partial wave analysis, multipole' or 'magnetic moment, multipole')
- multipomeron (pomeron)
- \*multiprocessor (e.g. 'microprocessor, multiprocessor')
- \*multiquark (quark, multiquark)
- multireggeon ('Regge poles, multi-Regge' or 'exchange, multi-Regge')
- multiwire proportional chamber (proportional chamber)
- muon
  - muon baryon
  - muon deuteron
  - muon hadron
  - muon K
  - muon light nucleus
  - muon meson
  - muon muon
  - muon n
  - muon nucleon
  - muon nucleus
  - muon number
  - muon p
  - muon pi
  - muon quark
  - muon+
  - muon+ deuteron
  - muon+ light nucleus
  - muon+ muon+
  - muon+ muon-
  - muon+ n
  - muon+ nucleon
  - muon+ nucleus
  - muon+ p
  - muon-
  - muon- deuteron
  - muon- light nucleus
  - muon- muon-
  - 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 baryon  
 n deuteron  
 n Lambda  
 n light nucleus  
 n n  
 N N(2170) (dibaryon resonance)  
 N N(2250) (dibaryon resonance)  
 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(1990) (partial wave F17)  
 \*N(2000) (partial wave F''15; 'postulated particle, N(2000)')  
 \*N(2080) (partial wave D'''13; 'postulated particle, N(2080)')  
 \*N(2100) (partial wave S'''11 or P'''11; 'postulated particle, N(2100)')  
 N(2190) (partial wave G17)  
 N(2200) (partial wave D''15)  
 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(2800) (partial wave G''19; 'postulated particle, N(2800)')  
 \*N(3000) (postulated particle, N(3000))  
 N(3030)  
 \*N(3245) (postulated particle, N(3245))  
 \*N(3690) (postulated particle, N(3690))  
 \*N(3755) (postulated particle, N(3755))  
 -N\* (use 'nucleon resonance' for  $I=1/2$ )  
 n-point function  
 -N/D method (partial wave, dispersion relations)  
 -NaI (see 'sodium-iodine')  
 -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 baryon  
 neutrino deuteron  
 neutrino electron  
 neutrino hadron  
 neutrino K  
 neutrino lepton  
 neutrino light nucleus  
 neutrino muon  
 neutrino n  
 neutrino neutrino  
 neutrino nucleon  
 neutrino nucleus  
 neutrino p  
 neutrino pi  
 neutrino positron  
 neutrino/e  
 neutrino/L (used for the heavy lepton neutrino)  
 neutrino/mu  
 neutrino/tau  
 -neutrinoless double-beta decay (semileptonic decay, (Oneutrino))  
 \*neutrino production (used for production by neutrinos or antineutrinos)  
 -neutron (use 'n')  
 \*new element (element, new element)  
 new particle  
 nickel  
 \*NIMROD PS (at Chilton, Rutherford)  
 \*NINA ES (at Daresbury)  
 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  
 \*Novosibirsk Stor3  
 \*Novosibirsk Stor4  
 -nuclear cascade ('nucleus, cascade'; see also 'model, intranuclear cascade')  
 nuclear emulsion  
 -nuclear emulsion chamber (use 'nuclear emulsion' and possibly 'total-absorption counter')  
 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 isobar (nucleon resonance)  
nucleon Lambda  
nucleon light nucleus  
nucleon n

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



- \*O(N) (e.g. 'symmetry, O(N)')
- \*O(10) (e.g. 'symmetry, O(10)')
- \*O(2) (e.g. 'symmetry, O(2)')
- \*O(3) (e.g. 'symmetry, O(3)')
- \*O(3,1) (e.g. 'symmetry, O(3,1)')
- \*O(4) (e.g. 'symmetry, O(4)')
- \*O(4,2) (e.g. 'symmetry, O(4,2)')
- \*Oak Ridge Linac
- OBEC (exchange, one-boson)
- \*octet (quark, octet)
- \*octonion (algebra, octonion)
- octupole lens (quadrupole lens, special focusing)
- \*off-line (track data analysis, off-line)
- off-mass-shell (model, off-shell)
- \*off-shell (model, off-shell)
- Okubo-Zweig rule (selection rule, Iizuka-Okubo-Zweig)
- Okubo-Zweig-Iizuka rule (selection rule, Iizuka-Okubo-Zweig)
- \*OMEGA (at CERN; 'magnetic detector, OMEGA')
- omega(1670)
- omega(783)
- Omega-
- Omega- Antiomega-
- \*on-line (e.g. 'computer, on-line'; only for instrumental papers)
- on-mass-shell (model, on-shell)
- \*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' microprocessors)
- \*operator algebra (restricted use)
- operator product (field theory, operator product expansion)
- \*operator product expansion (field theory, operator product expansion)
- \*optical (model, optical)
- \*optical theorem (total cross section, optical theorem)
- optics
- orbit
- orbit calculations ('beam optics' and 'orbit')
- organic compounds
- \*Orsay Cycl
- \*Orsay Linac
- \*Orsay Stor
- \*oscillation (e.g. 'neutrino, oscillation')
- \*oscillator (model, oscillator)
- osmium
- \*overlapping resonances (model, overlapping resonances)
- oxygen
- OZI (selection rule, Iizuka-Okubo-Zweig)



- p (denominates proton)
- p anti-n
- p antihyperon
- p Antilambda
- p antinucleon
- p Antisigma
- p Antixi
- p baryon
- p deuteron
- p hyperon
- P invariance (parity)
- P violation (parity, violation)
- p Lambda
- p light nucleus
- p n
- p nucleon
- p nucleus
- p p
- p Sigma
- p Sigma+
- p Sigma-
- p Sigma0
- p Xi
- p Xi-
- p Xi0
- P-wave (partial wave)
- \*Pade (approximation, Pade)
- pair
- \*pair production
- palladium
- paracharmionium (see 'charmonium')
- \*parametrization
- \*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
- \*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/PC(3510))
- \*PCAC (model, PCAC)
- \*Peking Stor
- PEP (SLAC PEP Stor)
- \*performance
- \*peripheral (model, peripheral)
- 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) (postulated particle, 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')
- photoexcitation (use 'photon, absorption' and 'excited nucleus')
- photofission
- photomultiplier (photoelectron, amplifier)
- phototransistor (semiconductor, optical)
- photon
- photon baryon
- photon deuteron
- photon electron
- \*photon gluon (vertex function, photon gluon)
- photon hadron
- photon K
- photon lepton
- photon light nucleus
- photon meson
- photon n
- photon neutrino
- photon nucleon
- photon nucleus
- photon p
- photon photon
- photon pi
- photon quark
- \*photoproduction (for  $q^2 \rightarrow 0$ , see 'electroproduction')
- pi
- pi baryon
- pi deuteron
- pi K
- pi light nucleus
- pi n
- pi nucleon
- pi nucleus
- pi p
- pi pi
- pi quark
- pi vector meson
- pi(1300)

\*pi(2050) (postulated particle, pi(2050))  
 \*pi(2100) (postulated particle, pi(2100))  
 pi+  
 pi+ deuteron  
 pi+ K+  
 pi+ K-  
 pi+ K0  
 pi+ light nucleus  
 pi+ n  
 pi+ nucleon  
 pi+ nucleus  
 pi+ p  
 pi+ pi+  
 pi+ pi-  
 pi-  
 pi- deuteron  
 pi- K+  
 pi- K-  
 pi- K0  
 pi- light nucleus  
 pi- n  
 pi- nucleon  
 pi- nucleus  
 pi- p  
 pi- pi-  
 -pionic form factor (vertex function)  
 \*pionization (multiple production, pionization)  
 \*Pittsburgh Cycl  
 pi0  
 pi0 deuteron  
 pi0 K+  
 pi0 K-  
 pi0 K0  
 pi0 light nucleus  
 pi0 n  
 pi0 nucleon  
 pi0 nucleus  
 pi0 p  
 pi0 pi+  
 pi0 pi-  
 pi0 pi0  
 \*planar (Feynman graph, planar)  
 \*planarity  
 plasma  
 plastics (e.g. 'plastics, track sensitive')  
 platinum  
 -plotting methods (see 'data analysis method' (restricted use) or 'multidimensional analysis, Dalitz plot' or 'statistical analysis')  
 \*PLUTO (at DORIS and 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  
 \*Pomeranchuk theorem (total cross section, Pomeranchuk theorem)  
 pomeron (also 'pomeron, multi-Regge')  
 \*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  
 positron positron  
 positronium  
 postulated particle  
 potassium  
 potential  
 potential scattering  
 \*Potts (model, Potts)  
 power engineering  
 power supply  
 praseodymium  
 -preon (model, prequark)  
 preprocessing  
 \*prequark (model, prequark)  
 \*pressure  
 \*Primakoff (effect, Primakoff)  
 \*primary (use in 'cosmic radiation, primary')  
 -probability (statistics)  
 production (restricted use, if possible use more specific term)  
 -production cross section (channel cross section)  
 programming  
 -project ('experimental equipment, proposed' or e.g. 'accelerator, proposed')  
 promethium  
 -prompt particle (see 'direct production')  
 propagator  
 proportional chamber  
 -proportional wire chamber (proportional chamber)  
 proposal (only for submitted proposals)  
 -pseudopotential (quasipotential)  
 \*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)  
-pseudoparticle solution (field  
equations, pseudoparticle)  
\*pseudoscalar (restricted use)  
pseudoscalar meson  
-pseudoscalar meson dominance (model,  
meson dominance)  
\*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-height analyzer  
(analog-to-digital converter)  
pulsed magnet

- QCD (quantum chromodynamics)
- QED (quantum electrodynamics)
- QFD (quantum flavordynamics)
- QFT (field theory)
- quadrupole lens
- quadrupole moment (e.g. magnetic moment, multipole)
- quantameter ('ionization chamber' and 'beam monitoring')
- quantization
- quantum chromodynamics
- quantum electrodynamics
- quantum field theory (field theory)
- quantum flavordynamics
- quantum gravity
- quantum mechanics
- quantum number
- quantum statistics (statistical mechanics)
- quark
- quark antiquark
- quark gluon (see also 'field theory, asymptotic freedom')
- quark intermediate boson
- quark line rule (selection rule, Iizuka-Okubo-Zweig)
- quark model ('quark, model' for prequark models only; otherwise use 'quark' or 'model, quark parton')
- \*quark parton (model, quark parton)
- quark quark
- quark rearrangement (model, constituent interchange)
- \*quark recombination (model, quark recombination)
- \*quarkonium (quark, 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')
- \*quintet (quark, quintet)
- Q1(1280)
- Q2(1400)

- radiation**  
 -radiation detector (not used; see more specific keywords)  
 -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**  
 \*random phase (approximation, random phase)  
 -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), only in cases of central importance)  
 \*readout (e.g. 'experimental equipment, readout' or 'optics, readout')  
 -real time ('control system' or 'computer, on-line')  
**recoil**  
 -recombination (model, quark recombination)  
 \*reflection  
 \*regeneration (K0, regeneration)  
**Regge cut** (only for papers treating models)  
**Regge poles**  
 -Regge trajectories (Regge poles)  
**Reggeon field theory**  
 \*Reggeon particle (scattering, Reggeon particle)  
 \*regularization (renormalization, regularization)  
 \*relativistic  
**relativity theory**  
 \*renormalizable (field theoretical model, renormalizable)  
**renormalization**  
**renormalization group**  
 \*representation ('group theory, representation'; see also 'Mandelstam representation' or 'spectral representation')  
 -rescattering ('multiple scattering' or 'final-state interaction')  
 \*resolution (e.g. 'experimental equipment, resolution')  
**resonance** (if possible use more specific term, like 'meson resonance'. See also 'beam instability')  
 \*resonance dominance (model, resonance dominance)  
 -resonance interaction model (model, overlapping resonances)  
 \*resonance scattering (model, resonance scattering)  
**review**  
 -RF cavity (RF system)  
 -RF field ('RF system' or 'electromagnetic field' or 'microwaves')  
 -RF separator (use 'particle separator' and possibly 'beam transport')  
**RF system**  
 -RFT (Reggeon field theory)  
**rhodium**  
 -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)  
**rubidium**  
**ruthenium**  
 -Rutherford ES (NINA ES)  
 -Rutherford PS (NIMROD PS)





- \*S(1935) (postulated particle, S(1935))
- S\*(975)
- S-matrix
- S-wave (partial wave)
- \*Saclay Linac
- \*Saclay PS
- safety (For aspects other than nuclear.  
See also 'health physics', 'dosimetry',  
'shielding' or 'radiation protection'.)
- \*Salam-Weinberg (field theoretical  
model, Salam-Weinberg)
- samarium
- \*sandwich (scintillation counter,  
sandwich)
- \*Saskatoon Linac
- \*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 (also used for scale invariance;  
for scaling violation: 'scaling,  
violation')
- scandium
- scattering (restricted use)
- scattering amplitude (restricted use,  
only for cases of central importance;  
see also 'S-matrix')
- scattering length
- \*Schroedinger equation (quantum  
mechanics, Schroedinger equation)
- \*Schwinger (field theoretical model,  
Schwinger)
- Schwinger source theory (field theory)
- scintillation counter
- \*screening ('effect, screening'; see also  
'effect, 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, inst-  
anton)
- 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
- \*Sendai Linac
- \*separable potential (model, separable  
potential)
- \*separated beam
- separator (particle separator)
- \*septum (magnet, septum)
- \*Serpukhov PS
- \*sextet (quark, sextet)
- sextupole lens (quadrupole lens, special  
focusing)
- SFM (magnetic detector, Split Field)
- shadow scattering ('model, optical' or  
'model, vector dominance')
- \*shadowing ('effect, shadowing'; see also  
'effect, 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 counter (shower detector)
- 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(1660) (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(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 P''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)  
 Sigma(2620)  
 \*Sigma(3000) (postulated particle, Sigma(3000))  
 \*Sigma(3170) (postulated particle, Sigma(3170))  
 Sigma+  
 Sigma+ deuteron  
 Sigma+ light nucleus  
 Sigma+ nucleus  
 Sigma-  
 Sigma- deuteron  
 Sigma- light nucleus  
 Sigma- nucleus  
 Sigma/c(2430)  
 Sigma0  
 silicon  
 silver  
 \*SIN Cycl  
 \*sine-Gordon ('field equations, sine-Gordon' or 'quantum mechanics, sine-Gordon')  
 -single particle (see 'one-particle'; also 'inclusive reaction')  
 -single-arm spectrometer (magnetic spectrometer)  
 -single-loop approximation ('Feynman graph, higher-order' or 'dual field theory, higher-order')  
 \*six-dimensional (e.g. 'field theory, six-dimensional')  
 -skeleton (Feynman graph)  
 \*SL(N,C) (e.g. 'symmetry, SL(N,C)')  
 \*SL(N,R) (e.g. 'symmetry, SL(N,R)')  
 \*SL(2,C) (e.g. 'symmetry, SL(2,C)')  
 \*SLAC Linac (at Stanford)  
 \*SLAC PEP Stor (at Stanford)  
 \*SLAC SLC Linac (e+ e- linear collider at Stanford)  
 \*SLAC SPEAR Stor (at Stanford)  
 \*Slavnov identity (gauge field theory, Slavnov identity)  
 -Slavnov-Taylor identity (gauge field theory, Slavnov identity)  
 -SLC (SLAC SLC Linac)  
 \*slepton (postulated particle, slepton)  
 \*slope  
 \*small-angle  
 \*sneutrino (postulated particle, sneutrino)  
 \*SO(N) (e.g. 'symmetry, SO(N)')  
 \*SO(10) (e.g. 'symmetry, SO(10)')  
 \*SO(14) (e.g. 'symmetry, SO(14)')  
 \*SO(2) (e.g. 'symmetry, SO(2)')  
 \*SO(3) (e.g. 'symmetry, SO(3)')  
 \*SO(4) (e.g. 'symmetry, SO(4)')  
 \*SO(5) (e.g. 'symmetry, SO(5)')  
 \*SO(8) (e.g. 'symmetry, SO(8)')  
 sodium  
 \*sodium-iodide (e.g. 'total-absorption counter, sodium-iodide')  
 -soft photon (radiative correction)  
 -soft pions ('current algebra, effective Lagrangians' or 'model, PCAC')  
 -software (programming)  
 \*solenoid (magnet, solenoid)  
 solid-state counter (see also 'semiconductor detector')  
 solids  
 \*soliton (field equations, soliton)  
 -soliton solution (field equations, soliton)  
 \*solution ('field equations, solution'; if possible use more specific term)  
 -Sommerfeld-Watson transformation (Regge poles)  
 -sonic spark chamber (spark chamber, acoustic)  
 -source ('field theory' or 'particle source')  
 -source algebra (current algebra)  
 \*Sp(N) (e.g. 'symmetry, Sp(N)')  
 \*space  
 \*space charge (for accelerators only)  
 \*Space Rad Lab Linac  
 \*space-time (field theory, space-time)  
 -spallation (fission)  
 spark chamber  
 \*spatial distribution (only used for cosmic radiation; see also 'angular 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-orbit (spin, orbit)
- spin-parity analysis (partial wave analysis)
- spin-spin correlation (spin, correlation)
- \*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)
- \*stability (see also 'beam instability')
- \*stacking ('injection, stacking' and 'storage ring')
- \*Stanford Linac MK3
- static model (model, Chew-Low)
- stationary phase (mathematical methods, path integral)
- \*statistical
- statistical analysis** (restricted to basic papers)
- statistical bootstrap (bootstrap, statistical)
- statistical mechanics**
- statistical tensor (spin, density matrix)
- statistics**
- status report (activity report)
- steel (use 'iron')
- \*stochastic (restricted use; 'quantization, 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**
- \*strangeness changing (current, strangeness changing)
- straton (quark)
- streamer chamber**
- streamer tube (spark chamber, streamer chamber)
- stress-energy (see 'energy-momentum')
- \*string (model, string)
- \*string tension (lattice field theory, string tension)
- strong absorption (model, absorption)
- \*strong coupling ('model, strong coupling' or 'expansion, strong coupling')
- strong interaction**
- strontium**
- structure function**
- \*SU(N) (e.g. 'symmetry, SU(N)')
- \*SU(N) x SU(N) (e.g. 'symmetry, SU(N) x SU(N)')
- \*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(4)\*\*4 (e.g. 'symmetry, SU(4)\*\*4')
- \*SU(5) (e.g. 'symmetry, SU(5)')
- \*SU(6) (e.g. 'symmetry, SU(6)')
- \*SU(6) x O(3) (e.g. 'symmetry, SU(6) x O(3)')
- \*SU(7) (e.g. 'symmetry, SU(7)')
- \*SU(8) (e.g. 'symmetry, SU(8)')
- \*SU(9) (e.g. 'symmetry, SU(9)')
- substructure ('model, composite' or 'model, prequark')
- sulfur**
- sum rule**
- superconducting**
- superconductivity (use 'superconducting')
- superfield (supersymmetry)
- superfragment** (charmed or beautiful nucleus)
- supergauge ('gauge field theory' and 'supersymmetry')
- supergravity**
- supermultiplet ('multiplet' and 'supersymmetry')
- \*superpropagator (propagator, superpropagator)
- \*superrenormalizable (field theoretical model, superrenormalizable)
- \*superselection rule (sum rule, superselection rule)
- supersymmetry**

\*superweak interaction (weak  
interaction, superweak interaction)  
-SVZ (quantum chromodynamics, sum  
rule)  
symmetry  
symmetry breaking  
synchro-cyclotron

-synchrotron ('synchrotron' or  
'proton synchrotron' or 'electron  
synchrotron')  
synchrotron  
synchrotron oscillation  
synchrotron radiation  
-SYRIUS (Tomsk ES)

- T-invariance (invariance, time reversal)
- T-matrix (S-matrix)
- \*tables
- \*tachyon (postulated particle, tachyon)
- \*tadpole (Feynman graph, tadpole)
- \*tagged beam ('photon, tagged beam' or 'electron, tagged beam')
- \*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)
- \*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)
- thallium
- theory of elementary particles (particle physics)
- \*thermodynamical (model, thermodynamical)
- thermodynamics
- \*thermoluminescence (counters and detectors, thermoluminescence)
- thesis (including masters' theses)
- \*Theta(1640) (postulated particle, Theta(1640))
- \*Thirring (field theoretical model, Thirring)
- thorium
- three-body annihilation (multiple production, annihilation)
- 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 distribution (see 'time variation')
- \*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
- \*Tomsk ES
- top (quark, truth)
- \*topological (charge, topological)
- topological cross section (channel cross section)
- \*topological expansion (duality, topological expansion)
- \*torsion
- total cross section (see also 'channel cross section')
- total hadronic cross section (for e+e- annihilation use 'channel 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' or 'glass, track sensitive')
- tracks
- trajectory (see 'Regge poles' or 'Regge cut'; not used for particle trajectory)
- transformation
- \*transition
- \*transition radiation (e.g. 'counters and detectors, transition radiation'; not used for radiative decay)
- transmission (absorption)
- \*transuranium (elements, transuranium)
- \*transverse (see also 'transverse momentum')
- transverse beam oscillation (betatron oscillation)
- transverse momentum
- \*tree (approximation, tree)

- Treiman-Yang test (decay, angular distribution)
- triangle anomaly (current algebra, anomaly)
- triangle graph (Feynman graph)
- trigger**
- triple-pomeron coupling (pomeron, coupling)
- 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)
- \*truth ('quark, truth' or 'search for, truth')
- truthful baryon

- truthful meson
- truthful particle
- \*truthonium (quark, truthonium)
- tungsten
- \*tunneling (effect, tunneling)
- \*twistor (e.g. 'mathematical methods, twistor')
- 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(N) (e.g. 'symmetry, U(N)')
- \*U(N) x U(N) (e.g. 'symmetry, U(N) x U(N)')
- \*U(1) (e.g. 'symmetry, U(1)')
- \*U(1) problem (field theory, U(1) problem)
- \*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(4) (e.g. 'symmetry, U(4)')
- \*U(4) x U(4) (e.g. 'symmetry, U(4) x U(4)')
- \*U(6) (e.g. 'symmetry, U(6)')
- \*UA1 (at CERN SPS Coll; 'magnetic detector, UA1')
- \*UA2 (at CERN SPS Coll; 'magnetic detector, UA2')
- \*UA4 (at CERN SPS Coll; 'four-pi-detector, UA4')
- \*UA5 (at CERN SPS Coll; 'four-pi-detector, UA5')
- ultraviolet divergence (renormalization)
- underground (deep underground)
- \*undulator ('radiation, undulator'; only in connection with accelerators)
- unified fermion (fermion, model)
- unified field theory** (kinds of interaction which are unified are added; see also 'grand unified theory')
- unitarity** (restricted use)
- \*universality
- \*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(9460)** (1S state)
- uranium

- 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 Hove plot (multidimensional analysis, longitudinal phase space)
- vanadium
- \*variational (restricted use; 'mathematical methods, variational')
- \*vector
- vector boson (see 'intermediate boson' or 'vector meson' or 'gauge boson')
- \*vector dominance (model, vector dominance)
- vector meson
- vector meson deuteron
- vector meson light nucleus
- vector meson nucleon
- vector meson nucleus
- vector meson quark
- velocity
- \*Veneziano (model, Veneziano)
- VEPP-2 (Novosibirsk Stor2)
- VEPP-3 (Novosibirsk Stor3)
- VEPP-4 (Novosibirsk Stor4)
- vertex function
- veto (use e.g. 'final state, (Olepton)')
- Villigen (SIN Cycl)
- violation
- 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')
- \*Ward identity (e.g. 'field theory, Ward identity'; see also 'Ward-Takahashi 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 interaction
- \*Weinberg angle (electroweak interaction, Weinberg angle)
- Weizsaecker-Williams (approximation, equivalent photon)
- \*Wess-Zumino (field theoretical model, Wess-Zumino)
- \*Weyl (algebra, Weyl)
- \*wide-angle ('spectrometer, wide-angle' or, e.g., 'elastic scattering, wide-angle')
- \*width (used for resonances or enhancements)
- \*wiggler (magnet, wiggler)
- Wightman fields (axiomatic field theory)
- Wightman function (axiomatic field theory)
- Wilson expansion (field theory, short-distance behavior)
- \*Wilson loop (gauge field theory, Wilson loop)
- \*Wino (postulated particle, Wino)
- \*wire (spark chamber, wire)
- \*WKB (approximation, WKB)
- Wolf method (correction, off-shell)
- Woods-Saxon ('potential' or 'potential scattering')
- \*Wu-Yang (model, Wu-Yang)

\*X(1850) (postulated particle, X(1850))  
\*X(1900-3600) (postulated particle,  
X(1900-3600))  
\*x-dependence (use more specific term  
if possible)  
**xenon**  
Xi  
Xi deuteron  
Xi light nucleus  
Xi nucleus  
Xi(1530) (partial wave P13)  
\*Xi(1630) (postulated particle, Xi(1630))  
\*Xi(1680) (partial wave S11; 'postulated  
particle, Xi(1680)')  
Xi(1820)  
\*Xi(1940) (postulated particle, Xi(1940))

Xi(2030)  
\*Xi(2120) (postulated particle, Xi(2120))  
\*xi(2200) (postulated particle, xi(2200))  
\*Xi(2250) (postulated particle, Xi(2250))  
\*Xi(2370) (postulated particle, Xi(2370))  
\*Xi(2500) (postulated particle, Xi(2500))  
Xi-  
Xi- deuteron  
Xi- light nucleus  
Xi- nucleus  
Xi0  
Xi0 deuteron  
Xi0 light nucleus  
Xi0 nucleus  
\*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 (Used in combination with  
particles; only where yield is given  
without cross sections.)

ytterbium  
yttrium  
\*Yukawa (potential, Yukawa)

## Z

\*Z(N) (e.g. 'symmetry, Z(N)')  
\*Z(2) (e.g. 'symmetry, Z(2)')  
\*Z(3) (e.g. 'symmetry, Z(3)')  
\*Z(4) (e.g. 'symmetry, Z(4)')  
-ZGS (Argonne PS)  
zinc  
\*Zino (postulated particle, Zino)  
zirconium  
-Zweig rule (selection rule,  
Iizuka-Okubo-Zweig)

Z0  
\*Z0(1780) (partial wave P01; 'postulated  
particle, Z0(1780)')  
\*Z0(1865) (partial wave D03; 'postulated  
particle, Z0(1865)')  
\*Z1(1900) (partial wave P13; 'postulated  
particle, Z1(1900)')  
\*Z1(2150) (postulated particle, Z1(2150))  
\*Z1(2500) (postulated particle, Z1(2500))

\*0 (for spin 0 use 'spinless')

\*1 (e.g. 'spin, 1')

\*1/2 (e.g. 'spin, 1/2')

\*2 (e.g. 'spin, 2')

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

