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Acronyms

a.s.l.	Above sea level (altitude)
ACE	Advanced composition explorer (astrophysical observatory orbiting the Earth)
AGASA	Akeno giant air shower array (experiment in Japan)
AGILE	Astro-rivelatore gamma a immagini leggero (gamma-ray telescope orbiting the Earth)
AGN	Active galactic nucleus
ALEPH	A LEP experiment (at CERN)
ALICE	A large ion collider experiment (at CERN)
ALLEGRO	A Louisiana low-temperature experimental gravitational radiation observatory (in the USA)
ALP	Axion-like particle
ALPHA	Antihydrogen experiment at CERN
AMS	Alpha magnetic spectrometer (particle detector onboard the ISS)
ANTARES	Astronomy with a neutrino telescope and abyss environmental research (experiment in the Mediterranean Sea)
APD	Avalanche photodiode (detector)
ARGO-YBJ	Cosmic-ray detector at the Yanbanjing Observatory (in Tibet)
ATIC	Advanced thin ionization calorimeter (balloon-borne experiment)
ATLAS	A toroidal LHC apparatus (experiment at CERN)
AU	Astronomical unit (a.u.)
AURIGA	An ultracryogenic gravitational waves detector
BaBar	B–anti-B experiment at SLAC
BATSE	Burst and transient source experiment (in the CGRO)
BBN	Big Bang nucleosynthesis
BEBC	Big European Bubble Chamber (experiment at CERN)
Belle	b physics experiment at KEK
BESS	Balloon-borne experiment with superconducting spectrometer
Bevatron	Billion electron volts synchrotron (accelerator in the USA)
BGO	$\text{Bi}_4 \text{Ge}_3 \text{O}_{12}$ (scintillating crystal)

BH	Black hole
BL Lac	Blazar Lacertae (an active galactic nucleus)
BNL	Brookhaven National Laboratory (in Long Island, NY)
Borexino	Boron solar neutrino experiment (at the LNGS)
BR	Branching ratio (in a decay process)
CANGAROO	Collaboration of Australia and Nippon (Japan) for a gamma-ray observatory in the outback (Cherenkov observatory)
CAST	CERN axion search telescope (experiment at CERN)
CDF	Collider detector at Fermilab (experiment)
Λ CDM	Lambda and cold dark matter (model with cosmological constant Λ)
CERN	European Organization for Nuclear Research, also European laboratory for particle physics
CGC	Colour glass condensate
CGRO	Compton gamma-ray observatory (orbiting the Earth)
cgs	centimeter, gram, second (system of units)
CKM	Cabibbo, Kobayasha, Maskawa (matrix mixing the quark flavors.)
CMB	Cosmic microwave background (radiation)
CMS	Compact Muon Solenoid (experiment at CERN)
COBE	Cosmic Background Explorer (satellite orbiting the Earth)
CoGeNT	Coherent germanium neutrino telescope (experiment in the USA)
COUPP	Chicagoland observatory for underground particle physics (experiment at Fermilab)
CP	Charge conjugation \times Parity (product of symmetry operators)
CPT	Charge conjugation \times Parity \times Time reversal (product of symmetry operators)
CR	Cosmic rays
CREAM	Cosmic-ray energetics and mass experiment (now on the ISS)
CRESST	Cryogenic rare event search with superconducting thermometers (experiment at LNGS)
CTA	Cherenkov Telescope Array (an international gamma-ray detector)
CUORE	Cryogenic underground observatory for rare events (experiment at LNGS)
D0	Experiment at Fermilab
DAMA	Dark matter experiment (at LNGS)
DAMPE	Dark matter particle explorer (astrophysical space observatory)
DAQ	Data acquisition (electronics system)
DARMa	De Angelis, Roncadelli, Mansutti (model of axion-photon mixing)
DAS	Data acquisition system
DASI	Degree angular scale interferometer
DELPHI	Detector with lepton, photon, and hadron identification (experiment at the CERN's LEP)

DESY	Deutsche synchrotron (laboratory in Germany)
DM	Dark matter
DNA	Desoxyribonucleic acid (the genetic base of life)
DONUT	Direct observation of the ν_τ (experiment at Fermilab)
DSA	Diffusive shock acceleration (of cosmic rays)
dSph	Dwarf spheroidal galaxy
EAS	Extensive air shower (cosmic rays)
EBL	Extragalactic background light
ECAL	Electromagnetic calorimeter (detector)
EGMF	Extragalactic magnetic field
EGO	European Gravitational Observatory (in Italy)
EGRET	Energetic gamma-ray experiment telescope (part of the CGRO)
EHE	Extremely high energy
EHS	European hybrid spectrometer (experiment at CERN)
EJSM/Laplace	European Jupiter space mission–Laplace (ESA/NASA Mission)
ESA	European Space Agency
EUSO	Extreme Universe Space Observatory
FCNC	Flavor-changing neutral currents (hypothetical electroweak process)
FD	Fluorescence detector
Fermilab	Fermi National Accelerator Laboratory (near Chicago, IL); also FNAL
FLRW	Friedmann, Lemaitre, Robertson, Walker (metric model in general relativity)
FNAL	Fermi National Accelerator Laboratory (near Chicago, IL); also Fermilab
FoV	Field of view
FPGA	Field-programmable gate array (processor)
FRI	Fanaroff and Riley class I (astrophysical sources)
FSRQ	Flat spectrum radio quasars
GALLEX	Gallium experiment (at LNGS)
GAMMA-400	gamma-ray space observatory (space astrophysical observatory)
Gargamelle	Experiment at CERN
GBM	Gamma Burst Monitor (detector)
GC	Galactic center
GERDA	Germanium detector array (experiment at the LNGS)
GIM	Glashow, Iliopoulos, Maiani (mechanism)
GLAST	Gamma-ray large area space telescope, renamed <i>Fermi</i> after positioning in orbit
GPM	Gaseous photomultipliers
GPS	Global positioning system
GRB	Gamma-ray burst (astrophysical event)
GSW	Glashow–Salam–Weinberg model of electroweak unification
GUT	Grand unified theory
GZK	Greisen, Zatsepin, Kuz'min (energy cutoff for cosmic rays)

H.E.S.S.	High-energy stereoscopic system (Cherenkov experiment in Namibia)
HAWC	High-altitude water Cherenkov (observatory in Mexico)
HBL	High-energy peaked BL Lac
HCAL	Hadron calorimeter (detector)
HE	High energy
HEGRA	High-energy gamma-ray astronomy (Cherenkov experiment in La Palma)
HERA	Hadron elektron ring anlage (particle accelerator at DESY)
HPD	Hybrid photon detector
HST	Hubble Space Telescope (orbiting the Earth)
IACT	Imaging Atmospheric Cherenkov Telescope
IBL	Intermediate energy peaked BL Lac
IC	Inverse Compton scattering (mechanism for the production of HE gamma rays)
IceCube	Neutrinos observatory in Antarctica
ICRR	Institute for Cosmic Ray Research (at the University of Tokyo, Japan)
IDPASC	International doctorate on particle and astroparticle physics, astrophysics, and cosmology (doctoral network)
IMB	Irvine, Michigan, Brookhaven (experiment in the US)
INFN	Istituto Nazionale di Fisica Nucleare (in Italy)
IR	Infrared (radiation)
IRB	Infrared background (photons)
ISS	International Space Station
IST	Instituto Superior Técnico (at the University of Lisboa, Portugal)
JEM	Japanese experimental module (onboard the ISS)
K2K	KEK to Kamioka experiment (Japan)
Kamiokande	Kamioka neutrino detector (experiment in Japan)
KamLAND	Kamioka liquid scintillator antineutrino detector (experiment in Japan)
KASCADE	Karlsruhe shower and cosmic array detector (experiment in Germany)
KATRIN	Karlsruhe tritium neutrino experiment (in Germany)
KEK	High-energy accelerator in Japan
Kepler	Mission to search for extraterrestrial planets (NASA)
KM	Parametrization of the CKM matrix in the original paper by Kobayasha and Maskawa
Km ³ NeT	kilometer cube neutrino telescope (experiment in the Mediterranean Sea)
kTeV	Experiment at Fermilab
L3	LEP third (experiment at CERN)
LAr	Liquid argon
LAT	Large Area Telescope (detector on the <i>Fermi</i> Satellite)
<i>Fermi</i> -LAT	Large Area Tracker, a gamma-ray telescope orbiting the Earth

LBL	Low-energy peaked BL Lac
LEBC	LExan Bubble Chamber (experiment at CERN)
LEP II	Second phase of operation of LEP, at energies above the Z mass
LEP	Large electron positron (collider at CERN)
LHC	Large hadron collider (at CERN)
LHCb	LHC beauty (experiment at CERN)
LHCf	LHC forward (experiment at CERN)
LIGO	Laser interferometer gravitational-wave observatory (in the USA)
LISA	Laser interferometer space antenna (project for gravitational wave's detection)
LIV	Lorentz invariance violation
LMC	Large Magellanic Cloud (dwarf galaxy satellite of the Milky Way)
LNGS	Laboratorio Nazionale del Gran Sasso (Laboratory for particle and astroparticle physics in Italy)
LO	Leading order in perturbative expansions
LPHD	Local parton hadron duality (approximation in QCD predictions)
LPM	Landau–Pomeranchuk–Migdal (effect)
LSND	Liquid scintillator neutrino detector (experiment in the USA)
LSP	Lightest supersymmetric particle
LST	Large-size telescope (Cherenkov telescope for CTA)
ly	light-year
MACE	Major atmospheric cherenkov experiment (Cherenkov experiment in India)
MACHO	Massive astronomical compact halo object
MAGIC	Major atmospheric gamma-ray imaging Cherenkov telescopes (Cherenkov experiment in Canary Islands)
MARE	Microcalorimeter arrays for a Rhenium experiment (in Italy)
MC	Monte Carlo (simulation technique)
MILAGRO	Cosmic-ray (gamma in particular) experiment in the USA
MINOS	Main injector neutrino oscillation search (experiment in Fermilab)
mip	minimum ionizing particle
MoEDAL	Monopole and exotics detector at the LHC (experiment at CERN)
MOND	Modified Newtonian dynamics
MSSM	Minimal supersymmetric model
MSW	Mikheyev, Smirnov, Wolfenstein (matter effect in neutrino oscillations)
NA#	North area # (experiment at CERN, # standing for its number)
NASA	National Aeronautics and Space Agency (in the USA)
NEMO	Neutrino Ettore Majorana Observatory (in France)
NESTOR	Neutrino Extended Submarine Telescope with Oceanographic Research (experiment in the Mediterranean Sea)
NFW	Navarro, Frenk and White (profile of dark matter distribution)
NIST	National Institute of Standards and Technology (US institute)

NKG	Nishimura Kamata Greisen (lateral density distribution function for showers)
NLO	Next-to-leading order in QCD perturbative expansions
NLSP	Next-to-lightest supersymmetric particle
NNLO	Next-to-next-to-leading order in perturbative expansions
NS	Neutron star
NT-200	Neutrino telescope (experiment in Russia)
NTP	Normal temperature and pressure
NU	Natural units (system of units)
OPAL	Omni-purpose apparatus for LEP (experiment at CERN)
OPERA	Oscillation project with emulsion-tracking apparatus (experiment at LNGS)
OZI	Okubo Zweig Iizuka (rule for transitions in particle processes)
PAMELA	Payload for antimatter–matter exploration and light-nuclei astrophysics (astrophysical observatory orbiting the Earth)
PAO	Pierre Auger Observatory (cosmic-ray observatory in Argentina)
PDF	Parton density function
PDG	Particle Data Group
PHENIX	A physics experiment at RHIC
Planck	ESA mission for precise measurement of CMB anisotropy and other properties
PLATO	Planet transits and oscillations of stars (ESA mission to search for extraterrestrial planets)
PMNS	Pontecorvo, Maki, Nakagawa, Sakata (neutrino mixing matrix)
PMT	Photomultiplier tube (detector)
PSF	Point spread function (space or angular resolution)
PVLAS	Polarizzazione del vuoto con laser (experiment in Italy)
PWN	Pulsar wind nebula (astrophysical object)
QCD	Quantum chromodynamics
QED	Quantum electrodynamics
QG	Quantum gravity
QGP	Quark gluon plasma (state of matter)
QPM	Quark parton model
RF	Radiofrequency
RHIC	Relativistic Heavy Ion Collider (at BNL)
RICH	Ring imaging Cherenkov (detector)
RMS	Root mean square
RPC	Resistive plate chamber (detector)
SAGE	Soviet–American gallium experiment (in Russia)
SCT	Semiconductor tracker (detector)
SDP	Shower detector plane (cosmic rays)
SED	Spectral energy distribution
SETI	Search for extraterrestrial intelligence
SI	International system (of units)
SiPM	Silicon photomultiplier (detector)

SK	Super-Kamiokande neutrino detector (experiment in Japan); also Super-K
SLAC	Stanford linear accelerator center (in the USA)
SLD	SLAC large detector
SM	Standard model (of particle physics)
SMBH	Supermassive black hole
SMC	Small Magellanic Cloud (dwarf galaxy satellite of the Milky Way)
SNO	Sudbury neutrino observatory (Canada)
SNR	Supernova remnant
SNU	Solar neutrino unit (of neutrino interactions)
SO(n)	Special orthogonal group of rank n
SPEAR	Stanford Positron Electron Asymmetric Rings (particle accelerator in the USA)
SPS	Super-proton synchrotron (particle accelerator at CERN)
$Spp\bar{S}$	Super-proton–antiproton synchrotron (collider at CERN)
SSB	Spontaneous symmetry breaking
SSC	Self-synchrotron Compton (mechanism for production of HE gamma-rays)
SSM	Standard solar model (of physics reactions in the Sun’s core)
SU(n)	Special unitary group of rank n
Super-K	Super-Kamiokande neutrino detector (experiment in Japan); also SK
SUSY	Supersymmetry (model beyond the SM)
T2K	Tokai to Kamioka experiment (in Japan)
TA	Telescope Array (cosmic-ray observatory in the USA)
TDAQ	Trigger and data acquisition (electronics system)
Tevatron	Teraelectronvolt synchrotron (collider at Fermilab)
TeVCAAT	Catalog of astrophysical VHE gamma-ray sources
TGC	Triple gauge coupling (coupling between the electroweak gauge bosons— Z , W bosons, and the photon)
Tibet-AS	Cosmic-ray experiment
TMAE	Tetra dimethyl-amine ethylene
TNT	Trinitrotoluene (2-Methyl-1,3,5-trinitrobenzene, chemical explosive)
TOTEM	Total cross section, elastic scattering and diffraction dissociation at the LHC (experiment at CERN)
TPC	Time projection chamber (detector)
TRD	Transition radiation detector
TRT	Transition radiation tracker (detector)
U(n)	Unitary group of rank n
UA#	Underground area # (experiment at CERN, # standing for its number)
UHE	Ultrahigh-energy (cosmic rays)
UHECR	Ultrahigh-energy cosmic rays

UV	Ultraviolet (radiation)
V–A	Vector minus axial-vector relational aspect of a theory
VCV	Véron-Cetty Véron (catalog of galaxies with active galactic nuclei)
VERITAS	Very energetic radiation imaging telescope array system (Cherenkov experiment in the USA)
VHE	Very high-energy (cosmic rays)
VIRGO	Italian-French laser interferometer collaboration at EGO (experiment in Italy)
VLBA	Very long baseline array (of radio telescopes, in the USA)
WA#	West area # (experiment at CERN, # standing for its number)
WBF	Weak boson fusion (electroweak process)
WHIPPLE	Cherenkov telescope (in Arizona)
WIMP	Weakly interactive massive particle
WMAP	Wilkinson microwave anisotropy probe (satellite orbiting the Earth)
XCOM	Photon cross sections database by NIST
XTR	X-ray transition radiation