

Illustrative Key to the Particle Listings

Name of particle. "Old" name used before 1986 renaming scheme also given if different. See the section "Naming Scheme for Hadrons" for details.

$a_0(1200)$

$$I^G(J^{PC}) = 1^-(0^{++})$$

Particle quantum numbers (where known).

OMITTED FROM SUMMARY TABLE
Evidence not compelling, may be a kinematic effect.

Indicates particle omitted from Particle Physics Summary Table, implying particle's existence is not confirmed.

Quantity tabulated below.

$a_0(1200)$ MASS

VALUE [MeV]	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
1206 ± 7 OUR AVERAGE					
1210 ± 8 ± 9	3000	FENNER	87	MMS	- 3.5 $\pi^- p$
1198 ± 10		PIERCE	83	ASPK	+ 2.1 $K^- p$
1216 ± 11 ± 9	1500	MERRILL	81	HBC	0 3.2 $K^- p$
1192 ± 16	200	LYNCH	81	HBC	± 2.7 $\pi^- p$

General comments on particle.

Top line gives our best value (and error) of quantity tabulated here, based on weighted average of measurements used. Could also be from fit, best limit, estimate, or other evaluation. See next page for details.

Systematic error was added quadratically by us in our 1986 edition.

"Document id" for this result; full reference given below.

Measurement technique. (See abbreviations on next page.)

Footnote number linking measurement to text of footnote.

$a_0(1200)$ WIDTH

VALUE [MeV]	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
41 ± 11 OUR AVERAGE					Error includes scale factor of 1.8. See the ideogram below.
50 ± 8		PIERCE	83	ASPK	+ 2.1 $K^- p$
70 +30 -20	200	LYNCH	81	HBC	± 2.7 $\pi^- p$
25 ± 5 ± 7		MERRILL	81	HBC	0 3.2 $K^- p$
<60		FENNER	87	MMS	- 3.5 $\pi^- p$

Scale factor > 1 indicates possibly inconsistent data.

Reaction producing particle, or general comments.

Number of events above background.

Measured value used in averages, fits, limits, etc.

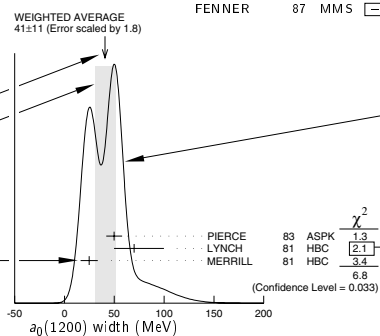
Error in measured value (often statistical only; followed by systematic if separately known; the two are combined in quadrature for averaging and fitting.)

Measured value *not* used in averages, fits, limits, etc. See the Introductory Text for explanations.

Arrow points to weighted average.

Shaded pattern extends $\pm 1\sigma$ (scaled by "scale factor" S) from weighted average.

Value and error for each experiment.



"Change bar" indicates result added or changed since previous edition.

Charge(s) of particle(s) detected.

Ideogram to display possibly inconsistent data. Curve is sum of Gaussians, one for each experiment (area of Gaussian = 1/error; width of Gaussian = \pm error). See Introductory Text for discussion.

Contribution of experiment to χ^2 (if no entry present, experiment not used in calculating χ^2 or scale factor because of very large error).

$a_0(1200)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
Γ_1 3π	(65.2 ± 1.3) %	S=1.7
Γ_2 $K\bar{K}$	(34.8 ± 1.3) %	S=1.7
Γ_3 $\eta\pi^\pm$	< 4.9 × 10 ⁻⁴	CL=95%

Partial decay mode (labeled by Γ_i).

Our best value for branching fraction as determined from data averaging, fitting, evaluating, limit selection, etc. This list is basically a compact summary of results in the Branching Ratio section below.

$a_0(1200)$ BRANCHING RATIOS

$\Gamma(3\pi)/\Gamma_{total}$	VALUE	DOCUMENT ID	TECN	CHG	COMMENT	Γ_1/Γ
	0.652 ± 0.013 OUR FIT				Error includes scale factor of 1.7.	
	0.643 ± 0.010 OUR AVERAGE					
	0.64 ± 0.01	PIERCE	83	ASPK	+ 2.1 $K^- p$	
	0.74 ± 0.06	MERRILL	81	HBC	0 3.2 $K^- p$	
	0.48 ± 0.15	² LYNCH	81	HBC	± 2.7 $\pi^- p$	
	² Data has questionable background subtraction.					
$\Gamma(K\bar{K})/\Gamma_{total}$	VALUE	DOCUMENT ID	TECN	CHG	COMMENT	Γ_2/Γ
	0.348 ± 0.013 OUR FIT				Error includes scale factor of 1.7.	
	0.35 ± 0.05	PIERCE	83	ASPK	+ 2.1 $K^- p$	
$\Gamma(K\bar{K})/\Gamma(3\pi)$	VALUE	DOCUMENT ID	TECN	CHG	COMMENT	Γ_2/Γ_1
	0.535 ± 0.030 OUR FIT				Error includes scale factor of 1.7.	
	0.50 ± 0.03	MERRILL	81	HBC	0 3.2 $K^- p$	
$\Gamma(\eta(\text{neutral decay})\pi^\pm)/\Gamma_{total}$	VALUE	DOCUMENT ID	TECN	CHG	COMMENT	0.71 Γ_3/Γ
	< 3.5	PIERCE	83	ASPK	+ 2.1 $K^- p$	

Branching ratio.

Our best value (and error) of quantity tabulated, as determined from constrained fit (using *all significant* measured branching ratios for this particle).

Weighted average of measurements of this ratio only.

Footnote (referring to LYNCH 81).

Branching ratio in terms of partial decay mode(s) Γ_j above.

Confidence level for measured upper limit.

References, ordered inversely by year, then author.

"Document id" used on data entries above.

Journal, report, preprint, etc. (See abbreviations on next page.)

$a_0(1200)$ REFERENCES

FENNER 87	PRL 55 14	H. Fenner et al.	[SLAC]
PIERCE 83	PL 123B 230	J.H. Pearce	[FNAL][UP]
LYNCH 81	PR D24 610	G.R. Lynch et al.	[CLEO Collab.]
MERRILL 81	PRL 47 143	D.W. Merrill et al.	[SACL, CERN]

Partial list of author(s) in addition to first author.

Quantum number determinations in this reference.

Institution(s) of author(s). (See abbreviations on next page.)

Abbreviations Used in the Particle Listings

Indicator of Procedure Used to Obtain Our Result

OUR AVERAGE	From a weighted average of selected data.
OUR FIT	From a constrained or overdetermined multiparameter fit of selected data.
OUR EVALUATION	Not from a direct measurement, but evaluated from measurements of other quantities.
OUR ESTIMATE	Based on the observed range of the data. Not from a formal statistical procedure.
OUR LIMIT	For special cases where the limit is evaluated by us from measured ratios or other data. Not from a direct measurement.

Measurement Techniques

(i.e., Detectors and Methods of Analysis)

ACCM	ACCMOR Collaboration	DAMA	DAMA, dark matter detector at Gran Sasso National Lab.
AEMS	Argonne effective mass spectrometer	DASP	DESY double-arm spectrometer
ALEP	ALEPH - CERN LEP detector	DBC	Deuterium bubble chamber
AMY	AMY detector at KEK-TRISTAN	DLCO	DELCO detector at SLAC-SPEAR or SLAC-PEP
APEX	FNAL APEX Collab.	DLPH	DELPHI detector at LEP
ARG	ARGUS detector at DORIS	DM1	Magnetic detector no. 1 at Orsay DCI collider
ARGD	Fit to semicircular amplitude path on Argand diagram	DM2	Magnetic detector no. 2 at Orsay DCI collider
ASP	Anomalous single-photon detector	DONU	DONUT Collab.
ASPK	Automatic spark chambers	DPWA	Energy-dependent partial-wave analysis
ASTE	ASTERIX detector at LEAR	E621	Fermilab E621 detector
ASTR	Astronomy	E653	Fermilab E653 detector
B787	BNL experiment 787 detector	E665	Fermilab E665 detector
B791	BNL experiment 791 detector	E687	Fermilab E687 detector
B845	BNL experiment 845 detector	E691	Fermilab E691 detector
B865	BNL E865 Collab.	E705	Fermilab E705 Spectrometer-Calorimeter
B871	BNL experiment 871 detector	E731	Fermilab E731 Spectrometer-Calorimeter
BABR	BaBar Collab.	E756	Fermilab E756 detector
BAKS	Baksan underground scintillation telescope	E760	Fermilab E760 detector
BC	Bubble chamber	E761	Fermilab E761 detector
BDMP	Beam dump	E771	Fermilab E771 detector
BEAT	CERN BEATRICE Collab.	E773	Fermilab E773 Spectrometer-Calorimeter
BEBC	Big European bubble chamber at CERN	E789	Fermilab E789 detector
BELL	Belle Collab.	E791	Fermilab E791 detector
BES	BES Beijing Spectrometer at Beijing Electron-Positron Collider	E799	Fermilab E799 Spectrometer-Calorimeter
BES2	BES Beijing Spectrometer at Beijing Electron-Positron Collider	E835	Fermilab E835 detector
BIS2	BIS-2 spectrometer at Serpukhov	E852	BNL E-852
BKEI	BENKEI spectrometer system at KEK Proton Synchrotron	EDEL	EDELWEISS Collab. .
BOLO	Bolometer, a cryogenic thermal detector	EHS	Four-pi detector at CERN
BONA	Bonanza nonmagnetic detector at DORIS	ELEC	Electronic combination
BORX	BOREXINO	EMC	European muon collaboration detector at CERN
BPWA	Barret-zero partial-wave analysis	EMUL	Emulsions
CALO	Calorimeter	FBC	Freon bubble chamber
CBAL	Crystal Ball detector at SLAC-SPEAR or DORIS	FENI	FENICE (at the ADONE collider of Frascati)
CBAR	Crystal Barrel detector at CERN-LEAR	FIT	Fit to previously existing data
CBOX	Crystal Box at LAMPF	FMPS	Fermilab Multiparticle Spectrometer
CC	Cloud chamber	FOCS	FNAL E831 FOCUS Collab.
CCFR	Columbia-Chicago-Fermilab-Rochester detector	FRAB	ADONE $B\bar{B}$ group detector
CDF	Collider detector at Fermilab	FRAG	ADONE $\gamma\gamma$ group detector
CDF2	CDF-II Collab.	FRAM	ADONE MEA group detector
CDHS	CDHS neutrino detector at CERN	FREJ	FREJUS Collaboration - modular flash chamber detector (calorimeter)
CDMS	CDMS Collab.	GA24	Hodoscope Cherenkov γ calorimeter (IHEP GAMS-2000) (CERN GAMS-4000)
CELL	CELLO detector at DESY	GALX	GALLEX solar neutrino detector in the Gran Sasso Underground Lab.
CHER	Cherenkov detector	GAM2	IHEP hodoscope Cherenkov γ calorimeter GAMS-2000
CHM2	CHARM-II neutrino detector (glass) at CERN	GAM4	CERN hodoscope Cherenkov γ calorimeter GAMS-4000
CHOZ	Nuclear Power Station near Chooz, France	GNO	Gallium Neutrino Observatory in the Gran Sasso Underground Lab.
CHRM	CHARM neutrino detector (marble) at CERN	GOLI	CERN Goliath spectrometer
CHRS	CHORUS Collaboration - CERNS SPS	H1	H1 detector at DESY/HERA
CIBS	CERN-IHEP boson spectrometer	HBC	Hydrogen bubble chamber
CLAS	Jefferson CLAS Collab.	HDBC	Hydrogen and deuterium bubble chambers
CLE2	CLEO II detector at CESR	HDMO	Heidelberg-Moscow Experiment
CLE3	CLEO III detector at CESR	HDMS	Heidelberg Dark Matter Search Experiment
CLEO	Cornell magnetic detector at CESR	HEBC	Helium bubble chamber
CMD	Cryogenic magnetic detector at VEPP-2M, Novosibirsk	HEPT	Helium proportional tubes
CMD2	Cryogenic magnetic detector 2 at VEPP-2M, Novosibirsk	HLBC	Heavy-liquid bubble chamber
CNTR	Counters	HOME	Home-made underground scintillation detector
COSM	Cosmology and astrophysics	HPW	Harvard-Pennsylvania-Wisconsin detector
CPLR	CLEAR Collaboration	HRS	SLAC high-resolution spectrometer
CRES	CRESST cryogenic detector	HYBR	Hybrid: bubble chamber + electronics
CRYB	Crystal Ball at BNL	HYCP	HyperCP Collab. (FNAL E-871)
CSB2	Columbia U. - Stony Brook BGO calorimeter inserted in NaI array	IGEX	IGEX Collab.
CSME	COSME Collaboration	IMB	Irvine-Michigan-Brookhaven underground Cherenkov detector
CUSB	Columbia U. - Stony Brook segmented NaI detector at CESR	IMB3	Irvine-Michigan-Brookhaven underground Cherenkov detector
D0	D0 detector at Fermilab Tevatron Collider	INDU	Magnetic induction
		IPWA	Energy-independent partial-wave analysis
		ISTR	IHEP ISTR+ spectrometer-calorimeter
		JADE	JADE detector at DESY
		K246	KEK E246 detector with polarimeter
		K2K	KEK to Super-Kamiokande
		K470	KEK-E470 Stopping K detector
		KAM2	KAMIOK ANDE-II underground Cherenkov detector
		KAMI	KAMIOK ANDE underground Cherenkov detector
		KAR2	KARMEN2 calorimeter at the ISIS neutron spallation source at Rutherford
		KARM	KARMEN calorimeter at the ISIS neutron spallation source at Rutherford

Abbreviations Used in the Particle Listings

KEDR	detector operating at VEPP-4M collider (Novosibirsk)	TASS	DESY TASSO detector
KLND	KamLand Collab. (Japan)	THEO	Theoretical or heavily model-dependent result
KLOE	KLOE detector at DAFNE (the Frascati e+e- collider Italy)	TOF	Time-of-flight
KOLR	Kolar Gold Field underground detector	TOPZ	TOPAZ detector at KEK-TRISTAN
KTEV	KTeV Collaboration	TPC	TPC detector at PEP/SLAC
L3	L3 detector at LEP	TPS	Tagged photon spectrometer at Fermilab
LASS	Large-angle superconducting solenoid spectrometer at SLAC	TRAP	Penning trap
LATT	Lattice calculations	UA1	UA1 detector at CERN
LEBC	Little European bubble chamber at CERN	UA2	UA2 detector at CERN
LEGS	BNL LEGS Collab.	UA5	UA5 detector at CERN
LENA	Nonmagnetic lead-glass NaI detector at DORIS	UKDM	UK Dark Matter Collab.
LEP	From combination of all 4 LEP experiments: ALEPH, DELPHI, L3, OPAL	VES	Vertex Spectrometer Facility at 70 GeV IHEP accelerator
LEPS	Low-Energy Pion Spectrometer at the Paul Scherrer Institute	VNS	VENUS detector at KEK-TRISTAN
LSND	Liquid Scintillator Neutrino Detector	WA75	CERN WA75 experiment
MAC	MAC detector at PEP/SLAC	WA82	CERN WA82 experiment
MBR	Molecular beam resonance technique	WA89	CERN WA89 experiment
MCRO	MACRO detector in Gran Sasso	WIRE	Wire chamber
MD1	Magnetic detector at VEPP-4, Novosibirsk	XEBC	Xenon bubble chamber
MDRP	Millikan drop measurement	ZEUS	ZEUS detector at DESY/HERA
MICA	Underground mica deposits		
MIRA	MIRABELLE Liquid-hydrogen bubble chamber		
MLEV	Magnetic levitation		
MMS	Missing mass spectrometer		
MPS	Multiparticle spectrometer at BNL		
MPS2	Multiparticle spectrometer upgrade at BNL		
MPSF	Multiparticle spectrometer at Fermilab		
MPWA	Model-dependent partial-wave analysis		
MRK1	SLAC Mark-I detector		
MRK2	SLAC Mark-II detector		
MRK3	SLAC Mark-III detector		
MRKJ	Mark-J detector at DESY		
MRS	Magnetic resonance spectrometer		
MUG2	MUON(g-2)		
MWPC	Multi-Wire Proportional Chamber		
NA14	CERN NA14		
NA31	CERN NA31 Spectrometer-Calorimeter		
NA32	CERN NA32 Spectrometer		
NA48	CERN NA48 Collaboration		
NA49	CERN NA49		
NAIA	NAIAD (NaI Advanced Detector) experiment		
ND	NaI detector at VEPP-2M, Novosibirsk		
NICE	Serpukhov nonmagnetic precision spectrometer		
NMR	Nuclear magnetic resonance		
NOMD	NOMAD Collaboration, CERN SPS		
NTEV	NuTeV Collab. at Fermilab		
NUSX	Mont Blanc NUSEX underground detector		
OBLX	OBELIX detector at LEAR		
OLYA	Detector at VEPP-2M and VEPP-4, Novosibirsk		
OMEG	CERN OMEGA spectrometer		
OPAL	OPAL detector at LEP		
OSPK	Optical spark chamber		
PLAS	Plastic detector		
PLUT	DESY PLUTO detector		
PWA	Partial-wave analysis		
REDE	Resonance depolarization		
RVUE	Review of previous data		
SAGE	US - Russian Gallium Experiment		
SELX	FNAL SELEX Collab.		
SFM	CERN split-field magnet		
SHF	SLAC Hybrid Facility Photon Collaboration		
SIGM	Serpukhov CERN-IHEP magnetic spectrometer (SIGMA)		
SILI	Silicon detector		
SKAM	Super-Kamiokande Collab.		
SLAX	Solar Axion Experiment in Canfranc Underground Laboratory		
SLD	SLC Large Detector for e^+e^- colliding beams at SLAC		
SMPL	SIMPLE superheated droplet detector.		
SND	Novosibirsk Spherical neutral detector at VEPP-2M		
SNO	SNO Collaboration (Sudbury Neutrino Observatory)		
SOU2	Soudan 2 underground detector		
SOUT	Soudan underground detector		
SPEC	Spectrometer		
SPED	From maximum of speed plot or resonant amplitude		
SPHR	Bonn SAPHIR Collab.		
SPRK	Spark chamber		
SQID	SQUID device		
STRC	Streamer chamber		

Conferences

Conferences are generally referred to by the location at which they were held (e.g., HAMBURG, TORONTO, CORNELL, BRIGHTON, etc.).

Journals

AA	Astronomy and Astrophysics
ADVP	Advances in Physics
AFIS	Anales de Fisica
AJP	American Journal of Physics
ANP	Annals of Physics
ANPL	Annals of Physics (Leipzig)
ANYAS	Annals of the New York Academy of Sciences
AP	Atomic Physics
APAH	Acta Physica Academiae Scientiarum Hungaricae
APJ	Astrophysical Journal
APJS	Astrophysical Journal Suppl.
APP	Acta Physica Polonica
APS	Acta Physica Slovaca
ARNPS	Annual Review of Nuclear and Particle Science
ARNS	Annual Review of Nuclear Science
ASP	Astroparticle Physics
BAPS	Bulletin of the American Physical Society
BASUP	Bulletin of the Academy of Science, USSR (Physics)
CJNP	Chinese Journal of Nuclear Physics
CJP	Canadian Journal of Physics
CNPP	Comments on Nuclear and Particle Physics
CZJP	Czechoslovak Journal of Physics
DANS	Doklady Akademii nauk SSSR
EPJ	The European Physical Journal
EPL	Europhysics Letters
FECAY	Fizika Elementarnykh Chastits i Atomnogo Yadra
HADJ	Hadronic Journal
IJMP	International Journal of Modern Physics
JAP	Journal of Applied Physics
JCAP	Journal of Cosmology and Astroparticle Physics
JETP	English Translation of Soviet Physics ZETF
JETPL	English Translation of Soviet Physics ZETF Letters
JHEP	Journal of High Energy Physics
JINR	Joint Inst. for Nuclear Research
JINRRC	JINR Rapid Communications
JPA	Journal of Physics, A
JPB	Journal of Physics, B
JPCRD	Journal of Physical and Chemical Reference Data
JPG	Journal of Physics, G
JPSJ	Journal of the Physical Society of Japan
LNC	Lettere Nuovo Cimento
MNRAS	Monthly Notices of the Royal Astronomical Society
MPL	Modern Physics Letters
NAT	Nature
NC	Nuovo Cimento
NIM	Nuclear Instruments and Methods
NJP	New Journal of Physics
NP	Nuclear Physics
NPBPS	Nuclear Physics B Proceedings Supplement
PAN	Physics of Atomic Nuclei (formerly SJNP)
PD	Physics Doklady (Magazine)

Abbreviations Used in the Particle Listings

PDAT	Physik Daten		ARCBO	Arecibo Observatory	Arecibo, PR, USA
PL	Physics Letters		ARIZ	Univ. of Arizona	Tucson, AZ, USA
PN	Particles and Nuclei		ARZS	Arizona State Univ.	Tempe, AZ, USA
PPCF	Plasma Physics Control Fusion		ASCI	Russian Academy of Sciences	Moscow , Russian Federation
PPN	Physics of Particles and Nuclei (formerly SJPN)		AST	Inst. of Phys.	Nankang, Taipei, The Republic of China (Taiwan)
PPNL	Physics of Particles and Nuclei Letters		ATEN	NCSR " Demokritos "	Aghia Paraskevi Attikis, Greece
PPNP	Progress in Particles and Nuclear Physics		ATHU	Univ. of Athens	Athens, Greece
PPSL	Proc. of the Physical Society of London		AUCK	Univ. of Auckland	Auckland, New Zealand
PR	Physical Review		BAKU	Azerbaijan Academy of Sciences , Inst. of Physics	Baku , Azerbaijan
PRAM	Pramana		BANGB	Bangabasi College	Calcutta, India
PRL	Physical Review Letters		BARC	Univ. Autónoma de Barcelona	Bellaterra (Barcelona), Spain
PRPL	Physics Reports (Physics Letters C)		BARI	Univ. di Bari	Bari, Italy
PRSE	Proc. of the Royal Society of Edinburgh		BART	Univ. of Delaware ; Bartol Research Inst.	Newark, DE, USA
PRSL	Proc. of the Royal Society of London, Section A		BASL	Inst. für Physik der Univ. Basel	Basel, Switzerland
PS	Physica Scripta		BAYR	Univ. Bayreuth	Bayreuth, Germany
PTP	Progress of Theoretical Physics		BCEN	Centre d'Etudes Nucleaires de Bordeaux-Gradignan	Gradignan, France
PTRSL	Phil. Trans. Royal Society of London		BEIJ	Beijing Univ.	Beijing, The People's Republic of China
RA	Radiochimica Acta		BEIJT	Inst. of Theoretical Physics	Beijing , The People's Republic of China
RMP	Reviews of Modern Physics		BELG	Inter-University Inst. for High Energies (ULB-VUB)	Brussel , Belgium
RNC	La Rivista del Nuovo Cimento		BELL	AT & T Bell Labs	Murray Hill, NJ, USA
RPP	Reports on Progress in Physics		BERG	Univ. of Bergen	Bergen, Norway
RRP	Revue Roumaine de Physique		BERL	DESY Zeuthen	Zeuthen , Germany
SCI	Science		BERN	Univ. of Berne	Berne, Switzerland
SJNP	Soviet Journal of Nuclear Physics		BGNA	Univ. di Bologna , & INFN, Sezione di Bologna; Viale C. Bertini Pichat, n. 6/2; Via Irnerio, 46, I-40126 Bologna	Bologna, Italy
SJPN	Soviet Journal of Particles and Nuclei		BHAB	Bhabha Atomic Research Center	Trombay, Bombay, India
SPD	Soviet Physics Doklady (Magazine)		BHEP	Inst. of High Energy Physics	Beijing , The People's Republic of China
SPU	Soviet Physics - Uspekhi		BIEL	Univ. Bielefeld	Bielefeld, Germany
UFN	Usp. Fiz. Nauk - Russian version of SPU		BING	SUNY at Binghamton	Binghamton, NY, USA
YAF	Yadernaya Fizika		BIRK	Birkbeck College, Univ. of London	London, United Kingdom
ZETF	Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki		BIRM	Univ. of Birmingham	Edgbaston, Birmingham, United Kingdom
ZETFP	Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki, Pis'ma v Redakts		BLSU	Bloomsburg Univ.	Bloomsburg, PA, USA
ZNAT	Zeitschrift für Naturforschung		BNL	Brookhaven National Lab.	Upton, NY, USA
ZPHY	Zeitschrift für Physik		BOCH	Ruhr Univ. Bochum	Bochum, Germany
Institutions			BOHR	Niels Bohr Inst.	Copenhagen Ø, Denmark
AACH	Phys. Inst. der Techn. Hochschule Aachen (Historical, use for general Inst. der Techn. Hochschule)	Aachen, Germany	BOIS	Boise State Univ.	Boise, ID, USA
AACH1	I Phys. Inst. RWTH Aachen Ib	Aachen, Germany	BOMB	Univ. of Bombay	Bombay, India
AACH3	III Phys. Inst. der Techn. Hochschule Aachen	Aachen, Germany	BONN	Rheinische Friedr.-Wilhelms-Univ. Bonn	Bonn, Germany
AACHT	Institut für Theoretische Physik E	Aachen , Germany	BORD	Univ. de Bordeaux I	Gradignan, France
AARH	Univ. of Aarhus	Aarhus C, Denmark	BOSE	S.N. Bose National Centre for Basis Sciences	Calcutta, India
ABO	Åbo Akademi	Abo, Finland	BOSK	" Rudjer Bošković " Inst.	Zagreb, Croatia
ADEL	Adelphi Univ.	Garden City, NY, USA	BOST	Boston Univ.	Boston, MA, USA
ADLD	The Univ. of Adelaide ; Dept. of Physics & Math. Physics; Centre for Subatomic Structure of Matter (CSSM)	Adelaide, SA, Australia	BRAN	Brandeis Univ.	Waltham, MA, USA
AERE	Atomic Energy Research Estab.	Didcot, United Kingdom	BRCO	Univ. of British Columbia	Vancouver, BC, Canada
AFRR	Armed Forces Radiobiology Res. Inst.	Bethesda, MD, USA	BRIS	Univ. of Bristol	Bristol, United Kingdom
AHMED	Physical Research Lab.	Ahmedabad , Gujarat, India	BROW	Brown Univ.	Providence, RI, USA
AICH	Aichi Univ. of Education	Aichi, Japan	BRUN	Brunel Univ.	Uxbridge, Middlesex, United Kingdom
AKIT	Akita Univ.	Akita, Japan	BRUX	Univ. Libre de Bruxelles ; Service de Physique des Particules Élémentaires	Bruxelles, Belgium
ALAH	Univ. of Alabama (Huntsville)	Huntsville, AL, USA	BRUXT	Univ. Libre de Bruxelles ; Physique Théorique	Bruxelles, Belgium
ALAT	Univ. of Alabama (Tuscaloosa)	Tuscaloosa, AL, USA	BUCH	Univ. of Bucharest	Bucharest-Măgurele, Romania
ALBA	SUNY at Albany	Albany, NY, USA	BUDA	KFKI Research Inst. for Particle & Nuclear Physics	Budapest , Hungary
ALBE	Univ. of Alberta	Edmonton, AB, Canada	BUFF	SUNY at Buffalo	Buffalo, NY, USA
AMES	Ames Lab.	Ames, IA, USA	BURE	Inst. des Hautes Etudes Scientifiques	Bures-sur-Yvette , France
AMHT	Amherst College	Amherst, MA, USA	CAEN	Lab. de Physique Corpusculaire, ISMRA	Caen , France
AMST	Univ. van Amsterdam	Amsterdam, The Netherlands	CAGL	Univ. degli Studi di Cagliari	Monerrato (CA), Italy
ANIK	NIKHEF	Amsterdam , The Netherlands			
ANKA	Middle East Technical Univ.; Dept. of Physics; Experimental HEP Lab	Ankara, Turkey			
ANL	Argonne National Lab.; High Energy Physics Division, Bldg. 362; Physics Division, Bldg. 203	Argonne, IL, USA			
ANSM	St. Anselm Coll.	Manchester, NH, USA			

Abbreviations Used in the Particle Listings

CAIR	Cairo University	Orman, Giza, Cairo, Egypt	DORT	Univ. Dortmund	Dortmund, Germany
CAIW	Carnegie Inst. of Washington	Washington, DC, USA	DUKE	Duke Univ.	Durham, NC, USA
CALC	Univ. of Calcutta	Calcutta, India	DURH	Univ. of Durham	Durham, United Kingdom
CAMB	DAMTP	Cambridge, United Kingdom	DUUC	University College Dublin	Dublin, Ireland
CAMP	Univ. de Campinas	Campinas , SP, Brasil	EDIN	Univ. of Edinburgh	Edinburgh, United Kingdom
CANB	Australian National Univ.	Canberra, ACT, Australia	EFI	Enrico Fermi Inst.	Chicago , IL, USA
CAPE	University of Capetown	Rondebosch, Cape, South Africa	ELMT	Elmhurst College	Elmhurst, IL, USA
CARA	Univ. Central de Venezuela	Caracas, Venezuela	ENSP	l'Ecole Normale Supérieure	Paris , France
CARL	Carleton Univ.	Ottawa, ON, Canada	EOTV	Eötvös University	Budapest, Hungary
CARLC	Carleton College	Northfield, MN, USA	EPOL	École Polytechnique	Palaiseau , France
CASE	Case Western Reserve Univ.	Cleveland, OH, USA	ERLA	Univ. Erlangen-Nurnberg	Erlangen, Germany
CAST	China Center of Advanced Science and Technology	Beijing, The People's Republic of China	ETH	Univ. Zürich	Zürich, Switzerland
CATA	Univ. di Catania	Catania, Italy	FERR	Univ. di Ferrara	Ferrara, Italy
CATH	Catholic Univ. of America	Washington, DC, USA	FIRZ	Univ. di Firenze	Sesto Fiorentino, Italy
CAVE	Cavendish Lab.	Cambridge, United Kingdom	FISK	Fisk Univ.	Nashville, TN, USA
CBNM	CBNM	Geel , Belgium	FLOR	Univ. of Florida	Gainesville, FL, USA
CCAC	Allegheny College	Meadville, PA, USA	FNAL	Fermilab	Batavia, IL, USA
CDEF	Collège de France	Paris, France	FOM	FOM , Stichting voor Fundamenteel Onderzoek der Materie	JP Utrecht , The Netherlands
CEA	Cambridge Electron Accelerator (Historical in <i>Review</i>)	Cambridge , MA, USA	FRAN	Univ. Frankfurt	Frankfurt am Main, Germany
CEBAF	Jefferson Lab—Thomas Jefferson National Accelerator Facility	Newport News , VA, USA	FRAS	Lab. Nazionali di Frascati dell'INFN	Frascati (Roma), Italy
CENG	Centre d'Etudes Nucleaires	Grenoble , France	FREIB	Albert-Ludwigs Univ.	Freiburg , Germany
CERN	CERN , European Organization for Nuclear Research	Genève, Switzerland	FREIE	Freie Univ. Berlin	Berlin, Germany
CFPA	Univ. of California , (Berkeley)	Berkeley, CA, USA	FRIB	Univ. de Fribourg	Fribourg, Switzerland
CHIC	Univ. of Chicago	Chicago, IL, USA	FSU	Florida State University	Tallahassee, FL, USA
CIAE	China Institute of Atomic Energy	Beijing, The People's Republic of China	FSUSC	Florida State Univ.	Tallahassee, FL, USA
CINC	Univ. of Cincinnati	Cincinnati, OH, USA	FUKI	Fukui Univ.	Fukui, Japan
CINV	CINVESTAV-IPN, Centro de Investigacion y de Estudios Avanzados del IPN	México, DF, Mexico	FUKU	Fukushima Univ.	Fukushima, Japan
CIT	California Inst. of Tech.	Pasadena, CA, USA	GENO	Univ. di Genova	Genova, Italy
CLER	Univ. de Clermont-Ferrand	Aubière, France	GEOR	Georgian Academy of Sciences	Tbilisi, Republic of Georgia
CLEV	Cleveland State Univ.	Cleveland, OH, USA	GESC	General Electric Co.	Schenectady, NY, USA
CMNS	Comenius Univ.	Bratislava, Slovakia	GEVA	Univ. de Genève	Genève, Switzerland
CMU	Carnegie Mellon Univ.	Pittsburgh, PA, USA	GIES	Univ. Giessen	Giessen, Germany
CNEA	Comisión Nacional de Energía Atómica	Buenos Aires, Argentina	GIFU	Gifu Univ.	Gifu, Japan
CNRC	Centre for Research in Particle Physics	Ottawa, ON, Canada	GLAS	Univ. of Glasgow	Glasgow, United Kingdom
COLO	Univ. of Colorado	Boulder, CO, USA	GMAS	George Mason Univ.	Fairfax, VA, USA
COLU	Columbia Univ.	New York, NY, USA	GOET	Univ. Göttingen	Göttingen, Germany
CONC	Concordia University	Montreal, PQ, Canada	GRAN	Univ. de Granada	Granada, Spain
CORN	Cornell Univ.	Ithaca, NY, USA	GRAZ	Univ. Graz	Graz, Austria
COSU	Colorado State Univ.	Fort Collins, CO, USA	GRON	Univ. of Groningen	Groningen, The Netherlands
CPPM	Centre National de la Recherche Scientifique, Luminy	Marseille , France	GSCO	Geological Survey of Canada	Ottawa, ON, Canada
CRAC	Kraków Inst. of Nuclear Physics	Kraków, Poland	GSI	Darmstadt Gesellschaft für Schwerionenforschung	Darmstadt, Germany
CRNL	Chalk River Labs.	Chalk River, ON, Canada	GUEL	Univ. of Guelph	Guelph, ON, Canada
CSOK	Oklahoma Central State Univ.	Edmond, OK, USA	GWU	George Washington Univ.	Washington, DC, USA
CST	Univ. of Science and Technology of China	Hefei , Anhui 230027, The People's Republic of China	HAHN	Hahn-Meitner Inst. Berlin GmbH	Berlin, Germany
CSULB	California State Univ.	Long Beach, CA, USA	HAIF	Technion – Israel Inst. of Tech.	Technion, Haifa, Israel
CUNY	City College of New York	New York, NY, USA	HAMB	Univ. Hamburg	Hamburg, Germany
CURIN	Univ. Pierre et Marie Curie (Paris VI), LPNHE	Paris, France	HANN	Univ. Hannover	Hannover, Germany
CURIT	Univ. Pierre et Marie Curie (Paris VI), LPTHE	Paris, France	HARC	Houston Advanced Research Ctr.	The Woodlands, TX, USA
DALH	Dalhousie Univ.	Halifax, NS, Canada	HARV	Harvard Univ.	Cambridge, MA, USA
DARE	Daresbury Lab	Cheshire, United Kingdom	HAWA	Univ. of Hawai'i	Honolulu, HI, USA
DARM	Tech. Hochschule Darmstadt	Darmstadt, Germany	HEBR	Hebrew Univ.	Jerusalem, Israel
DELA	Univ. of Delaware ; Dept. of Physics & Astronomy	Newark, DE, USA	HEID	Univ. Heidelberg ; (unspecified division) (Historical in <i>Review</i>)	Heidelberg, Germany
DELH	Univ. of Delhi	Delhi, India	HEIDH	Ruprecht-Karls Univ. Heidelberg	Heidelberg, Germany
DESY	DESY , Deutsches Elektronen-Synchrotron	Hamburg , Germany	HEIDP	Univ. Heidelberg ; Physik Inst.	Heidelberg, Germany
DFAB	Escuela de Ingenieros	Bilbao , Spain	HEIDT	Univ. Heidelberg ; Inst. für Theoretische Physik	Heidelberg, Germany
DOE	Department of Energy	Washington, DC, USA	HELS	Univ. of Helsinki ; Dept. of Phys. Sci., High Energy Phys. Div. (SEFO); Dept. of Phys. Sci., Theor. Phys. Div. (TFO); Helsinki Institute of Physics (HIP)	University of Helsinki, Finland
			HIRO	Hiroshima Univ.	Higashi-Hiroshima, Japan
			HOUS	Univ. of Houston	Houston, TX, USA
			HPC	Hewlett-Packard Corp.	Cupertino, CA, USA

Abbreviations Used in the Particle Listings

HSCA	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA, USA	KIAE	The Russian Research Center, Kurchatov Inst.	Moscow , Russian Federation
IAS	Inst. for Advanced Study	Princeton, NJ, USA	KIAM	Keldysh Inst. of Applied Math., Acad. Sci., Russia	Moscow , Russian Federation
IASD	Dublin Inst. for Advanced Studies	Dublin, Ireland	KIDR	Vinča Inst. of Nuclear Sciences	Belgrade, Serbia and Montenegro
IBAR	Ibaraki Univ.	Ibaraki, Japan	KIEV	Institute for Nuclear Research	Kiev , Ukraine
IBM	IBM Corp.	Palo Alto, CA, USA	KINK	Kinki Univ.	Osaka, Japan
IBMY	IBM	Yorktown Heights, NY, USA	KNTY	Univ. of Kentucky	Lexington, KY, USA
IBS	Inst. for Boson Studies	Pasadena, CA, USA	KOBE	Kobe Univ.	Kobe, Japan
ICEPP	Univ. of Tokyo; Int. Center for Elementary Particle Physics (ICEPP)	Tokyo, Japan	KOMAB	Univ. of Tokyo, Komaba	Tokyo, Japan
ICRR	Univ. of Tokyo	Chiba, Japan	KONAN	Konan Univ.	Kobe, Japan
ICTP	Abdus Salam International Centre for Theoretical Physics	Trieste , Italy	KOSI	Inst. of Experimental Physics	Košice , Slovakia
IFIC	IFIC (Instituto de Física Corpuscular)	Valencia , Spain	KYOT	Kyoto Univ.; Dept. of Physics, Graduate School of Science	Kyoto, Japan
IFRJ	Univ. Federal do Rio de Janeiro	Rio de Janeiro, RJ, Brasil	KYOTU	Kyoto Univ.; Yukawa Inst. for Theor. Physics	Kyoto, Japan
IIT	Illinois Inst. of Tech.	Chicago, IL, USA	KYUN	Kyungpook National Univ.	Taegu, Republic of Korea
ILL	Univ. of Illinois at Urbana-Champaign	Urbana, IL, USA	KYUSH	Kyushu Univ.	Fukuoka, Japan
ILLC	Univ. of Illinois at Chicago	Chicago, IL, USA	LALO	LAL, Laboratoire de l'Accélérateur Linéaire	Orsay , France
ILLG	Inst. Laue-Langevin	Grenoble, France	LANC	Lancaster Univ.	Lancaster, United Kingdom
IND	Indiana Univ.	Bloomington, IN, USA	LANL	Los Alamos National Lab. (LANL)	Los Alamos, NM, USA
INEL	E G and G Idaho, Inc.	Idaho Falls, ID, USA	LAPP	LAPP, Lab. d'Annecy-le-Vieux de Phys. des Particules	Annecy-le-Vieux , France
INFN	Ist. Nazionale di Fisica Nucleare (Generic INFN, unknown location)	Various places, Italy	LASL	U.C. Los Alamos Scientific Lab. (Old name for LANL)	Los Alamos, NM, USA
INNS	Leopold-Franzens Univ.	Innsbruck , Austria	LATV	Latvian State Univ.	Riga, Latvia
INPK	Inst. of Nuclear Physics	Kraków , Poland	LAUS	EPFL Lausanne	Lausanne, Switzerland
INRM	INR, Inst. for Nud. Research	Moscow , Russian Federation	LAVL	Univ. Laval	Quebec, QC, Canada
INUS	KEK, High Energy Accelerator Research Organization	Tokyo, Japan	LBL	Lawrence Berkeley National Lab.	Berkeley, CA, USA
IOAN	Univ. of Ioannina	Ioannina, Greece	LCGT	Univ. di Torino	Turin, Italy
IOFF	A.F. Ioffe Phys. Tech. Inst.	St. Petersburg , Russian Federation	LEBD	Lebedev Physical Inst.	Moscow , Russian Federation
IOWA	Univ. of Iowa	Iowa City, IA, USA	LECE	Univ. di Lecce	Lecce, Italy
IPN	IPN, Inst. de Phys. Nucl.	Orsay , France	LEED	Univ. of Leeds	Leeds, United Kingdom
IPNP	Univ. Pierre et Marie Curie (Paris VI)	Paris, France	LEHI	Lehigh Univ.	Bethlehem, PA, USA
IRAD	Inst. du Radium (Historical)	Paris , France	LEHM	Lehman College of CUNY	Bronx, NY, USA
ISNG	Lab. de Physique Subatomique et de Cosmologie (LPSC)	Grenoble , France	LEID	Univ. Leiden	Leiden, The Netherlands
ISU	Iowa State Univ.	Ames, IA, USA	LEMO	Le Moyné Coll.	Syracuse, NY, USA
ITEP	ITEP, Inst. of Theor. and Exp. Physics	Moscow , Russian Federation	LEUV	Katholieke Univ. Leuven	Leuven, Belgium
ITHA	Ithaca College	Ithaca, NY, USA	LINZ	Univ. Linz	Linz, Austria
IUPU	Indiana Univ., Purdue Univ. Indianapolis	Indianapolis, IN, USA	LISB	Inst. Nacional de Investigacion Cientifica	Lisboa CODEX, Portugal
JADA	Jadavpur Univ.	Calcutta, India	LISBT	Univ. Técnica de Lisboa, Inst. Superior Técnico	Lisboa , Portugal
JAGL	Jagiellonian Univ.	Kraków, Poland	LIVP	Univ. of Liverpool	Liverpool, United Kingdom
JHU	Johns Hopkins Univ.	Baltimore, MD, USA	LLL	Lawrence Livermore Lab. (Old name for LLNL)	Livermore, CA, USA
JINR	JINR, Joint Inst. for Nuclear Research	Dubna , Russian Federation	LLNL	Lawrence Livermore National Lab.	Livermore, CA, USA
JULI	Julich, Forschungszentrum	Julich, Germany	LOCK	Lockheed Palo Alto Res. Lab.	Palo Alto, CA, USA
JYV	Univ. of Jyväskylä	Jyväskylä, Finland	LOIC	Imperial College of Science Tech. & Medicine	London, United Kingdom
KAGO	Univ. of Kagoshima	Kagoshima-shi, Japan	LOQM	Queen Mary, Univ. of London	London, United Kingdom
KANS	Univ. of Kansas	Lawrence, KS, USA	LOUC	University College London	London, United Kingdom
KARL	Univ. Karlsruhe; (unspecified division) (Historical in Review)	Karlsruhe, Germany	LOUV	Univ. Catholique de Louvain	Louvain-la-Neuve, Belgium
KARLE	Univ. Karlsruhe; Inst. für Experimentelle Kernphysik	Karlsruhe, Germany	LOWC	Westfield College (Historical, see LOQM (Queen Mary and Westfield joined))	London, United Kingdom
KARLK	Forschungszentrum Karlsruhe	Karlsruhe, Germany	LRL	U.C. Lawrence Radiation Lab. (Old name for LBL)	Berkeley , CA, USA
KARLT	Univ. Karlsruhe; Inst. für Theoretische Teilchenphysik	Karlsruhe, Germany	LSU	Louisiana State Univ.	Baton Rouge, LA, USA
KAZA	Kazakh Inst. of High Energy Physics	Alma Ata, Kazakhstan	LUND	Univ. of Lund	Lund, Sweden
KEK	KEK, High Energy Accelerator Research Organization	Ibaraki-ken, Japan	LUND	Fysiska Institutionen	Lund, Sweden
KENT	Univ. of Kent	Canterbury, United Kingdom	LYON	Institute de Physique Nucléaire de Lyon (IPN)	Villeurbanne, France
KEYN	Open Univ.	Milton Keynes, United Kingdom	MADE	CSIC, Inst. de Estructura de la Materia	Madrid , Spain
KFTI	Kharkov Inst. of Physics and Tech. (KFTI)	Kharkov, Ukraine	MADR	C.I.E.M.A.T	Madrid , Spain
			MADU	Univ. Autónoma de Madrid	Madrid , Spain
			MANI	Univ. of Manitoba	Winnipeg, MB, Canada
			MANZ	Johannes-Gutenberg-Univ.	Mainz , Germany
			MARB	Univ. Marburg	Marburg, Germany

Abbreviations Used in the Particle Listings

MARS	Centre de Physique des Particules de Marseille	Marseille, France	NIU	Northern Illinois Univ.	De Kalb, IL, USA
MASA	Univ. of Massachusetts Amherst	Amherst, MA, USA	NMSU	New Mexico State Univ. ; Dept. of Physics; Part. & Nucl. Phys. Group, Box 30001/Dept. MSC 3D	Las Cruces, NM, USA
MASB	Univ. of Massachusetts Boston	Boston, MA, USA	NORD	Nordita	Copenhagen Ø, Denmark
MASD	Univ. of Massachusetts Dartmouth	N. Dartmouth , MA, USA	NOTT	Univ. of Nottingham	Nottingham, United Kingdom
MCGI	McGill Univ.	Montreal, QC, Canada	NOVM	Inst. of Mathematics	Novosibirsk , Russian Federation
MCBS	Univ. of Manchester	Manchester, United Kingdom	NOVO	BINP, Budker Inst. of Nuclear Physics	Novosibirsk , Russian Federation
MCMS	McMaster Univ.	Hamilton, ON, Canada	NPOL	Polytechnic of North London	London, United Kingdom
MEHTA	Harish-Chandra Research Inst.	Allahabad, India	NRL	Naval Research Lab	Washington, DC, USA
MEIS	Meisei Univ.	Tokyo, Japan	NSF	National Science Foundation	Arlington, VA, USA
MELB	Univ. of Melbourne	Victoria, Australia	NTHU	National Tsing Hua Univ.	Hsinchu, The Republic of China (Taiwan)
MEUD	Observatoire de Meudon	Meudon, France	NTUA	National Tech. Univ. of Athens	Athens, Greece
MICH	Univ. of Michigan	Ann Arbor, MI, USA	NWES	Northwestern Univ.	Evanston, IL, USA
MILA	Univ. di Milano	Milano, Italy	NYU	New York Univ.	New York, NY, USA
MILAI	INFN, Sez. di Milano	Milano, Italy	OBER	Oberlin College	Oberlin, OH, USA
MINN	Univ. of Minnesota	Minneapolis, MN, USA	OCH	Ochanomizu Univ.	Tokyo, Japan
MISS	Univ. of Mississippi	University, MS, USA	OHIO	Ohio Univ.	Athens, OH, USA
MISSR	Univ. of Missouri	Rolla, MO, USA	OKAY	Okayama Univ.	Okayama, Japan
MIT	MIT Massachusetts Inst. of Technology	Cambridge, MA, USA	OKLA	Univ. of Oklahoma	Norman, OK, USA
MIU	Maharishi International Univ.	Fairfield, IA, USA	OKSU	Oklahoma State Univ.	Stillwater, OK, USA
MIYA	Miyazaki Univ.	Miyazaki-shi, Japan	OREG	Univ. of Oregon ; Inst. of Theor. Science; U.O. Center for High Energy Physics	Eugene, OR, USA
MONP	Univ. de Montpellier II	Montpellier, France	ORNL	Oak Ridge National Laboratory	Oak Ridge, TN, USA
MONS	Univ. de Mons-Hainaut	Mons, Belgium	ORSAY	Univ. de Paris Sud	Orsay CEDEX , France
MONT	Univ. de Montréal ; Laboratoire René-J.-A.-Lévesque	Montréal, PQ, Canada	ORST	Oregon State Univ.	Corvallis, OR, USA
MONTCU	Univ. de Montréal ; Centre de recherches mathématiques	Montréal, PQ, Canada	OSAK	Osaka Univ.	Osaka, Japan
MOSU	Skobel'syn Inst. of Nuclear Physics, Moscow State Univ.	Moscow, Russian Federation	OSKC	Osaka City Univ.	Osaka-shi, Japan
MPCM	Max Planck Inst. fur Chemie	Mainz , Germany	OSLO	Univ. of Oslo	Oslo, Norway
MPEI	Moscow Physical Engineering Inst.	Moscow, Russian Federation	OSU	Ohio State Univ.	Columbus, OH, USA
MPIA	Max-Planck-Institute für Astrophysik	Garching, Germany	OTTA	Univ. of Ottawa	Ottawa, ON, Canada
MPIH	Max-Planck-Inst. für Kernphysik	Heidelberg , Germany	OXF	University of Oxford	Oxford, United Kingdom
MPIM	Max-Planck-Inst. für Physik	München , Germany	OXFTP	Univ. of Oxford	Oxford, United Kingdom
MSU	Michigan State Univ.	East Lansing, MI, USA	PADO	Univ. degli Studi di Padova	Padova, Italy
MTHO	Mount Holyoke College	South Hadley, MA, USA	PARIN	Univ. Paris VI et Paris VII , IN ² P ³ /CNRS	Paris, France
MULH	Centre Univ. du Haut-Rhin	Mulhouse, France	PARIS	Univ. de Paris (Historical)	Paris , France
MUNI	Ludwig-Maximilians-Univ. München	Garching, Germany	PARIT	Univ. Paris VII , LP THE	Paris, France
MUNT	Tech. Univ. München	Garching, Germany	PARM	Univ. di Parma	Parma, Italy
MURA	Midwestern Univ. Research Assoc. (Historical in <i>Review</i>)	Stroughton, WI, USA	PAST	Institut Pasteur	Paris , France
NAAS	North Americal Aviation Science Center (Historical in <i>Review</i>)	Thousand Oaks, CA, USA	PATR	Univ. of Patras	Patras, Greece
NAGO	Nagoya Univ.	Nagoya, Japan	PAVI	Univ. di Pavia	Pavia, Italy
NAPL	Univ. di Napoli	Napoli, Italy	PENN	Univ. of Pennsylvania	Philadelphia, PA, USA
NASA	NASA	Greenbelt, MD, USA	PGIA	INFN, Sezione di Perugia	Perugia, Italy
NBS	U.S. National Bureau of Standards (Old name for NIST)	Gaithersburg, MD, USA	PISA	Univ. di Pisa	Pisa, Italy
NBSB	National Inst. Standards Tech.	Boulder, CO, USA	PISAI	INFN, Sez. di Pisa	Pisa, Italy
NCAR	National Center for Atmospheric Research	Boulder, CO, USA	PITT	Univ. of Pittsburgh	Pittsburgh, PA, USA
NCARO	North Carolina State Univ.	Raleigh , NC, USA	PLAT	SUNY at Plattsburgh	Plattsburgh, NY, USA
NDAM	Univ. of Notre Dame	Notre Dame, IN, USA	PLRM	Univ. di Palermo	Palermo, Italy
NEAS	North-eastern Univ.	Boston, MA, USA	PNL	Battelle Memorial Inst.	Richland, WA, USA
NEUC	Univ. de Neuchâtel	Neuchâtel, Switzerland	PNPI	Petersburg Nuclear Physics Inst. of Russian Academy of Sciences	Gatchina, Russian Federation
NICEA	Univ. de Nice	Nice, France	PPA	Princeton-Penn. Proton Accelerator (Historical in <i>Review</i>)	Princeton, NJ, USA
NICEO	Observatoire de Nice	Nice, France	PRAG	Inst. of Physics, ASCR	Prague , Czech Republic
NIHO	Nihon Univ.	Tokyo, Japan	PRIN	Princeton Univ.	Princeton, NJ, USA
NIIG	Niigata Univ.	Niigata, Japan	PSI	Paul Scherrer Inst.	Villigen PSI, Switzerland
NIJM	Univ. of Nijmegen	ED NIJMEGEN, The Netherlands	PSLL	Physical Science Lab	Las Cruces, NM, USA
NIRS	Nat. Inst. Radiological Sciences	Chiba , Japan	PSU	Penn State Univ.	University Park, PA, USA
NIST	National Institute of Standards & Technology	Gaithersburg, MD, USA	PUCB	Pontificia Univ. Católica do Rio de Janeiro	Rio de Janeiro, RJ, Brasil
			PUEB	Univ. Autonoma de Puebla	Puebla , Pue, Mexico
			PURD	Purdue Univ.	West Lafayette, IN, USA
			QUKI	Queen's Univ.	Kingston, ON, Canada
			RAL	Rutherford Appleton Lab.	Chilton, Didcot, Oxon., United Kingdom
			REGE	Univ. Regensburg	Regensburg, Germany
			REHO	Weizmann Inst. of Science	Rehovot, Israel

Abbreviations Used in the Particle Listings

RHBL	Royal Holloway, Univ. of London	Egham, Surrey, United Kingdom	SMU	Southern Methodist Univ.	Dallas, TX, USA
RHEL	Rutherford High Energy Lab (Old name for RAL)	Chilton, Didcot, Oxon., United Kingdom	SNSP	Scuola Normale Superiore	Pisa, Italy
RICE	Rice Univ.	Houston, TX, USA	SOFI	Inst. for Nuclear Research and Nuclear Energy	Sofia, Bulgaria
RIKEN	Riken Accelerator Research Facility (RARF), Cyclotron Lab	Saitama, Japan	SOFU	Univ. of Sofia "St. Kliment Ohridski"	Sofia, Bulgaria
RIKK	Rikkyo Univ.	Tokyo, Japan	SPAUL	Univ. de São Paulo	São Paulo, SP, Brasil
RIS	Rowland Inst. for Science	Cambridge, MA, USA	SPIFT	Inst. de Física Teórica (IFT)	São Paulo, SP, Brasil
RISC	Rockwell International	Thousand Oaks, CA, USA	SSL	Univ. of California (Berkeley); Space Sciences Lab	Berkeley, CA, USA
RISL	Universities Research Reactor	Risley, Warrington, United Kingdom	STAN	Stanford Univ.	Stanford, CA, USA
RISO	Riso National Laboratory	Roskilde, Denmark	STEV	Stevens Inst. of Tech.	Hoboken, NJ, USA
RL	Rutherford High Energy Lab (Old name for RAL)	Chilton, Didcot, Oxon., United Kingdom	STLO	St. Louis Univ.	St. Louis, MO, USA
RMCS	Royal Military Coll. of Science	Swindon, Wilts., United Kingdom	STOH	Stockholm Univ.	Stockholm, Sweden
ROCH	Univ. of Rochester	Rochester, NY, USA	STON	SUNY at Stony Brook	Stony Brook, NY, USA
ROCK	Rockefeller Univ.	New York, NY, USA	STRB	IREs, Inst. de Recherches Subatomiques	Strasbourg, France
ROMA	Univ. di Roma (Historical)	Roma, Italy	STUT	Univ. Stuttgart	Stuttgart, Germany
ROMA2	Univ. di Roma, "Tor Vergata"	Roma, Italy	STUTM	Max-Planck-Inst.	Stuttgart, Germany
ROMAI	INFN, Sez. di Roma	Roma, Italy	SUGI	Sugiyama Jogakuen Univ.	Aichi, Japan
ROSE	Rose-Hulman Inst. of Technology	Terre Haute IN, USA	SURR	Univ. of Surrey	Guildford, Surrey, United Kingdom
RPI	Rensselaer Polytechnic Inst.	Troy, NY, USA	SUSS	Univ. of Sussex	Brighton, United Kingdom
RUTG	Rutgers, the State Univ. of New Jersey	Piscataway, NJ, USA	SVR	Savannah River Labs.	Aiken, SC, USA
SACL	CE Saclay, DAPNIA	Gif-sur-Yvette, France	SYDN	Univ. of Sydney	Sydney, NSW, Australia
SACL	CEA Saclay, DAPNIA	Gif-sur-Yvette, France	SYRA	Syracuse Univ.	Syracuse, NY, USA
SACLD	CEA Saclay, DAPNIA; Direction	Gif-sur-Yvette, France	TAJK	Acad. Sci., Tadzhik SSR	Dushanbe, Tadzhikistan
SAGA	Saga Univ.	Saga-shi, Japan	TAMU	Texas A&M Univ.	College Station, TX, USA
SAHA	Saha Inst. of Nuclear Physics	Bidhannagar, Calcutta, India	TATA	Tata Inst. of Fundamental Research	Bombay, India
SANG	Kyoto Sangyo Univ.	Kyoto-shi, Japan	TBIL	Tbilisi State University	Tbilisi, Republic of Georgia
SANI	Physics Lab., Ist. Superiore di Sanità	Roma, Italy	TELA	Tel-Aviv Univ.	Tel Aviv, Israel
SASK	Univ. of Saskatchewan	Saskatoon, SK, Canada	TELE	Teledyne Brown Engineering	Huntsville, AL, USA
SASSO	Lab. Naz. del Gran Sasso dell'INFN	Assergi (L'Aquila), Italy	TEMP	Temple Univ.	Philadelphia, PA, USA
SAVO	Univ. de Savoie	Chambery, France	TENN	Univ. of Tennessee	Knoxville, TN, USA
SBER	California State Univ.	San Bernardino, CA, USA	TEXA	Univ. of Texas at Austin	Austin, TX, USA
SCHAF	W.J. Schaffer Assoc.	Livermore, DA, USA	TGAK	Tokyo Gakugei Univ.	Tokyo, Japan
SCIT	Science Univ. of Tokyo	Tokyo, Japan	TGU	Tohoku Gakuin Univ.	Miyagi, Japan
SCOT	Scottish Univ. Research and Reactor Ctr.	Glasgow, United Kingdom	THES	Aristotle Univ. of Thessaloniki (AUTH)	Thessaloniki, Greece
SCUC	Univ. of South Carolina	Columbia, SC, USA	TINT	Tokyo Inst. of Technology	Tokyo, Japan
SEAT	Seattle Pacific Coll.	Seattle, WA, USA	TISA	Sagamihara Inst. of Space & Astronautical Sci.	Kanagawa, Japan
SEIB	Austrian Research Center, Seibersdorf LTD.	Seibersdorf, Austria	TMSK	Inst. Nuclear Physics	Tomsk, Russian Federation
SEOU	Korea Univ.; Dept. of Physics; HEP Group	Seoul, Republic of Korea	TMTC	Tokyo Metropolitan Coll. Tech.	Tokyo, Japan
SEOUL	Seoul National Univ.; Dept. of Physics, Coll. of Natural Sciences; Center for Theoretical Physics	Seoul, Republic of Korea	TMU	Tokyo Metropolitan Univ.	Tokyo, Japan
SERP	IHEP, Inst. for High Energy Physics (Also known as Serpukhov)	Protvino, Russian Federation	TNTO	Univ. of Toronto	Toronto, ON, Canada
SETO	Seton Hall Univ.	South Orange, NJ, USA	TOHO	Toho Univ.	Chiba, Japan
SFLA	Univ. of South Florida	Tampa, FL, USA	TOHOK	Tohoku Univ.	Sendai, Japan
SFRA	Simon Fraser University	Burnaby, BC, Canada	TOKA	Tokai Univ.	Shimizu, Japan
SFSU	California State Univ.	San Francisco, CA, USA	TOKAH	Tokai Univ.	Hiratsuka, Japan
SHAMS	Ain Shams University	Abbassia, Cairo, Egypt	TOKMS	Univ. of Tokyo; Meson Science Laboratory	Tokyo, Japan
SHEF	Univ. of Sheffield	Sheffield, United Kingdom	TOKU	Univ. of Tokushima	Tokushima-shi, Japan
SHMP	Univ. of Southampton	Southampton, United Kingdom	TOKY	Univ. of Tokyo; High-Energy Physics Theory Group	Tokyo, Japan
SIEG	Univ. Siegen	Siegen, Germany	TOKYC	Univ. of Tokyo; Dept. of Chemistry	Tokyo, Japan
SILES	Univ. of Silesia	Katowice, Poland	TORI	Univ. degli Studi di Torino	Torino, Italy
SIN	Swiss Inst. of Nuclear Research (Old name for VILL)	Villigen, Switzerland	TPTI	Lab. of High Energy Phys.	Tashkent, Republic of Uzbekistan
SING	National Univ. of Singapore	Kent Ridge, Singapore	TRIN	Univ. of Dublin, Trinity College	Dublin, Ireland
SISSA	Scuola Internazionale Superiore di Studi Avanzati	Trieste, Italy	TRIU	TRIUMF	Vancouver, BC, Canada
SLAC	Stanford Linear Accelerator Center	Menlo Park, CA, USA	TRST	Univ. di Trieste	Trieste, Italy
SLOV	Inst. of Physics, Slovak Acad. of Sciences	Bratislava, Slovakia	TRSTI	INFN, Sez. di Trieste	Trieste, Italy
			TRSTT	Univ. di Trieste	Trieste, Italy
			TSUK	Univ. of Tsukuba	Ibaraki-ken, Japan
			TTAM	Tamagawa Univ.	Tokyo, Japan
			TUAT	Tokyo Univ. of Agriculture Tech.	Tokyo, Japan
			TUBIN	Univ. Tübingen	Tübingen, Germany
			TUFTS	Tufts Univ.	Medford, MA, USA
			TUW	Technische Univ. Wien	Vienna, Austria
			TUZL	Tuzla Univ.	Tuzla, Argentina

Abbreviations Used in the Particle Listings

UCB	Univ. of California (Berkeley); Dept. of Physics	Berkeley, CA, USA	VIEN	Inst. für Ho chenergiephysik (HEPHY)	Vienna, Austria
UCD	Univ. of California (Davis)	Davis, CA, USA	VILL	Inst. for Particle Physics of ETH Zürich	Zürich, Switzerland
UCI	Univ. of California (Irvine)	Irvine, CA, USA	VIRG	Univ. of Virginia	Charlottesville, VA, USA
UCLA	Univ. of California (Los Angeles)	Los Angeles, CA, USA	VPI	Virginia Tech.	Blacksburg, VA, USA
UCND	Union Carbide Corp.	Oak Ridge, TN, USA	VRIJ	Vrije Univ.	HV Amsterdam, The Netherlands
UCR	Univ. of California (Riverside)	Riverside, CA, USA	WABRNE	Eidgenössisches Amt für Messwesen	Wabern, Switzerland
UCSB	Univ. of California (Santa Barbara); Physics Dept.	Santa Barbara, CA, USA	WARS	Warsaw Univ.	Warsaw, Poland
UCSBT	Univ. of California (Santa Barbara); Kavli Inst. for Theoretical Physics	Santa Barbara, CA, USA	WASCR	Waseda Univ.; Cosmic Ray Division	Tokyo, Japan
UCSC	Univ. of California (Santa Cruz)	Santa Cruz, CA, USA	WASH	Univ. of Washington; Elem. Particle Experiment (EPE); Particle Astrophysics (PA)	Seattle, WA, USA
UCSD	Univ. of California (San Diego)	La Jolla, CA, USA	WASU	Waseda Univ.; Dept. of Physics, High Energy Physics Group	Tokyo, Japan
UMD	Univ. of Maryland	College Park, MD, USA	WAYN	Wayne State Univ.	Detroit, MI, USA
UNC	Univ. of North Carolina	Greensboro, NC, USA	WESL	Wesleyan Univ.	Middletown, CT, USA
UNCCH	Univ. of North Carolina at Chapel Hill	Chapel Hill, NC, USA	WIEN	Univ. Wien	Vienna, Austria
UNCS	Union College	Schenectady, NY, USA	WILL	Coll. of William and Mary	Williamsburg, VA, USA
UNH	Univ. of New Hampshire	Durham, NH, USA	WINR	Andrzej Soltan Inst. for Nuclear Studies	Warsaw, Poland
UNM	Univ. of New Mexico	Albuquerque, NM, USA	WISC	Univ. of Wisconsin	Madison, WI, USA
UOEH	Univ. of Occupational and Environmental Health	Kitakyushu, Japan	WITW	Univ. of the Witwatersrand	Wits, South Africa
UPNJ	Uppsala College	East Orange, NJ, USA	WMIU	Western Michigan Univ.	Kalamazoo, MI, USA
UPPS	Uppsala Univ.	Uppsala, Sweden	WONT	The Univ. of Western Ontario	London, ON, Canada
UPR	Univ. of Puerto Rico	Rio Piedras, PR, USA	WOOD	Woodstock College (No longer in existence)	Woodstock, MD, USA
URI	Univ. of Rhode Island	Kingston, RI, USA	WUPP	Bergische Univ.	Wuppertal, Germany
USC	Univ. of Southern California	Los Angeles, CA, USA	WURZ	Univ. Würzburg	Würzburg, Germany
USF	Univ. of San Francisco	San Francisco, CA, USA	WUSL	Washington Univ.	St. Louis, MO, USA
UTAH	Univ. of Utah; Dept. of Physics; High-Energy Astrophysics Inst.	Salt Lake City, UT, USA	WYOM	Univ. of Wyoming	Laramie, WY, USA
UTRE	Univ. of Utrecht	Utrecht, The Netherlands	YALE	Yale Univ.	New Haven, CT, USA
UTRO	Norwegian Univ. of Science & Technology	Trondheim, Norway	YARO	Yaroslavl State Univ.	Yaroslavl, Russian Federation
UZINR	Acad. Sci., Ukrainian SSR	Uzhgorod, Ukraine	YCC	Yokohama Coll. of Commerce	Yokohama, Japan
VALE	Univ. de Valencia	Burjassot, Valencia, Spain	YERE	Yerevan Physics Inst.	Yerevan, Armenia
VALP	Valparaiso Univ.	Valparaiso, IN, USA	YOKO	Yokohama National Univ.	Yokohama-shi, Japan
VAND	Vanderbilt Univ.	Nashville, TN, USA	YORKC	York Univ.	Toronto, Canada
VASS	Vassar College	Poughkeepsie, NY, USA	ZAGR	Zagreb Univ.	Zagreb, Croatia
VICT	Univ. of Victoria	Victoria, BC, Canada	ZARA	Univ. de Zaragoza	Zaragoza, Spain
			ZEEM	Univ. van Amsterdam	TV Amsterdam, The Netherlands
			ZURI	Univ. Zürich	Zürich, Switzerland

