
Abbreviations

- A1200:** Fragment separator at the NSCL until 1999. The number 1200 refers to the maximum bending power of the device. The A stands for analysis.
- A1900:** Current NSCL fragment separator. The A stands for analysis.
- ALARA:** As low as reasonably achievable
- ALPI:** Superconducting booster linac at the Laboratori Nazionali di Legnaro, Italy
- ANC:** Asymptotic Normalization Coefficient
- ANL:** Argonne National Laboratory, Argonne, Illinois
- ARTEMIS:** Advanced Room Temperature Ion Source at the NSCL
- ATLAS:** Argonne Tandem-Linac Accelerator System
- ATOMKI:** Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, Hungary
- AURA:** Association of Universities for Research in Astronomy
- BCS:** Bardeen-Cooper-Schrieffer
- BeppoSAX:** Italian-Dutch X-ray Satellite
- BigRIPS:** Big RIKEN Projectile Fragment Separator
- BNL:** Brookhaven National Laboratory, Upton, New York
- BOE:** Basis of Estimate
- BPM:** Beam Position Monitor
- BRIC:** Breeding Ion Charge Experiment at INFN Bari, Italy
- BUU:** Boltzmann-Ühling-Uhlenbeck
- CCF:** Coupled Cyclotron Facility at the NSCL
- CEBAF:** Continous Electron Beam Accelerator Facility at JLAB
- CERN:** European Organization for Nuclear Research
- CESR:** Cornell Electron Storage Ring at the Laboratory for Elementary-Particle Physics, Cornell University, Ithaca, New York
- CEU:** Conference Experience for Undergraduates
- Chandra:** Satellite X-ray Observatory
- CI:** Confidence Indicator
- CICC:** Cable in Conduit Conductor
- CKM:** Cabibbo-Kobayashi-Maskawa
- CP:** Product of Charge and Parity
- CPT:** Product of Charge, Parity, and Time
- CVC:** Conserved Vector Current
- cw:** continuous wave
- CXC:** Chandra X-ray Center
- dc:** direct current
- DOE:** Department of Energy
- DRAGON:** Detector of Recoils and Gammas of Nuclear Reactions at TRIUMF
- DWBA:** Distorted Wave Born Approximation
- EBIS:** Electron Beam Ion Source
- EBIT:** Electron Beam Ion Trap

EC: Electron Capture
ECR: Electron Cyclotron Resonance
ECRIS: Electron Cyclotron Resonance Ion Source
EDF: Energy Density Functional
EDM: Electric Dipole Moment
EOS: Equation of State
ESA: European Space Agency
EXOSAT: European Space Agency's X-ray Observatory
Fermilab: Fermi National Accelerator Laboratory, Batavia, Illinois
FNAL: Fermi National Accelerator Laboratory, Batavia, Illinois
FRDM: Finite Range Droplet Model
FRS: Fragment Separator at GSI
GANIL: Grand Accélérateur National d' Ions Lourds, Caen, France
GDM: Generator Driven Mode
GDR: Giant Dipole Resonance
GMR: Giant Monopole Resonance
GRETA: Gamma-Ray Energy Tracking Array
GRETINA: First stage of GRETA
GSI: Gesellschaft für Schwerionenforschung, Darmstadt, Germany
GT: Gamow-Teller
GXPf1: A shell model interaction
HAPPEX: Hall A Proton Parity Experiment at JLAB
HBF: Hartree-Fock-Bogoliubov
HELIOS: Helical Orbit Spectrometer proposed by Western Michigan University, Kalamazoo, Michigan
HEPA: High Efficiency Particulate Air
HERES: Hamburg/ESO r-process Enhanced Star Survey
Hfb9: A Skyrme Interaction
HRIBF: Holifield Radioactive Ion Beam Facility at ORNL
HTS: High Temperature Superconductor
IBM: Interacting Boson Model
IF: Intermediate Frequency
IH DTL: Interdigital H-type Drift Tube Linac
INFN: Istituto Nazionale di Fisica Nucleare, Italy
IP: Ionization Processes
ISAC: Isotope Separator and Accelerator at TRIUMF
ISF: Isotope Science Facility proposed at the NSCL
ISIS: Pulsed Neutron & Muon Source, Rutherford Appleton Laboratory, Chilton, UK
ISOL: Isotope Separation On-Line
ISOLDE: Isotope Separator On-Line at CERN, Geneva, Switzerland
IVSGMR: Isovector Spin Giant Monopole Resonance
JAERI: Japan Atomic Energy Research Institute, Kashiwa, Japan
JINA: Joint Institute for Nuclear Astrophysics

JLAB: Jefferson Laboratory or Thomas Jefferson National Accelerator Facility (TJNAF), Newport News, Virginia

K50, K100, K500, K1200: Cyclotron accelerators built at the NSCL

KB3G: A shell model interaction

KEK: National Laboratory for High Energy Physics, Tsukuba, Japan

KEK-B: An asymmetric electron positron collider for B physics at KEK

KVI: Kernfysisch Versneller Instituut, Groningen, The Netherlands

LBNL: Lawrence Berkeley National Laboratory, Berkeley, California

LCW: Low Conductivity Water

LEP: Large Electron and Positron Collider at CERN

LEBIT: Low Energy Beam and Ion Trap Facility at the NSCL

LEBT: Low Energy Beam Transport

linac: linear accelerator

LISE: Ligne d'Ions Super Epluchés at GANIL

LISE-3: LISE and Wien filter combination at GANIL

LISOL: Leuven Isotope Separator On-Line at Louvain-la-Neuve

LLNL: Lawrence Livermore National Laboratory, Livermore, California

LLRF: Low Level Radio Frequency

LNS: Laboratori Nazionali del Sud, Catania, Italy

LPC: Laboratoire de Physique Corpusculaire, Caen, France

LPSC: Laboratoire de Physique Subatomique et de Cosmologie, Grenoble, France

MAXEBIS: EBIS test setup at GSI

MAYA: Active gas target detector at GANIL

MEBT: Medium Energy Beam Transport

MHB: Mult-Harmonic Buncher

MIPP: Main Injector Particle Production at FNAL

MISTRAL: Mass Measurements at Isolde Using a Transmission Radiofrequency Spectrometer On-Line at ISOLDE/CERN

MoNA: Modular Neutron Array at the NSCL

MRI: Major Research Instrumentation Program funded by the NSF

MSU: Michigan State University, East Lansing, Michigan

MUSIC: Multiple Sampling Ion Chamber

NASA: National Aeronautics and Space Administration

NMR: Nuclear Magnetic Resonance

NQR: Nuclear Quadrupole Resonance

NSAC: Nuclear Science Advisory Committee

NSCL: National Superconducting Cyclotron Laboratory, East Lansing, Michigan

NSE: Nuclear Statistical Equilibrium

NSF: National Science Foundation

NuMI: Neutrinos at the Main Injector at FNAL

ORNL: Oak Ridge National Laboratory, Oak Ridge, Tennessee

QRPA: Quasiparticle Random Phase Approximation

PAC: Program Advisory Committee

PAN: Physics of the Atomic Nucleus, JINA outreach program at the NSCL
PET: Positron Emission Tomography
PHOENIX: Charge breeding ECRIS developed at the Institut des Sciences Nucléaires, Grenoble, France
PPARC: Particle Physics and Astronomy Research Council
PSI: Paul Scherrer Institut, Villigen, Switzerland
R&D: Research and Development
RDM: Recoil Distance Method
REU: Research Experience for Undergraduates
REX-ISOLDE: Radioactive beam Experiment (reaccelerator) at ISOLDE/CERN
rf: radio frequency
RFFS: Radio Frequency Fragment Separator
RFQ: Radio Frequency Quadrupole
RHIC: Relativistic Heavy Ion Collider at BNL
RIA: Rare Isotope Accelerator
RIAFRAG: DOE RIA Fragmentation proposal DE-FG02-04ER41313
RIAISOL: DOE RIA ISOL proposal DE-FG02-04ER41322
RIB: Radioactive Ion Beam
RIBF: Radioactive Ion Beam Factory at RIKEN
RIKEN: The Institute of Physical and Chemical Research, Wako, Japan
RIPS: Riken Projectile Fragment Separator
RLD: Rotating Liquid Drop
rms: root-mean-square
RPA: Random Phase Approximation
RRR: Residual Resistivity Ratio
RXTE: Rossi X-ray Timing Explorer
S800: S800 Spectrograph at the NSCL. The number 800 refers to the maximum bending power of the device. The S stands for spectrograph.
SAO: Smithsonian Astrophysical Observatory
SC: Superconducting
SCC: Second Class Current
SciDAC: Scientific Discovery through Advanced Computing
S-DALINAC: Superconducting Darmstadt LInear Accelerator, Darmstadt, Germany
SDPF-M: Shell model interaction
SDSS: Sloan Digital Sky Survey
SeGA: Segmented Germanium Array at the NSCL
SEGUE: Sloan Extension for Galactic Understanding and Exploration
SEL: Self Excited Loop
SHARAQ: Spectroscopy of Hadron Systems by Radioactive Quantum Beams planned for the RIBF/RIKEN
SHIPTRAP: Separator of Heavy Ion Reaction Products TRAP at GSI
Sly4, Skp, Skx: Skyrme interactions
SNS: Spallation Neutron Source at ORNL

SPES: Study and Production of Exotic Species at INFN Legnaro, Italy
SRF: Superconducting Radio Frequency
STAR: Solenoidal Tracker at RHIC
STScI: Space Telescope Science Institute
SuperFRS: Super Fragment Separator at GSI
SuSI: Superconducting Source for Ions at the NSCL
SUSY: Supersymmetry
TAS: Total Absorption Spectroscopy
TDPAD: Time Dependent Perturbed Angular Distribution
TITAN: TRIUMF's Ion Trap Facility for Atomic and Nuclear Science
TOF: Time of Flight
TEC: Total Estimated Cost
TPC: Total Project Cost
TPC: Time Projection Chamber
TRIUMF: TRI-University Meson Facility, Vancouver, Canada
TRI μ P: Trapped Radioactive Atoms, μ -Laboratories for Fundamental Physics at KVI
UNEDF: Universal Nuclear Energy Density Functional
USD: Shell model interaction
VCX: Voltage Controlled Reactance
VENUS: Versatile ECR ion source for Nuclear Science at LBNL
VLT: The Very Large Telescope Project, European Southern Observatory, Garching, Germany
WBS: Work Breakdown Structure
WITCH: Weak Interaction Trap for Charged Particles at ISOLDE/CERN
XMM-Newton: X-ray Multi-Mirror Newton, orbiting X-ray observatory