

Decay Station Working Group :

Priority Physics (at 10, 50, 100 kW)
Support of FRIB white paper physics goals. Limits of nuclear existence Shell-evolution far from stability Evolution of shapes, Correlations revealed in particle and gamma decays, Exotic decay modes – two proton emission, beta-delayed fission, beta-delayed multi-neutron emission, direct neutron emission, r-process, rp-process, fundamental symmetries

Priority Beams (at 10, 50, 100 kW)
During Year 1/Year 2, it is anticipated that ample new decay properties will be obtained using primary beams of ^{238}U , ^{124}Xe , ^{78}Kr , ^{86}Kr , ^{48}Ca , ^{92}Mo , ^{82}Se . Additional or alternative beams may be recommended as new information comes forward; we would like to explore the options of developing other primary beams e.g. ^{144}Sm , ^{112}Sn for the studies around proton drip line

Priority (Planned) Equipment
(at 10, 50, 100 kW)
Decay spectroscopy equipment will be ready for Year-One experiments including various implantation arrays (Si, Ge, Scintillator), neutron counters (^3He and Scintillator), clover array, TAS

New: high granularity Si DSSD array, high-resolution neutron detector, and modern high-resolution gamma-ray detectors, all providing new capabilities.

Beam property and DAQ requirements?

Fast beams: 1-5 cm diameter, adjustable, RF kicker

Low energy beam: 20-60keV, 1 mm

Unified Digital Data Acquisition preferably a decay station pool of electronics.

Identification method for high-Z nuclei

Decay station FRIB isotopes

400 kW FRIB priority nuclei for decay studies

