

Hi Resolution In-Flight Gamma Spec WG

Priority Physics (at 10, 50, 100 kW):

The science case for in-beam g-ray spectroscopy has been laid out in the GRETA whitepaper and covers all overarching FRIB science topics and uses fast and reaccelerated beams at various intensities.

Priority Beams (at 10, 50, 100 kW):

The science cases presented in the GRETA whitepaper, which will likely evolve, would require, for example, ^{48}Ca , ^{82}Se , ^{238}U and ^{78}Kr .

We stress that in-beam g-ray spectroscopy offers science opportunities across the nuclear chart and thus primary beams reaching neutron-rich as well as neutron-deficient regions are needed. Undoubtedly, the science opportunities will evolve until FRIB comes online and some limited flexibility in the year-1 beam list would be appreciated.

Priority (Planned) Equipment (at 10, 50, 100 kW)

GRETINA will be available at FRIB day-1 (10 kW). Full GRETA will be available starting at about 50kW and is needed to realize the full scientific potential of FRIB. Ancillary devices (separators, particle detectors) are essential along with appropriate targetry.

Beam property and DAQ requirements?

At ReA: beam “as DC as possible”, need good beam/target diagnostics.

Fast beams: tracking of incoming beam profile and angles, RF separator in beam line for optimized purity for p-rich and N=Z nuclei.