

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

The High Rigidity Spectrometer for FRIB.¹ REMCO ZEGERS, NSCL, Michigan State University, FRIB HIGH RIGIDITY SPECTROMETER WORKING GROUP COLLABORATION — The fast-beam program at FRIB has tremendous discovery potential, enabling experiments with beam intensities of a few ions per second or less through the luminosity afforded by thick targets. The High Rigidity Spectrometer (HRS) will become the centerpiece of the fast-beam program: its maximum rigidity (8 Tm) will match the rigidities at which rare-isotope production yields at the FRIB fragment separator are maximum across the entire chart of nuclei and enable experiments with the most neutron-rich nuclei available at FRIB. Gain factors in luminosity of up to 100 or are achievable compared to running with existing spectrometers, which have a maximum rigidity of 4 Tm. The highest luminosity gains are for the most neutron-rich unstable isotopes. The HRS will accommodate different ion-optical modes and provide the flexibility to run in coincidence with a diverse set of other detector systems, such as the Gamma Ray Energy Tracking Array (GRETA) and the Modular Neutron Array (MoNA-LISA). In the presentation, an overview of the scientific opportunities with the HRS and the present layout of the HRS will be given.

¹This work is supported by the U.S. Department of Energy Office of Science under Grant DE-SC0014554, ION-OPTICAL AND ASSOCIATED MAGNET FEASIBILITY STUDY OF A HIGH RIGIDITY SPECTROMETER.

Remco Zegers
Michigan State Univ

Date submitted: 27 Dec 2017

Electronic form version 1.4