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First Results from GRETINA at the S800 Spectrometer

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The next-generation gamma-ray tracking array GRETINA has begun its first physics campaign at the National Superconducting Cyclotron Laboratory (NSCL). GRETINA, a first implementation of the future 4π GRETA device, consists of 28 highly segmented Ge detectors, covering 1π of the solid angle. The array makes use of the concepts of signal decomposition to localize the interaction of gamma-rays within the detector volumes, and gamma-ray tracking to identify the first hit position within the array. Combined, these techniques provide both an accurate position (within 2mm) for Doppler reconstruction, and rejection of Compton scattering events to reduce background and improve spectral quality. Completed in March 2011, GRETINA was successfully built and commissioned at LBNL, before moving to NSCL in the Spring of 2012. A physics campaign encompassing a wide range of topics in nuclear structure, nuclear reactions and astrophysics is currently underway at NSCL, using GRETINA coupled to the S800 spectrograph. The combination of these powerful devices, a cutting-edge gamma-ray spectrometer and a high-resolution, large acceptance spectrograph, allows spectroscopic studies of the most exotic nuclear systems, moving toward both the proton and neutron driplines. We will report on first results from the campaign of GRETINA at the S800, and present preliminary data from experiments studying nuclei across the chart of the nuclides.