Nuclear Structure Physics with Advanced Gamma-Detector Arrays (NSP13)

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GRETINA: status and future plans

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The gamma ray tracking array GRETINA started operation at MSU in spring 2012. It was installed at the target position of the S800 spectrometer at NSCL. Currently it has 7 modules each with four 36-fold segmented Ge detector, covering 1-p solid angle in the angular range of 60 to 90 degrees. The tracking detectors have the unique ability of resolving the energy and position of the individual interaction points and establishing the gamma-ray scattering sequence. GRETINA with S800 is a powerful combination for fast radioactive beam experiments at NSCL; their high position resolution is crucial for Doppler correction to achieve good energy resolution; their higher efficiency overcomes the low intensity of exotic beams and extends the range of study to more neutron-rich and proton-rich nuclei; and gamma ray tracking reduces background and improves spectral quality. More than 20 experiments have been approved by the PAC and will be completed by July of 2013. We will report on selected results from the campaign of GRETINA at the MSU and discuss the future plans.

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