Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Investigation of Structure of Gd and Tb Nuclei using STARS and LiBerACE CAIN BONNIWELL, BEN PAUERSTEIN, J.M. ALLMOND, C.W. BEAUSANG — This experiment, performed at Livermore Berkeley National Lab as a collaboration of Livermore, Berkeley, and the University of Richmond, was designed to investigate the structure of gadolinium and terbium nuclei using the P + 156Gd reaction at E beam = 27 MeV. The experimental design included use of the STARS system for detecting charged particles as well as the LiBerACE clover array for detecting gamma rays. The master gate was set to record particle-gamma as well as gamma-gamma coincidences. The data is currently being analyzed using the RADWARE escl8r software package which has allowed the creation of extensive level schemes for several Gd and Tb nuclei. So far the data suggests new gamma ray transitions as well as new energy states in 154Gd and 155Tb. The project is ongoing, and the results will be presented. This work was supported by the US Department of Energy under grant numbers DE-FG52NA26206 and DE-FG02-05ER41379.

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Date submitted: 24 Aug 2009 Electronic form version 1.4