

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Beta-decay spectroscopy with a Planar Germanium Double sided Strip Detector NICOLE LARSON, SEAN LIDDICK, CHRISTOPHER PROKOP, SCOTT SUCHYTA, NSCL/MSU — Traditional beta-decay spectroscopic studies at fragmentation facilities employ a double-sided silicon strip detector into which a cocktail beam of radioactive ions is implanted. The silicon detector monitors the arrival of each ion and detects the subsequent emission of a beta-decay electron. The beta-decay is correlated with a previously implanted ion in software based on position and temporal information. The thickness of the detector (typically 1 mm) combined with the low- Z of silicon make it difficult to efficiently detect all beta decays emitted from the radioactive isotopes. In an attempt to remedy this deficiency, a planar Ge double-sided strip detector (GeDSSD) has been incorporated into the Beta Counting System at National Superconducting Cyclotron Laboratory for decay spectroscopy studies. The higher Z and increased thickness of the GeDSSD compared to its silicon analogue should increase the detection efficiency for beta decays. Results from commission test will be presented. This work was supported in part by the National Science Foundation, Grant-PHY1102511 and the U.S. Department of Energy National Nuclear Security Administration under award number DE-NA0000979.

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Date submitted: 02 Jul 2012

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