

Abstract Submitted
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Active Target Simulation¹ NATHAN SMITH, PETER DRAZNIK, NATHAN FRANK, Augustana College, MONA COLLABORATION — We have simulated an existing experimental design to determine the resolution improvement upon energy measurements of neutron unbound nuclei. A number of experiments of this type have been performed at the National Superconducting Cyclotron Laboratory (NSCL), located at Michigan State University. An excited nucleus is typically produced with a radioactive beam interacting with a passive Beryllium target. Many different nuclei are produced in experiment, each of which immediately decays into a charged particle and neutron. The charged particles are detected and the neutrons interact in scintillation detectors such as the Modular Neutron Array (MoNA) and Large Multi-Institutional Scintillation Array (LISA). In our simulation, we have constructed an active target that provides additional information such that the point of nuclear interaction within the target may be determined. This information improves the resolution in decay energy measurements of neutron unbound isotopes. This presentation will cover some aspects of the simulation process, as well as showing some of the results that demonstrate the simulated improvement over a passive target.

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