Abstract Submitted
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Geant4 Simulation of A Multi-layered target for the Study of Neutron-Unbound Nuclei[1] PAUL GUEYE, JESSICA FREEMAN, Hampton University, NATHAN FRANK, Augustana College, MICHAEL THOENNESSEN, Michigan State University/National Superconducting Cyclotron Laboratory, MONA COLLABORATION — The MoNA/LISA setup at the National Superconducting Cyclotron Laboratory at Michigan State University has provided an avenue to study the nuclear structure of unbound states/nuclei at and beyond the neutron dripline for the past decade using secondary beams from the Coupled Cyclotron Facility. A new multi-layered Si/Be active target is being designed to specifically study neutron-unbound nuclei. In these experiments the decay energy is reconstructed from fragment-neutron coincidence measurements that are typically low in count rate. The multi-layered target will allow the use of thicker targets to increase the reaction rates, thus enabling to study currently out of reach nuclei such as 21C, 23C and 24N. The Geant4 Monte Carlo toolkit is currently used to model these physics processes within the multi-layered target and expected invariant mass distributions. A description of the experimental setup and simulation work will be discussed.

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