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Segmented Target Design[1] ABDUL RAHMAN MERHI, NATHAN FRANK, Augustana College, PAUL GUEYE, Hampton University, MICHAEL THOENNESSEN, NSCL/MSU, MONA COLLABORATION — A proposed segmented target would improve decay energy measurements of neutron-unbound nuclei. Experiments like this have been performed at the National Superconducting Cyclotron Laboratory (NSCL) located at Michigan State University. Many different nuclei are produced in such experiments, some of which immediately decay into a charged particle and neutron. The charged particles are bent by a large magnet and measured by a suite of charged particle detectors. The neutrons are measured by the Modular Neutron Array (MoNA) and Large Multi-Institutional Scintillation Array (LISA). With the current target setup, a nucleus in a neutron-unbound state is produced with a radioactive beam impinged upon a beryllium target. The resolution of these measurements is very dependent on the target thickness since the nuclear interaction point is unknown. In a segmented target using alternating layers of silicon detectors and Be-targets, the Be-target in which the nuclear reaction takes place would be determined. Thus the experimental resolution would improve. This poster will describe the improvement over the current target along with the status of the design.

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