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**Neutron Multiplicity Discrimination in MoNA**[1] SHEA MOSBY, EVAN MOSBY, WARREN F. ROGERS, Westmont College, MONA COLLABORATION — The Modular Neutron Array (MoNA) is a high efficiency neutron detector located at the National Superconducting Cyclotron Laboratory at Michigan State University and used in conjunction with the NSCL/FSU sweeper magnet to conduct coincidence experiments on unstable nuclei near the neutron drip-line. Experiments using this detector combination involve the loss of one or more neutrons from particle-unbound nuclei; it is therefore important to distinguish neutron multiplicity in MoNA in order to effectively analyze data from these experiments. We've developed an algorithm to distinguish neutron multiplicity based on the kinematic propagation properties of neutrons though MoNA. Scatter plots of neutron velocity, energy deposition, and scattering angle are constructed from which gates can be drawn for neutron multiplicity discrimination. Data from a few one- and two-neutron experiments have been analyzed, and results will be presented.

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