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Behavior of Neutrons in Plastic Scintillators\ CAROLINE CAPUANO, ANDREA ROBINSON, ANTHONY KUCHERA, Davidson College, PAUL GUEYE, Michigan State University, THE MONA COLLABORATION —
h $-abstract-$\pardThe purpose of this experiment is to measure the scattering behavior of neutrons in plastic scintillators, to improve the simulations of nuclear interactions. The experiment was conducted at the LANSCE WNR facility at Los Alamos National Laboratory using a neutron beam of energies ranging from 20 to 400 MeV and trajectory targeted on 16 BC-408 plastic scintillator detectors from the Modular Neutron Array arranged in an ascending horizontal array. The configuration of the scintillators will improve the data set used for simulations of neutron interactions. The multiple neutron production and the scattering angle probability, velocity, and energy between the first and second hit of the neutrons were examined with the data collected from the experiment. The results showed that the new configuration improved the data set collected and, in the future, will help improve the accuracy for higher energy simulation. It is important to improve and analyze the behavior of the scattered neutron because the simulation packages for higher beam and neutron energies are less accurate above 200 MeV.\pard\pard-/abstract-\

Caroline Capuano
None

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