Geant4 Simulation of MoNA[1] A. FRITSCH, Wabash College, M. HEIM, Marquette University, T. BAUMANN, S. MOSBY, A. SPYROU, Michigan State University, MONA COLLABORATION — The Modular Neutron Array (MoNA) is a neutron detector array consisting of 144 plastic scintillator detector modules at the National Superconducting Cyclotron Laboratory (NSCL). The detailed simulation of the neutron interaction with the detector is a crucial tool for optimizing detector configurations and analyzing experimental data. For this purpose the MoNA collaboration is developing a simulation package based on Geant4, a state-of-the-art C++ toolkit for the simulation of the passage of particles through matter. Our work this past summer involved introducing detector geometry into the Geant4 code, as well as determining how the program handles simulations of different physical interactions inside of the detector. By upgrading from Geant3 to Geant4, we are able to better simulate the physics of our experiments.

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