Abstract Submitted
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Neutron dEtector with Xn Tracking (NEXT)[1] AARON KINDRED, MUSTAFA RAJABALI, Tennessee Technological University, ROBERT GRZYWACZ, JOE HEIDEMAN, SHREE NEUPANE, University of Tennessee Knoxville, NEXT COLLABORATION — The neutron detector NEXT will allow higher accuracy studies for beta-delayed neutron emission, while maintaining neutron-gamma discrimination. NEXT utilizes thin, segmented, inorganic scintillators which are paired with photosensitive devices to increase detection efficiency for energy measurement and tracking capabilities. NEXT is currently in a prototype phase and is continuously being modeled with GEANT4 based simulation software, NEXTSim. Neutrons and gamma-rays with energies ranging from 100 keV to 10 MeV have been simulated and show consistent results in regards to scattering patterns and energy resolution within NEXT. Sample simulation outputs will be shown and described in this work. This work is funded by NSF grant NSF-1919735, subgrant A20-0254-S001.

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