Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Radiation Shielding and Dose Estimation for Nuclear Physics Experiment DEVAKI BHATTA PATHAK, Louisiana Tech Univ — Precise estimation of the radiation dose which can occurred during any nuclear physics experiment is very important, this helps us to design and develop the shielding for nuclear physics experiments accordingly and prevent any catastrophic damages to equipment. The simulation for radiation dose measurement was done using GEANT4 for PREX-II and MOLLER experiments. The dose measurement was done for neutron, and photon on detectors at different locations and compared to an experimental result. We found that, the result obtained from the simulation using GEANT4 is in close approximation to the actual dose during the PREX-II experiment providing a benchmark for simulation estimations of radiation dose. This result will be valuable for other upcoming MOLLER experiment in designing and developing realistic radiation shielding measures while minimizing the cost and effort.

Devaki Bhatta Pathak
Louisiana Tech Univ

Date submitted: 12 Jan 2020 Electronic form version 1.4