

## Evaluated Nuclear Data Based Photon Induced Nuclear Reaction Model of GEANT4

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**Abstract :** We develop an evaluated nuclear data based photonuclear reaction model of GEANT4 for a more accurate simulation of photon-induced neutron production. The evaluated photonuclear data libraries from the ENDF/B-VII.1 are taken as input. Incident photon energies up to 140 MeV which is the threshold energy for the pion production are considered. For checking the validity of the use of the data-based model, we calculate the photoneutron production cross-sections and yields and compared them with experimental data. The results obtained from the developed model are found to be in good agreement with the experimental data for  $(\gamma, xn)$  reactions.

**Keywords :** ENDF/B-VII.1, GEANT4, photoneutron, photonuclear reaction

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