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## The impact of FTFP and QGSP models on neutrino flux at the On-Axis and Off-Axis NuMI neutrino detector locations by using G4NuMI simulation

In this work, we would like to investigate the dependency of the physics model on predicting neutrino flux at the On-Axis and Off-Axis NuMI neutrino detector locations by using G4NuMI, a GEANT4 based beam simulation. In particular, we would like to present the effect of hadron production models in neutrino flux simulation and prediction with and without applying the corrections from existing thin target data sets on hadron production in the simulation. Finally, we will show the neutrino flux for MINERvA and NOvA ND locations according to the thresholds of muon energy seen by the muon monitors.

### Mini-abstract

Neutrino flux predictions at the location of experiment detectors with different hadronic models

### Experiment/Collaboration

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