Neutrino Interaction Model Tuning at NOvA

Authorship annotation
for the NOvA Collaboration

Session and Location
Wednesday Session, Poster Wall #60 (Auditorium Gallery Right)

Abstract content
The NOvA neutrino oscillation experiment uses the GENIE event generator to predict neutrino interactions in its detectors. Recent data, recent reanalysis of extant data, and continued development of theoretical models have brought to light deficiencies in the default GENIE cross section model, which in turn impact the predicted spectra used to infer oscillation parameters. We discuss modifications to GENIE version 2.12.2, motivated by these various sources, which culminate in a tune using NOvA near detector muon neutrino scattering data. This tuned version of the generator is used for the predictions in NOvA’s far detector oscillation analyses.

Poster included in proceedings:
yes

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