

Constraining neutrino interaction model parameters in NOvA

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NOvA is a long-baseline neutrino experiment based at Fermilab that studies neutrino oscillation parameters via electron neutrino appearance and muon neutrino disappearance. In these measurements, we compare the Far Detector data to a predicted energy spectrum constrained by the Near Detector (ND) data. The ND data is simulated using GENIE, with the neutrino cross section model adjusted to better describe the data by modifying the rate of Meson Exchange Current (MEC) interactions and the Final State Interactions. To characterize the performance of these adjustments, the ND simulation and data are divided into a set of samples based on multiplicity and topology. A fit to constrain MEC and other cross section parameters using these samples will be described.

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