Contribution ID: **417**   Type: **Poster accelerator**

Data-driven Techniques for ν_e Signal and Background Predictions in NOνA

NOνA is a long baseline neutrino oscillation experiment, using two functionally identical detectors to measure ν_e appearance and ν_μ disappearance at the Far Detector (FD) with the NuMI Beam at Fermilab. The Near Detector (ND) measures the beam before oscillations, which will allow us to make a measurement of the signal flux before it has oscillated and the background components which can mimic ν_e at our FD. We use the ND in three different ways to predict the amount of signal and background expected at the FD to partially cancel systematic uncertainties. The background prediction has three components: Charged Current (CC) ν_μ, ν_e and Neutral Current (NC) events. We need to determine the fraction of the selected ND sample in each of these components because some oscillate significantly (CC ν_μ) and some do not oscillate at all (NC). This poster will present details of these three data-driven techniques for predicting the FD spectrum.

Authorship annotation

for the NOνA collaboration

Session and Location

Wednesday Session, Poster Wall #80 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)