Contribution ID: **418** Type: **Poster accelerator**

Systematic Uncertainties and Cross-Checks for the NOvA Joint $\nu_\mu + \nu_e$ Analysis

One of the key physics goals of NOvA is to constrain oscillation parameters such as the octant of θ_{23}, δ_{cp}, and the neutrino mass hierarchy via a joint $\nu_\mu + \nu_e$ oscillation analysis. We do this by propagating ν_μs from the world's most powerful neutrino beam at Fermilab, over a baseline of 810 km to northern Minnesota, USA, and measure the ν_μ to ν_e oscillation probability. NOvA will be presenting its latest oscillation results, based on 9×10^{20} (7×10^{20}) protons on target neutrino (antineutrino) data. Strong constraints on these oscillation parameters require a rigorous treatment of systematic uncertainties and performing thorough cross-checks. In this poster, we present an overview of the treatment of systematic uncertainties, considering contributions from the beam flux, calibration, and uncertainties in our modeling of interactions, as well as cross checks using muon removed simulations and cosmic muon brem showers.

Authorship annotation

For the NOvA Collaboration

Session and Location

Wednesday Session, Poster Wall #81 (Auditorium Gallery Left)

Poster included in proceedings:

yes

Primary authors: GROH, Micah (Indiana University); Dr GANDRAJULA, Reddy Pratap (Michigan State University)

Presenters: GROH, Micah (Indiana University); Dr GANDRAJULA, Reddy Pratap (Michigan State University)

Track Classification: Poster (participating in poster prize competition)