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Extrapolation, Systematics and Results for the NOvA Disappearance Analysis

Saturday 6 August 2016 18:00 (2 hours)

The NOνA experiment is a long-baseline, off-axis, two-detector neutrino-oscillation experiment using the NuMI beam at Fermilab. The disappearance analysis measures oscillation of the muon-neutrino beam and is sensitive to the neutrino mixing angle θ_{23} and mass splitting Δm^2_{32}. This poster presents the method used to generate predicted far-detector energy spectra based on extrapolation of near-detector observations, accounting for flux and acceptance differences between the detectors. Varying the inputs to the extrapolation allows estimation of the effect of various systematic uncertainties on the far detector prediction. Because the detectors are of similar construction and are placed at similar angles from the beam axis, there is significant cancellation of systematic error. Finally, oscillation results based far detector observations are presented.

Author: LOZIER, Joseph (California Institute of Technology)

Presenter: LOZIER, Joseph (California Institute of Technology)

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