

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Systematic Uncertainties in the NOvA Oscillation Analysis YIBING ZHANG, Univ of Sussex, NOVA COLLABORATION — NOvA is a long-baseline accelerator neutrino oscillation experiment using the NuMI neutrino beam at Fermilab. Its physics goals are probing the neutrino mass hierarchy, CP-violating phase δ_{cp} and octant of θ_{23} mixing angle by observing the ν_e appearance and ν_μ disappearance signals. Two functionally identical detectors are placed off-axis from the centre of the NuMI beam. The near detector at Fermilab is 100 m underground, blocking a great number of cosmic rays, and the far detector located at Ash River, 810 km away from the beam source. Systematic uncertainties originating from beam flux, cross section, detector response, calibration, and other sources play a significant role in the NOvA analysis. This talk will present details of the systematic uncertainties and their effects on NOvA's latest precision measurements in both ν_e appearance and ν_μ disappearance oscillation channels.

Yibing Zhang
Univ of Sussex

Date submitted: 05 Jan 2021

Electronic form version 1.4