

# Measuring long-baseline neutrino oscillations with NOvA experiment

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The NOvA experiment is a long-baseline accelerator neutrino experiment designed to study neutrino oscillations and interactions with high precision. Utilizing an intense beam of muon neutrinos and antineutrinos produced at Fermilab, NOvA employs two functionally identical detectors: a Near Detector (ND) located close to the beam source and a Far Detector (FD) situated 810 kilometers away in northern Minnesota. This configuration enables the measurement of oscillation parameters by comparing the energy spectra and flavor composition of neutrinos observed at both sites. The Near Detector plays a critical role in characterizing the unoscillated beam and provides detailed data on neutrino interactions, essential for reducing systematic uncertainties in oscillation analyses. In this talk, we will present NOvA results on oscillation parameters as well as new insights from interaction studies in the Near Detector.

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