

Reconstructing Neutrino Energies with the NOvA Detectors

NOvA is a long-baseline neutrino oscillation experiment that aims to investigate the neutrino mass ordering, probe the lepton sector CP violating phase factor, and improve the limits on current neutrino oscillation parameters by measuring oscillations of both neutrinos and anti-neutrinos produced in the NuMI beam at Fermilab. Careful comparisons of the neutrino energy spectrum measured by the Near Detector, located 1 km from the NuMI target, and again at the Far Detector 810 km away near Ash River, MN, drive the main oscillation analyses. Therefore, precision measurements are maximized by achieving the best possible energy resolution in each detector. This poster presents current, traditional methods of estimating electron and muon neutrino energies, and investigates the potential for deep-learning approaches to energy estimation.

Authorship annotation

for the NOvA collaboration

Session and Location

Wednesday Session, Poster Wall #78 (Auditorium Gallery Right)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)