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Near-to-Far Extrapolation in Transverse Momentum at NOvA

NOvA is long-baseline neutrino oscillation experiment at Fermilab. In the NOvA ν_μ disappearance and ν_e appearance analyses the Far Detector (FD) spectrum is predicted by extrapolating the ν_μ charged current event spectrum at the Near Detector (ND) to the FD. ND and FD differences in selection efficiency and acceptance lead to uncertainties in the measured oscillation parameters. Extrapolating the ND spectrum to the FD in transverse momentum of the final state lepton helps account for these differences and reduces uncertainties in the measured oscillation parameters. This poster presents the results of extrapolating in transverse momentum in the 2020 NOvA ν_μ disappearance and ν_e appearance joint analysis.

Mini-abstract

Near-to-far extrapolation in transverse momentum reduces uncertainty in NOvA's oscillation results

Experiment/Collaboration

NOvA

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