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Data-Driven Constraint on the Total Neutrino Flux Using ν-e Elastic Scattering in the NOvA Near Detector

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NOvA, a long-baseline neutrino oscillation experiment at Fermilab, is designed to measure ν_e appearance and ν_μ disappearance rates in the NuMI beam. NOvA comprises two finely segmented liquid scintillator detectors at 14 mrad off-axis in the NuMI beam. Taking advantage of a tightly focused off-axis view of the NuMI neutrino beam, and a finely instrumented liquid scintillator detector, NOvA has an excellent opportunity to make high precision measurements of neutrino interactions using its near detector. An accurate prediction of the neutrino flux is needed for precision oscillation and cross-section measurements. In this talk, I shall present the data-driven constraint on the total neutrino flux using using $\nu - e$ elastic scattering in the NOvA near detector.

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