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Results From the Joint Fit to ν_e Appearance and ν_μ Disappearance in NOvA

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NOvA is a long baseline neutrino oscillation experiment at Fermilab. It uses two detectors, the Near Detector at Fermilab and the Far Detector at a distance of 810 km at Ash River, Minnesota. These two functionally identical liquid scintillator calorimeters are 14 mrad off-axis from the beam, providing a neutrino flux narrowly peaked at around 2 GeV. NOvA measures the rate of ν_e appearance and ν_μ disappearance at the Far Detector in the ν_μ beam produced by the NuMI facility at Fermilab.

In this talk, I will present the latest NOvA results from a joint fit to ν_μ disappearance and ν_e appearance. This talk will focus on the ν_e appearance analysis. The latest data set had 6.05×10^{20} protons-on-target and we observed 33 ν_e candidate events over 8.2 predicted background events in our Far Detector. I will describe the fit to the FD data and discuss constraints on δ_{CP}, mass-hierarchy and the octant of the θ_{23} mixing angle.

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