



Poster session 1 - Monday 4 July

P1.030 Electron neutrino appearance in NOvA

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The NOvA experiment is an off-axis, two-detector experiment designed to study electron neutrino appearance in the NuMI beam from Fermilab. The Far Detector is 810 km downstream of the NuMI target. This particularly long baseline gives us sensitivity to the still unknown charge-parity phase angle and the neutrino mass hierarchy. A smaller and functionally identical Near Detector, located at Fermilab, is used to evaluate and reduce systematic uncertainties in our analysis.

With over two years of data-taking, we have nearly doubled the exposure reported in our initial analysis. In this poster, we discuss the analysis of this larger data set. First, we show comparisons of data and Monte Carlo in the Near Detector. Then, we discuss our estimation of the Far Detector signal and background distributions using our Near Detector data. Additionally, we use Far Detector data collected outside of the NuMI beam time-window to estimate the cosmogenic background. Using these estimates, we can extract information on the yet to be known fundamental properties of neutrinos.