



Poster session 1 - Monday 4 July

P1.028 Charge current electron neutrino event identification in the NOvA detectors

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Taking advantage of a two-detector technique, a tightly focused off-axis view of the NuMI neutrino beam, and a pair of finely instrumented liquid scintillator detectors, NOvA is in a prime position to contribute to precision measurements of the neutrino mass splitting, mass hierarchy, and CP violation. NOvA started taking data in 2014 and has already observed electron neutrino appearance at the 3.3 sigma level with the first 7% of the total projected dataset last year.

A key part of that precise measurement is the accurate identification of neutrino interactions in our detector. This poster will describe several different approaches to identifying charge current electron neutrino candidates in the NOvA detectors, and how those approaches are tested in both simulation and data to assess both nominal performance and sensitivity to systematic uncertainties. Additionally it will describe in detail a new convolutional neural network based approach to electron neutrino identification in the NOvA detectors, where tools developed in the computer vision community are used to accurately identify events in the detector without using detailed reconstruction.