



Contribution ID: 172

Type: **Parallel contribution**

Neutrino interactions in the NOvA near detector prototype

Thursday 11 August 2011 10:50 (20 minutes)

The NuMI Off-Axis electron neutrino Appearance (NOvA) experiment has started taking data with the 209 ton liquid scintillator-filled prototype of the near detector in the end of November 2010. This detector collects data from two sources, the Main Injector complex and from the Booster Neutrino Beam. At the location of the prototype detector due to the off-axis effect the NuMI beam is narrow with maximum around 2GeV. On the other hand the detector is on axis of the BNB beam and sees its maximum around 1GeV. This configuration gives the NOvA experiment a unique opportunity of studying neutrino and anti-neutrino interactions with carbon target from two low energy beams.

I will present physics program for the NOvA experiment focusing on the cross section measurements and preliminary data obtained with the near detector prototype.

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Session Classification: Neutrino Physics

Track Classification: Neutrino Physics