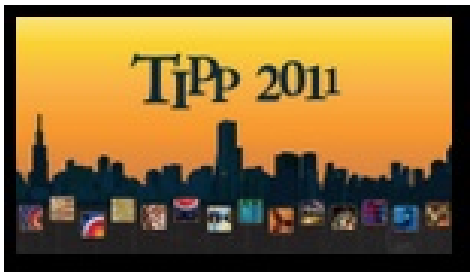

Contribution ID: **52** Type: **Oral Presentation**

Initial Performance from the NOvA Surface Prototype Detector

Thursday 9 June 2011 14:20 (20 minutes)

NOvA, the NuMI Off-Axis ν<Subscript>e</Subscript> Appearance experiment will study ν<Subscript>μ</Subscript>⟶ν<Subscript>e</Su oscillations, characterized by the mixing angle Θ<Subscript>13</Subscript>. Provided Θ<Subscript>13</Subscript> is large enough, NOvA will ultimately determine the ordering of the neutrino masses and measure CP violation in neutrino oscillations. A complementary pair of detectors will be constructed 14 mrad off beam axis to optimize the energy profile of the neutrinos. This system consists of a surface based 15 kTon liquid scintillatior tracking volume located 810 km from the main injector source (NuMI) in Ash River, Minnesota and an underground 222 Ton near detector at Fermi National Accelerator Laboratory (FNAL). The first neutrino signals at the Ash River Site are expected prior to the 2012 accelerator shutdown. In the meantime, a near detector surface prototype has been completed and neutrinos from the NuMI source at FNAL have been observed using the same novel PVC and liquid scintillator detector system that will be deployed in the full scale experiment. Design and initial performance characteristics of this prototype system along with implications for the full NOvA program will be presented. Additional talks on specific subsystem will also be highlighted.

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