

Abstract Submitted
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First Measurement of Neutrino Events in an Off-Axis Horn-Focused Neutrino Beam ZELIMIR DJURCIC, Columbia University — The purpose of the MiniBooNE experiment at Fermilab is to perform a $\nu_\mu \rightarrow \nu_e$ oscillation search in the Booster Neutrino Beam (BNB) beamline. However, the MiniBooNE Experiment reports the first observation of off-axis neutrinos from the NuMI beamline at Fermilab. Measurements of NuMI neutrino interactions in MiniBooNE provide a clear proof-of-principle of the off-axis beam concept that is being planned for use in future neutrino experiments such as T2K and NO ν A. The comparison between data and simulation for both charged current quasi-elastic ν_μ and ν_e events provides a direct check of the expected pion and kaon contributions and validates the modeling of the NuMI off-axis beam. The beam energy at the MiniBooNE location and the distance from the NuMI target to the MiniBooNE detector result in a (L/E_ν) -ratio comparable to the BNB. The NuMI off-axis events are dominated by intrinsic ν_e events and therefore subject to different systematics when compared to the BNB neutrinos. Therefore, the data from the NuMI beamline provide an important complementary sample to pursue an oscillation search. The latest analysis results will be presented.

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