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Measurement of ν_μ Induced Neutral Current π^0 Production Cross Section with the NOvA Near Detector

Monday, 13 June 2016 10:00 (15 minutes)

NOvA is a long baseline neutrino oscillation experiment at Fermilab. It uses two detectors, the near detector at Fermilab and the far detector at a distance of 810 km at Ash River, Minnesota. NOvA measures the rate of ν_e appearance at the far detector in the ν_μ beam produced by the NuMI facility at Fermilab. Neutrino interactions with a π^0 in the final state are the dominant background in the search for electron neutrinos since the photons produced can fake the appearance signal for an electron neutrino.

Studying neutral current (NC) interactions with a π^0 in the final state will improve understanding of neutrino induced NC π^0 production and reduce background uncertainties for current and future neutrino oscillation experiments. The talk will describe the status of the analysis related to the inclusive NC π^0 cross section measurement with the NOvA near detector.

Summary

Inclusive NC π0 measurement with the NOvA Near Detector

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