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Studies of the Nuclear Environment in MINERvA

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MINERvA (Main INjector ExpeRiment for neutrino-A) is a few-GeV neutrino nucleus scattering experiment at Fermilab that probes the nuclear environment in both inclusive charged current interactions off various targets, and by studying in detail the process of pion production on Carbon, which itself is sensitive to the nuclear environment through final state interactions. An analysis of the nuclear dependence of inclusive charged-current neutrino scattering using events in carbon, iron, lead, and scintillator targets of the MINERvA detector will be presented and compared to models. In addition a measurement of the differential cross-sections for muon-neutrino charged current charged pion production in the MINERvA active plastic target will be discussed. Both results are of great interest to high energy and nuclear physics and increasingly important for neutrino oscillation experiments.

Summary

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Session Classification : Neutrino Physics

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