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New Inclusive Cross Section Measurements from MINERvA

In an era of precision neutrino oscillation experiments using improved technology that generate large statistical samples, it is important to understand the properties of neutrino interactions on nuclei over a large volume of kinematic phase space. The MINERvA experiment, which utilizes the NuMI neutrino beam at Fermilab, measures cross sections across multiple materials ranging from helium to lead, and is able to compare results to imperfect models of these neutrino interactions. I will show a double differential cross section measurement, in variables of the longitudinal and transverse momenta of the muon, of charged current muon-neutrino interactions in hydrocarbon at a neutrino energy of $<3.5 \text{ GeV}>$ with $3.34\text{E}20$ protons on target. This result is advantageous for comparisons with theorists since it is done in well-defined easily measurable variables, and is able to highlight areas in which there are model deficiencies.

Mini-abstract

MINERvA measured ν_μ charged-current cross sections on CH in muon momentum variables.

Experiment/Collaboration

MINERvA

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