

Muon-neutrino charged-current interactions at the NOvA near detector

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The NOvA near detector (ND), located at Fermilab, provides an excellent opportunity to measure neutrino-nucleus interactions, which will benefit current and future neutrino experiments. The ND records a high rate of neutrino interactions with energies ranging from 1-5 GeV. In this talk, we present a measurement of the muon-neutrino charged-current inclusive cross sections as a function of the outgoing muon energy and angle, as well as cross sections in the derived neutrino energy and the square of the four-momentum transfer. We include a comparison of these results with predictions from various neutrino event generators. We also show our progress on the muon-antineutrino charged-current inclusive cross-section analysis. In addition, we present the status of the charged-current muon-neutrino with low hadronic activity analysis. This channel is particularly sensitive to nuclear effects in neutrino interactions, effects that are one of the major challenges for all neutrino experiments in the few GeV region.

Working group

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