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MiniBooNE's measurements of muon neutrino interaction cross sections

Understanding neutrino interaction cross-sections on nuclear targets has become increasingly important to current and proposed neutrino oscillation experiments. Before the last few years, only low-statistics measurements, most on deuterium targets, have been available in the ~ 1 GeV range. The MiniBooNE data set, with over a million muon neutrino-carbon interactions from a well-understood flux, is producing a full suite of detailed charged-current and neutral-current cross-section measurements. In many channels these are the first-ever measurements on carbon, and include differential and double-differential cross-sections that have never been measured on any targets. MiniBooNE's measurements of quasi-elastic, elastic, and neutral-current neutral pion production will be presented. New results on charged-current charged and neutral pion production will be shown, and results of a new measurement of the inclusive charged-current cross-section from 400 MeV to 2 GeV will be presented for the first time.

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