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Charged-current quasi-elastic scattering at MINERvA

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Charged-current quasi-elastic scattering is a particularly interesting interaction to understand. Not only is it a key signal process for oscillation experiments, but its relatively clean signature makes it an ideal channel to study multi-nucleon effects in the target nucleus. Over the past few years, Fermilab's MINERvA experiment has produced several studies of quasi-elastic scattering using the low-energy NuMI beam, which peaks in the 3GeV region. I will present a selection of results for both neutrino and antineutrino scattering on scintillator, including the world's first double-differential cross sections in this energy range, explaining what these can tell us about nuclear effects. In addition I will show a new result which demonstrates how the quasi-elastic cross section changes when scattering from different nuclei.

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