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Measurements of proton-carbon differential cross-sections at 20, 30, and 120 GeV/c in EMPHATIC experiment

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Neutrino parent particles in atmospheric and accelerator-based neutrino experiments are produced in hadronic interactions. Tagging of individual neutrinos and their ancestors is currently not possible. Therefore, we rely on Monte Carlo models and available hadron production data to predict neutrino fluxes. Without additional hadron production measurements, many neutrino measurements such as neutrino-nucleus cross-section measurements will be limited by the flux uncertainty. This talk will discuss new results from EMPHATIC - a tabletop hadron production experiment at the Fermilab Test Beam Facility. The results include measurements of differential proton-carbon cross-sections at 20, 30 and, 120 GeV/c.

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