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Pion scattering with the LArIAT experiment

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This talk presents studies of pion scattering on liquid argon (LAr) with the LArIAT experiment. Pion scattering cross-sections on LAr are an important input to models of neutrino scattering used by current and future LAr neutrino experiments, such as MicroBooNE, SBND, and DUNE. LArIAT is a small LAr time projection chamber (LArTPC) in an instrumented test beam at Fermilab. The precise calorimetry and tracking of LArTPC technology enable reconstruction of an interacting pion's energy as well as identification of secondary particles produced in the interaction. This enables the measurement of the total pion-argon cross-section and exclusive interaction channels such as pion absorption, charge exchange, and scattering.

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