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Pion-argon inclusive cross-section measurement on ProtoDUNE-SP

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Hadron cross-section measurement is crucial to understand the final-state interactions which accounts for a large source of systematic uncertainty in neutrino oscillation experiments. ProtoDUNE-SP with its charged particle beam data can provide such experimental constraints. This work shows the pion-argon inclusive cross-section measurement using ProtoDUNE-SP Run 1 1 GeV/c beam data. We further develop the slicing method proposed by the LArIAT collaboration and apply it to large scale LArTPC like ProtoDUNE-SP. The cross-sections of pion kinetic energy ranging from 350 MeV to 950 MeV are measured.

Attendance type

In-person presentation

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