Contribution ID: **442** Type: **Poster**

Pion production in DUNE Near Detector with Argon target

Monday 12 December 2022 14:00 (1 hour)

Neutrino oscillation experiments use nuclear targets to achieve the necessary interaction events to improve statistics. The inevitable nuclear effects arise due to the sophisticated nuclear environment and our poor understanding of the neutrino interaction with the targets gives rise to systematic uncertainties in the determination of neutrino oscillation parameters. In order to precisely determine the neutrino physics for neutrino experiments such as DUNE, the neutrino-nucleus interaction must be well-understood and the neutrino energy must be reconstructed accurately. In this work, we studied the uncertainties arising due to the pion production in the neutrino interaction with the Argon target for the DUNE energy range which is important for reducing systematic uncertainties for precision physics

Session

Neutrino Physics

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Session Classification: Poster - 1