

Charged-current muon neutrino interactions with at least one neutral pion in the final state in the T2K off-axis near detector

The T2K near detectors aim to measure precisely the neutrino beam flux and energy spectrum before oscillations. Additionally, the off-axis near detector allows us to measure cross sections of neutrino interactions with different nuclear targets and to tune neutrino generator parameters.

At the energies of the T2K neutrino beam, the contribution from inclusive ν_μ CC π^0 production is relatively large. Neutral pions are produced directly in neutrino primary interactions through single pion resonance production and deep inelastic scattering, as well as in pion production and charge exchange processes in secondary interactions inside the target nucleus.

This poster describes selection criteria and systematic error studies leading to the determination of the inclusive cross section for the π^0 production in the ν_μ CC interactions on C and H.

Authorship annotation

for the T2K collaboration

Session and Location

Wednesday Session, Poster Wall #105 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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