

Cross Section Systematics in DUNE

Friday, 21 June 2024 17:30 (2 hours)

For the operation of precision neutrino experiments, the understanding of neutrino interactions with matter are preconditioned requirements of all detections and measurements of neutrinos. The largest uncertainties in estimating neutrino-nucleus interaction cross sections arise in the incomplete understanding of nuclear effects. In the study of neutrino oscillations and nuclear scattering processes, obtaining an interaction model with associated uncertainties is of substantial interest for the neutrino physics community. This report presents studies of simulated CC 2p-2h interactions, in which a neutrino interacts with a bound pair of nucleons. This interaction mode is very poorly constrained by current data. A comparison of three leading CC 2p-2h models is presented, along with a number of uncertainty parameters that have been implemented to account for model-to-model discrepancies in the DUNE oscillation analysis.

Poster prize

Yes

Given name

Lars

Surname

Bathe-Peters

First affiliation

University of Oxford

Second affiliation

Institutional email

lars.bathe-peters@physics.ox.ac.uk

Gender

Male

Collaboration (if any)

DUNE, T2K

Primary author: BATHE-PETERS, Lars (University of Oxford)

Presenter: BATHE-PETERS, Lars (University of Oxford)

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