

# Inclusive and Exclusive Pionless Cross Section Measurements with MicroBooNE

venerdì 21 giugno 2024 17:30 (2 ore)

Making high-precision measurements of neutrino oscillation parameters requires an unprecedented understanding of neutrino-nucleus scattering. To help fulfill this need, MicroBooNE has produced an extensive set of multi-differential charged-current muon neutrino cross-section measurements which probe the leptonic and hadronic systems. This poster presents the first energy dependent multi-differential cross-section measurement and simultaneous measurements of final states with and without protons for the inclusive channel. None of the predictions from commonly used neutrino event generators were able to adequately describe the entirety of this data, especially below 1 GeV of neutrino energy and when no protons are present in the final state. Furthermore, to more directly probe the nuclear effects which complicate the modeling of neutrino-argon interactions, we present the first charged current double-differential cross-sections in kinematic imbalance variables using events with no detected final-state pions. These variables characterize both the transverse and total kinematic imbalance in a neutrino interaction and are sensitive to the modeling of final-state interactions, Fermi motion, and multi-nucleon processes.

## Gender

Male

## Second affiliation

## Collaboration (if any)

MicroBooNE

## Poster prize

No

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**Relatore:** HAGAMAN, Lee

**Classifica Sessioni:** Poster session and reception 2

**Classificazione della track:** Neutrino interactions