

Towards a NuMu CC0Pion2Protons Cross section measurement at the MicroBooNE detector

One of the main limiting factors in nu oscillation analysis is our understanding on the nu-nucleus scattering. In the particular case of a heavy nucleus, such as argon, we expect to be dominated by the nuclear structure modeling. MicroBooNE is a liquid argon time projection chamber located at 470 meters from the target of the Booster Neutrino Beam (BNB) which provides an almost pure NuMu beam, with the main goal of understanding electron-neutrino-like anomalies observed by previous experiments, MiniBooNE and LSND. This analysis enhances a topology of pion-less NuMu Charged Current events with 2 protons in the final state which is expected to be produced mainly by meson ex-change current (MEC) and neutrino-induced pion-absorption events. The final goal of this study is to perform a cross section measurement of this topology to understand our main nuclear effect contribution into a final oscillation measurement, which may be influenced by both MEC and pion absorption.

Authorship annotation

for the MicroBooNE Collaboration

Session and Location

Wednesday Session, Poster Wall #83 (Auditorium Gallery Left)

Poster included in proceedings:

yes

Primary author: Dr CASTILLO FERNANDEZ, Raquel (Fermilab)

Presenter: Dr CASTILLO FERNANDEZ, Raquel (Fermilab)

Track Classification: Poster (participating in poster prize competition)