Contribution ID: **121** Type: **not specified**

First Measurement of Inclusive Muon Neutrino Charged Current Triple-Differential Cross Section on Argon

Monday 8 May 2023 14:15 (15 minutes)

The MicroBooNE detector is a Liquid Argon Time Projection Chamber (LArTPC) located along the Booster Neutrino Beam at Fermilab. One of MicroBooNE's key physics goals is the measurement of neutrino-argon cross sections. The MicroBooNE detector's fully active volume and precision reconstruction and calorimetry allow for accurate measurements of lepton kinematics as well as visible hadronic energy produced in a neutrino interaction. This information is leveraged through Wiener SVD unfolding to produce the first neutrino-argon triple-differential cross section measurement, targeting inclusive charged-current final states. A series of constrained goodness of fit tests are used to demonstrate the validity of MicroBooNE's model in describing the distribution of reconstructed kinematics seen in data to ensure the accuracy of unfolding.

Author: COOPER-TROENDLE, London

Presenter: COOPER-TROENDLE, London

Session Classification: Neutrinos I

Track Classification: Neutrinos