Contribution ID: **24** Type: **not specified**

Application of hadron production data to Fermilab neutrino beam simulations

Friday, 17 June 2022 14:15 (15 minutes)

An accurate determination of the neutrino flux produced by the Neutrinos at the Main Injector (NuMI) and the Long-Baseline Neutrino Facility (LBNF) beamlines is essential to the neutrino oscillation and neutrino interaction measurements for the Fermilab neutrino experiments, such as MINERvA, NOvA, and the upcoming DUNE. In the current flux predictions, we use the Package to Predict the FluX (PPFX) to constrain the hadron production model using measurements of particle production off of thin targets mainly from the NA49 (CERN) experiment. Currently, the NA61/SHINE (CERN) and EMPHATIC (Fermilab) experiments are actively working to provide new hadron production measurements at different energies, nuclear targets, and particle projectiles for the accelerator-based neutrino experiments.

In this talk, we will present the status of the flux predictions and the effort to improve them by incorporating recent data from NA61/SHINE and EMPHATIC in the context of the PPFX-DUNE working group.

Primary author: BOSTAN, Nilay (University of Notre Dame)

Presenter: BOSTAN, Nilay (University of Notre Dame)

Session Classification: Neutrinos