



Contribution ID: 79

Type: Poster

Effects of LBNF Neutrino Beam Focusing Uncertainties on DUNE Neutrino Fluxes

Precision measurements of neutrino oscillation parameters with DUNE require estimates of uncertainties in the neutrino flux. These uncertainties fall into two general categories: those associated with hadron production, and others categorized as so-called focusing effects. The focusing of the LBNF ν -beam is affected by various uncertainties in the position and composition of the beamline components (horns, target, etc), the current or water layer in each horn, the number of protons-on-target, and beam scraping on the baffle. Some of these focusing effects have been studied previously for the DUNE TDR. Updates using the most current beamline geometry, as well as additional focusing uncertainties not previously studied (such as tilts to the horns, the effect of EM-fields the horn necks, near and far detector locations, etc) are presented here. They will be used in DUNE physics studies and in the design of the DUNE near detectors.

Mini-abstract

Impact of LBNF beam focusing uncertainties on neutrino fluxes at DUNE near and far detectors

Experiment/Collaboration

DUNE

Primary author: Dr WEATHERLY, Pierce (Drexel University)

Presenter: Dr WEATHERLY, Pierce (Drexel University)

Session Classification: Poster session 4