Abstract Submitted
for the APR21 Meeting of
The American Physical Society

DUNE-PRISM: Electron Neutrino Channel Analysis ERAN MOORE REA, University of Minnesota, Twin Cities, DUNE COLLABORATION — This work extends Deep Underground Neutrino Experiment (DUNE) Precision Reaction-Independent Spectrum Measurement (PRISM)'s oscillation analysis technique to the electron neutrino channel, which oscillates in a complementary manner to the muon channel. DUNE will consist of a Near Detector (ND) near the muon neutrino beam source and a Far Detector (FD) 800 miles away. The ND is on a movable axis perpendicular to the beamline. PRISM is a novel way to do long-baseline neutrino oscillation physics using DUNEs moveable neutrino detector. This moveable ND allows PRISM to find linear combinations of ND muon neutrino fluxes that closely match an oscillated muon neutrino flux at the FD. The work in this talk will help correct for the difference in electron neutrino and muon neutrino cross-sections when applying PRISMs analysis technique to the electron neutrinos. This will help the implementation of PRISM, eventually using DUNEs off-axis feature to improve sensitivity and make more precise measurements of oscillation parameters.

Eran Moore Rea
University of Minnesota, Twin Cities

Date submitted: 08 Jan 2021 Electronic form version 1.4