Contribution ID: **267** Type: **Poster**

The 2x2 Demonstrator: Overview and Physics Goals with DUNE's First Neutrino Beam Data

Tuesday, 18 June 2024 17:30 (2 hours)

The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline neutrino oscillation experiment with a broad physics program centered on the study of neutrinos. While prototypes of various component detectors have already collected data, the 2x2 Demonstrator, a prototype for DUNE's liquid argon near detector (ND-LAr), will be the first DUNE detector to collect neutrino beam data and support neutrino physics analyses. Installed in the Neutrinos at the Main Injector (NuMI) neutrino beamline at Fermilab and scheduled to begin data taking in spring 2024, the 2x2 Demonstrator boasts key DUNE ND-LAr design components including Liquid Argon Time Projection Chamber (LArTPC) technology, a modular structure, and pixel-based charge readout. Neutrino beam data collected with the 2x2 Demonstrator will be essential in validating DUNE ND-LAr design capabilities and will form the basis of DUNE's first neutrino physics measurements. This poster gives an overview of the 2x2 Demonstrator and some of its initial neutrino physics analysis targets.

Poster prize

Yes

Given name

Elise

Surname

Hinkle

First affiliation

University of Chicago

Second affiliation

Institutional email

ehinkle@uchicago.edu

Gender

Prefer not to answer

Collaboration (if any)

DUNE

Primary author: HINKLE, Elise (University of Chicago)

Presenter: HINKLE, Elise (University of Chicago)

Session Classification: Poster session and reception 1

Track Classification: Accelerator neutrinos