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Capabilities of the DUNE Near Detector Complex

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The main goals of the Deep Underground Neutrino Experiment (DUNE) are to measure CP violation in the lepton sector, to make precise measurements of neutrino oscillation parameters, to observe supernova burst neutrinos and to detect rare processes such as proton decay. To fulfill these goals, DUNE will use a highly capable suite of near detectors that work together to constrain flux and cross section uncertainties, which are the dominant sources of uncertainties in oscillation measurements. The near detectors will also be sensitive to numerous signals of physics beyond the standard model. The DUNE near detector complex will consist of a liquid argon TPC, ND-LAr, a magnetized high pressure gas argon TPC surrounded by a calorimeter, ND-GAr, and an on-axis neutrino detection system, SAND whose primary purpose is to monitor the beam with 1% precision. In this talk, I will present an overview of the DUNE near detector suite and its expected capabilities.

Collaboration name

Deep Underground Neutrino Experiment, DUNE

Primary author: Dr MOHAYAI, Tanaz Angelina (Fermilab)

Presenter: Dr MOHAYAI, Tanaz Angelina (Fermilab)

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