

Abstract Submitted
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Overview of the DUNE Near Detector¹ LANE KASHUR, Colorado State University, DUNE COLLABORATION — The Deep Underground Neutrino Experiment (DUNE) is an upcoming long-baseline neutrino experiment which aims to answer fundamental questions about the universe by studying neutrino oscillations. Neutrino oscillations will occur as the neutrinos travel from Fermilab to a far detector 1300 km away consisting of underground liquid argon time projection chambers (LArTPCs). Prior to oscillation, these neutrinos will first encounter the DUNE near detector (ND). The DUNE ND will be located on-site at Fermilab, and will be used to provide an initial characterization of the neutrino beam, as well as to constrain systematic uncertainties on neutrino oscillation measurements. The detector configuration described by the DUNE ND Conceptual Design Report consists of a modular 50-ton LArTPC (ND-LAr), a magnetized 1-ton gaseous argon time projection chamber (ND-GAr), and an 8-ton plastic scintillator spectral beam monitor known as the System for on-Axis Neutrino Detection (SAND). In this talk, these detectors will be discussed in detail, in addition to their role in enabling the DUNE ND to fulfill its purpose within the broader experiment.

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