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Status of the Short-Baseline Near Detector at Fermilab

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The Short-Baseline Near Detector (SBND) is one of three liquid argon time projection chamber (LArTPC) neutrino detectors positioned along the axis of the Booster Neutrino Beam (BNB) at Fermilab, and serves as the near detector in the Short-Baseline Neutrino (SBN) Program. The SBND detector completed commissioning and began taking neutrino data in the summer of 2024, and is expected to record about 2 million neutrino interactions per year. Using its superb tracking and calorimetric capabilities, and powerful light collection system, SBND will soon carry out a rich program of neutrino interaction measurements and novel searches for physics beyond the Standard Model (BSM). As the near detector, it will enable the full potential of the SBN sterile neutrino program by precisely characterizing the unoscillated neutrino beam, constraining BNB flux and neutrino-argon cross-section systematic uncertainties. In this talk, the current status and future prospects of SBND are discussed.

Neutrino Properties

Current status of experimental measurements of neutrino oscillations, neutrino cross-section studies, searches for light sterile neutrinos and BSM physics.

Neutrino Telescopes & Multi-messenger

N/A

Neutrino Theory & Cosmology

N/A

Data Science and Detector R&D

N/A

Author: NEBOT GUINOT, Miquel

Presenter: NEBOT GUINOT, Miquel

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