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Overview of Short-Baseline Neutrino Program

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Consisting of three large liquid-argon time projection chambers (LArTPCs) located along Fermilab's Booster Neutrino Beam, the Short-Baseline Neutrino (SBN) Program is a neutrino oscillation experiment that seeks to address anomalous results from the LSND and MiniBooNE experiments, where excesses of electron-like events could possibly be interpreted as originating from light sterile neutrinos. Additionally, detector R&D at SBN will benefit future long-baseline experiments, such as the Deep Underground Neutrino Experiment (DUNE), that will also utilize LArTPC technology. SBN features the 112-ton short-baseline near detector (SBND), the intermediate 89-ton MicroBooNE detector, and the 470-ton far detector (ICARUS); these detectors are located 110 m, 470 m, and 600 m from the beam source, respectively. In this presentation, the design and operational timeline of these detectors are discussed in detail, as well the role each plays in enabling SBN to fulfill its physics goals.

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