



Poster session 2 – Tuesday 5 July

P2.076 The Fermilab Short-Baseline Neutrino program

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The Fermilab Short-Baseline Neutrino (SBN) program with three Liquid Argon Time Projection Chamber (LAr-TPC) detectors located along the Booster Neutrino Beam will deliver a rich and compelling physics opportunity, including the ability to perform the most sensitive searches to date for sterile neutrinos at the 1 eV^2 mass-scale and resolve this interpretation of the anomalous excesses of electron (anti)neutrinos observed by the LSND and MiniBooNE experiments. In addition, the SBN detectors play an important role in the on-going R&D effort within neutrino physics aimed at realizing multi-kiloton-scale LAr-TPC detectors for a next generation long-baseline neutrino oscillation experiment. The first phase of the SBN program has recently started with the MicroBooNE detector operating at 470m from the neutrino source. By 2018, two additional detectors will be operational, the Short-Baseline Near Detector (SBND) at 110m and the ICARUS-T600 detector at 600m. With the three detectors in place, SBN will conduct sensitive searches for neutrino oscillations in both appearance and disappearance channels, covering current allowed parameters for light sterile neutrino oscillations at greater than 5-sigma significance. The current status and future physics reach of the SBN program will be presented.