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The Short-Baseline Neutrino Oscillation Program in the Fermilab Booster Neutrino Beam

Saturday 6 August 2016 18:00 (2 hours)

The Fermilab Short-Baseline Neutrino (SBN) program will deliver a rich and compelling physics opportunity, including the ability to resolve a class of existing experimental anomalies in neutrino physics and to perform the most sensitive search to date for sterile neutrinos at the 1 eV^2 mass-scale. SBN will consist of three Liquid Argon Time Projection Chamber (LAr-TPC) detectors located along the Booster Neutrino Beam: the Short-Baseline Near Detector (SBND) located 110m from the neutrino source, MicroBooNE at 470m, and the ICARUS-T600 detector located at 600m. SBN will conduct extremely sensitive searches for neutrino oscillations in both appearance and disappearance channels, covering current allowed parameters for light sterile neutrino oscillations with greater than 5-sigma significance. In this poster, the physics reach of the SBN program will be described in detail.

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