

Physics Programme for the SBND (Short-Baseline Near Detector)

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SBND (Short-Baseline Near Detector) is a 112-ton liquid argon TPC neutrino detector under construction in the Fermilab Booster Neutrino Beam. Together with MicroBooNE and ICARUS-T600 detectors, SBND will search for short baseline neutrino oscillations in the 1 eV² mass range. SBND will also perform detailed studies of the physics of neutrino-argon interactions, thanks to a data sample of millions of electron and muon neutrino interactions. Finally, SBND plays a vital role in the on-going R&D effort to develop the LArTPC technology, testing several technologies that can be used in a future kiloton-scale neutrino detectors for a long-baseline experiment. We will the physics program, with a particular focus on the neutrino cross-section measurements and search for BSM physics as well as discuss the detector design, its current status.

Authors: NOWAK, Jaroslaw (Lancaster University); Dr MOUSSEAU, Joel (University of Michigan)

Presenter: Dr MOUSSEAU, Joel (University of Michigan)

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