

MicroBooNE's Beyond Standard Model Physics Program

Monday, 16 September 2024 13:45 (20 minutes)

The data collected by the MicroBooNE detector, an 85-tonne active mass liquid argon time projection chamber (LArTPC) at Fermilab, is ideally suited to search for physics beyond the standard model due to its excellent calorimetric, spatial, and energy resolution. We will present several recent results using data recorded with Fermilab's two neutrino beams: a first search for dark-trident scattering in a neutrino beam, world-leading limits on heavy neutral lepton production, including the first limits in neutrino-neutral pion final states, and new constraints on Higgs portal scalar models. We also use off-beam data to develop tools for a neutrino-antineutrino oscillation search in preparation for the DUNE experiment. The talk will also discuss the opportunities for future searches using MicroBooNE data.

Working Group

WG 5: Neutrinos Beyond PMNS

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