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MicroBooNE's Beyond Standard Model Physics Program

Thursday 13 June 2024 15:05 (20 minutes)

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 neutron-antineutron oscillation search in preparation for the DUNE experiment. The talk will also discuss the opportunities for future searches using MicroBooNE data.

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Session Classification: Joint Session: Flavour/Neutrinos/Dark Matter

Track Classification: Flavour physics and neutrinos