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Recent astroparticle and exotic physics results from MicroBooNE

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MicroBooNE is an 85-ton active mass liquid argon time projection chamber (LArTPC) at Fermilab. Its excellent calorimetry and resolution, along with its exposure to two neutrino beam lines (BNB and NuMI) make it a powerful detector not just for neutrino physics, but also for Beyond the Standard Model (BSM) physics and astroparticle physics. The experiment has competitive sensitivity to heavy neutral leptons arising in the leptonic decay modes of kaons, and also to scalar bosons that can be produced in kaon decays in association with pions. In addition, MicroBooNE serves as a platform for prototyping searches for rare events in the future Deep Underground Neutrino Experiment (DUNE). This talk will explore the capabilities of LArTPCs for BSM physics and astrophysics and highlight some recent results from MicroBooNE.

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Collaboration / Activity

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