

The Astroparticle and Exotic Physics program of MicroBooNE

Friday, 2 November 2018 14:00 (20 minutes)

MicroBooNE is a liquid argon time projection chamber (LArTPC) with an 85-ton active mass situated on the Booster Neutrino Beam at Fermilab. Some of the experiment goals are investigating the excess of electron-like events observed in MiniBooNE, performing cross-section measurements of neutrino interactions in argon and gaining knowledge about the operation and the detector physics of LArTPCs in preparation for the future Deep Underground Neutrino Experiment (DUNE). In addition, MicroBooNE can be used to search for rare events and physics beyond sterile neutrino oscillations. This talk will focus on two topics: the search for heavy sterile neutrinos with mass in the hundreds of MeVs range, produced through mixing with active neutrinos, and decaying within the detector; and the development of a novel approach for detecting core-collapse supernova neutrinos based on a parallel continuous readout stream and an alert from the Supernova Early Warning System (SNEWS) that triggers a search back in the continuous stream.

Primary author: Dr JOSÉ I. Crespo-Anadón (Columbia University Nevis Laboratories)

Presenter: Dr JOSÉ I. Crespo-Anadón (Columbia University Nevis Laboratories)

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