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MicroBooNE's tests of the MiniBooNE anomalous low-energy excess

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MicroBooNE is an 85 tonne active mass liquid argon time projection chamber that uses the same mainly-muon-neutrino beamline as the MiniBooNE experiment. One of the main motivations when the experiment was proposed was to investigate the “low energy excess” (LEE) of electromagnetic (EM) shower events observed by the MiniBooNE experiment, which could not be explained by standard three-flavor neutrino oscillation models. MicroBooNE has released the first results of this measurement, searching for an excess of either electrons from charged-current electron neutrino interactions or photons from NC $\bar{\nu}_e$ decays. In this talk I will present these first results, and also the interpretation of these results in the context of neutrino oscillation models with an additional sterile state which induce both appearance and disappearance of electron neutrinos. I will finish the talk with an overview of ongoing LEE analyses in MicroBooNE, including an inclusive single photon-like EM shower selection, and searches for other BSM explanations of the MiniBooNE anomaly.

Primary author: YANDEL, Erin

Presenter: YANDEL, Erin

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