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## First Results from MicroBooNE's Low Energy Excess Search and Constraints on eV-Scale Sterile Neutrino Oscillations

*Friday, 8 July 2022 09:30 (15 minutes)*

The MicroBooNE collaboration recently released a series of measurements aimed at investigating the nature of the excess of low-energy electromagnetic shower events observed by the MiniBooNE collaboration. In this talk, we will present the latest results from both a search of single photons in MicroBooNE, as well as a series of three independent analyses leveraging different reconstruction paradigms which look for an anomalous excess of electron neutrino events. We additionally will highlight new results that use these well-understood selections to perform a search for an eV scale sterile neutrino in the 3+1 oscillation framework. Constraints are presented for regions of sterile neutrino oscillation parameter space relevant to the Gallium/Reactor  $\nu_e$  disappearance anomaly and LSND/MiniBooNE  $\nu_e$  appearance anomalies.

### In-person participation

Yes

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