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An inclusive electron-neutrino event selection for the Wire-Cell Low-Energy Excess search in MicroBooNE

The MicroBooNE detector is an 85 ton active mass liquid argon TPC (LArTPC) and is located along the Booster Neutrino Beam at Fermilab. MicroBooNE will examine a rich assortment of physics topics, such as searches for a light sterile neutrino and measurements of neutrino-Argon interaction cross sections. MicroBooNE is also pioneering new techniques, such as Wire-Cell, a novel tomographic event reconstruction paradigm for LArTPCs. It reconstructs topology-agnostic 3D space points based on multiple 2D projection views of the TPC activity by utilizing the geometry, time, charge, and sparsity information, which reduces ambiguity from wire readout. In this poser, an inclusive electron-neutrino event selection using the Wire-Cell reconstruction technique will be presented. The progress of the subsequent studies on systematics and Low-Energy Excess sensitivity will also be reported.

Mini-abstract

High performance electron neutrino selection using Wire-Cell reconstruction technique in MicroBooNE

Experiment/Collaboration

MicroBooNE Collaboration

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