

The MicroBooNE experiment

The MicroBooNE experiment at Fermilab will use a 170-ton, liquid-argon, time-projection chamber at the Fermilab 1-GeV Booster neutrino beam to investigate the MiniBooNE low-energy anomaly: an excess of events in a search for electron-neutrino appearance in a muon-neutrino beam, which is not consistent with neutrino oscillations. MicroBooNE can distinguish between electrons and photons converting to electron-positron pairs and therefore can explore the nature of those events. In addition, MicroBooNE will make important contributions to the knowledge of neutrino cross sections at low energy transfer; these are needed for a better understanding

of the structure of the nucleon and have implications for certain searches for dark matter. Finally, as detector-technology development it constitutes an important step in the development of very large, liquid-argon detectors for the Long-Baseline Neutrino Experiment.

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