

Energy Reconstruction and Calibration of the MicroBooNE LArTPC

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The Liquid Argon Time Projection Chamber (LArTPC) is increasingly becoming the chosen technology for current and future precision neutrino oscillation experiments due to its superior capability in particle tracking and energy calorimetry. In LArTPCs, calorimetric information is critical for particle identification, which is the foundation for the neutrino cross-section and oscillation measurements as well as searches for beyond standard model physics. One of the primary challenges in employing LArTPC technology is characterizing its performance and quantifying the associated systematic uncertainties. MicroBooNE, the longest operating LArTPC to date, has performed numerous such measurements, including studies of detector physics and electromagnetic shower reconstruction. Here we present results on the operation and performance of the detector during its data taking, highlighting accomplishments toward calorimetric reconstruction, calibration, and detector physics.

Attendance type

In-person presentation

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