

Characterizing Single-Phase LArTPC Detector Performance with MicroBooNE

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With many current and future neutrino experiments relying on Liquid Argon Time Projection Chamber (LArTPC) technology, characterizing the performance of these detectors is critical. The MicroBooNE LArTPC experiment is capable of performing numerous measurements to better understand the technology. These include identification and filtering of excess TPC noise, signal calibration and measurements of attenuation of drifting electrons, as well as diffusion and recombination. MicroBooNE, residing on the surface, can also provide useful information about cosmic ray rate and the build up of space charge in the TPC volume. A laser calibration system has been designed and employed to investigate these important effects.

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