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Detector Systematics Evaluation for the MicroBooNE Single Photon Analysis

MicroBooNE is an 85-ton active volume Liquid Argon Time Projection Chamber (LArTPC) which has been collecting data from the Booster Neutrino Beam at Fermilab since Fall 2015. The main goal of MicroBooNE is to investigate the Low Energy Excess (LEE) observed by the MiniBooNE experiment. One interpretation of the MiniBooNE LEE is that it could be due to photons from neutral current $\Delta(1232)$ decays ($\Delta(1232) \rightarrow N\gamma$) mis-identified as electrons. This poster presents the systematic evaluations for the single-photon analysis due to various detector effects, such as LArTPC wire response and drift electric field distortion from space charge effects. The results are then used together with beam and flux systematics for single-photon sensitivity studies.

Mini-abstract

Evaluate the detector systematics for MicroBooNE single photon analysis

Experiment/Collaboration

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