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Neutral Current Background Rejection for the Low-Energy Excess Analysis using Wire-Cell Reconstruction in MicrobooNE

One of the main goals of MicroBooNE is to investigate the anomalous events observed by MiniBooNE and defined as the Low Energy Excess (LEE). The power of the Liquid Argon Time Projection Chamber (LArTPC) technology lies in its 3D bubble chamber quality images, along with the particle identification capability and electron/photon separation. The study of the electron neutrino appearance in MicroBooNE requires both the identification of charged current (CC) electron neutrino interactions and the rejection of all other kinds of interactions. The backgrounds consist of two main categories: muon neutrino CC and neutral current (NC) events. In this poster we describe how NC events are identified and rejected in view of the LEE analysis, using the novel Wire-Cell tomographic algorithm and the Pandora pattern recognition kit.

Mini-abstract

Rejecting neutral current events using Wire-Cell tool for the low energy excess search in MicroBooNE

Experiment/Collaboration

MicroBooNE

Primary author: SCANAVINI, Giacomo

Presenter: SCANAVINI, Giacomo

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