Charged Current Electron Neutrino Event Selection in Micro-BooNE Based on Wire-Cell 3D Reconstruction Algorithms LEE HAGA-MAN, Yale University, MICROBOONE COLLABORATION — MicroBooNE is an 85 ton active volume liquid argon time projection chamber in the Booster Neutrino Beam at Fermilab. One of MicroBooNE's major physics goals is to investigate short baseline neutrino oscillations, primarily the low energy excess of electromagnetic events observed by the MiniBooNE experiment. The challenging task of identifying electron neutrino events among many backgrounds is essential for this oscillation analysis. In this talk, I will describe the charged current electron neutrino event selection we have developed using Wire-Cell 3D reconstruction algorithms, which build a 3D image of an event from 2D projections produced by the detector. We use 3D pattern recognition algorithms and machine learning techniques to reject various types of backgrounds and achieve a high efficiency and high purity selection.

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