



Contribution ID: 617

Type: Poster

Study of $\text{Pi}0$ Events in MicroBooNE and Applications to the Deep Learning Low-Energy Excess Search

In this poster, I will present a selection of events containing $\text{Pi}0$ particles. This selection uses tools in the deep learning (DL) reconstruction chain. We present the efficiency and energy resolution of the selection. We also present the use of these events in energy calibration using the reconstructed $\text{Pi}0$ mass. These events are used to understand the $\text{Pi}0$ background in the DL electron low energy excess (e-LEE) analysis. The low energy electron neutrino events in this analysis have one electron and one proton connected at the vertex. This topology can be mimicked by neutral current $\text{Pi}0$ events with a proton and with one gamma close to the event vertex. Similarly, charged current events with one gamma close to the vertex can be mistakenly interpreted as an electron neutrino event if a muon is mis-reconstructed as a proton. This makes $\text{Pi}0$ events an important background to the e-LEE analysis.

Mini-abstract

A study of $\text{Pi}0$ events in MicroBooNE and applications to the low-energy excess search.

Experiment/Collaboration

MicroBooNE

Primary author: MASON, Katie (Tufts University)

Presenter: MASON, Katie (Tufts University)

Session Classification: Poster Session 2