

# Hunting Muon Neutrinos in MicroBooNE with Deep Learning Techniques

## Authorship annotation

## Session and Location

Monday Session, Poster Wall #153 (Hölderlin-Room)

## Abstract content

The MicroBooNE experiment is a large Liquid Argon TPC located on the Booster Neutrino Beam at Fermi National Laboratory. The primary goal is to investigate the source of the excess of low energy electron neutrino events observed by the MiniBooNE experiment. The main background to the oscillation signal arises from intrinsic electron neutrinos coming from decay of pions and muons in the beam rather than oscillation. To constrain the systematic uncertainty on this background, MicroBooNE will perform a combined fit to both the muon and electron neutrino spectra. This method provides constraints on flux, cross section, and detector uncertainties. This poster will discuss the identification and selection of muon neutrino events using a novel hybrid approach of Deep Learning and traditional reconstruction algorithms that can be used for this constraint.

## Poster included in proceedings:

yes

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**Session Classification** : Poster Session Monday

**Track Classification** : Poster (participating in poster prize competition)