Contribution ID: **378** Type: **Poster cross sections**

A preliminary νμCC0π event selection in SBND

SBND is a Liquid Argon Time Projection Chamber (LArTPC) experiment and the near detector in the Short Baseline Neutrino (SBN) program. At a 110m baseline & with a 112 tonne active mass, the detector will observe ~5,000,000 $\nu_\mu CC$ interactions at energies of $< E_\nu >$ 650 MeV in its 6.6×10^{20} POT (3 year) exposure. SBND will constrain the systematics on the event rate for sterile neutrino searches in the SBN program and have a rich program of neutrino cross-section measurements.
The most abundant topology in SBND, $\nu_\mu CC0\pi$, is a key channel for oscillation searches due to its simple final-state: a single muon and no mesons. However, the well-understood $CCQE$ interaction on free nuclei is not sufficient to correctly model the $\nu_\mu CC0\pi$ final state in nuclear target experiments.
This poster will demonstrate a preliminary $\nu_\mu CC0\pi$ selection using automated reconstruction in SBND, in an effort to thoroughly understand its properties in a LArTPC.

Authorship annotation

For the SBND collaboration

Session and Location

Wednesday Session, Poster Wall #113 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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Track Classification: Poster (not participating in poster prize competition)