Contribution ID: **68** Type: **not specified**

Charged current single pion production on SBND

The Short Baseline Neutrino (SBN) program at Fermilab is designed to provide precise measurements of neutrino oscillations using 3 Liquid Argon Time Projection Chambers (LArTPC) built along Fermilab's Booster Neutrino Beam (BNB). The Short Baseline Near Detector (SBND), located at only 110 m from the BNB target, will precisely characterize the neutrino flux before oscillations take place, thanks to its unprecedented neutrino interaction statistics.
Due to its proximity to the neutrino production target, the detector expects over a million neutrino interactions annually, which will open the possibility of exploring exclusive channels of neutrino interactions.
This poster will show SBND's capabilities of exploring Muon Neutrino Charged Current Single Pion production, for which previous measurements in Argon were limited by statistics. The poster will introduce the relevance of this process for neutrino Physics, the unique possibilities of SBND and a preliminary event selection using SBND's current reconstruction tools.

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Session Classification: Poster Session