

New Perspectives



Contribution ID: 22

Type: **not specified**

Study of the QE-like Exclusive Channel at SBND

Friday, June 17, 2022 9:00 AM (15 minutes)

The upcoming Short-Baseline Near Detector (SBND) experiment will play a crucial role in the Short-Baseline Neutrino (SBN) Program's sterile neutrino search as the near detector, as well as contribute significantly to the understanding of neutrino-nucleus interactions. The high event statistics of over a million neutrino events per year, together with the reconstruction capabilities of liquid argon time projection chamber detectors will allow precision measurements on various exclusive channels, including the quasielastic-like (QE-like) channel. As this channel is the dominant interaction channel for SBND, and since it has a simple working event topology definition of one muon, one proton and nothing else, it is an appealing channel for various physics analyses. In this talk I will outline the selection process for a high purity QE-like sample. Furthermore, I will discuss how the analysis on this channel ties to understanding neutrino-nucleus interactions and to better neutrino energy reconstruction.

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Session Classification: Neutrinos