

An introduction to a $CC1\pi^0$ exclusive analysis using the ND280 Tracker + ECal

Poster Abstract

Author : Dave Shaw - Lancaster University

The Tokai to Kamioka (T2K) experiment in Japan is designed to investigate properties of neutrinos. A beam of muon neutrinos is produced at the J-PARC facility in Tokai. The beam's flux, composition, energy spectrum and interaction cross section is measured 280 m downstream of the production point at the near detector (ND280). This is measured again after 295 km at the Super-Kamiokande detector. By comparing these two measurements, oscillation parameters can be obtained.

As it is possible for decay photons from neutral pions to be mis-identified as electron neutrino events in Super-Kamiokande, it is of great importance that we clearly understand the mechanisms by which these are produced. This analysis will focus on the muon neutrino charged current single π^0 interactions which occur in the ND280. These interactions will be investigated by selecting events where a muon is produced in one of the fine grained detectors (FGD) and the decay photons from the π^0 are identified using the electromagnetic Calorimeter (ECal) and the time projection chambers (TPCs). This poster will present ideas and preliminary work on such a selection.

Summary

An introduction to a $CC1\pi^0$ exclusive analysis using the ND280 Tracker + ECal

Author: SHAW, Dave (Lancaster University)

Presenter: SHAW, Dave (Lancaster University)