Poster session 1 - Monday 4 July

P1.042 **A CCPi0 Inclusive Analysis at the T2K near detector**

D Shaw

Lancaster University, UK

on behalf of T2K collaboration

The Tokai to Kamioka (T2K) experiment in Japan is designed to investigate neutrino oscillations. 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 are measured 280 m downstream of the production point using a suite of near detectors. These are measured again 295 km away 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 the Super-Kamiokande detector, it is important that we clearly understand the mechanisms by which these are produced. The poster will focus on selecting muon neutrino charged-current π^0 interactions which occur in the ND280 off-axis detector. 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). Discriminating variables and selection criteria used in the analysis will be described.