Contribution ID: **15** Type: **not specified**

An Overview of the DUNE 35 Ton Prototype at Fermilab

Monday, 13 June 2016 16:30 (15 minutes)

Liquid argon time projection chambers (LArTPCs) provide a robust method for measuring interactions by combining 3D event imaging with excellent spatial resolution. A LArTPC design has been chosen as the far detector technology for the Deep Underground Neutrino Experiment (DUNE), which will have a fiducial mass of 40 kton. This will consist of 4 staged 10 kton modules, each one representing a ∼15 times increase in mass over current generation LAr experiments. This requires new designs for the cryostat and TPC, and as such, significant prototyping is required. The first results of one such prototype, 'the 35 ton', will be discussed as well as an overview of the fulfillment of its design goals. These goals are: to measure the effect of a modular design on reconstruction, the efficacy with which photon detectors can be integrated into a TPC, the effect of digitizing the TPC output at cryogenic temperatures, and the ability to install a TPC into a membrane cryostat. Particular focus will be given on early analyses such as particle identification from cosmic rays.

Primary author: Mr WARBURTON, Karl (University of Sheffield)

Presenter: Mr WARBURTON, Karl (University of Sheffield)

Session Classification: Session 4