Contribution ID: **172** Type: **Poster accelerator**

The ProtoDUNE single-phase liquid argon detector and beam measurement program at CERN

The Deep Underground Neutrino Experiment (DUNE) will use large liquid argon (LAr) detectors to measure the CP violating phase, determine the neutrino mass hierarchy and perform precision tests of the three-flavor paradigm in long-baseline neutrino oscillations. The underground laboratory will house four detectors, each with a fiducial mass of 10 kt of LAr. Due to its unprecedented size, DUNE will allow sensitive searches for proton decay and the detection of electron neutrinos from core collapse supernovae.
We have constructed a single-phase LAr prototype detector (ProtoDUNE) at CERN and plan to start operation in August 2018. The ProtoDUNE detector components are identical to what is foreseen for the first DUNE detector and serve as an important engineering milestone.
A well characterized charged particle beam will be directed at ProtoDUNE to provide critical calibration measurements as well as invaluable data sets to quantify and reduce systematic detector uncertainties for DUNE.

Authorship annotation

for the DUNE collaboration

Session and Location

Wednesday Session, Poster Wall #47 (Auditorium Gallery Right)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)