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Performance of ProtoDUNE Dual-Phase

The Deep Underground Neutrino Experiment (DUNE) will use a large liquid argon (LAr) detector consisting of four modules each with a fiducial mass of 10 ktons of LAr. One of the technology options for the far detector modules is a liquid-argon Time Projection Chamber (TPC) working in Dual Phase mode. In a Dual Phase TPC, ionisation charge deposited in the liquid argon volume is drifted towards the liquid surface, extracted into the argon vapour, amplified by Large Electron Multipliers (LEM) and collected by an anode plane with strip read-out. To validate this technology, a kton-scale prototype, ProtoDUNE Dual-Phase, has been constructed and has been operating at the CERN neutrino platform since September 2019. In this poster we will describe the principal features of the detector design and operation. Preliminary results will be shown on its performance.

Mini-abstract

ProtoDUNE Dual-Phase principal design features and preliminary results showing performance

Experiment/Collaboration

DUNE collaboration

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