

ProtoDUNE Dual Phase: Design, Construction and First Results

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The Deep Underground Neutrino Experiment (DUNE) will use 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 readout. To validate this technology, a kton-scale prototype, ProtoDUNE Dual-Phase, has been constructed and is currently operating at the CERN neutrino platform.

In this talk, we will cover the principal features of the detector design, discuss its operation, and show some preliminary results from the collected cosmic ray data samples.

I read the instructions

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