

Scintillation light detection in the long-drift ProtoDUNE-DP liquid argon TPC

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ProtoDUNE-DP is a 6x6x6 m³ liquid argon time-projection-chamber (LArTPC) operated at the Neutrino Platform at CERN in 2019-2020 as a prototype of the DUNE Far Detector. DUNE is a dual-site experiment for long-baseline neutrino oscillation studies, neutrino astrophysics and nucleon decay searches. The light signal in these detectors is crucial to provide precise timing capabilities. In ProtoDUNE-DP, scintillation and electroluminescence light produced by cosmic muons in the LArTPC is collected by the photosensors placed up to 7 m away from the point of interaction. The scintillation light production and propagation processes are analyzed and compared to simulations, improving the understanding of some liquid argon properties.

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No, this is an entirely new submission.

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