

The ICEBERG Test Stand for DUNE Cold Electronics Development

Thursday, 19 September 2024 14:25 (20 minutes)

ICEBERG is a liquid argon time projection chamber at Fermilab for the purpose of testing detector components and software for the Deep Underground Neutrino Experiment (DUNE). The detector features a 1.15m x 1m anode plane following the specifications of the DUNE horizontal drift far detector and a newly installed X-ARAPUCA photodetector. The status of ICEBERG will be reported along with analysis of noise, pulser, and cosmic ray data from the current ninth run beginning June 2024 with the goal of advising the DUNE collaboration on the optimal wire readout electronics configuration. In addition, development of an absolute energy scale calibration method is currently underway using known sources such as cosmic ray muon Michel electrons at the ~10 MeV scale and ^{39}Ar decay electrons at the ~100 keV scale. Research into AI-based identification of such events at the data acquisition level will be presented.

Working Group

WG 6: Detectors

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