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Movable Thermometer System in ProtoDUNE

Thursday, 30 July 2020 13:33 (3 minutes)

The movable temperature profiler is a 7m vertical array of 22 sensors which measure cryogenic temperatures with a precision of a few mK. This precision is necessary to monitor the efficiency of recirculation and purification of liquid argon inside large liquid argon based neutrino detectors. Liquid argon temperature impacts electron (signal) drift velocity, liquid argon flow, purity distribution and thus the overall energy calibration. The temperature profiler is motorized and moves vertically, while in the detector, and cross-calibrates neighboring sensors. The temperature offsets between each sensor cancel the effects of electromagnetic noise. This poster reports on the temperature measurements and such in-situ cross-calibrations at ProtoDUNE (single phase) at CERN.

I read the instructions

Secondary track (number)

12

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