

# The Development and Prototyping of DUNE's Vertical Drift Charge Readout Planes

*martedì 18 giugno 2024 17:30 (2 ore)*

The DUNE (Deep Underground Neutrino Experiment) project is a future long-baseline neutrino oscillation experiment. The primary objectives of DUNE include measuring the neutrino CP-violating phase, establishing the neutrino mass hierarchy, and conducting a broad physics program that encompasses studies of supernovae, low-energy physics, and searches for physics beyond the Standard Model. Central to achieving these objectives, DUNE will deploy two far detectors, each leveraging distinct technological innovations to capture and analyze neutrino interactions. The first detector will employ a well-established single-phase horizontal-drift liquid-Argon Time Projection Chamber (TPC) that utilizes conventional wire-chamber technology. In contrast, the second detector is set to pioneer a groundbreaking “vertical drift” TPC, replacing wires with charge readout planes (CRPs) accommodating strips on perforated PCB anodes for the charge readout. Following the success of small-scale prototypes, full-scale CRP demonstrators have been built and tested extensively at the CERN neutrino platform.

This poster will present the design nuances of the “vertical drift” CRPs, highlight critical insights for CRP assembly, and will present preliminary results from the demonstration phase.

## Poster prize

Yes

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**Classificazione della track:** New technologies for neutrino physics