



ID de Contribution: 3

Type: Non spécifié

## Low-energy calibration of DUNE prototypes at CERN with Michel electron energy reconstruction

*mardi 2 décembre 2025 16:35 (25 minutes)*

DUNE is a neutrino oscillation experiment expected to take its first data around 2030. A near and a far measurement of an accelerator-produced muon neutrino flux allows for a precise determination of the oscillation parameters, including a first measurement of  $\delta_{CP}$  (CP violation parameter). The far detector is a compound of tens of kilotons liquid argon time projection chambers (LArTPC). Two reduce-sized prototypes are operated at CERN. Aside from beam neutrinos measurements, the far detector might be sensitive to supernova neutrinos, typically around 10 MeV. The prototypes allow to study the sensibility to such a signal of the LArTPC technology at large scale. Cosmic muons, abundant at ground level where the prototypes are located, mainly decay to 0-50 MeV electrons (Michel electrons) are an ideal calibration source at the energy range of supernova neutrinos.

**Auteur:** QUELIN LECHEVRANTON, Jérémy (IJCLab, DUNE)

**Orateur:** QUELIN LECHEVRANTON, Jérémy (IJCLab, DUNE)

**Classification de Session:** Neutrino physics

**Classification de thématique:** Neutrino physics