



CERN Colloquium

SPEAKER: Flavio Cavanna

TITLE: **New technologies for new discoveries:
ProtoDUNE at CERN for the international
DUNE mega-science project**

DATE: 30 Jan 2020, 16:30

PLACE: 500/1-001 - Main Auditorium

ABSTRACT

Experimental discoveries in the last decades have placed neutrinos in the spotlight to unlock the mysteries of the matter abundance unbalance in the Universe and the ultimate fate of the stars. The Deep Underground Neutrino Experiment (DUNE) is the new leading-edge, international mega-science experiment for neutrino science and searches for physics beyond the Standard Model. DUNE will use the state-of-the-art liquid-argon (LAr) TPC technology to instrument up to 70,000 tons of liquid argon at 87 K achieving millimetre-scale 3D precision. The DUNE detectors will be located deep-underground at the SURF laboratory in South Dakota. A 1 kton precursor of the DUNE LArTPC detector has been constructed and activated at the CERN Neutrino Platform. After a first exposure to low energy charged particle beams, just before the CERN accelerator complex long shut down, ProtoDUNE-SP is now approaching 500 days of continuing operation. A second 1 kton prototype, ProtoDUNE-DP - implementing the dual phase variant of the LArTPC technology - came online more recently and is now taking data. The spectacular events collected and the extraordinary performance of the LArTPC technology open the way for discoveries with DUNE.

Organised by: W. Lerche/TH-SP and A. De Roeck/EP-NU
Tea and coffee will be served at 16h00