



Laboratório de Instrumentação e  
Física Experimental de Partículas

## **Seminário LIP\***

Wednesday, 15 November 2017

11:30 to 12:30

### ***DUNE: The Deep Underground Neutrino Experiment***

**By Dr. Nuno Barros  
(University of Pennsylvania)**

The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline neutrino experiment consisting of an intense neutrino beam fired a distance of 1300 km from the Fermi National Accelerator Laboratory to the 40,000 ton Liquid Argon DUNE detector, located deep underground in the Homestake mine in South Dakota. The principal goals of this experiment are a comprehensive investigation of neutrino oscillations to test CP violation in the lepton sector, determining the ordering of the neutrino masses, and testing the three-neutrino paradigm. The experiment will perform a broad set of neutrino scattering measurements with the near detector and exploit the large, high-resolution, underground far detector for non-accelerator physics topics including atmospheric neutrino measurements, searches for nucleon decay, and measurement of astrophysical neutrinos especially those from a core-collapse supernova. In this talk an overview of the physics potential of the experiment will be given, as well as a review of its present status, with emphasis on its ongoing prototype program.

**\* Place: Seminar Room (311)**

**LIP (Laboratório de Instrumentação e Física Experimental de Partículas)**

**Instituto Interdisciplinar de Investigação da Universidade de Lisboa**

**Av. Gama Pinto, 2, piso 3**

**Coffe and cakes at 11:00 in room 312**