



**Laboratório de Instrumentação e
Física Experimental de Partículas**

LIP Seminar

Thursday, 05 November, 11h30

Search for WIMPs and sub-GeV dark matter particles using double-phase xenon detectors

Elias Lopez Asamar
(LIP)

Among the existing direct detection dark matter experiments, double-phase xenon time-projection chambers (TPCs) stand as the most sensitive instruments to search for weakly-interacting massive particles (WIMPs). In addition recent investigations indicate that this technology could be also competitive to search for sub-GeV dark matter particles by exploiting atomic processes such as the Migdal effect.

In this talk I will discuss the use of double-phase xenon TPCs to search for WIMPs, with a focus on the LZ detector. This experiment, that is currently in the last stages of its construction, is expected to improve the sensitivity to WIMPs by more than one order of magnitude with respect to the existing constraints. In addition I will discuss the Migdal effect and its potential to search for sub-GeV dark matter particles. In this context I will also explain the MIGDAL experiment, that aims to obtain the first experimental confirmation of the Migdal effect.

Location: Videoconference - Zoom

<https://indico.lip.pt/event/769/>

Connection details

URL: <https://videoconf-colibri.zoom.us/j/93118525564>

PIN: LIPseminar

Or by phone:

*Dial: +351 308 810 988 (Portugal Toll) or +351 211 202 618
(Portugal Toll)*

Meeting ID: 931 1852 5564

*iPhone one-tap: 308810988,93118525564# or
211202618,93118525564#*

PIN for phones: 9740003134