



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

## **LIP Seminar**

Thursday, 02 July, 11h30

# **Searching for Rare Events at Colliders Using Deep Learning**

**Miguel Crispim Romão**  
(LIP)

In recent years, Machine Learning has suffered an outstanding renaissance driven by groundbreaking developments around the so-called Deep Learning architectures, which have the power to process huge amounts of data in a variety of formats, like images and text. This has led to a growing interest of Deep Learning applications in HEP as current and future colliders have an increasing data collection capacity which often comes in different shapes, from low-level detector information to high-level variables of reconstructed objects.

In this talk, we will walk through current applications of Deep Learning to study rare phenomena at colliders. We will show recent results in developing Deep Learning tools to perform generic, signal agnostic, New Physics searches, as well as how low-level calorimeter data can be used to study rare physical phenomena such as Jet Quenching by the Quark Gluon Plasma.

**Location: Videoconference - Zoom**

**<https://indico.lip.pt/event/739/>**

**Connection details**

**URL: <https://videoconf-colibri.zoom.us/j/99842372416>**

**PIN: LIPseminar**

*Or by phone:*

Dial: +351 211 202 618 (Portugal Toll) or +351 265 120 012

(Portugal Toll)

Meeting ID: 998 4237 2416

*iPhone one-tap:* 211202618,99842372416# or  
265120012,99842372416#

PIN for phones: 089251