ID de la contribución : **1117** Tipo : **Talk**

ProtoDUNE's Window into Hidden Physics

jueves, 20 de noviembre de 2025 9:30 (15)

The lack of observation of experimental signals pointing to the existence of physics beyond the Standard Model (SM) suggests that the coupling between SM particles and hidden sectors is likely small. This suppression leads to relatively long lifetimes for BSM particles when their masses lie within the MeV–GeV range. In this talk, the regime of long-lived particles (LLPs) is considered, motivated by their potential to serve as portals to hidden sectors that address different open problems of the SM.
Recent studies indicate that Liquid Argon Time Projection Chambers (LArTPC) , as the prototype of DUNE far detectors (ProtoDUNE) installed at CERN, have the potential to detect long-lived BSM particles from one of the targets in CERN's North Area exposed to the 400 GeV SPS beam. A key demonstration lies in observing SM neutrinos—well-known weakly interacting particles. Feasibility studies are ongoing with a test carried out using one of the ProtoDUNE detectors that aimed at demonstrating the potential of these detectors for BSM searches. In this talk, the status of our analysis and our plans for future BSM prospects will be highlighted.

Abstract

Primary author(s) : Dr. HERNANDEZ, Josu (IFIC-UV)

Presenter(s) : Dr. HERNANDEZ, Josu (IFIC-UV)

Clasificación de la sesión : Física Teórica

Clasificación de temáticas : Física Teórica