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Particle Physics at LPTHE

Mardi 28 Novembre 2023, 14 :00
LPTHE, Library and Zoom (link in the comments)(The seminar will be held in person in the library but will also be broadcast on Zoom : https ://cern.zoom.us/j/63331677422?pwd=MDZOTGVoZmlGdE5xM3d5WHlSaWtFQT09)
Domaines : hep-ph

Titre : *Cosmic antiparticles : insights on dark matter & Galactic astrophysics*

Orateur : **Silvia Manconi (LAPTh Annecy)**

Résumé : *Indirect signatures for dark matter annihilations or decays in the halo of our Galaxy are expected in the form of high-energy cosmic rays. In particular, cosmic antiparticles are expected to be rare in Galactic cosmic rays, and thus more sensitive to any excess from exotic processes. In order to firmly identify dark matter signals using cosmic antimatter, a robust assessment of the background coming from standard astrophysical processes is essential. This offers the unique opportunity to address compelling questions on the origin of Galactic cosmic radiations, their acceleration, and on their propagation in the interstellar environment. In this talk I will discuss the current status of the search for WIMP dark matter signals using cosmic positrons, antiprotons and anti-nuclei measured at Earth, and the interpretation of the tentative excesses reported for each of these species. I will focus on the recent endeavor of (1) characterizing the main astrophysical candidates to explain the positron excess, Galactic pulsars, through the multiwavelength observations of pulsar halos, and of (2) deriving robust constraints on dark matter theories from antiproton measurements, combining them with insights from direct and collider searches.*
