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Particle Physics at LPTHE

Mardi 24 Janvier 2023, 14 :00
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Meeting ID : 655 9373 7147 Passcode : 852067)
Domaines : astro-ph—hep-ph

Titre : *Scrutinizing current predictions for cosmic-ray antiparticles*

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Résumé : *The creation of antiparticles in the Galaxy has been discussed as a potential signal of exotic production mechanisms such as primordial black hole evaporation or dark matter decay/annihilation, in addition to the more conventional production from cosmic-ray (CR) interactions. Recent CR detectors have provided very accurate measurements on the spectra of antiprotons and positrons that we use to search for evidence of new physics. In addition, the exciting first measurements of the flux of anti-nuclei can be achievable in a few years.*

In this talk, I discuss the uncertainties related to the modelling of these antiparticles and show state-of-art predictions of their spectra. We will also talk about recent dark matter constraints from antiprotons and positrons and discuss the expected fluxes of anti-deuteron and anti-helium from global analyses of different CR observables in view of the first tentative detection of anti-nuclei events by the AMS-02 collaboration.