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Particle Physics at LPTHE

Mardi 30 Novembre 2021, 14 :00
LPTHE, Library, 4th floor
Domaines : astro-ph—hep-ph

Titre : *Dark Dark Sectors*

Orateur : **Andrea Tesi (INFN Florence)**

Résumé : *I will discuss self-interacting dark sectors assuming that they are only gravitationally coupled to us (or through higher dimensional operators suppressed by the Planck scale).*

This apparent nightmare scenario turns out to be rather predictive depending on few parameters and displaying a plethora of phenomena, including thermalisation, out-of-equilibrium phase transitions, cannibalism in the dark sector. As illustrative examples I consider scenarios with non-abelian gauge interactions (with and without flavors), strongly coupled CFTs and their holographic duals.

I will discuss general properties of dark matter in this context, focussing on unavoidable production mechanisms, and comment on how to constrain these scenarios by use of structure formation, CMB, dark matter self-interactions and gravitational waves.