



DÉPARTEMENT DE PHYSIQUE THÉORIQUE

COSMOLOGIE ET PHYSIQUE DES PARTICULES

Sujet: Bound states in dark matter phenomenology

Orateur: Kallia Petraki, LPTHE, Paris

Lieu: Salle 234

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Résumé:

Dark matter with long-range interactions, mediated by a light or massless force carrier, appears in a variety of theories with different motivation. Examples include the self-interacting dark matter scenario, which is motivated by the observed galactic structure, as well as models constructed to explain observed astrophysical signals. Notably, even the Weak interactions of the Standard Model exhibit long-range behaviour if the interacting particles are heavier than a few TeV. An important implication of long-range interactions is the existence of bound states. I will describe some implications of the formation of dark-matter bound states in the early universe and inside haloes today, and put them in the context of the cosmology and phenomenology of a dark U(1) sector.

Helene.Dupuy@unige.ch