SEMPARIS – Séminaires en région parisienne

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Particle Physics at LPTHE

Vendredi 26 Avril 2024, 14 :00
LPTHE, Library
Domaines : hep-ph

Titre : *The NANOGrav Bound On Ultralight Dark Matter*

Orateur : **Alessandro Dondarini (Pisa University)**

Résumé : *The detection of the stochastic gravitational wave background by NANOGrav imposes constraints on the mass of compact cores of ultralight dark matter, also known as "solitons", surrounding supermassive black holes found at the centers of large galaxies. The strong dynamical friction between the rotating black holes and the solitons competes with gravitational wave emission, resulting in a suppression of the characteristic strain in the nHz frequency range. Our findings rule out solitons arising from the condensation of ultralight dark matter particles with masses ranging from* 1.3×10^{-21} *eV to* 1.4×10^{-20} *eV.*