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Particle Physics in Paris

Mardi 7 Décembre 2021, 11 :00
LPTHE, Library, 4th floor
Domaines : astro-ph—hep-ph—hep-th

Titre : *Probing the scale of grand unification with gravitational waves*

Orateur : **Valerie Domcke (CERN and EPFL)**

Résumé : *Cosmic strings arise as remnants of phase transitions in the early Universe, often related to theories of grand unification (GUTs). If such a phase transitions occurs at high energies, the resulting cosmic string network generates a sizable amount of gravitational waves. Most work so far has focused on the gravitational wave signal from topologically stable cosmic strings. In this talk I will introduce metastable cosmic strings, which are a generic consequence of many GUTs. I will discuss how this idea can be probed in various ongoing and upcoming gravitational wave experiments, from pulsar timing arrays to space- and ground- based interferometers. In the final part of my talk I will discuss a recent proposal on using the radio telescopes to probe this and other sources of ultra high frequency gravitational waves.*