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Probing the scale of grand unification with gravitational waves

Monday 29 November 2021 11:20 (1 hour)

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.

Presenter: DOMCKE, Valerie (CERN)

Session Classification: Opening session