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Interplay between dark matter and gravitational wave signal from conformal symmetry breaking

lundi 30 mai 2022 16:10 (20 minutes)

In this talk I will present a classically scale-invariant model in the context of a phase transition in the early Universe. The model consists of a scale-invariant version of the Standard Model augmented by a new SU(2) gauge group and a scalar eld which is a doublet under the new SU(2) group and a singlet of the Standard Model. Due to large supercooling, during the electroweak phase transition large amount of latent heat is released resulting in an observable gravitational wave signal. At the same time, gauge bosons of the new SU(2) group acquire mass and become good dark ma er candidates. e properties of the phase transition influence both the gravitational wave signal, and the dark ma er abundance. In this talk I will present phenomenological predictions for these observables and discuss interconnections between them. Moreover, I will review some theoretical aspects of the analysis, such as dependence on the renormalisation scale.

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Classification de Session: Parallel session 2