

NEW PERSPECTIVES IN
CONFORMAL FIELD THEORY AND GRAVITY

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Higgsless simulations - A modern tool for stochastic gravitational waves from phase transitions

Wednesday 27 September 2023 14:10 (20 minutes)

A stochastic gravitational wave background of cosmological origin is an intriguing possibility to be probed by gravitational wave detectors such as pulsar timing arrays and LISA in the near future. In this talk, I will present a novel “Higgsless” simulation to predict the stochastic gravitational wave spectrum from first-order phase transitions in the early universe. I will present results for weak-to-intermediate phase transitions, and demonstrate an application to phase transitions seeded by domain walls. Being numerically efficient and fully nonlinear, the “Higgsless” approach will pave the way for exploring previously uncharted regimes of strong phase transitions and relativistic wall velocities.

Summary

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Session Classification: Parallel Session Wednesday: Gravitational waves/phase transitions session

Track Classification: Cosmology & Astroparticle Physics