Contribution ID: **35** Type: **Talk**

Thermal nucleation in perturbation theory

Thursday 13 March 2025 15:25 (20 minutes)

Cosmological first-order phase transitions may have generated an observable gravitational wave background, offering a unique probe of beyond-Standard-Model physics. A crucial step in predicting this background is the reliable computation of bubble nucleation rates. In this talk, I will give an overview of recent advancements in perturbative high-temperature nucleation rate calculations. These include the application of effective field theory, which enhances our understanding of the equilibrium part of the computation, and the use of Boltzmann equations to account for the off-equilibrium effects of the primordial plasma onto nucleation. I will also discuss some open challenges that remain in perturbative approaches, paving the way for future developments.

Author: Dr HIRVONEN, Joonas (University of Nottingham)

Presenter: Dr HIRVONEN, Joonas (University of Nottingham)

Session Classification: Contributed talks