

Thesis Proposal for the Master's Degree in Physics

Title: The electroweak phase transition on a space-time lattice

Abstract (max 10 lines):

Non-perturbative methods provide the most accurate insights into the properties of the electroweak phase transition within the Standard Model of particle physics. By exploiting quantum field theory methods on a space-time lattice, this thesis extends these non-perturbative approaches to explore theories beyond the Standard Model. Understanding the characteristics of the phase transition is essential for gaining a clearer picture of the early evolution of the Universe. Additionally, if the phase transition is of the first order, it enables reliable predictions of the gravitational wave background, which could be detectable by future interferometric observatories.

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Laboratory where the thesis is carried out:

Laboratorio di calcolo del gruppo di Fisica delle Particelle Elementari – Dipartimento di Fisica

Type of thesis:

research: theoretical