

Dimensionally reduced EFTs for cosmological phase transitions

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The upcoming launch of the LISA interferometer has recently strengthened the interest in exploring SM extensions where a gravitational wave-producing, strong first-order electroweak phase transition (SFOEWPT) occurs in the early universe. One of the preferred approaches to the study of thermal FOPTs is through the construction of a dimensionally reduced effective field theory (3dEFT) where the temperature only appears in the Wilson coefficients.

In this talk we will summarize the key aspects and advantages of this approach. We will provide a rigorous perturbative method to compute the essential observables for modelling the GW production in a SFOPT, and we will discuss the importance of including higher-order effective operators in these computations, which are often overlooked in the current literature.

Authors: LÓPEZ-MIRAS, Javier (Universidad de Granada); SANTIAGO, Jose (Universidad de Granada (ES)); CRIBADO, Juan Carlos (University of Granada); GIL, Luis (Universidad de Granada); CHALA, Mikael (Universidad de Granada)

Presenter: GIL, Luis (Universidad de Granada)

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