

How robust are gravitational wave predictions from first order cosmological phase transitions?

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The prospect of detecting Gravitational waves from first order phase transitions opens up a whole new way to test particle physics models. However in order to make use of this we need to have an understanding of the uncertainties involved in theoretical calculations and the reliability of commonly used approximations. I will discuss various subtle issues in the prediction of gravitational wave spectra from first order phase transitions that can significantly impact the predictions and discuss how robust the predictions are. In particular I will discuss criteria for determining if a phase transition completes, the dependence of gravitational wave predictions on the transition temperature and a variety of standard approximations.

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