



Universidad del País Vasco  
Euskal Herriko Unibertsitatea  
The University of the Basque Country

## Seminarios de Física Teórica Fisika Teorikoa: Hitzaldiak

# First-order phase transitions and gravitational waves

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**Abstract** The direct detection of gravitational waves by LIGO has led to heightened interest in other observable sources of gravitational waves, both astrophysical and primordial. There is also growing interest in proposed detectors such as LISA, scheduled for launch in 2034. In this talk, I will focus on one possible primordial source of gravitational waves: first order phase transitions in the early universe. The resulting gravitational wave signal is a good candidate for detection at next-generation gravitational wave detectors. I will discuss some recent work on simulating and modelling the processes involved in such a first-order phase transition that give rise to gravitational waves. I shall discuss the importance not only of the colliding bubbles but also of acoustic waves set up by the phase transition, and the possible onset of turbulence.

Prof. A. Chamorro Seminar Room, Dept. of Theoretical Physics, Corridor 4.-2.

**Wednesday, Nov. 29th, 2016**

**Time: 11:40 am**