



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

Seminarios de Física Teórica Fisika Teorikoa: Hitzaldiak

Gravitational wave forest from String Axiverse

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Abstract Axions predicted in string theory may have a scalar potential which has a shallower potential region than the conventional cosine potential. I first show that axions which were located at such shallow potential regions generically undergo prominent resonance instabilities. We also study non-linear dynamics of axions caused by these resonance instabilities based on lattice simulation. We show that string axions in various mass ranges generate gravitational waves (GWs) with peaks at various frequencies determined by the mass scales, dubbed the GW forest. This may allow us to explore string axiverse through future multi-frequency GW observations. I will also discuss our on-going work about a generation of circularly polarized GWs through gauge fields which are amplified through the resonance instability of the axions.

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

Wednesday, March 27th, 2019

Time:11:40 am