



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

Seminarios de Física Teórica Fisika Teorikoa: Hitzaldiak

Inflation in Random Gaussian Landscapes

Masaki Yamada

Tufts University, Boston, US

Abstract String theory combined with inflationary cosmology has led to the picture of inflationary multiverse, populated by a multitude of vacua with diverse properties. The vacuum landscape is often modeled as potential minima of random fields to understand its statistical properties. I will review some recent progress in understanding random Gaussian models and clarify differences from some other landscape models, including the random Hessian model. I will explain that there are some advantages in random Gaussian models and the number density of de Sitter minima is not so much suppressed as the one estimated before even in the case without approximate supersymmetry. Then I will also explain that slow-roll inflation in this landscape model is not multi-field, the probability for future detection of spatial curvature is rather low ($P \sim 0.001$), the probability distribution for the magnitude of density fluctuations has a unique shape, and the probability for PBH formation is nonzero but quite small.

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

Wednesday, April 11th, 2018

Time:11:40 am