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Seminar of the Gravity and cosmology group of IJCLAB

Mercredi 18 Septembre 2024, 14 :00
IJCLAB, 210/1-114 - Salle des Séminaires
Domaines : gr-qc

Titre : *Non-linear treatment of cosmological perturbations*

Orateur : **Danilo Artigas (Kyoto University)**

Résumé : *Linear-perturbation theory has proven to be an extremely powerful tool to compare inflationary models with observational data. Recently, the newcoming high-precision observations call for predictions beyond linear perturbations. Such effects are known to be relevant for example in the production of primordial black holes or scalar-induced gravitational waves. The separate-universe approach proposes to capture some of these non-linearities. It describes the universe as a set of causally disconnected homogeneous and isotropic patches (FLRW). In this talk, I will show that by allowing the patches to exhibit constant curvature, the separate-universe approach can be extended to non- slow-roll models. I will discuss the case of ultra-slow roll where this new approach allows to correctly predict the power spectrum of scalar perturbations together with non-Gaussianities.*
