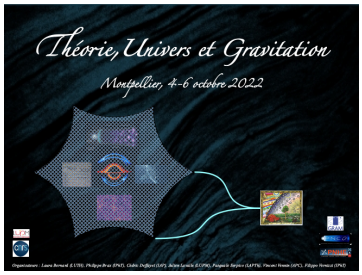

ID de Contribution: **3** Type: **Non spécifié**

Cosmological master equations

mercredi 5 octobre 2022 11:40 (25 minutes)

Nearly scale-invariant, Gaussian and adiabatic scalar perturbations from quantum mechanical origin have been extensively tested using CMB and LSS data. Effective field theories aim at providing a systematic way to consider extensions to this adiabatic evolution, incorporating the knowledge of unknown physics in a parametrically controlled manner. In order to grasp the implications of some hidden sector at the quantum level, the formalism needs to incorporate non-unitary effects such as dissipation and decoherence. To achieve this goal, master equations can be a valuable tool. Ubiquitous in quantum optics where they describe the effects of an almost unspecified environment on the evolution of measurable degrees of freedom, they rely on assumptions that do not straightforwardly extend to cosmology where the background is curved and dynamical, the Hamiltonian time-dependent and the environment out-of-equilibrium. In this talk, I will present their implementation in cosmology and benchmark their efficiency on solvable models.

Auteur principal: COLAS, Thomas (IAS/APC)

Co-auteurs: VENNIN, Vincent (APC Paris); GRAIN, Julien (Institut d'Astrophysique Spatiale)

Orateur: COLAS, Thomas (IAS/APC)