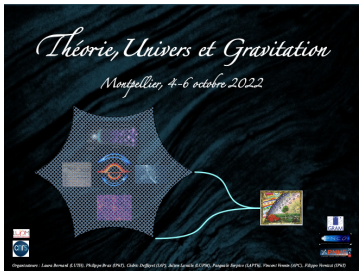

ID de Contribution: **10** Type: **Non spécifié**

Primordial non-Gaussianities and gravitational waves: an intertwined story

mercredi 5 octobre 2022 10:50 (25 minutes)

Notoriously, scalar primordial non-Gaussianities constitute a key prediction of the inflationary paradigm that is yet to be discovered. Less famous, tensor non-Gaussianities as well as mixed scalar-tensor non-Gaussianities may also arise from non-linear interactions in the early Universe.

In this talk, I will explain how the latter types of bispectra (the three-point functions) may be probed through the anisotropies of the Stochastic Gravitational Wave Background. I will present a recent rigorous derivation of the key formula relating the two effects, found using the in-in formalism for quantum interactions in cosmology. Those findings will be exemplified with two models of multifield inflation leading to:
- a homogeneous component of the SGWB that will be observable by future experiments like LISA, while being compatible with current constraints on CMB scales;
- anisotropies inherited from the tensor and scalar-tensor primordial non-Gaussianities at a potentially detectable level.

Time permitting, I will also mention a recent work where we prove that the connected scalar four-point function, the trispectrum, cannot induce a sizeable amount of gravitational waves when scalar perturbations re-enter the horizon during the radiation era.

Auteur principal: PINOL, Lucas (Instituto de Física Teórica (IFT), UAM-CSIC, Madrid)

Orateur: PINOL, Lucas (Instituto de Física Teórica (IFT), UAM-CSIC, Madrid)