

# Oscillations in the stochastic gravitational wave background from particle production during inflation

*mercredi 8 décembre 2021 18:10 (10 minutes)*

Observational constraints and prospects for detection of features, i.e. physically motivated oscillations in the primordial power spectrum, have so far concentrated on the CMB and Large Scale Structure surveys. These oscillations are induced by transient non-adiabatic dynamics along the inflationary history that generate a burst of particle production during inflation.

I will show how features lead to characteristic oscillatory patterns in the stochastic gravitational wave background (SGWB) for which we derive explicit (semi-)analytical templates.

The SGWB sourced during inflation can overcome the standard scalar-induced SGWB sourced at horizon re-entry of the fluctuations after inflation, while being less constrained by perturbativity and backreaction bounds. In addition, one may entertain the possibility of detecting both signals since they peak at different frequencies exhibiting oscillations with distinct periods.

**Orateur:** FUMAGALLI, Jacopo (IAP)

**Classification de Session:** LISA CosWG Workshop day 1