SEMPARIS – Séminaires en région parisienne

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Seminar of the theory group of APC

Mardi 22 Mai 2018, 14 :00
APC, 483 A - Malevitch
Domaines : hep-th

Titre : *Stochastic effective action for a spectator scalar in inflation*

Orateur : **Gerasimos Rigopoulos (University of Newcastle)**

Résumé : *We discuss the IR dynamics of a light scalar field in inflation. We demonstrate from a functional integral perspective how the full quantum theory gives rise to Starobinsky's semi-classical and local stochastic description when the field is smoothed on scales comparable to the Hubble horizon. We then apply the functional renormalization group to the stochastic dynamics by progressively integrating out frequencies. The resulting effective action determines the approach to equilibrium and allows for the computation of unequal time correlators for large time separations. Remarkably, the renormalization group flow for the stochastic effective potential agrees with that found previously using quantum field theory methods and a smoothing over spatial wavelengths. These results further support the notion that stochastic inflation captures the correct IR dynamics of light scalar fields in inflation.*