UNIVERSITY OF Southampton

Contribution ID: **26** Type: **not specified**

Asymptotically Safe Starobinksy inflation

Friday 24 January 2014 15:00 (30 minutes)

I will discuss how Starobinsky inflation can be successfully embedded in a quantum gravitational context, and in particular within the scenario of Asymptotic Safety. After presenting the (non—perturbative) beta functions for Newton's coupling G and the dimensionless R^2 coupling, I will show how an attractive, asymptotically free UV fixed point exists for the latter, while an asymptotically safe one exists for the former under the renormalisation group (RG). I will then explain how the realisation of observationally viable Starobinsky inflation is naturally ensured by the presence of the asymptotically free fixed point under the RG, for a wide range of scales. I will also discuss the corresponding RG dynamics of the action from the UV to IR, as well as how inflationary and classical observations define the renormalisation conditions for the gravitational couplings.

Primary author: SALTAS, Ippocratis

Presenter: SALTAS, Ippocratis