Contribution ID: **71**   Type: **not specified**

Dynamically induced Planck scale and inflation in Palatini quadratic gravity

Wednesday 29 June 2022 17:20 (20 minutes)

In this talk we will consider a model of infation in the Palatini formulation of gravity with the addition of quadratic in curvature terms in the usual Einstein-Hilbert action.

The model under consideration corresponds to a two-field scalar-tensor theory, that involves the Higgs field and an extra scalar field stemming from a gauge U(1)_X extension of the Standard Model, which contains an extra gauge boson and three right-handed neutrinos. By means of the Gildener-Weinberg approach, we describe the infationary dynamics in terms of a single scalar degree of freedom along the flat direction of the tree-level potential. The one-loop effective potential in the Einstein frame exhibits plateaus on both sides of the minimum and thus the model can accommodate both small and large field inflation. The Planck scale is dynamically generated when the scalar field coupled to gravity develop their vacuum expectation values. The infationary predictions are found to comply with the latest bounds set by the Planck collaboration.

Primary author: Dr GIALAMAS, Ioannis (National and Kapodistrian University of Athens)

Presenter: Dr GIALAMAS, Ioannis (National and Kapodistrian University of Athens)

Session Classification: Gravity and Supergravity