Contribution ID: **105**   Type: **Oral**

Failures of homogeneous and isotropic cosmologies in Extended Quasi-Dilaton Massive Gravity

Wednesday, 9 August 2017 16:45 (15 minutes)

We analyze the Extended Quasi-Dilaton Massive Gravity model around a Friedmann-Lemaitre-Robertson-Walker cosmological background. We present a careful stability analysis of asymptotic fixed points. We find that the traditional fixed point cannot be approached dynamically, except from a perfectly fine-tuned initial condition involving both the quasi-dilaton and the Hubble parameter. A less-well examined fixed-point solution, where the time derivative of the 0-th Stuckelberg field vanishes $\dot{\phi}^0 = 0$, encounters no such difficulty, and the fixed point is an attractor in some finite region of initial conditions. We examine the question of the presence of a Boulware-Deser ghost in the theory. We show that the additional constraint which generically allows for the elimination of the Boulware-Deser mode is *only* present under special initial conditions. We find that the only possibility corresponds to the traditional fixed point, and the initial conditions are the same fine-tuned conditions that allow the fixed point to be approached dynamically.

Primary author: Mr KUMAR, Saurabh (Case Western Reserve University)

Co-authors: Dr ANSELMI, Stefano (Observatoire de Paris, Institut d'Astrophysique de Paris); LOPEZ NACIR, Diana Laura (CERN); STARKMAN, Glenn David (Case Western Reserve University (US))

Presenter: Mr KUMAR, Saurabh (Case Western Reserve University)

Session Classification: Cosmology

Track Classification: Cosmology (incl. neutrino mass/number density)