Contribution ID: **485**   Type: **Poster**

Varying constants entropic cosmology

Tuesday 15 December 2015 18:16 (3 minutes)

We formulate the basic framework of thermodynamical entropic force cosmology which allows variation of the gravitational constant G and the speed of light c. Three different approaches to the formulation of the field equations are presented. Some cosmological solutions for each framework are given and one of them is tested against combined observational data (supernovae, BAO, and CMB). From the fit of the data it is found that the Hawking temperature numerical coefficient γ is two to four orders of magnitude less than usually assumed on the geometrical ground value of O(1) and that it is also compatible with zero. Besides, in the entropic scenario we observationally test that the fit of the data is allowed for the speed of light c growing and the gravitational constant G diminishing during the evolution of the universe. We also obtain a bound on the variation of c to be $\Delta c/c \propto 10^{-5} > 0$ which is at least one order of magnitude weaker than the quasar spectra observational bound.

Author: GOHAR, Hussain (University of Szczecin, Poland)

Presenter: GOHAR, Hussain (University of Szczecin, Poland)

Session Classification: 03 - Modifications of gravity