



Tuesday, 11 February 2014 at 16:15
Seminar room 0815, 8th floor, physics highrise

Can effects of quantum gravity be observed in the cosmic microwave background?

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Abstract

In any approach to quantum gravity, it is crucial to look for observational effects. In my talk, I discuss how quantum gravitational contributions to the anisotropy spectrum of the cosmic microwave background arise in the framework of quantum geometrodynamics (Wheeler-DeWitt equation). From the present non-observation of these contributions, we find a constraint on the Hubble parameter of inflation. I also compare these results with the predictions from loop quantum cosmology.

Ref.: C. Kiefer and M. Krämer, Phys. Rev. Lett. 108, 021301 (2012).