



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Weyl Anomalies and Cosmology

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Date: Jan 5, 2017
Time: 11.45 am
Venue: A-304, TIFR



(Duration and Location are subject to irreducible jitter)

I'll discuss effects of Weyl anomalies arising from renormalization of composite operators in a cosmological context. I'll first describe a two-dimensional model of gravity in which the nonlocal contributions to the quantum effective action arising from such Weyl anomalies slow down exponential de Sitter expansion to quasi de Sitter power law expansion and lead to a slow dilution of vacuum energy. I'll describe methods to systematically compute similar nonlocal effects for general actions in four dimensions for cosmological spacetimes using local renormalization group and compare them with the Barvinsky-Vilkovisky expansion. I'll conclude by discussing possible implications for primordial magnetogenesis and quantum stability of (anti) de Sitter spacetimes.