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A higher dimensional view on quantum cosmology

Tuesday, July 6, 2021 3:00 PM (1 hour)

Fundamental questions in cosmology, such as understanding the Big Bang, the cosmic hierarchy problem and boundary conditions for the wave function of the universe, should be possible to address explicitly in (toy?) models that are UV complete. Inspired from string theory I will discuss the role of extra dimensions in all these issues and show that indeed with some varying degree of precision the physics of extra dimensions provides answers. For instance; in a very natural suggestion by Banerjee et al to realise a de Sitter cosmology from string theory, I will explain how Vilenkin's tunneling wave function is selected as the unique boundary condition for the wave function of the universe.

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