

Numerical Loop Quantum Cosmology

Thursday, March 8, 2018 11:00 AM (1 hour)

One of the key predictions of loop quantum gravity is that classical differential geometry of GR is replaced by a discrete quantum geometry at the Planck scale. In this talk we will discuss the way numerical simulations of quantum spacetime is far more challenging than the ones in classical spacetime. We will then discuss some novel procedures to overcome these challenges and discuss various numerical results. These results show that big bang singularity in isotropic and anisotropic spacetimes are resolved and that prove validity of an effective spacetime description. The latter has been extensively used to understand new physics at the Planck scale and signatures in cosmic microwave background.

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