

Abstract Submitted
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Phenomenology of loop quantum cosmology and observational consequences¹ BRAJESH GUPT, The Pennsylvania State University — An important feature of singularity resolution in loop quantum cosmology (LQC) is the occurrence of the quantum bounce when the spacetime curvature becomes Planckian leading the pre-inflationary evolution of the universe to be greatly modified. Due to the modified dynamics in the pre-inflationary era the initial conditions for both the background and cosmological perturbations are different from those in the standard inflationary scenario. We find that such modifications can lead to observational signatures on the cosmic microwave background (CMB) anisotropy spectrum, and provide a new window to explore the CMB anomalies. In this talk we describe these initial conditions, discuss their consequences on the inflationary power spectrum, and compare our results with data from recent CMB experiments.

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