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Perturbation vacua and primordial power spectra in Loop Quantum Cosmology

Monday, 12 September 2016 17:00 (25 minutes)

We discuss the primordial power spectra for both scalar and tensor perturbations in a inflationary model quantized by means of the hybrid quantization in Loop Quantum Cosmology. In order to compute the primordial power spectra we use the effective dynamics coming from the quantum theory and we neglect backreactions. As expected, the primordial power spectra obtained depend crucially in the initial conditions given for the perturbations (i.e. in the selected vacuum). We will show the results obtained for usual instances of adiabatic vacua of different orders and for a new proposed vacua that minimize the temporal variation of the amplitude of the perturbations.

Summary

We discuss the primordial power spectra for both scalar and tensor perturbations in a inflationary model quantized by means of the hybrid quantization in Loop Quantum Cosmology. In order to compute the primordial power spectra we use the effective dynamics coming from the quantum theory and we neglect backreactions. As expected, the primordial power spectra obtained depend crucially in the initial conditions given for the perturbations (i.e. in the selected vacuum). We will show the results obtained for usual instances of adiabatic vacua of different orders and for a new proposed vacua that minimize the temporal variation of the amplitude of the perturbations.

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