Contribution ID : **23** Type : **not specified**

Can a quantum mixmaster universe undergo a spontaneous inflationary phase?

Thursday, 20 April 2023 09:15 (60)

We study asemi-classical model of the mixmaster universe. We first derive the quantum model and then introduce its semi-classical approximation. We employ a general integral quantization method that respects the symmetries of the model given by the affine and the Weyl-Heisenberg groups, and can produce a wide class of quantum models. The semi-classical approximation is based on the coherent states. The semi-classical dynamics is complex and can not be solved by analytical methods. We focus on a key qualitative feature of the dynamics, namely, we investigate whether the primordial anisotropic universe can undergo a spontaneous inflationary phase driven by the anisotropic energy combined with semi-classical corrections. The answer to this question provides a useful perspective on the inflationary paradigm as well as on alternative bouncing models.

Presenter(s) : DE CABO MARTIN, Jaime (NCBJ)