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Quantum dynamics of general Bianchi IX model

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The dynamics of the general (non-diagonal) Bianchi IX model, near the gravitational singularity, underlies the BKL scenario. Asymptotically, the solutions to this dynamics include some special structures named wiggles, which correspond to the oscillatory evolution of the BKL scenario. We propose the formalism, based on the affine quantization scheme, to examine the fate of the wiggles at the quantum level. We present the way of comparing the classical wiggles with their quantum counterparts. The expectation is that our work may contribute towards understanding some quantum aspects of the BKL scenario.

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