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Spinfoam cosmology

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Our universe is expected to emerge from an era dominated by quantum effects, for which a theory of quantum gravity is necessary. Loop Quantum Gravity, in its covariant formulation, provide a tentative yet viable framework to perform reliable computations about the physics of the early universe. In this talk I will review the strategy to be follow to apply the spinfoam formalism to cosmology. I review in particular the most recent results concerning the definition of the primordial vacuum state from the full theory, and the computation of primordial quantum fluctuations. I consider the singularity resolution mechanism in this framework and the modelling of a quantum bounce. Finally, I discuss the effective equations that are obtained in the semiclassical regime of this theory.

Keyword-1

Quantum Gravity

Keyword-2

Cosmology

Keyword-3

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