

De *Madrid* al *Cosmos*

Primordial perturbations in Hybrid (Loop) Quantum Cosmology

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Abstract: A lot of attention has been devoted recently to the consideration of quantum corrections to the power spectrum of primordial fluctuations, as a possible fundamental window on the Early Universe to explore quantum geometry phenomena. We present a framework for the quantum description of the evolution of cosmological scalar perturbations, starting from a formalism designed to preserve covariance, which allows us to extract physical predictions for those quantum modifications. We show how a Born-Oppenheimer ansatz leads to the recovery of a Mukhanov-Sasaki equation in which the coefficients are provided by expectation values on the background geometry. We also discuss technical tools and develop a procedure to deal with these quantum corrections beyond the most direct approximations. The case of hybrid Loop Quantum Cosmology is commented here. However, the presented scheme is general and aims at increasing the ability to discriminate between the predictions of different quantization proposals for cosmological perturbations.

Jueves 09 febrero, 15:00 h.
Sala de Seminarios FT-I
Facultad de CC. Físicas, UCM

Ciclo de seminarios organizado conjuntamente por los grupos

- *Teorías Efectivas en Física Moderna* (UCM)
- *Gravitación y Cosmología* (IEM-CSIC)

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