

The collapse of the wavefunction and the origin of cosmic seeds

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The quantum fluctuations of the inflationary field are currently considered as the seeds for cosmic structure and their traces are observed in the cosmic radiation background. However, this paradigm faces a conceptual difficulty in that the proposal does not contain any mechanism capable of breaking the homogeneity and isotropy characterizing the primordial (quantum) state of the Universe. In previous works, it was proposed that a self-induced spontaneous collapse of the wavefunction of the inflaton field, would offer a mechanism for the generation of the primordial inhomogeneities. In this talk we will present a novel type of signature in the primordial spectrum, characterizing some unusual statistical aspects that would possibly be associated with the collapse process.

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