



LNGS SEMINARS

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Non-Gaussianity: The Cosmic Collider

Abstract

In this review talk we summarize the current state of this active subfield of cosmology. Non-Gaussianity is the study of higher-order correlation functions which are generated during inflation and contain information about its underlying physics (at energy scales potentially as high as 10^{14} GeV). It has been recently understood that specific characteristics of these correlation functions have information about the masses and spins of the fields which were active during inflation and contributed to the primordial fluctuations. These correlation functions are analogous to scattering cross-sections in collider experiments, in that they contain information about the field spectrum at very high energies. From the observational side, the Planck satellite has put strong constraints on the size of these effects, compatible with the predictions of generic single and multi field models. In the near future, galaxy surveys will greatly improve this bound and start exploring the most physically interesting region.

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LNGS - Room "B. Pontecorvo"

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