LABORATORI NAZIONALI DEL GRAN SASSO

SEMINAR ANNOUNCEMENT

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"General treatment of primordial perturbations and non-Gaussianities"

Due to the huge amount of data collected in the latest years, cosmological perturbations and their possible non-Gaussian features are emerging as key observables to understand the evolution of the primordial universe and the involved high energy physics. After a basic review on the subject, I will present a general formalism that provides a systematic computation of the linear and non-linear perturbations for an arbitrary number of cosmological fluids in the early Universe going through various transitions, in particular the decay of some species. The mixed inflaton-curvaton scenario is presented as an application. More generally, the presented formalism can be used as a toolbox to study systematically the cosmological constraints, arising from linear perturbations and from non-Gaussianities, for particle physics models in the early Universe.

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