High Energy Physics - Theory

Reheating in Inflationary Cosmology: Theory and Applications

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Reheating is an important part of inflationary cosmology. It describes the production of Standard Matter particles after the phase of accelerated expansion. We give a review of the reheating process, focusing on an in-depth discussion of the preheating stage which is characterized by exponential particle production due to a parametric resonance or tachyonic instability. We give brief overview of the thermalization process after preheating and end with a survey of some applications to supersymmetric theories and to other issues in cosmology such as baryogenesis, dark matter and metric preheating.

Comments: Draft of commissioned review article for Annual Reviews of Nuclear and Particle Science, comments welcome! A few references added in this version
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