

Title : Inflation in UV theories
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Abstract:

In light of the discoveries that the universe went through a phase of accelerated expansion and is in a state with extremely small vacuum energy, physicists are struggling to produce theoretical models that are consistent with these observations. I will discuss the potential implications of the recent detection of B mode polarization by the BICEP2 experiment. I will discuss two theoretical approaches giving rise to (1) large field inflation and (2) small field inflation. The first realizes N-flation via kinematic alignment in the axion kinetic term while the second approach aims towards an understanding inflation within random supergravity theories. Both approaches crucially rely on a detailed understanding of the geometry on which the underlying string theory is compactified.