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A look at axion inflation in string theory

Friday 11 December 2020 10:00 (1 hour)

We will take a look at axion inflation in string theory, taking a somewhat eclectic approach guided by some mechanism classes and (semi-)explicit examples. Looking at models with either 1 or 2 axions, we will argue that (up to manifestly tuning for small-field models) inflation can arise from 2 different mechanisms - either monodromy, or hybrid inflation. Cautiously incorporating both known limits of top-down theory knowledge as well as bottom-up 'effective quantum gravity'conjectural constraints, should lead to a 'theory error blob'of CMB observable predictions describing the 'mechanism equivalence class'. We outline this using harmonic hybrid inflation as a representative of 2-axion hybrid inflation, and then describe a systematic method of propagating the 'theory error'to observable predictions using machine learning and information geometry

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