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Multi-field alpha attractor in fundamental theory

Tuesday, 20 June 2017 15:45 (15 minutes)

We discuss the possible realizations of α-attractor in Maximal supersymmetric theory/string theory/M-theory. The α-attractor is realized with the Kahler potential $K = -3\alpha \log(T + \bar{T})$, which describes hyperbolic geometry. The tensor-to-scalar ratio r in this model is proportional to α. It is known that the 4-dimesional supersymmetric truncation of maximal supergravity/ string/ M-theory can have multiple moduli fields with $\alpha \leq 1$. Then, we naively expect $r \leq 0.04 \left(\frac{55}{N}\right)^2$.

In this talk, we discuss the possibility to realize r larger than the naive expectation with using multi-α-attractor, which is testable by near-future B-mode experiments. We consider the dynamically realized constraints on moduli space, which effectively realize the large α direction. We also show that the fibre inflation in string theory can be understood as the multi field α-attractor with a dynamical constraint.

Presentation type

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