

More fields are different: Stochastic view of multi-field inflationary scenario

Thursday, 10 July 2025 09:00 (30 minutes)

High-energy physics often motivates multi-field inflationary scenarios where stochastic effects play a crucial role. Peculiar to multi-field models, the noise-induced centrifugal force results in a longer duration of inflation depending on the number of fields, even when the stochastic noises themselves are small. We show that, in such small-noise regimes, the number of fields generically discriminates whether inflation successfully terminates or lasts forever. Our results indicate that inflation with an extremely large number of fields may fail to realise our observable Universe.

Presenter: TAKAHASHI, Tomo (Saga U)

Session Classification: Plenary