Contribution ID: 11

Type: not specified

## STOLAS: STOchastic LAttice Simulation of cosmic inflation

Thursday, 7 November 2024 14:00 (40 minutes)

We develop a C++ package of the STOchastic LAttice Simulation (STOLAS) of cosmic inflation. It performs the numerical lattice simulation in the application of the stochastic-deltaN formalism. STOLAS can directly compute the three-dimensional map of the observable curvature perturbation without estimating its statistical properties. In its application to two toy models of inflation, chaotic inflation and Starobinsky's linear-potential inflation, we confirm that STOLAS is well-consistent with the standard perturbation theory. Furthermore, by introducing the importance sampling technique, we have success in numerically sampling the current abundance of primordial black holes in a non-perturbative way.

Primary author: TADA, Yu-ichiro

**Presenter:** TADA, Yu-ichiro

Session Classification: Inflation and Early Universe 2