IOA Colloquium

CENTRAL CHINA NORMAL UNIVERSITY

Matter-antimatter asymmetric production in preheating era

Date 10:00 - 11:00, 2021/12/24, Friday

Place 1131, Building 9 (Zoom ID: 881 5903 1592)

Speaker

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Abstract

In this talk, we discuss the scenario in which the non-perturbative particle production and the generation of the matter-antimatter asymmetry simultaneously due to an oscillation background field. This type of scenario occurs if the theory has the oscillating background field coherently, as similar to an inflation field, and has CP-violating parameters. To demonstrate the possibility of our scenario, we consider the type-I seesaw model as an illuminating example and show the numerical analysis. In order to generate the required lepton number $|n_L/s| = 2.4 \times 10^{-10}$, we find that the scale of the Higgs oscillation is required to be higher than 10^{14} GeV.

Biography

Seishi Enomoto received his Dr. Sci. in 2013 from Nagoya University for his study of theoretical particle physics and cosmology. He is a Research Fellow in theoretical particle physics group at School of Physics, Sun Yat-Sen University. His current research interests include inflation theory, reheating theory after inflation, non-perturbative effect in quantum field theory.