

Post supercooled universe gives dynamical origin of the small field inflation

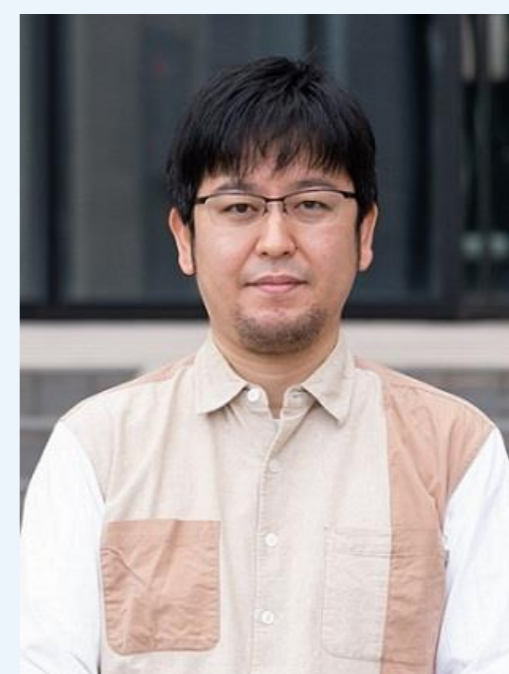
Date 14:00 - 15:30, October 25 (Wednesday), 2023

Place 1118, Building 9 (Zoom ID: 881 5903 1592)

Speaker

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Abstract

In this talk, we discuss the dynamical origin of the realization of the small field inflation (SFI) by Coleman-Weinberg (CW) mechanism which is suffered from the initial condition to start the inflation. We propose a dynamical trapping mechanism to solve this problem: an ultra-supercooling caused by an almost scale-invariant CW potential traps the inflation at the false vacuum, far away from the true vacuum dominantly created by the quantum scale anomaly, and allows the inflation to dynamically start the slow-roll down due to a classical explicit-scale breaking effect. To be concrete, we employ a successful CW-SFI model and show that the proposed mechanism works consistently with the observed bounds on the inflation parameters.

Biography

Prof. Hiroyuki Ishida received his PhD. in March 2012 from Niigata University. He worked as postdoctoral researcher at Kyoto Sangyo University (April 2012 – March 2013), Tohoku University (April 2013 – March 2014), Niigata University (April 2014), and Tohoku University (May 2014 – July 2016) in Japan. Later, he worked as postdoctoral researcher at NCTS (August 2016 – January 2019) in Taiwan and KEK (February 2019 – March 2021) in Japan. He joined in Toyama Prefectural University as an associate professor in April 2021.