IOA Colloquium

CMB in the next decades

Date 13:30 - 15:00, April 1 (Friday)

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

Speaker

Dr. Atsuhisa Ota (太田敦久)

IAS Postdoctoral Fellow,

The Hong Kong University of science and technology

香港科技大学

Abstract

Cosmology with the cosmic microwave background (CMB) linear anisotropies has been powerful, providing precise information about the Universe. However, studies on the linear anisotropies are already exhausted, and we must consider the next generation of cosmology based on new observational approaches. CMB Spectral distortions, deviations from the Planck spectrum, are new promising observable in the future. The theory of the spectral distortions is more complicated than the linear CMB as they are non-equilibrium effects without universal prescriptions. In this talk, I will discuss the spectral distortions, their generation mechanisms, what we can learn from them, and the detectability in the future.

Biography

Dr. Atsuhisa Ota received his BS in 2012, MS in 2014, and PhD in 2017 from Tokyo Institute of Technology under the supervision of Prof. Masahide YAMAGUCHI. He was awarded with a JSPS doctoral fellowship (2017-2018) and joined the University of Cambridge as a JSPS overseas fellow (2019-2020). Then he became a Postdoctoral Fellow in HKUST IAS in 2021 after serving at a postdoctoral position at Ohio University (2020-2021). Dr. Ota's previous studies cover different aspects of cosmology, such as the cosmic microwave background spectral distortions, gravitational waves, etc. Recently, he is interested in the cosmological large-scale structure.