IOA Seminar

Massive graviton as dark matter

Date 10:00 - 11:00, March 31 (Friday), 2023

Place 1130, Building 9 (Zoom ID: 881 5903 1592)

Speaker

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Abstract

Dark matter (DM) is one of the biggest mysteries in the Universe. Despite many experimental and observational efforts, the existence of DM has been confirmed only through gravitational interactions so far. A possible scenario is then DM is of gravitational origin. In this talk, I will talk about scenarios in which there exists a massive graviton in addition to the standard massless graviton and the massive one explains DM of our Universe. On the theoretical side, several production mechanisms can be considered depending on the mass range and the early universe scenario. Observationally, the massive graviton DM scenarios can be generically tested by fifth force experiments and gravitational wave interferometers since the massive graviton has the universal gravitational coupling to matter fields.

Biography

Prof. Aoki Katsuki is a program-specific assistant professor of physics and astronomy at the Yukawa Institute for Theoretical Physics, Kyoto University(YITP). He received his BS in 2013, MS in 2014, and PhD in 2017 form Waseda University. He worked as a JSPS research fellow in 04/2015-03/2018 and assistant professor in 04/2018-03/2019 at Waseda University. Then he became a JSPS research fellow in 04/2019-03/2022 and research assistant professor in 04/2022-06/2022 at YITP, Kyoto University.