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国台学术报告 NAOC COLLOQUIUM

2023 年 第 12 次 / No.12 2023

Time: Wednesday, 2:30 PM , Jun 14th, 2023

Location: A601, NAOC & Live Streaming

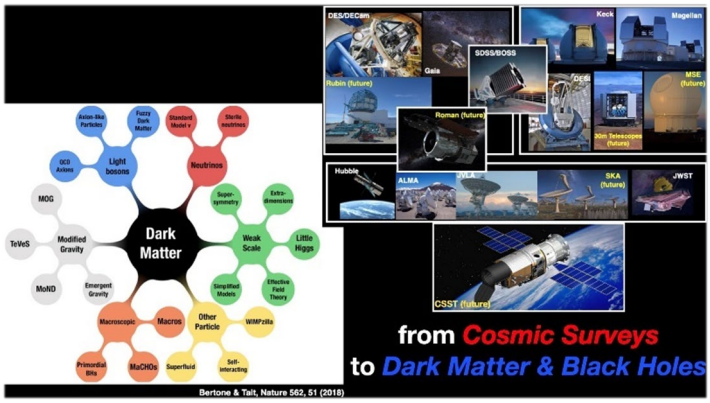
From Cosmic Surveys to Dark Matter & Black Holes

Prof. Ting Li (University of Toronto)

Ting Li is an Assistant Professor at the Department of Astronomy & Astrophysics, the University of Toronto. Ting's research focuses on near-field cosmology. In particular, she studies the stars in the Milky Way Galaxy and nearby galaxies to understand how they form and to understand the nature of dark matter. She specializes in analyzing large data sets from modern sky surveys and also performs traditional astronomical observations with optical and near-infrared telescopes. Ting also builds astronomical instruments and contributes to infrastructure work for large-area sky surveys such as the Dark Energy Survey (DES), Dark Energy Spectroscopic Instrument (DESI). She is the founder and leader of the Southern Stellar Stream Spectroscopic Survey, a survey to map streams of stars in the sky visible from the southern hemisphere to determine the mass profile of the Milky Way. Ting grew up in Shanghai, China, where she completed her bachelor's degree at Fudan University, with a major in physics and a minor in diplomacy. She earned her PhD in physics from Texas A&M University in 2016, and was selected as the 2016 recipient of the Leon Lederman fellow at Fermi National Accelerator Laboratory. She was a NASA Hubble Fellowship Program Einstein Fellow and Carnegie-Princeton Fellow at Carnegie Observatories in 2019-2021.

Abstract

Our understanding of the universe has been revolutionized with large-scale astrometric, photometric, and spectroscopic surveys in the past decade. In this talk, she will summarize astrophysical observations that can constrain the fundamental physics of dark matter in the era of modern cosmic surveys. She will highlight the progress that has been made so far with past and ongoing astronomical observations with modern surveys, and discuss how the next-generation cosmic survey programs such as CSST will complement other experiments to strengthen our understanding of the fundamental characteristics of dark matter. She will finish her talk with a program that she is leading: the Southern Stellar Stream Spectroscopic Survey, or S5, and discuss how they study dark matter and black holes together with this program.



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