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国台学术报告 NAOC COLLOQUIUM

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Time: Wednesday 2:30 PM, June 21st **Location: A601 NAOC**

Modified Gravity as an Explanation for Cosmic Acceleration and Its Cosmological Probes

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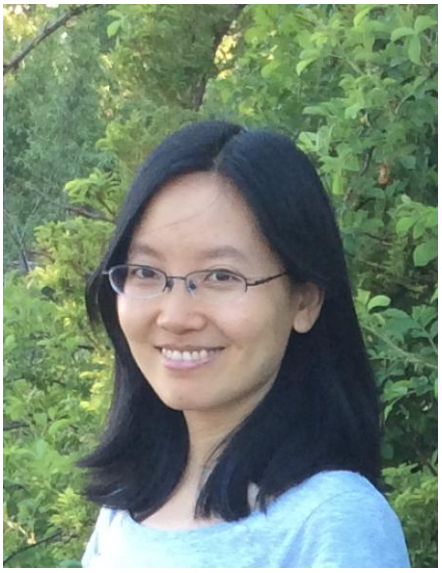

Dr. Wenjuan Fang is a Research Professor at the University of Science and Technology of China (USTC). She got her Ph.D. from the Physics Department of Columbia University in 2009. After that, she conducted postdoctoral research at the University of Michigan and the University of Illinois at Urbana-Champaign. She joined the Astronomy Department of USTC in the Fall of 2017. Dr. Fang's research interests are mainly in cosmological probes of fundamental physics, especially those responsible for cosmic acceleration including dark energy and modified gravity. Her work has ruled out a leading modified gravity model for cosmic acceleration. The parameterized post-Friedman description for dark energy and its numerical implementation developed by her and collaborators are now widely used by the community in probing dark energy, including the WMAP, Planck, BOSS, CFHTLens collaborations etc.

Abstract

The accelerating expansion of the Universe imposes one of the most challenging questions for modern physics. Except for missing a dark energy component, modifying gravity on large scales is another popular perspective to tackle the puzzle of cosmic acceleration. After all, our standard theory of gravity, i.e., general relativity, is only stringently tested on astrophysical systems. It is possible that the accelerating expansion is a signature for modified behavior of gravity on large scales which are so large that we were unable to observe before. Probes of cosmic acceleration thus provide a chance to test theories of gravity as well. I will talk about specific examples of such modified gravity models, and their cosmological probes, including a new probing method we recently proposed that uses the morphological properties of the Universe's large-scale structure.

All are welcome! Tea, coffee, biscuits will be served at 2:15 PM.