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国台学术报告 NAOC COLLOQUIUM

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Time: Wednesday 2:30PM, Feb. 18 Location: A601 NAOC

Understanding the inner structure of quasars: from phenomenology to reverberation mapping

Prof. Yue Shen (KIAA-PKU)

Dr. Yue Shen got his PhD in astrophysics from Princeton University in 2009. After that he was a Clay fellow at the Harvard-Smithsonian Center for Astrophysics, then a Hubble fellow at the Carnegie Observatories. He joined the faculty of the Kavli Institute for Astronomy and Astrophysics at Peking University in 2014. Dr. Shen works on various topics on quasars and supermassive black holes. He uses survey data and various space-based facilities and ground-based telescopes to understand the physics and evolution of supermassive black holes and their hosts across cosmic time. He has published more than 70 papers with over 4000 citations.

Abstract

Broad-line quasars display a remarkable regularity in their diverse multi-wavelength properties, following a well-defined physical sequence called "Eigenvector 1" discovered by Boroson and Green two decades ago. In the first half of my talk, I will discuss how these diverse quasar properties can be utilized to understand the structure and physics of quasars. New work using large survey data demonstrates that the diversity and regularity of quasar phenomena can be unified by two simple quantities of Eddington ratio and orientation, shedding light on the anisotropic geometry of the broad-line region. In the second half of my talk, I will introduce the Sloan Digital Sky Survey Reverberation Mapping (SDSS-RM) project, a dedicated multi-object RM program to measure distances (time lags) from the broad-line region and dust torus to the black hole. I will present some early science results from SDSS-RM, and demonstrate how this endeavor will advance our knowledge of the inner structure of quasars and improve their BH mass measurements.

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