



DEPARTMENT OF PHYSICS
THE UNIVERSITY OF HONG KONG



香港天文與天體物理研究所
THE HONG KONG INSTITUTE FOR
ASTRONOMY AND ASTROPHYSICS

HKIAA SEMINAR SERIES

Ultra-fast outflows in active galactic nuclei in the XRISM era

Dr. Yerong XU

INSTITUTE OF SPACE SCIENCES (ICE-CSIC), SPAIN

ABSTRACT

Ultra-fast outflows (UFOs) are an extreme class of winds in active galactic nuclei (AGN), characterized by mildly relativistic speeds and high ionization states. They are considered one of the most promising candidates to drive AGN feedback, potentially shaping the co-evolution of supermassive black holes (SMBHs) and their host galaxies. However, their driving mechanisms, physical structure, and role in AGN feedback remain poorly understood. In this talk, I will present recent progress in UFO studies in the era of high-resolution X-ray spectroscopy. I will first discuss XRISM observations of a quasar PDS 456, where the relativistic wind is resolved into multiple discrete components, revealing a highly structured and inhomogeneous outflow. Moving to larger scales, I will present the discovery of a powerful UFO in the quiescent galaxy KUG 1208+386 and discuss its implications for AGN feedback and galaxy evolution. Finally, I will show preliminary results from a very recent multi-mission campaign on a narrow-line Seyfert 1 galaxy, I Zw 1, highlighting the complex structure of AGN winds.

BIOGRAPHY

I obtained my Bachelor's degree from Fudan University (China), my Master's degree from the University of Chicago (U.S.), and defended my PhD thesis at the University of Palermo (Italy). Following a postdoc at Saint Mary's University (Canada), I am currently a junior postdoctoral fellow at the Institute of Space Sciences (ICE-CSIC, Spain). My research interests focus on the X-ray view of active galactic nuclei using both spectroscopy and timing methods to study accretion and ejection of SMBHs, with a particular emphasis on ejection.

9 September 2026 (Wednesday)

2:00 PM – 3:00 PM

Venue: KKL106, LG1/F, K.K. Leung Building, Main Campus

The University of Hong Kong

Anyone interested is welcome to attend.



ZOOM FOR ONLINE PARTICIPANTS

Meeting ID 964 7297 1072

Password 410133

hku.zoom.us/j/96472971072

Enquiries: arenal@hku.hk · +852 3917 3416



THE HONG KONG INSTITUTE FOR
**ASTRONOMY And
ASTROPHYSICS**
香港天文與天體物理研究所