



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

Fast Radio Burst Observations in the Telescope-Driven Era

SPEAKER

Dr. Jiarui NIU

NATIONAL ASTRONOMICAL OBSERVATORIES,
CHINESE ACADEMY OF SCIENCES (NAOC)

Dr. Jiarui Niu is a postdoctoral fellow at the National Astronomical Observatories, Chinese Academy of Sciences (NAOC), working with Prof. Weiwei Zhu. She received her bachelor's degree in Nuclear Physics from Lanzhou University and her Ph.D. in Astrophysics from the University of Chinese Academy of Sciences. Her research focuses on fast radio bursts and pulsars, with particular interests in periodicity analysis, polarization, and radiation mechanisms. She has participated in several major FAST science projects and has authored or co-authored some papers in leading journals, including *Nature*, *Science*, *The Astrophysical Journal*, and *Research in Astronomy and Astrophysics*. Starting next month, she will join The University of Hong Kong to work with Prof. Bing Zhang.

ABSTRACT

Fast Radio Bursts (FRBs) are among the most enigmatic transients in modern astrophysics. Over the past decade, rapid advances in radio telescopes and large-scale surveys have transformed FRB studies from the discovery of rare events to the routine detection and detailed characterization of thousands of bursts. In particular, the Five-hundred-meter Aperture Spherical radio Telescope (FAST) has played a leading role by providing unprecedented sensitivity. This talk reviews recent observational progress in FRB research, with an emphasis on results from FAST. I will discuss three key questions: Where do FRBs originate? What are the physical conditions of their local environments? How do their signals propagate to us? Observational evidence related to repeating FRBs, magnetar connections, polarization, burst morphology, and multi-wavelength studies will be summarized. I will also highlight how propagation effects provide unique probes of the magneto-ionic environments surrounding FRBs and of the intervening media between the source and the observer.

20 July 2026 (Monday)

11:00 AM – 12:00 PM

Venue: Room 522, 5/F · Chong Yuet Ming Physics Building

Department of Physics, The University of Hong Kong

Anyone interested is welcome to attend.



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