



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 Colloquium Series

# In-Depth Exploration of the Extreme Universe



January 12, 2026 (Monday)



11:00 a.m.



Room 522, 5/F, Chong Yuet Ming  
Physics Building, The University of  
Hong Kong



**Prof. Shuang-Nan ZHANG**

*Institute of High Energy Physics (IHEP),  
Chinese Academy of Sciences (CAS)*

### Abstract:

In recent years, China has launched and operated several space astronomy missions such as Wukong, POLAR, Insight-HXMT, GECAM, Einstein Probe (EP), and SVOM, embarking on a journey to explore the extreme universe. Nevertheless, numerous key scientific questions about the extreme universe remain to be solved. These include problems related to extreme explosions, extreme origin, extreme energy, extreme celestial objects, extreme gravity, extreme density, and extreme magnetic fields. In the next 5-15 years, we plan to address and solve these questions through several internationally leading large-scale space high-energy astrophysics missions. These include the “Gamma-ray Burst Polarimeter-II” (POLAR-2) and the “High Energy cosmic-Radiation Detection” (HERD) experiment, to be operated on China’s space station; the enhanced X-ray Timing and Polarimetry (eXTP) space observatory; and the “Chasing All Transients Constellation Hunters” (CATCH) plan, consisting of hundreds of micro-satellites. These projects are poised to bring revolutionary advancements to the in-depth exploration of the extreme universe.

### Biography:

Zhang Shuang-Nan, Professor at the Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS). Selected for the National Science Fund for Distinguished Young Scholars (NSFC), appointed as a Changjiang Distinguished Professor by the Ministry of Education, and recognized by the National Overseas High-level Talent Program, among other honors. Recipient of the Zhao Jiuzhang Outstanding Young and Middle-aged Scientist Award, CAS Outstanding Science and Technology Achievement Prize, National Science and Technology Progress Award, National Defense Science and Technology Innovation Award, the Science Award of the Space Science Association of China and Beijing Natural Science Award. Has published over 500 papers with citations exceeding 26,000. Proposed and successfully promoted multiple space science projects. Serves as the PI for space missions including Insight-HXMT astronomical satellite, the Tiangong-2 Gamma-Ray Polarization Detection project (POLAR) and its follow-on project POLAR-2, the eXTP space X-ray observatory, and the High Energy cosmic-Radiation Detection (HERD) experiment on the China Space Station.