



丘成桐数学科学中心  
YAU MATHEMATICAL SCIENCES CENTER



# 林家翘冠名讲座

Chia-Chiao Lin Distinguished Lecture

**Topic 1:** On the Relativistic Astrophysics Domains (Dec. 9)

**Topic 2:** Bosons and Fermions in Relativistic Astrophysics (Dec. 10)

**Topic 3:** The Long March toward the Understanding  
of the Fundamental Nature of GRBs (Dec. 12)

**Topic 4:** The Eight Different GRB Families (Dec. 13)



Remo Ruffini  
Director of ICRANet and President of ICRA



She-Sheng Xue  
ICRA and ICRANet



Jorge Rueda  
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Yu Wang  
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Rahim Moradi  
ICRA and ICRANet

**Time:** 16:30–17:30/Dec.9, 2018 (Sun.)    15:20–16:20/Dec.10, 2018 (Mon.)  
17:30–18:30/Dec.12, 2018 (Wed.)    17:30–18:30/Dec.13, 2018(Thur.)

**Place:** Lecture Hall, 3rd Floor, Jin Chun Yuan West Building  
Tsinghua University  
清华大学近春园西楼三层报告厅

## About ICRA and ICRANet

ICRANet, the International Center for Relativistic Astrophysics Network, is an international organization which promotes research activities in relativistic astrophysics and related areas. Its members are four countries and three Universities and Research Centers: the Republic of Armenia, the Federative Republic of Brazil, Italian Republic, the Vatican City State, the University of Arizona (USA), Stanford University (USA) and ICRA, the International Center for Relativistic Astrophysics (Rome, Italy). ICRANet headquarters are located in Pescara, Italy.



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## On the Relativistic Astrophysics Domains

The pioneering works of C.C. Lin and Frank Shu born in the domain of classical optical astronomy have evolved, following the observations of the flat rotation curves of galaxies by the Dutch radio astronomers, into the realm of Physics. The crucial issue of determining the matter distribution of our galaxy has open the new field of "dark matter" and the yet evolving physics of the "inos" quantum charged particles interacting mainly gravitationally. The field is further evolving into the realm of General Relativity addressing the problematic, also daily evolving, of the nature of the core of our own galaxy.

Similarly the observations of Pulsars born in the domain of radio classical astronomy have evolved, following the observations of the binary X ray sources by the UHURU satellite, into the realm of General Relativity with the discovery of the first "Black Hole" in our galaxy, hypothesized in 1971 by Ruffini and Wheeler. This field has been further evolving in recent months with the "long march" of almost forty years of the understanding of Gamma Ray Bursts demonstrating, almost daily the formation of "Black Holes" in our entire Universe.

The historical unprecedented development of observational techniques from space, the ground and underground in all wavebands of the electromagnetic spectrum as well as of neutrinos and ultra-high-energy-cosmic rays (UHECR), is offering a new occasion for improving the quality of life and the advancing the frontier of the understanding of the Universe. Relativistic astrophysics is offering in these days the reaching of the understanding of new Relativistic Astrophysics domain both in the classical and quantum domain, the dream of Albert Einstein, in the understanding of the GeV emission of Binary Driven Hyper novae BDHNE with the AGILE telescope and the LAT telescope flown in the FERMI satellite, both using Italian technologies.