Astronomy/Nuclear Physics Special Colloquium

Prof. Yongzhong Qian 钱永忠

University of Minnesota

The Origin and Evolution of the Elements: A Modern Perspective

Time: 10:00-11:00, 30 May(Thursday), Shanghai time

Venue: N600（TDLI）

Host: Dong Lai

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Abstract:

I will review the processes of making the elements in various astrophysical environments, emphasizing the role of fundamental physics and observational evidence. I then discuss how to understand chemical evolution from both the ab initio and the data-driven approaches, contrasting the respective central issues. To illustrate the latter approach, I show how the average production patterns of Fe, Sr, Ba, and Eu by core-collapse supernovae and neutron star mergers can be inferred from the data on metal-poor stars in the Galactic halo.

Biography:

Professor Yong-Zhong Qian received his Bachelor of Science in Physics from University of Science and Technology of China in 1989, and his PhD in Physics from University of California, San Diego in 1993. He was a research associate at National Institute for Nuclear Theory, University of Washington, Seattle from 1993 to 1995, the David W. Morriroe Fellow in Theoretical Physics at California Institute of Technology from 1995 to 1998, and the J. Robert Oppenheimer Fellow at Los Alamos National Laboratory from 1998 to 1999, before he joined the faculty at University of Minnesota. He was elected Fellow of American Physical Society in 2008 for contributions to theoretical nuclear astrophysics capture process and to theoretical studies of collective neutrino flavor transformations in supernovae. He has been a member of the editorial committee for Annual Review of Nuclear and Particle Science since 2015.