

You are welcome to nominate speakers to [colloquium@nao.cas.cn](mailto:colloquium@nao.cas.cn). The video and slides of previous colloquia and more information can be found at <http://www.nao.cas.cn>

# 国台学术报告 NAOC COLLOQUIUM

2023 年第 9 次 / No. 9 2023

Time: **Thursday, 2:30 PM, May.17<sup>th</sup>, 2023**

Location: **A601, NAOC**

## Physical Mechanisms Regulating Gas Supply to Galaxies

**Prof. Renyue Cen (Zhejiang University)**

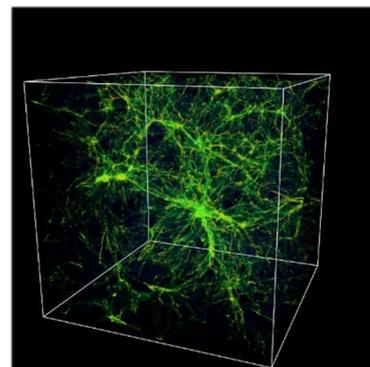


Professor Renyue Cen, an astrophysicist, is currently the director of the Center for Cosmology and Computational Astrophysics, Institute for Advanced Study in Physics, Zhejiang University. He was born in Ningbo, Zhejiang in April 1965, graduated from the Department of Physics at Fudan University in 1985 and obtained his Ph.D. in Astrophysics from Princeton University in 1990. After two years as a postdoctoral fellow at Princeton University, in 1992 he was invited to join the faculty of Astrophysical Sciences Department at Princeton University in 1992,

working there until October 2022. He joined the School of Physics at Zhejiang University in October 2022. His research areas include theory and computational astrophysics. Dr. Renyue Cen is a pioneer in the theory and cosmological hydrodynamical simulations of galaxy formation and cosmological reionization. His original research achievements include first pointing out that the evolution of the galaxy cluster mass function has powerful constraints on the cosmological parameters, primarily responsible for establishing the modern theory of Lyman alpha forest, which laid the theoretical foundation for Lyman alpha forest flux measurements to become one of the three pillar methods to measure cosmological parameters, neutrino mass and dark energy; he is primarily responsible for establishing the current theory of the cosmic missing baryons, whose predictions have been confirmed by Hubble space telescope observations; he is the initiator of the widely used 21cmFAST program. At present, his main research fields include the influence of galactic nucleus feedback process on galaxy formation, the physical origin of globular clusters, the sources and processes of cosmological reionization, and the detection of warm-hot intergalactic medium.

### Abstract

He will first present an overview of the problem of galaxy formation. He will then turn his attention to some important and robust physical mechanisms that regulate the supply of cold gas to galaxies. He will in the end try to convey the message that the field of galaxy formation simulation would benefit by turning to more physics, rather than parameter, based approach, through exploring additional physics, such as external, global feedback processes.



*All are welcome !*