国台学术报告 NAOC COLLOQUIUM

2018 年 第 25 次 / No. 25 2018

Time: Thursday 2:30 PM, Sep.13th   Location: A601, NAOC

Numerical study of AGN feedback in an elliptical galaxy

Dr. Feng Yuan
Shanghai Astronomical Observatory

Dr. Feng Yuan got his PHD in USTC in 1997. After than he spend several years as a postdoc in Nanjing University, Max-Planck Institute of Radio Astronomy, Harvard University, and Purdue University. He came back to China in 2005 and work in Shanghai Astronomical Observatory since then. His main research interests include black hole accretion, active galactic nuclei, black hole X-ray binaries, and AGN feedback. He is the author of more than 100 papers, including one review article on black hole accretion published in ARA&A in 2014.

Abstract

There are many observational evidences for the co-evolution between the supermassive black hole and its host galaxy. It is widely thought that the underlying physical mechanism is the interaction between the central active galactic nuclei and the galaxy, i.e., AGN feedback. This is a young field and many unsolved problems remain. In this talk, I will first introduce some background of AGN feedback, then I will focus on our most recent series of works on AGN feedback using high-resolution hydrodynamical numerical simulation. Compared to previous works, the main improvement of our work is that we adopt the most updated AGN physics, namely the discrimination of cold and hot accretion modes and the exact descriptions of the AGN radiation and wind. Physical processes such as star formation and SNe feedback are taken into account. I will discuss the effects of AGN feedback on the AGN light curve, growth of the black hole mass, AGN duty cycle, star formation, and X-ray surface brightness of the galaxy.
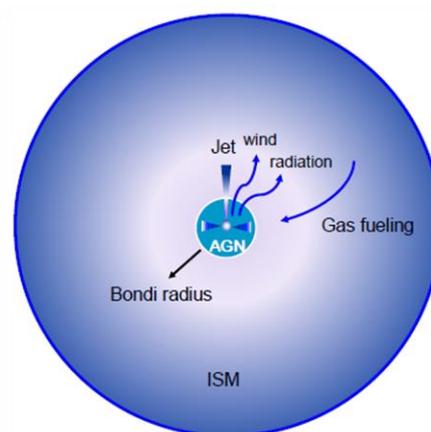
All are welcome ！Tea and coffee will be served at 2:15 PM.