



THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
SEMINAR

Numerical Study of AGN Feedback in A Disk Galaxy

by

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ALL INTERESTED ARE WELCOME

Abstract

Observational and theoretical studies suggest that supermassive black holes at galactic centers play a significant role in the evolution of their host galaxies. The underlying physical mechanism may involve active galactic nucleus (AGN) feedback. However, both observational explorations and theoretical investigations remain under active development. Key scientific challenges – such as the quenching mechanisms of galaxies – have yet to be resolved. In this talk, I will first review the current observational signatures and theoretical models of AGN feedback. Then I will present our recent progresses in numerical simulations of AGN feedback at galactic scales, focusing on disk galaxies. Specific topics will address: 1) the correlation between black hole accretion rates and star formation rates; 2) the gas reservoir evolution in galaxies; 3) physical mechanisms driving galaxy quenching; 4) observable scaling relations between SMBH masses and stellar masses of host galaxies.