



THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
COLLOQUIUM

The Initial Mass Function and Stellar Populations in Massive Early-Type Galaxies

by



Professor Meng GU (顧夢教授)
Department of Physics
The University of Hong Kong

Date: October 24, 2025 (Friday)

Time: 4:00 - 5:00 p.m.

Place: L2, Science Centre, CUHK

(Light refreshments will be served at [SCNB 1/F lobby](#) from 3:30 to 3:50 p.m.)

ALL INTERESTED ARE WELCOME

Abstract

Reconstructing the formation and assembly history of galaxies remains one of the central goals of astrophysics. Recent advances in stellar population synthesis modeling have moved the field well beyond the traditional "age and metallicity" framework. By extracting detailed elemental abundance patterns and constraining the stellar initial mass function (IMF) from the integrated light of distant galaxies, we gain profound insights into their star formation histories, stellar mass distributions, and dark matter content. In this talk, I will present new results on the stellar IMF and its spatial variation of nearby early-type galaxies from the MASSIVE survey. I will also discuss recent stellar population studies of massive galaxies and their extended environments, highlighting how low-surface-brightness observations reveal the imprints of galaxy formation and assembly in previously inaccessible low-mass regimes. Finally, I will preview lookback studies enabled by the observations from the James Webb Space Telescope.