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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

Green's function estimates in Kahler geometry

by

Prof. Yashan ZHANG

Hunan University

Abstract

In Riemannian geometry, there are fundamental uniform geometric estimates on diameter, volume growth, Green's function etc. under certain curvature conditions (e.g. Ricci curvature lower bound). Recent works of Guo-Phong-Song-Sturm established for compact Kahler manifolds a variety of geometric estimates depending on an upper bound of L^p norm of the volume density (p>1) but not on any curvature bound, in which a key ingredient is a uniform integral estimate for Green's function. This talk will present the main results of arXiv:2508.13646v2 proving an improved (nearly optimal) integral estimate for Green's function under L^p volume density condition and, as its applications, improved global geometric estimates without involving Ricci curvature lower bound. These results can be applied to the study of the Kahler-Ricci flow on compact Kahler manifolds.

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Date : 09 February 2026 (Monday)
Time : 4:00p.m.-5:00p.m.
Venue : Room 1104 (Lift 19)

All are Welcome!