THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Regularity for singular and degenerate PDEs: qualitative vs. sharp estimates

By

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Abstract

Singular and degenerate partial differential equations are unavoidable in the modelling of several phenomena, like phase transitions and chemotaxis, and are also used in machine learning in the context of semi-supervised learning. They encompass a crucial issue in the analysis of PDEs, namely whether we can still derive analytical estimates when the crucial algebraic assumption of ellipticity collapses. We provide a broad overview of qualitative versus quantitative regularity estimates for solutions of these equations, introducing the method of intrinsic scaling and deriving sharp estimates by means of geometric tangential analysis. We discuss, in particular, recent results concerning the Stefan problem and the parabolic p-Poisson equation.

Date : 22 April 2022 (Friday)

Time : 4:00pm

Zoom Meeting : https://hkust.zoom.us/j/93174733026 (Passcode: 766088)

All are Welcome!