THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

Conductivity Imaging Using Deep Neural Networks

By

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Abstract

Conductivity imaging from various observational data represents one fundamental task in medical imaging. In this talk, we discuss numerical methods for identifying the conductivity parameters in elliptic PDEs. Commonly, a regularized formulation consists of a data fidelity and a regularizer is employed, and then it is discretized using finite difference method, finite element methods or deep neural networks in practical computation. One key issue is to establish a priori error estimates for the recovered conductivity distribution. In this talk, we discuss our recent findings on using deep neural networks for this class of problems, by effectively utilizing relevant stability results.

> **Date** : **19 June 2023 (Monday)**
> **Time** : **4:00pm – 5:00pm**
> **Venue** : **Room 4475 (Lifts 25/26)**

All are Welcome!