应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

应用数学报告（81）

报告人 / **Докладчик** / **Speaker:** 周知 副教授（香港理工大学）

题 目 / **Название** / **Title:** Identification of Conductivity in Elliptic equations using Deep Neural Networks

时间 / **Время** / **Time**：2023.06.21, 9:45-12:00；14:00-16:15

地点 / **Место** / **Venue:** 主楼435会议室

摘要 / **Аннотация** / **Abstract**:

The focus of this talk is on the numerical methods used to identify the conductivity in an elliptic equation. Commonly, a regularized formulation consisting 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. 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 estimates.

周知副教授简介：

Zhi Zhou received his B.Sc in computational mathematics in 2010 from Nanjing University of Aeronautics and Astronautics, and the Ph.D. degree in mathematics from Texas A&M University. During 2015-2017, he was a postdoctorial scientist at the Department of Applied Physics and Applied Mathematics, Columbia University. Currently, he is an Associate Professor at the Department of Applied Mathematics, Hong Kong Polytechnic University. His research interests lie primarily in the fields of numerical PDEs, scientific computing, nonlocal/fractional models, and inverse problems.

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