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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SPECIAL COLLOQUIUM

Electrical Impedance Tomography with Minimal Measurements

By

Prof. Fadil Santosa

Johns Hopkins University

Abstract

In this presentation, the speaker will provide a brief overview of the inverse problem of Electrical Impedance Tomography (EIT). The goal of EIT is to determine the conductivity distribution of a body from boundary measurements of electrical currents and voltages. Much is known about the problem, from uniqueness to difficulty in obtaining high-resolution images. This talk will focus on the simpler problem of determining a small conductivity anomaly from a few measurements. It will also attempt to address the question of optimal experiment design associated with the measurements.

Bio: *Professor Fadil Santosa earned his Bachelor of Science in Mechanical Engineering from the University of New Mexico in 1976 and his Ph.D. in Theoretical and Applied Mechanics from the University of Illinois at Urbana-Champaign in 1980. He is currently a Professor and the Yu Wu and Chaomei Chen Department Head of Applied Mathematics and Statistics at Johns Hopkins University. Additionally, Professor Santosa serves as a researcher at the Ralph S. O'Conner Sustainable Energy Institute, is affiliated with the SNF Agora Institute, and is a member of the Data Science and AI Institute. His research interests include inverse problems, wave phenomena in complex media, photonic devices, and optimal design. In recognition of his contributions, he received the 2023 SIAM Distinguished Service to the Profession Award and the 2023 Johns Hopkins Diversity Award.*

Date : 06 December 2024 (Friday)

Time : 3:00pm – 4:00pm

Venue : Room 6602 (near Lift 31/32)

All Are Welcome!