



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

**Onsager's principle, constitutive equations, and
design of structure-preserving numerical schemes**

By

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Abstract

Onsager's linear response theory has been the foundation for many physical models that people use today. It produces models with thermodynamically consistent entropy-production properties. These properties can guide the development of structure and property-preserving schemes for numerically solving the PDE models. In this talk, I will discuss a couple of popular approaches and techniques to arrive at structure-preserving numerical approximations to thermodynamically consistent PDEs.

Biography

Dr. Qi Wang is a professor at the Department of Mathematics, University of South Carolina. He is an applied and computational mathematician and modeler. His research interests include modeling and computation of complex systems in materials and life science, development of efficient numerical algorithms for partial differential equations, data science and machine learning applications in materials and life science. He is especially interested in developing cutting-edge models to approximate complex biomedical systems of spatial-temporal resolution. He obtained his PhD from Ohio State University in 1991. He has published over 190 peer-reviewed journal papers and has been continuously funded by federal and state funding agencies in the US.

Date : 4 August 2023 (Friday)

Time : 3:00pm – 4:00pm

Venue : Room 1410 (Lifts 25/26)

All are Welcome!