THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

Adaptive sparse grid discontinuous Galerkin (DG) schemes for high-dimensional PDEs

By

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Abstract

In this talk, we present sparse grid discontinuous Galerkin (DG) schemes for solving high-dimensional PDEs. The scheme is constructed based on the standard weak form of the DG method and sparse grid finite element spaces built from multiwavelets. The interpolatory multiwavelets are introduced to efficiently deal with the nonlinear terms. This scheme is demonstrated to be effective in adaptive calculations, particularly for high dimensional applications. Numerical results for Hamilton-Jacobi equations, nonlinear Schrodinger equations and wave equations will be discussed.

Date : 06 June 2024 (Thursday)
Time : 10:30a.m. – 11:30a.m.
Venue : Room 2463 (near Lifts 25/26)

All are Welcome!