香港浸會大學
HONG KONG BAPTIST UNIVERSITY

香港浸會大學理學院
HKBU Faculty of Science

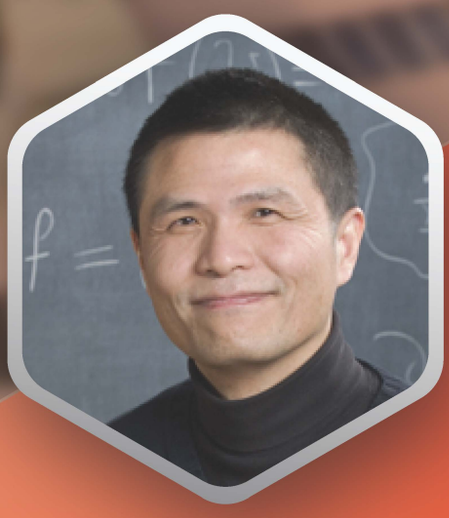
Department of Mathematics

Distinguished Lecture Series

Discontinuous Galerkin Method for Convection Dominated Partial Differential Equations

10 March 2021 (Wednesday)
10:00-11:00 a.m. GMT+8 (Hong Kong Time)

Online via Zoom
(Meeting ID: 959 8217 5924)



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Chi-Wang Shu is the Theodore B. Stowell University Professor of Applied Mathematics at Brown University. He is a SIAM (Society for Industrial and Applied Mathematics) Fellow, an AMS (American Mathematical Society) Fellow and AWM (Association for Women in Mathematics) Fellow. He is a recipient of the First Feng Kang Prize of Scientific Computing (1995), SIAM/ACM Prize in Computational Science and Engineering (2007) and SIAM John von Neumann Prize (2021).

ABSTRACT

Discontinuous Galerkin (DG) method is a finite element method with features from high resolution finite difference and finite volume schemes such as approximate Riemann solvers and nonlinear limiters. It was originally designed for solving hyperbolic conservation laws but has been generalized later to solve higher order convection dominated partial differential equations (PDEs) such as convection diffusion equations and convection dispersion equations. The DG method has been widely applied, in areas such as computational fluid dynamics, computational electromagnetism, and semiconductor device simulations, just to name a few. In this talk we will give a general survey of the DG method, emphasizing its designing principles and main ingredients. We will also describe some of the recent developments in DG methods.

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