DEPARTMENT OF APPLIED MATHEMATICS
應 用 數 學 系

The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

A robust weak Galerkin finite element method for convection-diffusion-reaction equations

by

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Abstract

We propose a weak Galerkin (WG) finite element method for 2- and 3-dimensional convection-diffusion-reaction problems on conforming or nonconforming polygon/polyhedral meshes. The WG method uses piecewise-polynomial approximations of degree $k(k\ge 0)$ for both the scalar function and its trace on the inter-element boundaries. We show that the method is robust in the sense that the derived a priori error estimates is uniform with respect to the coefficients for sufficient smooth true solutions. Numerical experiments confirm the theoretical results.

Date : 23 January, 2017 (Monday)
Time : 11:00a.m. – 12:00noon
Venue : TU801, The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***