



**The Hong Kong Polytechnic University
Department of Applied Mathematics**

**Seminar
On**

The immersed numerical methods for interface problems

by

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Abstract

This talk is to present finite element (FEM) methods based on the linear and bilinear immersed finite element (IFE) for solving the boundary value problems of the diffusion equation with a discontinuous coefficient (interface problem). This method possesses the usual FE method's property (and local conservation property for FVM version) and can use a structured mesh or even the Cartesian mesh to solve a boundary value problem whose coefficient has discontinuities along piecewise smooth nontrivial curves. Numerical examples are provided to demonstrate features of this method. In particular, this method can produce a numerical solution to an interface problem with the usual $O(h^2)$ (in L^2 norm) and $O(h)$ (in H^1 norm) convergence rates.

Date : 30 June, 2008 (Monday)
Time : 11:00 a.m. – 12:00 noon
Venue : Departmental Conference Room HJ610
The Hong Kong Polytechnic University

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