



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

Colloquium

On

Lower Bound by Nonconforming FEMs

by

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Abstract

Considering the eigenvalue bounds of PDEs, there are two kinds of FEMs: one is conforming, the other is nonconforming. The former always gives always the upper bounds while the latter is uncertain. We proved first that the simplest nonconforming element (so called Morley element) gives successfully the lower bounds for eigenvalues of the biharmonic equation. The proof argument moves then to other equations, e.g., Laplace, Stokes and Steklov equations, showing how to modify the standard nonconforming elements in order to get satisfied lower bounds.

Date : January 3, 2012 (Tuesday)

Time : 11:00 a.m. – 12:00 noon

Venue : HJ610, The Hong Kong Polytechnic University

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