



Fall 2008 Seminar Series



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Friday, November 14, 2008

Time: 3:00 PM

Room: HSS 2.01.08

Superconvergence phenomenon in the finite element method

Abstract: In the finite element method, the approximate solution and its gradient may converge to the exact one at a higher rate on certain special points than they do globally. This phenomenon is called superconvergence, and these points are called natural superconvergence points. Identifying superconvergence points is critical for various processes, e.g., post-processing of the solution, estimating the solution errors, and adaptive controls. In this talk, we shall discuss the location of the natural superconvergence points. Several popular finite element spaces on rectangular, triangular, and hexahedral meshes will be considered.

A reception will follow the talk and will be held in HSS 2.01.08