Department of Mathematics,
University of California, San Diego

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Center for Computational Mathematics Seminar

Sara Pollock

UCSD

Convergence of goal-oriented adaptive finite element methods for semilinear problems

Abstract:

In this talk, we will discuss a goal-oriented adaptive method for second order semilinear PDEs. In goal-oriented methods we are concerned with approximating a given quantity of interest, a function of the weak solution to the PDE. In linear problems, this is accomplished by defining a dual problem or formal adjoint and solving the two problems simultaneously. For the semilinear case, we will discuss the formation of the linearized and approximate dual problems. We will then review the standard contraction framework and discuss some additional estimates used to show convergence of the method. Finally, we introduce an appropriate notion of error to derive a strong contraction result.

Tuesday, January 31, 2012

11:00 AM

AP&M 2402

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