Numerical Analysis and Scientific Computing Colloquium

Iterative linear solvers for PDE-constrained Optimization problems

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Abstract: The numerical approximation of Partial Differential Equation (PDE) problems leads typically to large dimensional linear or linearised systems of equations. For problems where such PDEs provide only a constraint on an Optimization problem (so-called PDE-constrained Optimization problems), the systems are many times larger in dimension.

We will discuss the solution of such problems by preconditioned iterative techniques in particular where the PDEs in question are the steady Stokes equations describing incompressible fluid flow and some very recent work on the time-dependent diffusion equation.

Thursday, December 2, 2010, 4:00 pm

Mathematics and Science Center: W201

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