Department of Mathematics

University of Houston

Scientific Computing Seminar

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Divergence-free-preserving discretizations of incompressible flow

Thursday, March 3, 2016
1:30 PM- 2:30 PM
Room 646 PGH

Abstract: We construct conforming finite element spaces for the Stokes and Navier–Stokes problem in two and three dimensions that yield divergence–free velocity approximations. The derivation of the finite element pairs is motivated by a smooth de Rham complex that is well–suited for the Stokes problem. We discuss the stability and convergence properties of the new elements and outline the construction of reduced elements that have fewer unknowns.