

Mini elements and stabilization for Stokes equations

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ABSTRACT

In this talk, we introduce a new stable MINI-element pair for incompressible Stokes equations on quadrilateral meshes, which uses the smallest number of bubbles for the velocity. The pressure is discretized with the linear nonconforming space and each component of the velocity field is done with the standard Q_1 conforming space enriched by one bubble a quadrilateral. The superconvergence in the pressure of the proposed pair is analyzed on uniform rectangular meshes, and tested numerically on uniform and non-uniform meshes.