

**Brezzi, F.; Pitkäranta, J****On the stabilization of finite element approximations of the Stokes equations.** (English)[Zbl 0552.76002](#)

Efficient solutions of elliptic systems, Proc. GAMM-Semin., Kiel 1984, Notes Numer. Fluid Mech. 10, 11-19 (1984).

[For the entire collection see [Zbl 0543.00006](#).]

Considered are finite element approximations of the Stokes equations. We present a systematic way of stabilizing it by adding bubble functions to the discrete velocity field. Another way of stabilization is also presented where the finite element spaces are kept unchanged but the discrete incompressibility condition is modified instead.

**MSC:**[76M99](#) Basic methods in fluid mechanics[65N30](#) Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEsCited in **3** ReviewsCited in **89** Documents**Keywords:**[bubble functions](#); [discrete velocity field](#); [discrete incompressibility condition](#)