ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

15. Numerical Analysis and Scientific Computing

1991 MS Classification: 65N22 65M55
Olshanskii, Maxim A., Moscow State University, Russia
Iterative method for generalized Stokes problem
Numerical iterative method for the generalized Stokes problem is considered. The preconditioned Uzawa type scheme is used. A new preconditioner provides convergence estimates uniformly bounded with respect to system parameters. The algorithm and convergence proofs are based on recent results for the Stokes problem with a model boundary conditions, which make possible a decoupling of "pressure" and "velocity" variables, and on the generalization of the well-known Nechas inequality in $L_2(\Omega)$. Numerical results and some results for nonsymmetric system are available. Part of these results is joint work with G. M. Kobelkov.
Reference:
M. A. Olshanskii, On Stokes problem with model boundary conditions, *Sbornik: Mathematics* **V.188** (1997), 603–620.