

On the preconditioning of the Navier–Stokes equations with applications in arterial blood flow

Efficient Solvers in Biomedical Applications, Mariatrost, July 2-5, 2012

Lorenz John¹ Olaf Steinbach²

We present an overview on different preconditioners for the Navier–Stokes equations. In particular we focus on preconditioning techniques for high Reynolds number flows, which arise in problems for arterial blood flow. Further, preconditioners for stabilized finite element methods and optimal control problems for the Navier–Stokes equations are discussed. Some numerical results will be given.

¹Institute of Computational Mathematics, TU Graz,

²Institute of Computational Mathematics, TU Graz,