International workshop Mathematical Modeling in Hemodynamics

Stationary Navier-Stokes problem in 2D exterior domain

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(joint work with M. Korobkov and R. Russo)

Steady solutions to the Navier--Stokes problem in two dimensional exterior domain will be considered and the overview of known classical results will be given. Further, we prove that any solution with finite Dirichlet integral is bounded and uniformly converges to a constant vector at infinity. No additional condition (on symmetry or smallness, etc.) are assumed. We also prove that the problem with nonhomogeneous boundary conditions admits at least one solution with finite Dirichlet integral if the total flux over all connected components of the boundary is zero.