Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)
Vol. XIV (2015), 233-262

An existence theorem for steady Navier-Stokes equations in the axially symmetric case

MIKHAIL KOROBKOV, KONSTANTIN PILECKAS AND REMIGIO RUSSO

Abstract. We study the nonhomogeneous boundary value problem for the Navier-Stokes equations of steady motion of a viscous incompressible fluid in a bounded three-dimensional domain with multiply connected boundary. We prove that this problem has a solution in some axially symmetric cases, in particular, when all components of the boundary intersect the axis of symmetry.

Mathematics Subject Classification (2010): 35Q30 (primary); 76D03, 76D05 (secondary).