

ON SOME PROPERTIES OF THE NAVIER–STOKES EQUATIONS

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We discuss the initial and boundary value problems for the system of dimensionless Navier–Stokes equations describing the dynamics of a viscous incompressible fluid using the method of characteristics and the geometric method developed by the authors. Some properties of the formulation of these problems are considered. We study the effect of the Reynolds number on the flow of a viscous fluid near the surface of a body.

Keywords: Navier–Stokes equations, initial value problem, boundary value problem, Reynolds number, turbulence.

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