On stability of a flow past a (rotating) body

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Abstract

We discuss a sufficient condition for stability of a steady solution of the Navier–Stokes equation in a 3D exterior domain Ω, possibly modified so that it describes the flow around a rotating body. The condition is mainly formulated as a requirement on integrability on the time interval $(0, +\infty)$ of a semigroup generated by the linearized problem for perturbations, applied to a finite family of certain functions. The norm of the semigroup is measured in a bounded sub–domain of Ω.