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On bounds of the drag for Stokes flow around a body without thickness

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Abstract: This paper is devoted to lower and upper bounds of the hydrodynamical drag T for a body in a Stokes flow.
We obtain the upper bound since the solution for a flow in an annulus and therefore the hydrodynamical drag can be explicitly derived. The lower bound is obtained by comparison to the Newtonian capacity of a set and with the help of a result due to J. Simon [10]. The chosen approach provides an interesting lower bound which is independent of the interior of the body.

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