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A Hele-Shaw study of brachistochrones in potential flow past rigid bodies ASHWIN VAIDYA, ROBERTO CAMASSA, RICHARD MCLAUGHLIN, MATHEW MOORE, DERREK SPRONK, DAVID SKEWRER, SEAN SKEWRER, University of North Carolina — The potential flow of an unbounded, viscous, incompressible fluid past a rigid body in two and three dimensions has been theoretically shown to possess a brachistochrone path which is absent in the case of Stokes flow past the same object. In this talk, we present some experimental verification of the brachistochrone by means of a Hele-Shaw experiment which simulates the two dimensional potential flow past an obstacle in the presence of walls. The experiments are also compared with some numerical studies comparing Stokes and potential flow past symmetric bodies in bounded and unbounded domains.

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