

Abstract Submitted
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Slipping through the water: A study of superhydrophobic hydrofoils¹ ROBERT DANIELLO, University of Massachusetts, Amherst, KIERSTIN DEL VALLE², None, JONATHAN ROTHSTEIN, University of Massachusetts, Amherst — Superhydrophobic surfaces which are chemically hydrophobic with micron or nanometer scale surface features have been studied for their ability to produce a slip interface which has been shown to affect drag, separation, lift, and vortex dynamics. In this talk, we will consider an experimental study of the effect of slip on lift, drag and stall of hydrofoils with a slip-producing superhydrophobic coating. Direct force measurements of lift and drag will be presented for a series of superhydrophobic and no-slip hydrofoils over a range of Reynolds numbers $3500 < Re < 35000$ and angles of attack from 0 to stall. Effects of slip on the boundary layer, separation and stall will be considered with particle image velocimetry.

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