

Abstract Submitted
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Direct Numerical Simulation of Superhydrophobic Surfaces¹

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A volume of fluid methodology will be used to study the physics of superhydrophobic surfaces. The geometry of the surface will be resolved. The effect of pressure difference on the interface will be presented and contrasted to theory. Interface failure will be explored and simulations of microchannel flow will be compared to experiments. A turbulent channel with superhydrophobic grooves will be presented showing the interface behavior and implications on drag reduction. Extension to random textured surfaces will be discussed.

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