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Upstream Drafting of a Flexible Body by its Downstream Neighbor TEIS SCHNIPPER, Applied Mathematics Laboratory, Courant Inst., New York University and Dept. of Physics and Center for Fluid Dynamics, Technical University of Denmark, JUN ZHANG, Applied Mathematics Laboratory, Courant Inst., and Dept. of Physics, New York University — It is common knowledge that an upstream body influences its downstream neighbors in an open flow. This is often referred to as flow drafting or slipstreaming (either in the air or in water). In this talk, we present an experimental study on how the motion of a flapping flag is strongly affected by a downstream neighbor. In a flowing soap film tunnel we introduce, in turn, passive as well as kinematically driven bodies in the wake of an otherwise freely flapping flag. We show how the flapping frequency and drag on the leading flag can be significantly manipulated by the downstream neighbor.

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