

Abstract Submitted
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Flow-Induced Flutter of Multiple Inverted Flags for Improved Energy Harvesting¹ AARON RIPS, Johns Hopkins Univ, KOUROSH SHOELE, Florida State University, RAJAT MITTAL, Johns Hopkins Univ — Multi-inverted flag configurations undergoing flow-induced flutter have been studied using a coupled fluid-structure interaction solver. Both tandem and side-by-side configurations are examined to better understand the dynamics and energy harvesting potential of these systems, and to identify configurations that enhance energy harvesting. Parametric sweeps over the separation distance demonstrate a rich variety of coupling modes and system dynamics. A number of operational regimes have been identified for this two-flag system and correlated to the vortex dynamics. Simulations indicate that the coupling between flags can be used to enhance overall energy harvesting potential.

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