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Effects of Oscillatory Actuation Frequency on Wall-Mounted Hump Flow JENNIFER FRANCK, Brown University, TIM COLONIUS, California Institute of Technology — A large eddy simulation (LES) is used to explore the effects of high frequency actuation on the natural separation bubble formed by a wall-mounted hump. Low frequency forcing at $F^+ \sim O(1)$ has been shown to increase entrainment through regular shedding of large-scale structures. Using a LES technique previously validated on the baseline and controlled flow over the wall-mounted hump geometry, the effectiveness of high frequency actuation is explored and compared with previous investigations. It is found that the high frequency actuation does not produce distinct vortical structures in the separated shear layer, and does not delay the onset of separation. The resulting mean flow is relatively unaltered by the application of high frequency actuation, although the local flow surrounding the actuation location is slightly modified.

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