

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Effect of trailing edge shape on the wake and propulsive performance of pitching panels¹ TYLER VAN BUREN, DANIEL FLORYAN, Princeton University, DANIEL BRUNNER, Zurich University, UTKU SENTURK, Ege University, ALEXANDER SMITS, Princeton University and Monash University — We present the effects of the trailing edge shape on the wake and propulsive performance of a pitching panel with an aspect ratio of 1. The trailing edges are symmetric chevron shapes with convex and concave orientations of varying degree. Concave trailing edges delay the natural vortex bending and compression of the wake, and the streamwise velocity field contains a single jet-like structure. Conversely, convex trailing edges promote wake compression and produce a wake split into four jets. Deviation from the square trailing edge mostly reduces the thrust and efficiency.

¹Supported by the Office of Naval Research under MURI grant number N00014-14-1-0533

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Date submitted: 01 Aug 2016

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