

Abstract Submitted  
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**Parameters Governing the Wake Structure of a Low-Aspect-Ratio Pitching Panel at  $Re_C = 640$** <sup>1</sup> JAMES BUCHHOLZ, University of Iowa, ALEXANDER SMITS, Princeton University — Measurements of the wake structure and thrust performance of a rigid rectangular low-aspect-ratio panel pitching about its leading edge have been previously reported (Buchholz, J.H.J and Smits, A.J, *J. Fluid Mech*, 603, pp. 331–365). Such a simplified propulsor has proven to be a useful platform for the investigation of the physics of aquatic animal swimming. Wake visualizations at  $Re_C = 640$  yielded vortex skeleton models that were used to understand the structure of the wake at  $Re_C = O(10^4)$ ; however, at this low Reynolds number, only a single value of panel aspect ratio and pitching amplitude were investigated, for three representative Strouhal numbers. In the present work, we investigate variations in aspect ratio and pitching amplitude, and consider additional pitching frequencies in order to further elucidate parameters governing the structure of the wake at  $Re_C = 640$ .

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