

Abstract Submitted  
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**Mechanisms of elastic enhancement and hindrance for finite length undulatory swimmers in viscoelastic fluids** BECCA THOMASES, ROBERT GUY, University of California, Davis — A computational model of finite-length undulatory swimmers is used to examine the physical origin of the effect of elasticity on swimming speed. We explore two distinct target swimming strokes, one derived from the motion of *C. elegans*, with large head undulations, and a contrasting stroke with large tail undulations. We show that both favorable stroke asymmetry and swimmer elasticity contribute to a speed-up, but a substantial boost results only when these two effects work together. We reproduce conflicting results from the literature simply by changing relevant physical parameters.

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