

Abstract Submitted
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Performance of flexible low-Re swimmers in Newtonian and viscoelastic liquids J. ESPINOSA, R. ZENIT, Universidad Nacional Autonoma de Mexico, E. LAUGA, University of California - San Diego — We show experimental results of “flexible tail” swimmers in elastic fluids. A magnetic microswimmer powered by a frequency-controlled homogeneous magnetic field was built. Experiments were performed in a reference viscous Newtonian fluid and a glucose-based Boger fluid of the same shear viscosity. High definition video of the swimmer traveling along a channel was taken to measure its average swimming speed. We found that locomotion is enhanced in elastic fluids for most conditions. To further investigate the swimming performance, the flow field around the swimmer was visualized with a PIV (Particle Image Velocimetry) technique. The differences between Newtonian and Boger fluid will be presented and discussed.

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