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Enhanced helical swimming in Boger fluids FRANCISCO GODINEZ, RODRIGO MENDEZ-ROJANO, ROBERTO ZENIT, Universidad Nacional Autonoma de Mexico, ERIC LAUGA, University of Cambridge — We conduct experiments with force-free magnetically-driven helical swimmers in Newtonian and viscoelastic (Boger) fluids. In order assess the effect of viscoelasticity on the swimming performance, we conduct experiments for swimmers with different helical tail geometries. We use helices with the same wave length and total length but vary the angle of the helix. As previously reported by the computational study of Spagniole and collaborators, we found that the swimming performance can either increase, decrease or remain unchanged, depending on the geometry of the tail. With the right geometry, the enhancement can be up to a factor of two.

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