

Abstract Submitted
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Locomotion in a liquid crystal near a wall¹ THOMAS POWERS,
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Madison — Recent observations of bacteria swimming in nematic liquid crystal
solution motivate the theoretical study of how swimming speed depends on liquid
crystal properties. We consider the Taylor sheet near a wall, in which propulsion
is achieved by the propagation of traveling waves along the length of the swimmer.
Using the lubrication approximation, we determine how swimming speed depends
on the Ericksen number, which is the ratio of elastic to viscous stresses. We also
study the effect of anchoring strength, at the surface of the swimmer and the surface
of the wall.

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