

Abstract Submitted
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A mechanism for non-Newtonian swimming enhancement YI
MAN, ERIC LAUGA, University of Cambridge — Polymeric solutions and sus-
pensions are prone to display slip due to the presence of thin low-viscosity fluid
layers near boundaries. Using theoretical modeling, we investigate the role of such
reduction in fluid friction on locomotion of model microorganisms. Addressing two-
and three-dimensional situations, we demonstrate how even very thin regions of re-
duced fluid friction can dramatically enhance locomotion speeds. Our results suggest
a mechanism for enhanced swimming in complex fluid environments.

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