

Abstract Submitted
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Symmetry breaking: Swimming beneath free surfaces, Part 2¹

OPHIR SAMSON, SUNYON LEE, MIT, ERIC LAUGA, UCSD, ANETTE HOSOI, DARREN CROWDY, MIT — A swimmer modelled as a point stresslet and dipole in a Stokes flow has been shown to propel itself by deforming the shape of the interface and thus breaking the symmetry of the flow. The theory of this 2D point swimmer is now generalized to one having a deformable body. In this case, the swimmer can control its motion by “squirming” in any desired way. By using conformal mapping theory of doubly connected domains we can simultaneously capture both the deformation of the swimmer’s shape and motion of the interface.

¹EPSRC

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