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A fluid model for Helicobacter pylori[1] SHANG-YIK REIGH, ERIC LAUGA, DAMTP, CMS, University of Cambridge — Swimming microorganisms and self-propelled nanomotors are often found in confined environments. The bacterium *Helicobacter pylori* survives in the acidic environment of the human stomach and is able to penetrate gel-like mucus layers and cause infections by locally changing the rheological properties of the mucus from gel-like to solution-like. In this talk we propose an analytical model for the locomotion of *Helicobacter pylori* as a confined spherical squirmer which generates its own confinement. We solve analytically the flow field around the swimmer, and derive the swimming speed and energetics. The role of the boundary condition in the outer wall is discussed. An extension of our model is also proposed for other biological and chemical swimmers.

[1]Newton Trust

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