Abstract Submitted
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A numerical study on swimming micro-organisms inside a capillary tube[1] LAILAI ZHU, Linne Flow Centre, KTH Mechanics, ERIC LAUGA, Department of Mechanical and Aerospace Engineering, University of California San Diego, LUCA BRANDT, Linne Flow Centre, KTH Mechanics — The locomotivity of micro-organisms is highly dependent on the surrounding environments such as walls, free surface and neighbouring cells. In our current work, we perform simulations of swimming micro-organisms inside a capillary tube based on boundary element method. We focus on the swimming speed, power consumption and locomotive trajectory of swimming cells for different levels of confinement. For a cell propelling itself by tangential surface deformation, we show that it will swim along a helical trajectory with a specified swimming gait. Such a helical trajectory was observed before by experiments on swimming *Paramecium* inside a capillary tube.

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