Abstract Submitted
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Microswimmers in anisotropic media[1] IVAN TANASIJEVIC, ERIC LAUGA, DAMTP, University of Cambridge — Biological microswimmers sometimes have to move through complex fibrous environments whose microstructures are anisotropic. Examples include the cytoplasm of eukaryotic cells, gels and polymer networks. In this work, we develop theoretical modelling of simple microswimmers interacting with slender fibres. We first use a combination of asymptotic calculations and numerical simulations based on the method of regularised stokeslets to address the fundamental case of a single force-free swimmer near an infinite slender fibre and then address the stochastic dynamics of an ensemble of swimmers. We finally show how to use our results in order to design useful anisotropic media.

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