

LadHyX Seminar – June 1st, 10:45 – LadHyX library

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Swimming Efficiently by Wrapping

Single flagellated bacteria are ubiquitous in nature. They exhibit various swimming modes using their flagella to explore complex surroundings such as soil and porous polymer networks. Some single-flagellated bacteria swim with two distinct modes, one with its flagellum extended away from its body and another with its flagellum wrapped around it. The wrapped mode has been observed when the bacteria swim under tight confinements or in high viscous polymeric melts. In this study we investigate the hydrodynamics of these two modes inside a circular pipe. We find that the wrap mode is slower than the extended mode in bulk but more efficient under strong confinement.