

Abstract Submitted
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Instabilities in the Swimming of Bacteria EMILY RILEY, ERIC LAUGA, University of Cambridge — Peritrichously flagellated bacteria, such as *E. coli* and *B. subtilis*, have flagella randomly distributed over their body. These flagella rotate to generate a pushing force that causes the cell to swim body first. For changes in direction these flagella return to their randomly distributed state where the flagella point in many different directions. The main observed state of swimming peritrichously flagellated bacteria however is one where all their flagella gathered or bundled at one end of the body. In this work we address this problem from the point of view of fluid-structure interactions and show theoretically and numerically how the conformation of flagella depends on the mechanics of the cell.

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