

Abstract Submitted  
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**Hydrodynamics of spinning bacteria at a surface** RACHEL BENNETT, Univ of Pennsylvania, RAMIN GOLESTANIAN, University of Oxford — Bacteria tethered to a surface by their flagellum show a variety of different spinning behaviors, including different angles made with the surface and rotation velocities. We have developed a hydrodynamic model to show that the different behaviors arise from several factors including the degree of flagellar constraint, the shape of the bacterium, the flexibility of the flagellar hook and the motor torque. Our minimal model produces the wide variety of behaviors observed in experiments and successfully predicts the detachment angle for bacteria with three different body curvatures.

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