

Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Scattering of spermatozoa off cylindrical pillars ANTON BUKATIN, Warwick University, ENKELEIDA LUSHI, Simons Foundation and New York University, VASILY KANTSLER, Warwick University — The motion of microswimmers in structured environments, even though crucial in processes such as in vivo and in vitro egg fertilization, is still not completely understood. We combine microfluidic experiments with mathematical modeling of 3D swimming near convex surfaces to quantify the dynamics of individual sperm cells in the proximity of cylindrical pillars. Our results show that the hydrodynamic and contact forces that account for the shape asymmetry and flagellar motion, are crucial in correctly describing the dynamics observed in the experiments. Last, we discuss how the size of the cylindrical obstacles determines whether the swimmers scatter off or get trapped circling the pillar.

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Date submitted: 01 Aug 2017

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