

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Rheology of bacterial flagella suspensions SEVIM YARDIMCI, THOMAS GIBAUD, DANIEL CHEN, EDWARD BARRY, ZVONIMIR DOGIC, Physics Department, Brandeis University — The mechanical behavior of a suspension of rigid and semiflexible filaments has been studied in great detail. In comparison the effect of the filament geometry has been relatively unexplored. We present experimental results on the rheological behavior of suspensions of curly and straight flagella with an identical average contour length. We find that both suspensions are trapped in a glassy state and exhibit a solid-like behavior. We observe that the scaling of viscoelastic moduli is highly dependent on filament geometry. Taken together, this highlights the role of filament geometry in suspension mechanics.

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Date submitted: 03 Jan 2011

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