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**Elasticity-induced viscous streaming phenomenon<sup>1</sup>** YASHRAJ BHOSALE, TEJASWIN PARTHASARATHY, MATTIA GAZZOLA, University of Illinois at Urbana-Champaign — Rectified flows associated with the oscillatory motion of immersed solid boundaries, known as viscous streaming, are an efficient way of manipulating and controlling fluids via inertial effects in microfluidic settings. Despite its potential, we know surprisingly little about viscous streaming beyond the classical cases of vibrating solid cylinders, plates, and spheres. Here we extend our understanding by numerically investigating the effects of solid-boundary elasticity, via a recently developed framework based on remeshed vortex methods coupled to reference map techniques. Preliminary results indicate that a complex interplay between inertial, viscous, and elastic forces leads to rich behaviors.

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Yashraj Bhosale  
University of Illinois at Urbana-Champaign

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