

Abstract Submitted  
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**Confined shear induces spatial ordering in an interacting pair of drops**<sup>1</sup> RAJESH SINGH, KAUSIK SARKAR, University of Delaware — In a shear flow between two parallel walls, viscous interactions between deforming drops induce migration velocities away from the wall. Unlike free shear, the drops, after collision, come to the centerline of the domain, i.e. they experience a zero cross-stream separation, and more importantly a fixed streamwise separation. We numerically investigate to find that the final streamwise separation depends on the degree of confinement, capillary number and viscosity ratio, but does not depend on the initial separation between drops. The streamwise separation varies as the square of the domain size and inversely with the capillary number. We present an asymptotic theory to explain these scalings.

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Kausik Sarkar  
University of Delaware

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