

Abstract Submitted  
for the DFD12 Meeting of  
The American Physical Society

**Particle Migration and Interaction in Confined Flows** KAITLYN TULEY, SUNGYON LEE, MARCUS ROPER, UCLA — Inertial microfluidic principles are widely applied in flow cytometry, microfluidic chips, and cell filtration. The hydrodynamic nonlinearity caused by inertia regulates the location of and separation between particles in these devices. Yet, there is no theory to explain these phenomena. We describe asymptotic and numerical models for the fundamental fluid mechanics of particle migration and interaction with applications to: (i) inertial focusing and (ii) the dynamic self-assembly of particles into uniformly spaced flowing lattices.

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Date submitted: 03 Aug 2012

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