

Abstract Submitted  
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**Interactions of inertially focused particles** KAITLYN HOOD, Massachusetts Institute of Technology, MARCUS ROPER, University of California Los Angeles — In inertial microfluidic devices, fluid inertia aligns submerged particles to a finite number of streamlines. Once particles are aligned on a streamline, particle interactions produce regularly spaced chains of particles. We demonstrate that viscous particle-particle and particle-wall interactions, combined with inertial focusing, give rise to a set spacing length for two particles. This model shows how the spacing length scale depends on particle size and Reynolds number. We also show that for two particles of different sizes, a range of spacing lengths can be achieved by tuning the Reynolds number.

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