

Abstract Submitted
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Forming particle chains in inertial microfluidic devices KAITLYN HOOD, University of California Los Angeles, LAWRENCE LIU, University of Southern California, MARCUS ROPER, University of California Los Angeles — Particles in microfluidic devices at finite Reynolds number self-assemble into evenly-spaced chains, which can be exploited in inertial microfluidic devices for flow cytometry, high speed imaging, and entrapment. While the location and number of chains can be manipulated by changing the channel geometry, the particle interactions are not understood well enough to manipulate the spacing between particles. We present a mathematical model of particle interactions and the formation of particle chains. We will address the following questions: Is there a preferred particle spacing? What are the conditions needed for chain formation?

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