

Abstract Submitted
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Dynamics of shear-induced migration of spherical particles in pipe flow ELISABETH GUAZZELLI, Aix Marseille University, CNRS, IUSTI UMR 7343, BRADEN SNOOK, Aix Marseille University, CNRS, IUSTI UMR 7343 and Department of Chemical Engineering, University of Florida, JASON BUTLER, Department of Chemical Engineering, University of Florida, AIX-MARSEILLE UNIVERSITY, CNRS, IUSTI UMR 7343 TEAM, DEPARTMENT OF CHEMICAL ENGINEERING, UNIVERSITY OF FLORIDA TEAM — We study the large-oscillation flow of a concentrated suspension in a pipe. Particle volume fraction and particle velocity are examined through refractive index matching techniques. The particles are seen to migrate toward the center of the pipe, i.e. from the region of high to low shear-rate. The dynamics of the shear-induced migration process is analyzed and in particular compared to the prediction of the suspension balance model using realistic rheological laws.

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