

Abstract Submitted  
for the DFD14 Meeting of  
The American Physical Society

**Entrainment effects in the long residence times of solid spheres settling in stratified fluids**<sup>1</sup> CLAUDA FALCON, ROBERTO CAMASSA, RICHARD MCLAUGHLIN, University of North Carolina, UNC JOINT FLUIDS LAB TEAM — This talk will present results of a study, by a combination of experimental, analytical and numerical tools, of the effects of sharp density variations in the dynamics of a settling sphere in viscous dominated regimes. In particular, long residence times rivaling the ones observed for porous spheres in similar configurations will be demonstrated and discussed. Asymptotic approaches and exact solutions for the sphere exterior problem of Stokes equations will be compared in a parametric study of relevance for experiments.

<sup>1</sup>Supported by NSF and ONR.

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Date submitted: 01 Aug 2014

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