Abstract Submitted
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An internal splash: Levitation and Long Transients of Falling Spheres in Stratified Fluids[1] RICHARD PARKER, BYRON HUFF, RICHARD MCLAUGHLIN, ROBERTO CAMASSA, University of North Carolina, UNC RTG FLUID GROUP TEAM — We present measurements regarding new phenomena arising with falling bodies in sharply stratified (two layer) fluids.[2] Specifically, the newly observed phenomena in which a heavy falling sphere stops and reverses its motion before ultimate descent to the bottom is further explored through careful adjustment of the bottom layer fluid density . An experimental study is presented which documents the bounce amplitude and long layer residence times as function of the bottom layer density for several spheres of different densities. Finally, we present the behavior associated with beads of adjustable density and varying size.

[1]RTG NSF DMS-0502266
[2]N. Abaid, D. Adalsteinsson, Akua Agyapong, and R. M. McLaughlin, "An Internal Splash: Falling Spheres in Stratified Fluids," Physics of Fluids, 16, no. 5, 1567-1580, 2004.

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