Abstract Submitted
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A regularization by stratification of the Stokes flow divergences by translating spheres[1] ROBERTO CAMASSA, CLAUDIA FALCON, University of North Carolina, JOYCE LIN, University of Utah, RICHARD MCLAUGHLIN, ANNA MILLER, KATHRYN VALCHAR, University of North Carolina, UNC NSF RTG FLUIDS GROUP COLLABORATION — Stokes flow solutions of fluid motions in the presence of a moving sphere notoriously suffer unphysical divergences in quantities such as the dragged volume of fluid which have been traditionally regularized by far-field Oseen inertial corrections. This talk will consider an alternative regularization mechanism related to the presence of stable stratification under gravity in the fluid. A first principle theory will be outlined and results with falling spheres in sharp stratifications will illustrate the mechanism.

[1]NSF

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