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### 76th Annual Meeting of the Division of Fluid Dynamics

Sunday–Tuesday, November 19–21, 2023; Washington, DC

#### **Session ZC46: Particle-Laden Flows: Clustering II**

12:50 PM–2:47 PM, Tuesday, November 21, 2023

Room: 209BC

Chair: Shaurya Prakash, The Ohio State University

#### **Abstract: ZC46.00006 : Periodic orbits of particles settling under gravity in a viscous fluid\***

1:55 PM–2:08 PM

[← Abstract →](#)

#### **Presenter:**

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To understand basic features of the dynamics of particle systems settling under gravity in a very viscous fluid, it is useful to study simple models. A class of periodic orbits of three rigid spheres in a vertical plane is found numerically for certain initial configurations. The multipole expansion corrected for lubrication based on the Stokes equations is used. Basic features of the periodic solutions, including their sensitivity to small perturbations, are analyzed. It is shown that the same type of the periodic motion was observed elsewhere for a more complex system.

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