

Abstract Submitted
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Computational Analysis of Flow Field Hydrodynamics Between Identical Spheres in Water GAURANG SHYAM LIMACHIA, None — Stokes' Law is the foundation of modern hydrodynamics. The introduction of rigid particles into a uniform flow makes the governing equations highly complex; consequently, these equations are nearly impossible to resolve analytically. As a result, solutions are often found for specific instances through numerical analysis. This paper performs such numerical analysis for rigid spheres suspended in a single fluid with uniform upward flow. The perturbation of the velocity field was found to be greatest when the spheres were within 1.30 Diameters of each other. In contrast, the spheres moved independently with minimum interaction at distances greater than 5 Diameters apart. This research helps us identify ideal interaction distances for suspended objects and understand the natural orientation of real organisms traveling in real fluids in the real world.

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None

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