

Abstract Submitted  
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**The motion of a light particle in a rotating Stokes flow** TOM MULLIN, TANIA SAUMA PEREZ, YANG LI, Univ of Manchester — We present the results of experimental investigations into the motion of light spheres in a rotating horizontal drum filled with viscous fluid. Stokesian dynamics calculations indicate a single stable fixed point on the centreline of the flow whereas calculations with finite sized spheres suggest the possibility of a range of fixed points. Our results support the latter with good quantitative accord between theory and experiment. We also consider the effects of roughness, porosity and elasticity on the fixed points and dynamics.

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