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**Colloidal Hydrodynamics with Arbitrary Boundary Conditions**
JONATHAN K. WHITMER, ERIK LUIJTEN, University of Illinois at Urbana-Champaign — Hydrodynamic interactions are essential to the understanding of colloidal dynamics. Due to their complexity and computational cost, they are often ignored in simulations. Over the past decade, coarse-grained methods such as Stochastic Rotation Dynamics[1] (an example of the larger family of Multi-Particle Collision (MPC) methods[2]) have been developed to include these interactions efficiently in simulation. To use these methods for the study of self-assembly dynamics of particles with anisotropic surface chemistry, we extend previously implemented methods for stick boundary conditions[3] to arbitrarily slipping surfaces on the curved surfaces of spherical colloids. We present a mapping from an easily tunable simulation parameter onto the slip length as defined by Navier, and discuss the dynamics of anisotropic particles simulated using this method.

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[3]I. Gotze, H. Noguchi, and G. Gompper Phys. Rev. E **76** 046705 (2007)

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