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**Dissipative Particle Dynamics Simulations of Colloidal Suspensions** IGOR PIVKIN, GEORGE KARNIADAKIS, Brown University — Dissipative Particle Dynamics (DPD) is an off-lattice mesoscopic particle-based simulation method for complex fluids. Due to soft force potential used in DPD, modeling of solid-wall boundary conditions is difficult. We have developed a relatively simple procedure to impose no-slip boundary conditions for DPD. We have applied it to study colloidal suspensions of spherical particles with different volume fractions. We will present simulation results from these studies focusing on the rheological properties and comparisons with experimental results and theoretical predictions.

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