

Abstract Submitted
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Computer simulation of anisotropic diffusion of colloidal particles between flat plates¹ GILAD BARLEV, Dept. of Physics, Kenyon College, Gambier, OH, CHORNG-HAUR SOW, Dept. of Physics, National University of Singapore, Singapore, TIMOTHY SULLIVAN, Dept. of Physics, Kenyon College, Gambier, OH — We have created a computer simulation of the anisotropic diffusion of charged colloidal particles trapped between charged or uncharged flat plates. Anisotropic diffusion is simulated using a random displacement in each time interval appropriate for diffusion constants taken from the theory of Happel and Brenner [1]. For charged flat plates, the electrostatic force on the particle was derived from measured potential energies taken from C.H. Sow, *et al.*, [2]. The code and analysis techniques have been checked for the case of free diffusion in 3D and in simulating the experiments of Lin, Yu, and Rice [3]. We are now working on using the code to test new analysis techniques for the case of charged plates where the electrostatic force further suppresses diffusion in the direction perpendicular the plates. [1] J. Happel and H. Brenner, *Low Reynolds Number Hydrodynamics*, (Kluwer, Dordrecht, 1991) [2] C.-H. Sow, *et al.*, in preparation [3] B. Lin, J. Yu, and S. Rice, *Phys. Rev.* **E62**, 3909 (2000)

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