

Abstract Submitted
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Experimental Study of Short-Time Brownian Motion JIANYONG MO, AKARSH SIMHA, DAVID RIEGLER, MARK RAIZEN, The University of Texas at Austin — We report our progress on the study of short-time Brownian motion of optically-trapped microspheres. In earlier work, we observed the instantaneous velocity of microspheres in gas and in liquid, verifying a prediction by Albert Einstein from 1907. We now report a more accurate test of the energy equipartition theorem for a particle in liquid. We also observe boundary effects on Brownian motion in liquid by setting a wall near the trapped particle, which changes the dynamics of the motion. We find that the velocity autocorrelation of the particle decreases faster as the particle gets closer to the wall.

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