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Brownian motion of passive particles in a bath of E. coli bacteria. MACKENZIE SMITH, JAIDA HOPKINS, LUIS SANCHEZ DIAZ, University of Tennessee at Chattanooga — With aim to understand the dynamics of passive colloids surrounded for active particles. Here, we study the Brownian movement of latex particles in a bath of E. coli bacteria. Vials were mixed with latex particles, luria broth and E Coli. Some of the vials were treated with an antibiotic to see how mutations to the antibiotic altered movement of the bacteria. The single particle tracking method, based on observations of the trajectories of individual particles, is compared Brownian simulation and theoretical results that characterize the motions of a large collection of particles. Determination of diffusion coefficients and viscosity from correlation of positions of the particles is discussed.

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