

Abstract Submitted
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Diffusion theory of Brownian particles moving at constant speed in D dimensions¹ FRANCISCO J. SEVILLA, Instituto de Física, Universidad Nacional Autónoma de México — The propagation of Brownian-active particles that move at constant speed in the limit of short times, differs from wave-like propagation in that active particles propagate without leaving a wake trailing characteristic of wave propagation in even dimensions. In the long time regime, normal diffusion is expected due to random fluctuations that disperse the particle direction of motion. A phenomenological equation that describe the transition from the behavior free of effects of wake, to the normal diffusion of the particles is proposed. A comparison of the results predicted by such equation with those obtained from models using Langevin equations is presented in the spherically symmetric case.

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