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The Stepping Motion of Brownian Particle Derived by Nonequilibrium Fluctuation

ZHAN Yong, ZHAO Tong-Jun, YU Hui, SONG Yan-Li, and AN Hai-Long

Physics Department, Hebei University of Technology, Tianjin 300130, China
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Abstract: The direct motion of Brownian particle is considered as a result of system derived by external nonequilibrium fluctuating. The cooperative effects caused by asymmetric ratchet potential, external rocking force and additive colored noise drive a Brownian particle in the directed stepping motion. This provides this kind of motion of kinesin along a microtubule observed in experiments with a reasonable explanation.

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Key words: stepping motion, nonequilibrium fluctuation, kinesin

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