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| Research: | Theory of biomedical soft matter: Microrheology, micromachines, active matter | |

# Odd elasticity in stochastic micromachines

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We investigate the statistical properties of fluctuations in active systems that are described by an overdamped Langevin equation with an odd elastic tensor. We find that the anti-symmetric parts of the time-correlation functions can exist and that they are proportional to the odd elastic constant. Using the short-time asymptotic expressions of the time-correlation functions, one can estimate an odd elastic constant of an active material such as an enzyme or a motor protein. Moreover, we propose a novel type of thermally driven microswimmer in which the three spheres are connected by springs having not only even elasticity but also odd elasticity. We explicitly demonstrate that the proposed stochastic odd microswimmer can exhibit directional locomotion as a result of odd elasticity.