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Energetics of the undamped stochastic oscillators

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We present results for undamped stochastic oscillators driven by additive noise. For various noise types we study analytically and numerically energetic properties of stochastic systems. In general, action of an additive noise results in pumping of energy into the system through an interesting interplay between kinetic and potential energies which are sensitive to the shape of the potential well and noise type.

We show that in the long time limit, the total energy grows in time with characteristic exponents depending on the type of noise.

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