Dynamical states and Stochastic Resonance in an Inhomogeneous with high-friction Periodic Bistable Potential

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**Abstract**. In this present work, we numerically observe the existence of two dynamical states of trajectories in the underdamped motion of a particle in an inhomogeneous periodic bistable potential with high friction coefficient driven by a periodic force. The system is inhomogeneous in the sense that the coefficient of friction is periodic in space and with phase difference 'ϕ' with respect to the potential. Just like in sinusoidal potentials, the occurrence of stochastic resonance (SR) in the periodic bistable potential is due to the transitions between the dynamical states at an optimal (thermal) noise strength.

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