

RANDOM DELAY INDUCED RESONANCE IN DUFFING OSCILLATOR

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Abstract

We consider the ubiquitous Duffing oscillator driven by a weak periodic force and with a time-delayed linear feedback term. For a random time-delay we numerically explore the effect of strength of feedback term (γ) and standard deviation σ of Gaussian white noise type delay time on resonance. We show the occurrence of single and double resonance and bring out the mechanisms associated with the resonances.

Keywords: random delay, resonance, Duffing oscillator, Gaussian white noise