Effects of Time Delay on Nonlinear Stochastic Energy Harvesting System

Ping Zhu
School of Science and Technology
Puer University, China Puer 665000
Open Key Laboratory of Mechanics of university in Yunnan
Province, China Puer 665000
+86 0879 2120696
zhuupp@163.com

Talk Abstract

In recent years, great attention has been paid to the energy harvester from the almost ubiquitous ambient energy to the electronic energy colocated with microdevices. An effectively nonlinear energy harvesting stochastic systems have been investigated, and effects an ubiquitous ambient stochastic force and system parameters on the system output are discussed by both theory and experiment. In the nature world, many realistic inanimate and animate systems possessing self-regulation control mechanisms by feed back loops, the transmission of from the input signal to the output signal need to take some time, implying that the time delay phenomenon occurs and it is a ubiquitous universal phenomenon. What's more significant is that in the realistic stochastic system effects of the time delay are more interesting and important. A series interesting results of effects of the time delay are found.

In my paper, we study stochastically forced limit cycles of the energy harvesting system subjected to the time delay and find supersensitive limit cycles of the energy harvesting stochastic system. We show effects of the time delay on probability distribution of the energy harvesting stochastic system. By investigating the characteristic correlation time of the system, we point out coherence resonance and anti-coherence resonance phenomena induced by the time delay and effects of the parameters on the stability and the output of the system. simple guidelines. In essence, we ask you to make your abstract look exactly like this document. The easiest way to do this is simply to replace the content with your own material.

Keywords

Energy harvesting System ; Stochastic noise; Time delay; Supersensitive limit cycle; Coherence resonance; System output.

Short biography

Zhu ping, he earn PH.D in Physics from the Yunnan University.

Now he teach Physics at School of Science and Technology of Puer University in China and is a Physics Professor. He presided over the research work of the National Natural Science Foundation of China and the work of Open Key Laboratory of Mechanics of university in Yunnan Province. His the main research fields are stochastic dynamics and applications. relative papers are published in The European Physical Journal B, J Stat Phys and other journals