



航空学报 » 1998, Vol. 19 » Issue (3) :357-360 DOI:

论文

[最新目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)

[<<](#) [<](#) [前一页](#) | [后一页](#) [>](#) [>>](#)

两柔性梁碰撞振动的非相似模态

金栋平, 胡海岩

南京航空航天大学振动工程研究所, 南京, 210016

DISSIMILAR MODES OF A PAIR OF IMPACTING FLEXIBLE BEAMS

Jin Dongping, Hu Haiyan

Institute of Vibration Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, 210016

摘要

参考文献

相关文章

Download: [PDF \(215KB\)](#) [HTML](#) 0KB Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要

研究以Hertz接触模型描述的两柔性梁的碰撞振动, 通过坐标变换将系统投影到环面上分析其模态动力学问题, 揭示碰撞模态呈现非相似性质。

关键词: 碰撞振动 内共振 模态

Abstract:

Unavoidable clearances exist in the space structure composed of elastic rods and beams so that the free vibro impacts between the flexible components occur when the structure is subject to any environmental disturbance. As a preliminary study, this paper deals with the free vibro impacts between two flexible beams. By means of the Hertz formula for contact force and the Galerkin approach, the pair of impacting beams is simplified to an impacting system of two degrees of freedom. After a series of transforms, the free vibro impact of the system is characterized by two variables spanning a torus. The numerical simulation showed that the nonlinear modes of the system do not keep the similarity when the vibro impacts become strong.

Keywords: vibro-impact inter na l r esonance mode

Received 1997-11-21; published 1998-06-25

引用本文:

金栋平;胡海岩. 两柔性梁碰撞振动的非相似模态[J]. 航空学报, 1998, 19(3): 357-360.DOI:

Jin Dongping;Hu Haiyan. DISSIMILAR MODES OF A PAIR OF IMPACTING FLEXIBLE BEAMS[J]. Acta Aeronautica et Astronautica Sinica, 1998, 19(3): 357-360.DOI:

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [金栋平](#)
- ▶ [胡海岩](#)