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具有干摩擦阻尼的叶片组振动的理论与实验研究

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THE THEORITICAL ANALYSIS AND EXPERIMENTAL INVESTIGATION OF VIBRATION ON BLADES WITH DRY FRICTION DAMPING

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摘要 通过理论分析与实验研究,讨论带凸肩叶片的振动特性及其干摩擦阻尼效应。提出了适用于凸肩干摩擦的局部非线性特点的一种新的降阶方法,定义了无量纲干摩擦阻尼因子,用于度量干摩擦阻尼效果。最后,按照设计的实验方案,对带凸肩叶片组试件做了振动实验研究。

关键词： 非线性振动   干摩擦阻尼   降阶方法   振动测度   叶片组

Abstract： The vibration characteristics and dry friction damping effect of shrouded blades are studied bV theoretical analysis and experiments.Anew reducing method on the basis of shroud dry friction nonlinear connection element and fixed interfaee component model synthesis meth-ods is proposed.Dimensionless dry friction damping factor is defined to measure the effect of dry friction damping,Finally,according to designed method, a vibration experiment of shrouded blades is carried out.

Keywords： nonlinear vibration   dry friction damping   order-reducing methods   vibrationmeasurement   blades

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引用本文:

任勇生;朱德懋. 具有干摩擦阻尼的叶片组振动的理论与实验研究[J]. 航空学报, 1994, 15(11): 1306-1314.

Ren Yongsheng. THE THEORITICAL ANALYSIS AND EXPERIMENTAL INVESTIGATION OF VIBRATION ON BLADES WITH DRY FRICTION DAMPING[J]. Acta Aeronautica et Astronautica Sinica, 1994, 15(11): 1306-1314.