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航空发动机用金属橡胶隔振器动静态性能的研究

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Research on Dynamic and Static Characteristics of Metal Rubber Isolator Used in Aero-Engine

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摘要 以某型号航空发动机阻尼减振需求为背景,对开发研制的金属橡胶隔振器与现用的橡胶隔振器进行了动、静态实验研究。研究结果表明:金属橡胶隔振器的能量耗散性能、静态承载能力、过临界的能力及提供振动防护的区域都远远大于橡胶隔振器,而且通过改变金属橡胶隔振器的结构参数和预压缩量可以优化其隔振效果。研究结果为利用金属橡胶隔振器来改善航空发动机的振动状况提供了依据。

关键词： 金属橡胶 橡胶 隔振器 实验研究

Abstract： To satisfy the need of reducing vibration of aero-engine, Metal Rubber （MR） isolator is designed and compared with rubber isolator experimentally. It is shown from the results that the performance of dissipating energy, load capacity, passing resonance and the range of vibration protection of MR isolator are much more excellent than those of rubber isolator. The isolating effects of MR isolator can be optimized by changing structural parameters and pre-compressing value of the elastic elements. The results of research offer evidences for MR isolator being applied to improve the vibration condition of aero-engine.

Keywords： metal rubber rubber isolator experimental research

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