

基于MRFD的车载仪器并联减振半主动控制实验 Experiment on Semi-active Control of Parallel Damping Equipment Using Vehicle Instrument Based on MRFD

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关键词: 车载仪器 磁流变阻尼器 并联机构 多维减振 半主动控制

摘要: 采用3-PRRP (4r) 并联机构作为主体机构, 在机构移动副处的主负荷方向上辅以磁流变阻尼器 (MRFD), 采用LQR最优控制算法对装置进行半主动控制, 从而实现对车载仪器的多维减振。实验结果表明, 该MRFD多维减振机构具有良好的多维减振效果。3-DOF vibration reduction platform using 3-PRRP (4r) parallel mechanism and the elastic damping devices were established. A semi-active controller was designed with LQR law to control the system. Then, an experiment system was constructed to test the vibration of on control and off control. The result showed that it has good effectiveness for multi-dimension vibration control of instrument carried in vehicle.

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