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Characterization of Magnetorheological Elastomer (MRE) Engine Mounts

(Conference Paper)

Ladipo, I.L. , Fadly, J.D., Faris, W.F.

Faculty of Engineering, Department of Mechanical Engineering, International Islamic University Malaysia, Malaysia

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Abstract

This study presents simulation of Magnetorheological Elastomers (MREs) as engine mounts. A 4- parameter model is used to model the MRE mounts and the performance compared with passive or rubber mounts. Using relative displacements and force transmissibility at low frequencies and high frequencies respectively, the comparison show a 50% vibration reduction at resonance and varying degree of isolation at other broadband frequencies. Also by tuning the magnetic flux input, the MRE engine mounts can be used to further isolate vibration. These results suggest that the use of MRE as engine mounts deserves more attention. © 2016 Elsevier Ltd.

Author keywords

Engine mounts; Magnetorheological elastomer (MRE); Modelling; Smart materials; Vibration isolation

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