

Plates with Shunted Piezoelectric Patches

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ABSTRACT

The need for passive damping techniques arises from the complexities, added weight, and energy requirements associated with the implementation of various active control techniques. A novel passive damping approach for the attenuation and localization of the vibration of plates is presented in this study. The introduction of distributed piezoelectric patches with passively shunted circuits is presented. A numerical model that describes the coupling of shunted circuit with flexible plates is developed using spectral finite element approach. The prediction of the model is validated against analytical and experimental results.

Keywords: composite plate, piezoelectric, flexible plates

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