

عنوان مقاله:

Estimation of time response of flexural and angular displacements over a cantilevered plate

محل انتشار:

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خلاصه مقاله:

In this work, a technique is suggested to estimate the transient response of physical displacements and rotation over an entire plate structure. A cantilevered plate instrumented with piezoelectric patches is taken as a test structure. Equations of motion of the test structure are derived using finite element method (FEM) based on Hamilton's principle. The system of second-order ordinary differential equations is converted into a first order state-space model. Discrete Kalman filter is then used to estimate modal displacements in the time domain. Using theory of modal analysis and transient response of modal displacements, transient responses of physical displacements and physical rotations are estimated over the test-plate.

کلمات کلیدی:

Kalman filter, Estimation, Vibration mode, Cantilevered plate

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