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Discrete-layered damping model of multilayer plate with account of internal damping

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Abstract

© Published under licence by IOP Publishing Ltd.Construction of discrete-layered damping model of multilayer plate in small displacement and deformations with account of internal damping of layers of Thompson- Kelvin-Voight model is presented. Based on derived equations, analytical solution is given to the static damping problem of simply supported single-layer rectangular plate subjected to uniformly distributed pressure, which is applied to one of its boundary planes. Convergence to the three-dimensional case is analysed for the obtained solution with respect to the dependence on dimension of mesh in the thickness direction of plate. For thin plates, dimension reduction of the formulated problem is set on the basis of simplifying hypothesis applied for each layer.

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