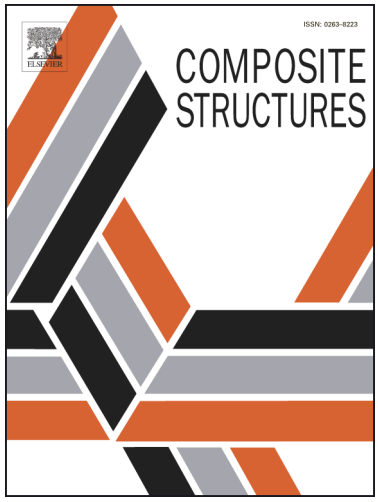

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Vibration analysis of sandwich plates with carbon nanotube-reinforced composite face-sheets

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Abstract: A layer-wise sandwich model is employed for vibration analysis of symmetric sandwich plates with two thin carbon nanotube-reinforced composite (CNTRC) face-sheets, in which a new polynomial refined plate theory is proposed for the core and the classical plate theory is adopted for the face-sheets. By virtue of symmetry, the in-plane displacements are neglected. By maintaining the displacement continuity conditions at the interfaces, the displacement fields are expressed with only two transverse displacement components, which are given in summations of products of beam characteristic functions in one direction and unknown functions in the other. Then, the multi-term Kantorovich-Galerkin method (MTKGM) is extended to obtain semi-analytical solutions for vibration response of symmetric CNTRC sandwich plates resting on elastic foundation. Non-dimensional natural frequencies are obtained for CNTRC sandwich plates, and the effects of the number of

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