عنوان مقاله:

Free Vibration of a Thick Sandwich Plate Using Higher Order Shear Deformation Theory and DQM for Different Boundary Conditions

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خلاصه مقاله:

In this paper, the effect of different boundary conditions on the free vibration analysis response of a sandwich plate is presented using the higher order shear deformation theory. The face sheets are orthotropic laminated composites that follow the first order shear deformation theory (FSDT) based on the Rissners-Mindlin (RM) kinematics field. The motion equations are derived considering the continuity boundary conditions between the layers based on the energy method and Hamilton s principle. The frequency and mode shapes of the structure are obtained using the differential quadrature method (DQM). The effects of different parameters such as the face sheet-to-core stiffness ratio, the boundary conditions, and the core-to-face sheet thickness ratio on the frequency of the sandwich plate are shown. Moreover, the numerical results indicate that thefrequency of the CCCC and CFFF sandwich plates predict the higher and lower frequency, respectively

کلمات کلیدی:

Sandwich plate, Vibration, DQM, Higher order theory, FSDT

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