عنوان مقاله:

The Out of-plane and in-plane vibration analysis of clamped-clamped composite laminated beam

محل انتشار:

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خلاصه مقاله:

Composites are used in structural system for decreasing weight and increasing specific stiffness and producing specific strength characteristics. Beam analysis plays an important role in civil, mechanical structural design such as structural foundation, railway and car suspension system. The present study is concerned with the vibration analysis of laminated beams with clamped- clamed boundary condition. Bernoulli-Navier hypothesis and Timoshenko's first-order shear beam theory are applied to derive natural frequency of laminated beams. Thus a Matlab code is constructed to compute beam natural frequency by laminated theory and subsequently a comparison is performed between their results. Then results of the commercial software ANSYS 14.0 are compared to analytical results which .are in consistent with each other

کلمات کلیدی:

composite laminated beam, Bernoulli-Navier theory, Timoshenko's theory, ansys FEM, natural frequency