عنوان مقاله:

Coupled Vibration of Partially Fluid-Filled Laminated Composite Cylindrical Shells

نویسنده:

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خلاصه مقاله:

In this study, the free vibration of partially fluid-filled laminated composite circular cylindrical shell with arbitrary boundary conditions has been investigated by using Rayleigh-Ritz method. The analysis has been carried out with strain-displacement relations based on Love's thin shell theory and the contained fluid is assumed irrotational, incompressible and inviscid. After determining the kinetic and potential energies of fluid filled laminated composite shell, the eigenvalue problem has been obtained by means of Rayleigh-Ritz method. To demonstrate the validity and accuracy of the results, comparison has been made with the results of similar works for the empty and partially fluid-filled shells. Finally, an extensive parameter study on a typical composite tank is accomplished and some conclusions are drawn.

کلمات کلیدی:

Laminated composite, Rayleigh-Ritz, Partially fluid-filled, Cylindrical shell, Vibration analysis

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