Abstract

Buckling analysis of laminated composite simply supported cylindrical shell under cryogenic environment is solved by using exact approach. The theoretical formulation is based upon the third-order shear deformation theory, then equation of motion are derived and solved using Fourier series to obtain critical buckling load by solving eigenvalue problem for different cryogenic gradients. Many design parameters are changed such as using different material, number of laminate, aspect ratio (L/R) and thickness ratio (R/h). Results show that changing cryogenic temperature improve buckling load for all material of cylindrical shell, the results show good agreement with those published by other researchers.

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Index Terms

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Buckling  Composite material  Cryogenic  Shell  Cylindrical  Shell theory.