

## عنوان مقاله:

Effects of thickness profiles on buckling load of cylindrical shells with variable thickness

## محل انتشار:

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## خلاصه مقاله:

In this paper, an analytical solution is presented to determine the buckling load of a cylindrical shell with variable thickness and the effects of these profiles on the buckling load is investigated. The loading of the shell is axial, the thickness varies linearly and nonlinearly (two different profiles) and the material property obeys the Hooke's law. The displacement field is defined using the first order shear deformation theory and the von-Karman strain-displacement relations are used for the kinematic description of the shell. The governing equations which are a system of nonlinear differential equations with variable coefficients, are derived by the virtual work principle and they are solved using the perturbation technique. Also the buckling load for the linear profile case is determined by using the finite element method and it is compared with the analytical solution results.

## کلمات کلیدی:

Buckling load, cylindrical shell with variable thickness, first order shear deformation theory, perturbation technique, Analytical solution

## لینک ثابت مقاله در پایگاه سیویلیکا:

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