عنوان مقاله:

effect of shell axial deformation on flutter of cantilevered cylindrical shells under follower forces

محل انتشار:

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خلاصه مقاله:

axial vibration effect of shell particles on dynamic stability of a cantilevered cylindrical shell under an axial follower force was addressed in spite of free -ended shells the reduced axial force under this effect cnnot be derved analytically instead an approximate method was proposed based on the fact that the static and harmonic axial deformation under an axial load in a free -ended beam are almost zero in a particular point near the middle of the beam which was adopted as the equivalent fixed end of a cantilever the work done by the nonconservative follower force was derived for a cantilevered beam and was extended to the case of a cantilevered cylindrical shell the flutter load for a long free-ended shell was calculated using the equivalent cantilevered half -shell and compared with the previous results then flutter load was calculated with and with out the axial vibration effect for cantilevered shells with different lengths and thicknesses and the effect of each parameter was assessed on the flutter load and the critical circumferential mode number in each case

کلمات کلیدی:

axial follower force,flutter,cantilevered,cylindrical shell,circumferential,mode number