

## عنوان مقاله:

Forced Vibration Responses of Axially Functionally Graded Beams by using Ritz Method

## محل انتشار:

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## خلاصه مقاله:

This work presents forced vibration responses of a cantilever beam made of functionally graded material under a harmonic load. The material properties of beam vary along the axial direction. The kinematics of the beam are considered within Timoshenko beam theory. The governing equations of problem are derived by using the Lagrange procedure. In the solution of the problem the Ritz method is used and algebraic polynomials are used with the trivial functions for the Ritz method. In the solution of the forced vibration problem, the Newmark average acceleration method is used in the time history. In this study, free and forced vibration responses of the axially functionally graded beam are investigated in detail. In the numerical examples, the effects of material graduation, geometric and dynamic parameters on the free and forced vibration response of axially graded beam are investigated.

## کلمات کلیدی:

Axially Functionally Graded Material, Forced Vibration Analysis, Timoshenko Beams, Ritz method

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1222022>

