

## عنوان مقاله:

Application of variational iteration method in nonlinear free vibration analysis of a plate-cavity system

## محل انتشار:

سومین کنفرانس بین المللی آکوستیک و ارتعاشات (سال: 1392)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

Nonlinear free vibration analysis of a plate-cavity system is performed. Von-Karman plate theory and wave equation are used to model the flexible plate and air cavity, respectively. Galerkin technique is employed to derive the differential equations of the system. Coupled nonlinear differential equations of the system are solved using Variational Iteration Method (VIM). A parametric study is then carried out to investigate the effects of different parameters on nonlinear natural frequencies of the plate backed by the cavity. For this purpose, frequency ratio is obtained for different values of cavity depth and aspect ratio. Back-bone curves are also found to examine the influence of initial conditions on the natural frequencies of the system.

## کلمات کلیدی:

Nonlinear vibration; Plate-cavity; Vibro-acoustic analysis; Variational iteration method

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/271008>

