

## عنوان مقاله:

Vibration Analysis of a Multi-disk, Bearing and Mass Unbalance Rotor Using Assumed Modes Method

## محل انتشار:

مجله بین المللی طراحی پیشرفته و تکنولوژی ساخت, دوره 8, شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 9

## نویسندگان:

R. Norouzi - *Department of Mechanical Engineering, University of Yazd, Yazd, Iran*

M. Rafeeyan - *Department of Mechanical Engineering, University of Yazd, Yazd, Iran*

H. Dalayeli - *Department of Mechanical Engineering, Malek Ashtar University of Technology, Esfahan, Iran*

## خلاصه مقاله:

In this paper, a simple and efficient method for modeling and solving the equations of a rotor with any number of disks, bearings and mass unbalances is presented using the assumed modes method. This model consists of a continuous shaft, arbitrary number of mass unbalances in any axial location and phase angle, and any number of rigid disks and bearings. This arrangement is extensively used in diverse applications. In this study, final governing differential equations are not derived because the assumed modes method is directly inserted to solving process. Some examples in both cases of free and forced vibration are performed. The results show the accuracy of this modeling and the ability of it to predicting the vibration behavior of the rotor in a complex combination of shaft, disk and bearing. This study also shows that the present approach can give the results as accurate as the most popular approach, i.e. the Finite Element Method.

## کلمات کلیدی:

Assumed Modes Method, Rotor-Bearing, Vibration analysis

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1198212>

