

Friswell, M. I.; Garvey, S. D.; Penny, J. E. T.

Model reduction using dynamic and iterated IRS techniques. (English) Zbl 1049.74725

J. Sound Vib. 186, No. 2, 311-323 (1995).

Summary: Static or Guyan reduction is widely used to reduce the number of degrees of freedom in a finite element model but it is exact only at zero frequency. The Improved Reduced System (IRS) method makes some allowance for the inertia terms and produces a reduced model which more accurately estimates the modal model of the full system. In this paper the IRS method is extended by obtaining the equivalent transformation based on dynamic rather than static reduction. An iterative algorithm, based on the IRS method, is also described. On convergence this algorithm provides a reduced model which reproduces a subset of the modal model of the full system. The iterative version of the IRS method based on dynamic reduction is also described.

MSC:

[74M15](#) Contact in solid mechanics

[74K99](#) Thin bodies, structures

Cited in **24** Documents

Full Text: [DOI](#)