عنوان مقاله:

Modal Analysis of Complex Structures via a Sub-Structuring Approach

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خلاصه مقاله:

In this paper, the problems arising from determining the modal properties of large and complex structures are investigated. For this purpose, the free interface component mode synthesis method has been used. In the following, Singular-Value Decomposition (SVD) is applied as a powerful mathematical tool to determine the appropriate coordinates to participate in the coupling process. Also, the effective error resources including modal shear error and the continuous systems overlapping error and their solution are introduced. Initially, a discrete system has been employed to investigate the free interface component mode synthesis method. Eventually, the studied main samples in this research are beam, plate and cylindrical shell. It is worth noting that the application of this method on the cylindrical shell has not been observed in previous researches.

کلمات کلیدی:

Component Mode Synthesis, Free Interface Method, Modal Analysis, Substructures, Singular-Value Decomposition Method

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