Mechanical Vibrations. Theory and Application to Structural Dynamics. 3rd Edition

Description: Mechanical Vibrations: Theory and Application to Structural Dynamics, Third Edition is a comprehensively updated new edition of the popular textbook. It presents the theory of vibrations in the context of structural analysis and covers applications in mechanical and aerospace engineering. Although keeping the same overall structure, the content of this new edition has been significantly revised in order to cover new topics, enhance focus on selected important issues, provide sets of exercises and improve the quality of presentation.

Without being exhaustive (see the Introduction for a comprehensive list), some key features include:

- A systematic approach to dynamic reduction and substructuring, based on duality between mechanical and admittance concepts
- An introduction to experimental modal analysis and identification methods
- An improved, more physical presentation of wave propagation phenomena
- A comprehensive presentation of current practice for solving large eigenproblems, focusing on the efficient linear solution of large, sparse and possibly singular systems
- A deeply revised description of time integration schemes, providing framework for the rigorous accuracy/stability analysis of now widely used algorithms such as HHT and Generalized-
- Solved exercises and end of chapter homework problems
- A companion website hosting supplementary material

With revised, coherent and uniform notation, Mechanical Vibrations: Theory and Application to Structural Dynamics, Third Edition is a must-have textbook for graduate students working with vibration in mechanical, aerospace and civil engineering, and is also an excellent reference for researchers and industry practitioners.

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