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Autore	Hjelmstad Keith D.
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Nota di contenuto	Particle and Rigid-Body Dynamics -- Numerical Solution of Ordinary Differential Equations -- Single Degree-of-Freedom Systems -- Classical Solution to NDOF Systems -- Nonlinear Response of NDOF Systems -- Earthquake Response of NDOF Systems -- Dynamic Analysis of Truss Structures -- Axial Wave Propagation -- Dynamics of Planar Beams: Theory -- Wave Propagation in Beams -- Finite Element Analysis of Linear Beams -- Nonlinear Dynamic Analysis of Planar

Sommario/riassunto

This text closes the gap between traditional textbooks on structural dynamics and how structural dynamics is practiced in a world driven by commercial software, where performance-based design is increasingly important. The book emphasizes numerical methods, nonlinear response of structures, and the analysis of continuous systems (e.g., wave propagation). Fundamentals of Structural Dynamics: Theory and Computation builds the theory of structural dynamics from simple single-degree-of-freedom systems through complex nonlinear beams and frames in a consistent theoretical context supported by an extensive set of MATLAB codes that not only illustrate and support the principles, but provide powerful tools for exploration. The book is designed for students learning structural dynamics for the first time but also serves as a reference for professionals throughout their careers.
