1. Record Nr. UNINA9910299723003321

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Titolo	Essentials of applied dynamic analysis / / Junbo Jia
Pubbl/distr/stampa	Heidelberg [Germany] : , : Springer, , 2014
ISBN	3-642-37003-9
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (xviii, 424 pages) : illustrations (some color)
Collana	Risk Engineering, , 2195-433X
Disciplina	620.00113
Soggetti	Dynamics Mechanical engineering Civil engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 2195-433X."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Governing Equation of Motions -- Free Vibrations for a Single-Degree-of-Freedom (SDOF) System–Translational Oscillations -- Practical Eigenanalysis and Structural Health Monitoring -- Solving Eigenproblem for Continuous Systems: Rayleigh Energy Method -- Vibration and Buckling Under Axial Loading -- Eigenfrequencies of Non-uniform Beams, Shallow and Deep Foundations -- Deterministic and Stochastic Motions -- Time Domain to Frequency Domain: Spectrum Analysis -- Statistics of Motions and Loads -- Forced Vibrations -- Calculation of Environmental Loading Based on Power Spectra -- Vibration of Multi-Degrees-of-Freedom Systems -- Damping -- Nonlinear Dynamics -- Structural Responses Due to Seismic Excitations -- Fatigue Assessment -- Human Body Vibrations -- Vehicle-Structure Interactions.
Sommario/riassunto	This book presents up-to-date knowledge of dynamic analysis in engineering world. To facilitate the understanding of the topics by readers with various backgrounds, general principles are linked to their applications from different angles. Special interesting topics such as statistics of motions and loading, damping modeling and measurement, nonlinear dynamics, fatigue assessment, vibration and buckling under axial loading, structural health monitoring, human body vibrations, and vehicle-structure interactions etc., are also presented. The target readers include industry professionals in civil, marine and

mechanical engineering, as well as researchers and students in this area.