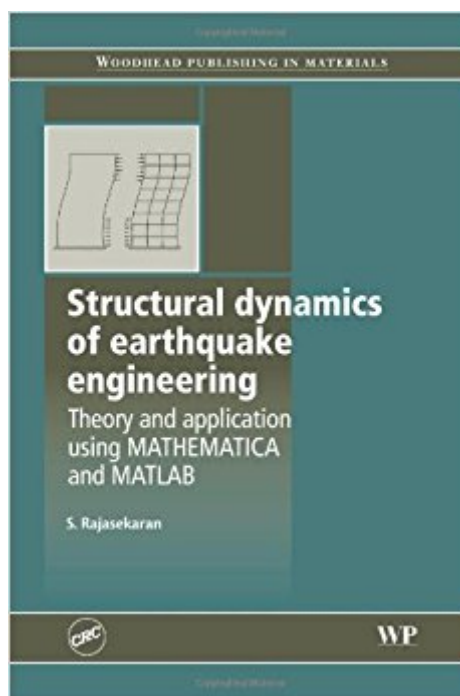The book was found

Structural Dynamics Of Earthquake Engineering: Theory And Application Using Mathematica And Matlab (Woodhead Publishing Series In Civil And Structural Engineering)

Synopsis

Given the risk of earthquakes in many countries, knowing how structural dynamics can be applied to earthquake engineering of structures, both in theory and practice, is a vital aspect of improving the safety of buildings and structures. It can also reduce the number of deaths and injuries and the amount of property damage.The book begins by discussing free vibration of single-degree-of-freedom (SDOF) systems, both damped and undamped, and forced vibration (harmonic force) of SDOF systems. Response to periodic dynamic loadings and impulse loads are also discussed, as are two degrees of freedom linear system response methods and free vibration of multiple degrees of freedom. Further chapters cover time history response by natural mode superposition, numerical solution methods for natural frequencies and mode shapes and differential quadrature, transformation and Finite Element methods for vibration problems. Other topics such as earthquake ground motion, response spectra and earthquake analysis of linear systems are discussed.Structural dynamics of earthquake engineering: theory and application using Mathematica and Matlab provides civil and structural engineers and students with an understanding of the dynamic response of structures to earthquakes and the common analysis techniques employed to evaluate these responses. Worked examples in Mathematica and Matlab are given.Explains the dynamic response of structures to earthquakes including periodic dynamic loadings and impulse loadsExamines common analysis techniques such as natural mode superposition, the finite element method and numerical solutionsInvestigates this important topic in terms of both theory and practise with the inclusion of practical exercise and diagrams

Book Information

Series: Woodhead Publishing Series in Civil and Structural Engineering

Hardcover: 896 pages

Publisher: Woodhead Publishing; 1 edition (June 13, 2009)

Language: English

ISBN-10: 1845695186

ISBN-13: 978-1845695187

Product Dimensions: 6.4 x 2.3 x 9.5 inches

Shipping Weight: 3.2 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars   1 customer review

Best Sellers Rank: #998,914 in Books (See Top 100 in Books)   #48 inÃ Â Books > Engineering & Transportation > Engineering > Civil & Environmental > Seismic Design   #50 inÃ Â Books >

Customer Reviews

Dr S. Rajasekaran is Professor of Infrastructure Engineering at the PSG College of Technology, India.

great to learn and to implement with matlab

Structural Dynamics of Earthquake Engineering: Theory and Application Using Mathematica and Matlab (Woodhead Publishing Series in Civil and Structural Engineering) Strengthening of Reinforced Concrete Structures: Using Externally-Bonded Frp Composites in Structural and Civil Engineering (Woodhead Publishing Series in Civil and Structural Engineering) Signals and Systems using MATLAB, Second Edition (Signals and Systems Using MATLAB w/ Online Testing) Tribology and Dynamics of Engine and Powertrain: Fundamentals, Applications and Future Trends (Woodhead Publishing in Mechanical Engineering) Fire Following Earthquake (American Society of Civil Engineers: Technical Council on Lifeline Earthquake Engineering Monograph, No. 26) Fundamental Finite Element Analysis and Applications: with Mathematica and Matlab Computations Perspectives on Earthquake Geotechnical Engineering: In Honour of Prof. Kenji Ishihara (Geotechnical, Geological and Earthquake Engineering) Modal Testing, Theory, Practice, and Application (Mechanical Engineering Research Studies: Engineering Dynamics Series) Dynamics of Structures: Theory and Applications to Earthquake Engineering (2nd Edition) Dynamics of Structures: Theory and Applications to Earthquake Engineering Advances in Wrought Magnesium Alloys: Fundamentals of Processing, Properties and Applications (Woodhead Publishing Series in Metals and Surface Engineering) Model of Human Occupation: Theory and Application (Model of Human Occupation: Theory & Application) KINDLE PUBLISHING: How To Build A Successful Self-Publishing Business With Kindle and Createspace. A Detailed, Step-By-Step Guide To The Entire Process (Kindle Publishing Series Book 1) Image Processing with MATLAB: Applications in Medicine and Biology (MATLAB Examples) Accelerating MATLAB Performance: 1001 tips to speed up MATLAB programs Handbook of Organic Materials for Optical and (Opto)Electronic Devices: Properties and Applications (Woodhead Publishing Series in Electronic and Optical Materials) Fracture and Fatigue of Welded Joints and Structures (Woodhead Publishing Series in Welding and

Other Joining Technologies) Principles and Applications of Organic Light Emitting Diodes (OLEDs) (Woodhead Publishing Series in Electronic and Optical Materials) Coal Power Plant Materials and Life Assessment: Developments and Applications (Woodhead Publishing Series in Energy) Handbook of Waste Management and Co-Product Recovery in Food Processing (Woodhead Publishing Series in Food Science, Technology and Nutrition)