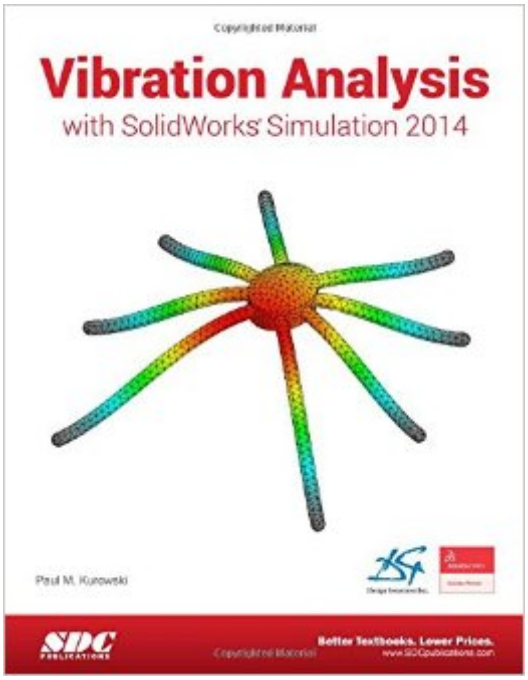
Vibration Analysis With SolidWorks Simulation 2014



Synopsis

Vibration Analysis with SolidWorks Simulation 2014 goes beyond the standard software manual. It concurrently introduces the reader to vibration analysis and its implementation in SolidWorks Simulation using hands-on exercises. A number of projects are presented to illustrate vibration analysis and related topics. Each chapter is designed to build on the skills and understanding gained from previous exercises. Vibration Analysis with SolidWorks Simulation 2014 is designed for users who are already familiar with the basics of Finite Element Analysis (FEA) using SolidWorks Simulation or who have completed the book Engineering Analysis with SolidWorks Simulation 2014. Vibration Analysis with SolidWorks Simulation 2014 builds on these topics in the area of vibration analysis. Some understanding of structural analysis and solid mechanics is recommended. Topics Covered Differences between rigid and elastic bodies Discrete and distributed vibration systems Modal analysis and its applications Modal Superposition Method Modal Time History (Time Response) analysis Harmonic (Frequency Response) analysis Random Vibration analysis Response Spectrum analysis Nonlinear Vibration analysis Modeling techniques in vibration analysis Table of Contents Before you start 1. Introduction to vibration analysis 2. Introduction to modal analysis 3. Modal analysis of distributed systems 4. Modal analysis the effect of pre-stress 5. Modal analysis - properties of lower and higher modes 6. Modal analysis mass participations, properties of modes 7. Modal analysis mode separation 8. Modal analysis axi-symmetric structures 9. Modal analysis locating structurally weak spots 10. Modal analysis a diagnostic tool 11. Harmonic excitation of discrete systems 12. Harmonic base excitation of distributed systems 13. Omega square harmonic force excitation 14. Time response analysis, resonance, beating 15. Vibration absorption 16. Random Vibration 17. Response Spectrum analysis 18. Nonlinear vibration 19. Vibration benchmarks 20. Glossary of terms 21. References 22. List of exercises

Book Information

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Customer Reviews

This book is excellent, not only because it shows step by step how to set up vibration simulations in the application but it also offer good background in the theory of vibrating structures. I will enjoy utilizing this material at work where we use SolidWorks and ANSYS.

This book was very helpful, for a few notable reasons:1. Each chapter introduces a new and valuable point. Generally something I had not thought about before but should have.2. The online Solidworks models used as supplements in each chapter aid in providing clear illustrations of the relevant points. At the same time, they minimize set-up time for the reader.3. Individual chapters are set up so as to avoid feeding the reader too much at once.I have come away feeling that I know a lot more about vibration analysis in general, and vibration analysis in Simulation in particular.

Highly recommend! I've always found books by this author to be easy to digest, clear, and concise. Each chapter solidifies the concepts being taught by using practical examples. The author does a great job at including all the details used to set-up each study, and provides a highly detailed analysis of the results. Overall a great read.

Guide with Video Instruction: SolidWorks 2012-2014 Official Guide to Certified SolidWorks Associate Exams - CSWA, CSDA, CSWSA-FEA (SolidWorks 2015, 2014, 2013, and 2012) Atmospheric and Space Flight Dynamics: Modeling and Simulation with MATLABÃ Â® and SimulinkÃ Â® (Modeling and Simulation in Science, Engineering and Technology) Motion Simulation and Mechanism Design with SolidWorks Motion 2013 Motion Simulation and Mechanism Design with SOLIDWORKS Motion 2016