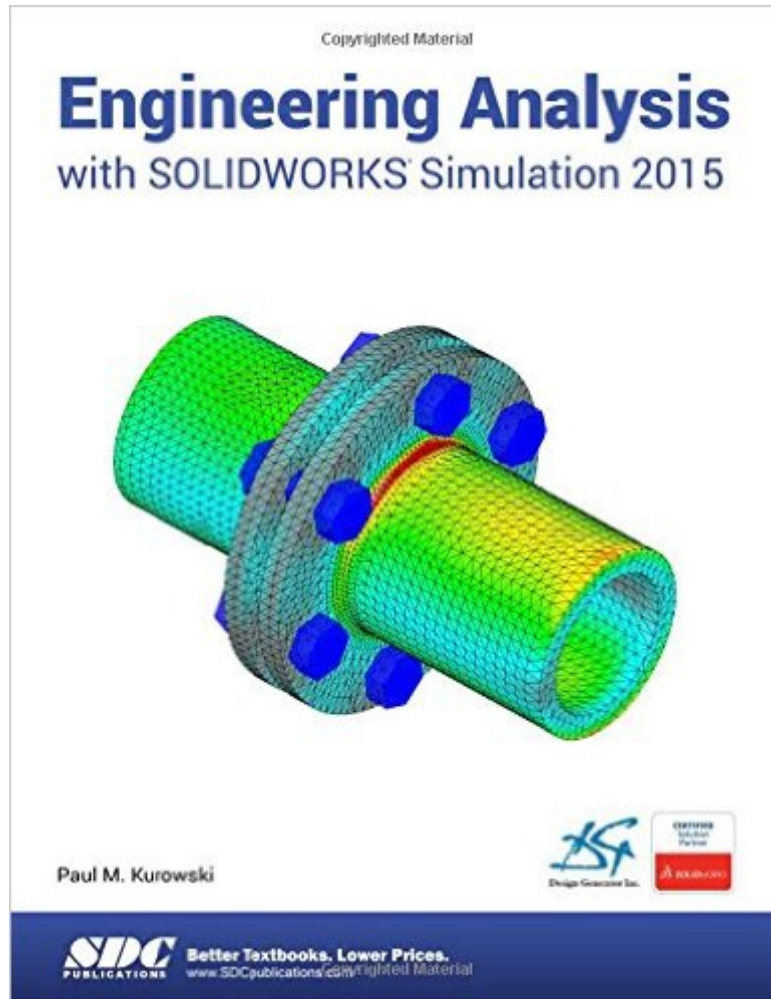


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# Engineering Analysis With SOLIDWORKS Simulation 2015



## Synopsis

Engineering Analysis with SOLIDWORKS Simulation 2015 goes beyond the standard software manual. Its unique approach concurrently introduces you to the SOLIDWORKS Simulation 2015 software and the fundamentals of Finite Element Analysis (FEA) through hands-on exercises. A number of projects are presented using commonly used parts to illustrate the analysis features of SOLIDWORKS Simulation. Each chapter is designed to build on the skills, experiences and understanding gained from the previous chapters. Topics covered: Linear static analysis of parts and assemblies Contact stress analysis Frequency (modal) analysis Buckling analysis Thermal analysis Drop test analysis Nonlinear analysis Dynamic analysis Random vibration analysis h and p adaptive solution methods Modeling techniques Implementation of FEA in the design process Management of FEA projects FEA terminology Table of Contents 1. Introduction 2. Static analysis of a plate 3. Static analysis of an L-bracket 4. Static and frequency analysis of a pipe support 5. Static analysis of a link 6. Frequency analysis of a tuning fork and a plastic part 7. Thermal analysis of a pipe connector and heater 8. Thermal analysis of a heat sink 9. Static analysis of a hanger 10. Thermal stress analysis of a bi-metal loop 11. Buckling analysis of I-beam 12. Static analysis of a bracket using adaptive solution methods 13. Drop test 14. Selected nonlinear problems 15. Mixed meshing problem 16. Analysis of a weldment using beam elements 17. Review of 2D problems 18. Vibration Analysis - Modal Time History and Harmonic 19. Analysis of random vibration 20. Miscellaneous topics 21. Implementation of FEA into the design process 22. Glossary of terms 23. Resources available to FEA users 24. List of exercises

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## Customer Reviews

I am a mechanical design engineer, PE, and have been mainly self taught in CAD using 3rd party manuals since the early 90's on autocad, pro/e (since 1993) and lately Solidworks. I am now diving into the simulation package for Solidworks as it has, in my opinion, finally gained the power and stability to be a potential alternative for flotherm and ANSYS (my previous preferred tools) as CFD and FEA analytical tools. I have found this book to be extremely well written, with great depth, accuracy and user friendliness; when I run a problem from the book the solution teaches methodology, works (without having to dig through typos, errors or crashes), and occasionally touches on theory without diving into the linear algebra basis for FEA that is frankly only interesting to FEA programmers or hard core math nuts. A definite 5 star tutorial that is suitable for self study. I am admittedly only ~ 2/3 of the way through so there might be an example problem that needs tweaking left to find, but so far so great. 10 points, 5 stars, A+, whatever..

This book has become my reference to learn simulation.

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