



An Introduction to SOLIDWORKS Flow Simulation 2015

By John E. Matsson



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An Introduction to SOLIDWORKS Flow Simulation 2015 takes you through the steps of creating the SOLIDWORKS part for the simulation followed by the setup and calculation of the SOLIDWORKS Flow Simulation project. The results from calculations are visualized and compared with theoretical solutions and empirical data. Each chapter starts with the objectives and a description of the specific problems that are studied. End of chapter exercises are included for reinforcement and practice of what has been learned.

The fourteen chapters of this book are directed towards first-time to intermediate level users of SOLIDWORKS Flow Simulation. It is intended to be a supplement to undergraduate Fluid Mechanics and Heat Transfer related courses. This book can also be used to show students the capabilities of fluid flow and heat transfer simulations in freshman and sophomore courses such as Introduction to Engineering. Both internal and external flow problems are covered and compared with experimental results and analytical solutions. Covered topics include airfoil flow, boundary layers, flow meters, heat exchanger, natural and forced convection, pipe flow, rotating flow, tube bank flow and valve flow.

Covers these feature of SOLIDWORKS Flow Simulation 2015:

- Animations
- Automatic and Manual Meshing
- Boundary Conditions
- Calculation Control Options
- External and Internal Flow
- Goals
- Laminar and Turbulent Flow
- Physical Features
- Result Visualizations
- Two and Three Dimensional Flow
- Velocity, Thermodynamic and Turbulence Parameters
- Wall Thermal Conditions

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2. Flat Plate Boundary Layer
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13. Swirling Flow in a Closed Cylindrical Container
14. Flow Past a Model Rocket

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An Introduction to SOLIDWORKS Flow Simulation 2015 By John E. Matsson Bibliography

- Sales Rank: #1509873 in Books
- Published on: 2015-07-22
- Original language: English
- Dimensions: 10.75" h x 8.50" w x 1.00" l, 1.80 pounds
- Binding: Perfect Paperback
- 350 pages



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