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## Scientific Computing with Mathematica®

By Addolorata Marasco

Birkhäuser Aug 2001, 2001. Buch. Book Condition: Neu. 235x155x21 mm. This item is printed on demand - Print on Demand Titel. Neuware - Many interesting behaviors of real physical, biological, economical, and chemical systems can be described by ordinary differential equations (ODEs). Scientific Computing with Mathematica for Ordinary Differential Equations provides a general framework useful for the applications, on the conceptual aspects of the theory of ODEs, as well as a sophisticated use of Mathematica software for the solutions of problems related to ODEs. In particular, a chapter is devoted to the use ODEs and Mathematica in the Dynamics of rigid bodies. Mathematical methods and scientific computation are dealt with jointly to supply a unified presentation. The main problems of ordinary differential equations such as, phase portrait, approximate solutions, periodic orbits, stability, bifurcation, and boundary problems are covered in an integrated fashion with numerous worked examples and computer program demonstrations using Mathematica. Topics and Features: Explains how to use the Mathematica package ODE.m to support qualitative and quantitative problem solving End-of- chapter exercise sets incorporating the use of Mathematica programs Detailed description and explanation of the mathematical procedures underlying the programs written in Mathematica Appendix describing the use of ten...



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