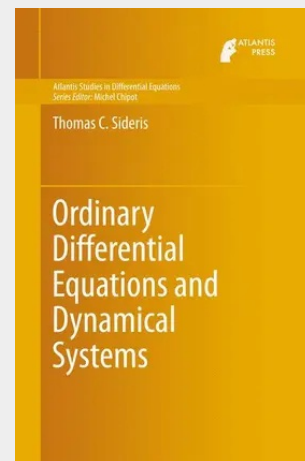


Ordinary Differential Equations and Dynamical Systems

This book is a mathematically rigorous introduction to the beautiful subject of ordinary differential equations for beginning graduate or advanced undergraduate students. Students should have a solid background in analysis and linear algebra. The presentation emphasizes commonly used techniques without necessarily striving for completeness or for the treatment of a large number of topics. The first half of the book is devoted to the development of the basic theory: linear systems, existence and uniqueness of solutions to the initial value problem, flows, stability, and smooth dependence of solutions upon initial conditions and parameters. Much of this theory also serves as the paradigm for evolutionary partial differential equations. The second half of the book is devoted to geometric theory: topological conjugacy, invariant manifolds, existence and stability of periodic solutions, bifurcations, normal forms, and the existence of transverse homoclinic points and their link to chaotic dynamics. A common thread throughout the second part is the use of the implicit function theorem in Banach space. Chapter 5, devoted to this topic, serves as the bridge between the two halves of the book.

This book is a mathematically rigorous introduction to the beautiful subject of ordinary differential equations for beginning graduate or advanced undergraduate students. Students should have a solid background in analysis and linear algebra. The presentation emphasizes commonly used techniques without necessarily striving for completeness or for the treatment of a large number of topics. The first half of the book is devoted to the development of the basic theory: linear systems, existence and uniqueness of solutions to the initial value problem, flows, stability, and smooth dependence of solutions upon initial conditions and parameters. Much of this theory also serves as the paradigm for evolutionary partial differential equations. The second half of the book is devoted to geometric theory: topological conjugacy, invariant manifolds, existence and stability of periodic solutions, bifurcations, normal forms, and the existence of transverse homoclinic points and their link to chaotic dynamics. A common thread throughout the second part is the use of the implicit function theorem in Banach space. Chapter 5, devoted to this topic, serves as the bridge between the two halves of the book.



90,94 €
84,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789462390201
Medium: Buch
ISBN: 978-94-6239-020-1
Verlag: Atlantis Press
Erscheinungstermin: 30.10.2013
Sprache(n): Englisch
Auflage: 2013
Serie: Atlantis Studies in Differential Equations
Produktform: Gebunden
Gewicht: 4853 g
Seiten: 225
Format (B x H): 160 x 241 mm

