

<<微分方程动态系统和混沌导论>>

图书基本信息

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内容概要

30年来,动力系统的数学理论与应用有了很大发展。

30多年前还没有高速的台式计算机和计算机图像,“混沌”一词也没有在数学界使用,而对于微分方程与动力系统的研究兴趣主要仅限于数学界中比较小的范围。

到今天,处处有计算机,求微分方程近似解的软件包已得到广泛运用,使人们从图形中就能看到结果。

对于非线性微分方程的分析已为广大学者所接受,一些复杂的动力学行为,如马蹄映射、同宿轨、Lorenz系统中揭示出来的复杂现象,以及数学方面的分析,使学者们确信简单的稳定运动,如平衡态和周期解已不总是微分方程解的最重要的行为,而混沌现象揭示出来的美妙性态正促使各个领域的科学家与工程师细心关注在他们自己领域中提出的重要的微分方程及其混沌特性。

动力系统现象在今天已出现在几乎每个科学领域中,从化学中的振荡Belousov-Zhabotinsky反应到电子工程中的混沌Chua电路,从天体力学中的复杂运动到生态系统中的分岔。

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书籍目录

CHAPTER 1 First-Order Equations 1.1 The Simplest Example 1.2 The Logistic Population Model 1.3 Constant Harvesting and Bifurcations 1.4 Periodic Harvesting and Periodic Solutions 1.5 Computing the Poincaré Map 1.6 Exploration : A Two-Parameter Family

CHAPTER 2 Planar Linear Systems 2.1 Second-Order Differential Equations 2.2 Planar Systems 2.3 Preliminaries from Algebra 2.4 Planar Linear Systems 2.5 Eigenvalues and Eigenvectors 2.6 Solving Linear Systems 2.7 The Linearity Principle

CHAPTER 3 Phase Portraits for Planar Systems 3.1 Real Distinct Eigenvalues 3.2 Complex Eigenvalues 3.3 Repeated Eigenvalues 3.4 Changing Coordinates

CHAPTER 4 Classification of Planar Systems 4.1 The Trace-Determinant Plane 4.2 Dynamical Classification 4.3 Exploration : A 3D Parameter Space

CHAPTER 5 Higher Dimensional Linear Algebra 5.1 Preliminaries from Linear Algebra 5.2 Eigenvalues and Eigenvectors 5.3 Complex Eigenvalues 5.4 Bases and Subspaces 5.5 Repeated Eigenvalues 5.6 Genericity

CHAPTER 6 Higher Dimensional Linear Systems 6.1 Distinct Eigenvalues 6.2 Harmonic Oscillators 6.3 Repeated Eigenvalues 6.4 The Exponential of a Matrix 6.5 Nonautonomous Linear Systems

CHAPTER 7 Nonlinear Systems 7.1 Dynamical Systems 7.2 The Existence and Uniqueness Theorem 7.3 Continuous Dependence of Solutions 7.4 The Variational Equation 7.5 Exploration : Numerical Methods

CHAPTER 8 Equilibria in Nonlinear Systems 8.1 Some Illustrative Examples 8.2 Nonlinear Sinks and Sources 8.3 Saddles 8.4 Stability 8.5 Bifurcations 8.6 Exploration : Complex Vector Fields

CHAPTER 9 Global Nonlinear Techniques 9.1 Nullclines 9.2 Stability of Equilibria 9.3 Gradient Systems 9.4 Hamiltonian Systems 9.5 Exploration : The Pendulum with Constant Forcing

CHAPTER 10 Closed Orbits and Limit Sets 10.1 Limit Sets 10.2 Local Sections and Flow Boxes 10.3 The Poincaré Map 10.4 Monotone Sequences in Planar Dynamical Systems 10.5 The Poincaré-Bendixson Theorem 10.6 Applications of Poincaré-Bendixson 10.7 Exploration : Chemical Reactions That Oscillate

CHAPTER 11 Applications in Biology 11.1 Infectious Diseases 11.2 Predator / Prey Systems 11.3 Competitive Species 11.4 Exploration : Competition and Harvesting

CHAPTER 12 Applications in Circuit Theory 12.1 An RLC Circuit 12.2 The Lienard Equation 12.3 The van der Pol Equation 12.4 A Hopf Bifurcation 12.5 Exploration : Neurodynamics

CHAPTER 13 Applications in Mechanics 13.1 Newton's Second Law 13.2 Conservative Systems 13.3 Central Force Fields 13.4 The Newtonian Central Force System 13.5 Kepler's First Law 13.6 The Two-Body Problem 13.7 Blowing Up the Singularity 13.8 Exploration : Other Central Force Problems 13.9 Exploration : Classical Limits of Quantum Mechanical Systems

CHAPTER 14 The Lorenz System 14.1 Introduction to the Lorenz System 14.2 Elementary Properties of the Lorenz System 14.3 The Lorenz Attractor 14.4 A Model for the Lorenz Attractor 14.5 The Chaotic Attractor 14.6 Exploration : The Rossler Attractor

CHAPTER 15 Discrete Dynamical Systems 15.1 Introduction to Discrete Dynamical Systems 15.2 Bifurcations 15.3 The Discrete Logistic Model 15.4 Chaos 15.5 Symbolic Dynamics 15.6 The Shift Map 15.7 The Cantor Middle-Thirds Set 15.8 Exploration : Cubic Chaos 15.9 Exploration : The Orbit Diagram

CHAPTER 16 Homoclinic Phenomena 16.1 The Shilnikov System 16.2 The Horseshoe Map 16.3 The Double Scroll Attractor 16.4 Homoclinic Bifurcations 16.5 Exploration : The Chua Circuit

CHAPTER 17 Existence and Uniqueness Revisited 17.1 The Existence and Uniqueness Theorem 17.2 Proof of Existence and Uniqueness 17.3 Continuous Dependence on Initial Conditions 17.4 Extending Solutions 17.5 Nonautonomous Systems 17.6 Differentiability of the Flow

Bibliography Index

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编辑推荐

《微分方程动态系统和混沌导论》这次修订本新增加一名作者，即著名的混沌理论专家德瓦尼（R.Devaney），内容也有很大改动。

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