

<<常微分方程>>

图书基本信息

书名：<<常微分方程>>

13位ISBN编号：9787506259286

10位ISBN编号：7506259281

出版时间：2003-6

出版时间：北京世图

作者：W.Walter

页数：380

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<常微分方程>>

内容概要

本书是在1996年出版的《常微分方程》（德文）一书的基础上编写而成的，书中主要介绍常微分方程的基础理论。

内容包括：可积一阶微分方程，微分方程解的存在性和唯一性，微分方程的初极值问题，边值问题和特征值问题，稳定性与渐进稳定性理论。

阅读本书需要具备一定的计算代数、线性代数及泛函分析的基础知识。

适用于高校数学专业、牧业专业和计算机科学等相关专业的本科生和研究生。

<<常微分方程>>

书籍目录

Preface Note to the Reader Introduction Chapter I. First Order Equations: Some Integrable Cases 1. Explicit First Order Equations 2. The Linear Differential Equation. Related Equations Supplement: The Generalized Logistic Equation 3. Differential Equations for Families of Curves. Exact Equations 4. Implicit First Order Differential Equations Chapter II: Theory of First Order Differential Equations 5. Tools from Functional Analysis 6. An Existence and Uniqueness Theorem Supplement: Singular Initial Value Problems 7. The Peano Existence Theorem Supplement: Methods of Functional Analysis 8. Complex Differential Equations. Power Series Expansions 9. Upper and Lower Solutions. Maximal and Minimal Integrals Supplement: The Separatrix Chapter III: First Order Systems. Equations of Higher Order 10. The Initial Value Problem for a System of First Order Supplement I: Differential Inequalities and Invariance Supplement II: Differential Equations in the Sense of Carathéodory 11. Initial Value Problems for Equations of Higher Order Supplement: Second Order Differential Inequalities 12. Continuous Dependence of Solutions Supplement: General Uniqueness and Dependence Theorems 13. Dependence of Solutions on Initial Values and Parameters Chapter IV: Linear Differential Equations 14. Linear Systems 15. Homogeneous Linear Systems 16. Inhomogeneous Systems Supplement: L¹-Estimation of C¹-Solutions 17. Systems with Constant Coefficients 18. Matrix Functions. Inhomogeneous Systems Supplement: Floquet Theory 19. Linear Differential Equations of Order n 20. Linear Equations of Order n with Constant Coefficients Supplement: Linear Differential Equations with Periodic Coefficients Chapter V: Complex Linear Systems 21. Homogeneous Linear Systems in the Regular Case 22. Isolated Singularities 23. Weakly Singular Points. Equations of Fuchsian Type 24. Series Expansion of Solutions 25. Second Order Linear Equations Chapter VI: Boundary Value and Eigenvalue Problems 26. Boundary Value Problems Supplement I: Maximum and Minimum Principles Supplement II: Nonlinear Boundary Value Problems 27. The Sturm-Liouville Eigenvalue Problem Supplement: Rotation-Symmetric Elliptic Problems 28. Compact Self-Adjoint Operators in Hilbert Space Chapter VII: Stability and Asymptotic Behavior 29. Stability 30. The Method of Lyapunov Appendix A. Topology B. Real Analysis C. Complex Analysis D. Functional Analysis Solutions and Hints for Selected Exercises Literature Index Notation

<<常微分方程>>

媒体关注与评论

书评The author's book on Gewöhnliche Differentialgleichungen (Ordinary Differential Equations) was published in 1972. The present book is based on a translation of the latest, 6th, edition, which appeared in 1996, but it also treats some important subjects that are not found there. The German book is widely used as a textbook for a first course in ordinary differential equations. This is a rigorous course, and it contains some material that is more difficult than that usually found in a first course textbook; such as, for example, Peano's existence theorem. It is addressed to students of mathematics, physics, and computer science and is usually taken in the third semester. Let me remark here that in the German system the student learns calculus of one variable at the gymnasium¹ and begins at the university with a two-semester course on real analysis which is usually followed by ordinary differential equations.

<<常微分方程>>

编辑推荐

The author's book on Gewöhnliche Differentialgleichungen (Ordinary Differential Equations) was published in 1972. The present book is based on a translation of the latest, 6th, edition, which appeared in 1996, but it also treats some important subjects that are not found there. The German book is widely used as a text book for a first course in ordinary differential equations. This is a rigorous course, and it contains some material that is more difficult than that usually found in a first course text book; such as, for example, Peano's existence theorem. It is addressed to students of mathematics, physics, and computer science and is usually taken in the third semester. Let me remark here that in the German system the student learns calculus of one variable at a gymnasium and begins at the university with a two-semester course on real analysis which is usually followed by ordinary differential equations.

<<常微分方程>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>