

<<椭圆型微分方程>>

图书基本信息

书名：<<椭圆型微分方程>>

13位ISBN编号：9787030166845

10位ISBN编号：7030166841

出版时间：2006-1

出版时间：科学出版社

作者：哈克布施

页数：311

字数：381000

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>

## <<椭圆型微分方程>>

### 内容概要

本书论述了椭圆型微分方程的理论与数值处理。  
主要内容包括古典理论(格林函数、极大值原理等)和变分公式化。  
作者阐述并分析了有限差分方法和有限元方法。  
某些章节特别讨论了特征值问题和斯托克斯问题。

<<椭圆型微分方程>>

作者简介

作者：(德)哈克布施

<<椭圆型微分方程>>

书籍目录

Foreword Table of Contents Notation 1 Partial Differential Equations and Their Classification Into Types 1.1  
 Examples 1.2 Classification of Second-Order Equations into Types 1.3 Type Classification for Systems of First Order  
 1.4 Characteristic Properties of the Different Types 2 The Potential Equation 2.1 Posing the Problem 2.2  
 Singularity Function 2.3 The Mean Value Property and Maximum Principle 2.4  
 Continuous Dependence on the Boundary Data 3 The Poisson Equation 3.1 Posing the Problem 3.2  
 Representation of the Solution by the Green Function 3.3 The Green Function for the Ball 3.4  
 The Neumann Boundary Value Problem 3.5 The Integral Equation Method 4  
 Difference Methods for the Poisson Equation 4.1 Introduction: The One-Dimensional Case 4.2  
 The Five-Point Formula 4.3 M-matrices, Matrix Norms, Positive Definite Matrices 4.4 Properties of the Matrix Lh  
 4.5 Convergence 4.6 Discretisation of Higher Order 4.7 The Discretisation of the Neumann 4.8  
 Discretisation in and Arbitrary Domain 5 General Boundary Value Problems 5.1  
 Dirichlet Boundary Value Problems for Linear 5.2 General Boundary Conditions 5.3  
 Boundary Problems of Higher Order 6 Tools from Functional Analysis 6.1 Banach Spaces and Hilbert Spaces 6.2  
 Sobolev Spaces 6.3 Dual Spaces 6.4 Compact Operators 6.5 Bilinear Forms 7 Variational Formulation 7.1  
 Historical Remarks 7.2 Equations with Homogeneous Dirichlet boundary Conditions 7.3  
 Inhomogeneous Dirichlet boundary Conditions 7.4 Natural Boundary Conditions 8 The Method of Finite Elements  
 8.1 The Ritz-Galerkin Method 8.2 Error Estimates 8.3 Finite Elements 8.4  
 Error Estimates for Finite Element Methods 8.5 Generalisations 8.6 Finite Elements for Non-Polygonal Regions  
 8.7 Additional Remarks 8.8 Properties of the Stiffness Matrix 9 Regularity 9.1  
 Solutions of the Boundary Value Problem 9.2 Regularity Properties of Difference Equations 10  
 Special Differential Equations 10.1 Differential Equations with Discontinuous Coefficients 10.2  
 A Singular Perturbation Problem 11 Eigenvalue Problems 11.1 Formulation of Eigenvalue Problems 11.2  
 Finite Element Discretisation 11.3 Discretisation by Difference Methods 12 Stokes equations 12.1  
 Systems of Elliptic Differential Equations 12.2 Variational formulation 12.3  
 Mixed Finite-Element Method for the Stokes Problem Bibliography Index

## <<椭圆型微分方程>>

### 编辑推荐

《椭圆型微分方程:理论与数值处理》是科学出版社出版。

<<椭圆型微分方程>>

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>