# <<矩阵迭代分析>>

### 图书基本信息

书名:<<矩阵迭代分析>>

13位ISBN编号: 9787030166746

10位ISBN编号:7030166744

出版时间:2006-1

出版时间:科学出版社

作者:瓦尔加

页数:372

字数:439000

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

## <<矩阵迭代分析>>

#### 内容概要

《矩阵迭代分析(第二版)》的作者现任英国肯特大学教授,多种国际权威杂志主编或编委。

本书第一版1962年由Prentice Hall出版,是矩阵迭代分析方面的经典教材。

此次修订,有些章节吸收了新的研究成果,如弱正则分裂方面的结果;有些章节则增添了新的内容, 引述了最近的定理,更新了参考文献,读者从中可以了解一些最新的发展方向。

此次修订,新的章节的内容基本上都是自含的,并添加了习题。

原版主要基于线性代数方法,而修订版强调借助其他领域的工具,如逼近论和共型映射理论,得到更加新颖的结果。

本书尤其适合从事数值分析的科研人员和研究生阅读。

## <<矩阵迭代分析>>

#### 书籍目录

1. Matrix Properties and Concepts 1.1 Introduction 1.2 A Simple Example 1.3 Norms and Spectral Radii 1.4 Bounds for the Spectral Radius of a Matrix and Directed Graphs 1.5 Diagonally Dominant Matrices 1.6 Ovals of Cassini2. Nonnegative Matrices 2.1 Spectral Radii of Nonnegative Matrices 2.2 Cyclic and Primitive Matrices 2.3 Reducible Matrices 2.4 Nonnegative Matrices and Directed Graphs3. Basic Iterative Methods and Comparison Theorems 3.1 The Point Jacobi, Gauss-Seidel, and Successive Overrelaxation Iterative Methods 3.2 Average Rates of Convergence 3.3 The Stein-Rosenberg Theorem 3.4 The Ostrowski-Reich Theorem 3.5 Stieltjes Matrices, M-Matrices and H-Matrices 3.6 Regular and Weak Regular Splittings of Matrices4. Successive Overrelaxation Iterative Methods 4.1 p-Cyclic Matrices 4.2 The Successive Overrelaxation Iterative Method for p-Cyclic Matrices 4.3 Theoretical Determination of an Optimum Relaxation Factor 4.4 Extensions of the 2-Cyclic Theory of Matrices 4.5 Asymptotic Rates of Convergence 4.6 CO(q,r) and GCO(q,r): Generalized Consistent Orderings5. Semi-Iterative Methods 5.1 Semi-Iterative Methods and Chebyshev Polynomials 5.2 Relationship of Semi-Iterative Methods to Successive Overrelaxation Iterative Methods 5.3 Comparison of Average Rates of Convergence: the Weakly Cyclic Case 5.4 Cyclic Reduction and Related Iterative Methods 5.5 Semi-Iterative Methods Applied to the Successive Overrelaxation Method6. Derivation and Solution of Elliptic Difference Equations 6.1 A Simple Two-Point boundary-Value Problem 6.2 General Second-Order Ordinary Differential Equations 6.3 Derivation of Finite Difference Approximations in Higher Dimensions 6.4 Factorization Techniques and block Iterative Methods 6.5 Asymptotic Convergence Rates for the Model Problem7. Alternating-Direction Implicit Iterative Methods 7.1 The Peaceman-Rachford Iterative Method 7.2 The Commutative Case 7.3 The Noncommutative Case 7.4 Variants of the Peaceman-Rachford Iterative Method8. Matrix Methods for Parabolic Partial Differential Equations 8.1 Semi-Discrete Approximation 8.2 Essentially Positive Matrices 8.3 Matrix Approximations for exp (-tS) 8.4 Relationship with Iterative Metholds for Solving Elliptic Difference Equations 8.5 Chebyshev Rational Approximations for exp (-tS)9. Estimation of Acceleration Parameters 9.1 Application of the Theory of Nonnegative Matrices 9.2 Application of Isoperimetric Inequalities A. AppendixB. AppendixReferencesIndex

# <<矩阵迭代分析>>

### 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