

<<最优化导论>>

图书基本信息

书名：<<最优化导论>>

13位ISBN编号：9787115176073

10位ISBN编号：7115176078

出版时间：2008-4

出版时间：人民邮电出版社

作者：桑达拉姆

页数：357

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>

## <<最优化导论>>

### 内容概要

最优化是在20世纪得到快速发展的一门学科。

本书介绍了最优化理论及其在经济学和相关学科中的应用，全书共分三个部分。

第一部分研究了 $R^n$ 中最优化问题的解的存在性以及如何确定这些解，第二部分探讨了最优化问题的解如何随着基本参数的变化而变化，最后一部分描述了有限维和无限维的动态规划。

另外，还给出基础知识准备一章和三个附录，使得本书自成体系。

本书适合于高等院校经济学、工商管理、保险学、精算学等专业高年级本科生和研究生参考。

## <<最优化导论>>

### 作者简介

Rangarajan K.Sundaram，毕业于美国康乃尔大学，哲学博士，工商管理硕士。

先后在罗切斯特人学和纽约人学斯特恩商学院任教，授课课程涉及微分、期权定价、最优化理论、博弈论、公司理财、经济学原理、中级微观经济学和数理经济学等。

研究领域包括：代理问题、管理层薪资水平、公司基础、衍生工具定价、信用风险与信用衍生工具等。

他在世界顶级学术期刊上还发表了大量论文。

## &lt;&lt;最优化导论&gt;&gt;

## 书籍目录

Mathematical Preliminaries 1.1 Notation and Preliminary Definitions 1.1.1 Integers, Rationals, Reals,  $\mathbb{R}^n$  1.1.2 Inner Product, Norm, Metric 1.2 Sets and Sequences in  $\mathbb{R}^n$  1.2.1 Sequences and Limits 1.2.2 Subsequences and Limit Points 1.2.3 Cauchy Sequences and Completeness 1.2.4 Suprema, Infima, Maxima, Minima 1.2.5 Monotone Sequences in  $\mathbb{R}$  1.2.6 The Lim Sup and Lim Inf 1.2.7 Open Balls, Open Sets, Closed Sets 1.2.8 Bounded Sets and Compact Sets 1.2.9 Convex Combinations and Convex Sets 1.2.10 Unions, Intersections, and Other Binary Operations 1.3 Matrices 1.3.1 Sum, Product, Transpose 1.3.2 Some Important Classes of Matrices 1.3.3 Rank of a Matrix 1.3.4 The Determinant 1.3.5 The Inverse 1.3.6 Calculating the Determinant 1.4 Functions 1.4.1 Continuous Functions 1.4.2 Differentiable and Continuously Differentiable Functions 1.4.3 Partial Derivatives and Differentiability 1.4.4 Directional Derivatives and Differentiability 1.4.5 Higher Order Derivatives 1.5 Quadratic Forms: Definite and Semidefinite Matrices 1.5.1 Quadratic Forms and Definiteness 1.5.2 Identifying Definiteness and Semidefiniteness 1.6 Some Important Results 1.6.1 Separation Theorems 1.6.2 The Intermediate and Mean Value Theorems 1.6.3 The Inverse and Implicit Function Theorems 1.7 Exercises 2 Optimization in  $\mathbb{R}^2$  2.1 Optimization Problems in  $\mathbb{R}^n$  2.2 Optimization Problems in Parametric Form 2.3 Optimization Problems: Some Examples 2.4 A Roadmap 2.5 Exercises 3 Existence of Solutions: The Weierstrass Theorem 3.1 The Weierstrass Theorem 3.2 The Weierstrass Theorem in Applications 3.3 A Proof of the Weierstrass Theorem 3.4 Exercises 4 Unconstrained Optima 4.1 "Unconstrained" Optima 4.2 First-Order Conditions 4.3 Second-Order Conditions 4.4 Using the First- and Second-Order Conditions 4.5 A Proof of the First-Order Conditions 4.6 A Proof of the Second-Order Conditions 4.7 Exercises 5 Equality Constraints and the Theorem of Lagrange 5.1 Constrained Optimization Problems 5.2 Equality Constraints and the Theorem of Lagrange 5.2.1 Statement of the Theorem 5.2.2 The Constraint Qualification 5.2.3 The Lagrangean Multipliers 5.3 Second-Order Conditions 5.4 Using the Theorem of Lagrange 5.4.1 A "Cookbook" Procedure 5.4.2 Why the Procedure Usually Works 5.4.3 When It Could Fail 5.4.4 A Numerical Example 5.5 Two Examples from Economics 5.5.1 An Illustration from Consumer Theory 5.5.2 An Illustration from Producer Theory 5.5.3 Remarks 5.6 A Proof of the Theorem of Lagrange 5.7 A Proof of the Second-Order Conditions 5.8 Exercises 6 Inequality Constraints and the Theorem of Kuhn and Tucker 6.1 The Theorem of Kuhn and Tucker 6.1.1 Statement of the Theorem 6.1.2 The Constraint Qualification 6.1.3 The Kuhn-Tucker Multipliers 6.2 Using the Theorem of Kuhn and Tucker 6.2.1 A "Cookbook" Procedure 6.2.2 Why the Procedure Usually Works 6.2.3 When It Could Fail 6.2.4 A Numerical Example 6.3 Illustrations from Economics 6.3.1 An Illustration from Consumer Theory 6.3.2 An Illustration from Producer Theory 6.4 The General Case: Mixed Constraints 6.5 A Proof of the Theorem of Kuhn and Tucker 6.6 Exercises 7 Convex Structures in Optimization Theory 7.1 Convexity Defined 7.1.1 Concave and Convex Functions 7.1.2 Strictly Concave and Strictly Convex Functions 7.2 Implications of Convexity 7.2.1 Convexity and Continuity 7.2.2 Convexity and Differentiability 7.2.3 Convexity and the Properties of the Derivative 7.3 Convexity and Optimization 7.3.1 Some General Observations 7.3.2 Convexity and Unconstrained Optimization 7.3.3 Convexity and the Theorem of Kuhn and Tucker 7.4 Using Convexity in Optimization 7.5 A Proof of the First-Derivative Characterization of Convexity 7.6 A Proof of the Second-Derivative Characterization of Convexity 7.7 A Proof of the Theorem of Kuhn and Tucker under Convexity 7.8 Exercises 8 Quasi-Convexity and Optimization 8.1 Quasi-Concave and Quasi-Convex Functions 8.2 Quasi-Convexity as a Generalization of Convexity 8.3 Implications of Quasi-Convexity 8.4 Quasi-Convexity and Optimization 8.5 Using Quasi-Convexity in Optimization Problems 8.6 A Proof of the First-Derivative Characterization of Quasi-Convexity 8.7 A Proof of the Second-Derivative Characterization of Quasi-Convexity 8.8 A Proof of the Theorem of Kuhn and Tucker under Quasi-Convexity 8.9 Exercises 9 Parametric Continuity: The Maximum Theorem 10 Supermodularity and Parametric Monotonicity 11 Finite-Horizon Dynamic Programming 12 Stationary Discounted Dynamic Programming Appendix A Set Theory and Logic: An Introduction Appendix B The Real Line Bibliography Index

## <<最优化导论>>

### 编辑推荐

《最优化导论(英文版)》出自纽约大学著名教授之手，被国外众多大学用作教材或主要参考书。如普林斯顿大学、圣路易斯华盛顿大学、宾夕法尼亚大学、马里兰大学等。

《最优化导论(英文版)》出版以来。

已经重印了10多次，深受广大读者欢迎。

最优化是在20世纪得到快速速发展的一门学科。

随着计算机技术的发展，它在经济计划、工程设计、生产管理、交通运输、国防等重要领域得到了日益广泛的应用，它已受到政府部门、科研机构 and 产业部门的高度重视。

《最优化导论(英文版)》适合于高等院校经济学、工商管理、保险学、精算学等专业高年级本科生和研究生参考。

<<最优化导论>>

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>