

# RESEÑAS / BOOK REVIEWS

## GEOMETRIC GROUP THEORY

Goulnara N. Arzhantseva, Laurent Bartholdi, José Burillo y Enric Ventura (Editores). 2007

Birkhauser Verlag AG.

X+253

ISBN: 978-3-7643-8411-1

€109,00 US\$: 149,00

Este libro es una recopilación de 12 artículos, todos seleccionados entre conferencias y trabajos presentados en dos eventos científicos sobre investigaciones en las áreas de la Teoría de Grupo Geométrica y Combinatoria. Ambos eventos fueron realizados en el año 2005, el primero de ellos en Suiza “Asymptotic and Probabilistic Methods in Geometric Group Theory” y el segundo en España “Barcelona Conference in Group Theory”. La unidad lógica de estos artículos está en que todos utilizan la teoría de grupos para enfrentar diferentes problemas científicos.

Los artículos presentados fueron:

1. Baumgartner U. “Totally Disconnected, Locally Compact Groups as Geometric Objects. A survey of work in progress”.
2. Burillo J., Cleary S. and Wiest B. “Computational Explorations in Thompson’s Group F”.
3. Ceccherini – Silberstein T and Coornaert M. “On the Surjectivity of Artinian Linear Cellular Automata over Residually Finite Groups”.
4. Cornuier Y and Mann A. “Some Residually Finite Groups Satisfying Laws”.
5. Flores R. J. “Classifying Spaces for Wallpaper Groups”.
6. Guirardel V and Levitt G. “A General Construction of JSJ Decompositions”.
7. Cornuier Y and de la Harpe P. “Décompositions de Groupes para Produit Direct et Groupes de Coxeter”.
8. Ould Houcine A. “Limit Groups of Equationally Noetherian Groups”.
9. Juhász A. “Solution of the Conjugacy Problem and Malnormality of Subgroups in Certain Relative Small Cancellation Group Presentations”.
10. Juhász A. “Solution of the Membership Problem for Magnus Subgroups in Certain One-Relator free Products”.
11. Lustig M. “Conjugacy and Centralizers for Iwip Automorphisms”.
12. Miasnikov A, Ventura E and Weil P. “Algebraic Extensions in Free Groups”.

Pablo Freyre  
Universidad de La Habana

## **MODÉLISATION STATISTIQUE APPLIQUÉE AUX SCIENCES SOCIALES**

Pascal Bressoux (2008)

DE BOECK  
XIX+464

ISBN-10: 2804157148

ISBN-13: 978-2804157142  
26,50 €

Esta obra es más que un simple libro para realizar cálculos, pues se trata de una obra que enseña al lector los principios, aplicaciones y formas de interpretar los datos usando estadística. Con ello deja claro que el análisis estadístico no solo es un ejercicio matemático, sino que constituye un medio para analizar y comprender el mundo social, con base en un análisis cuidadoso de los hechos. Contiene gran variedad de ejemplos, figuras, ilustraciones y ejercicios, todos diseñados para ilustrar el estudio de la sociedad de una manera creativa y lógica el libro muestra al lector paso a paso el proceso estadístico. Discute e ilustra como utilizar la modelación estadística a través de técnicas como los modelos lineales o no-lineales, los modelos logit, logísticos y multiniveles. Los ejemplos son desarrollados usando MLwin, SAS y SPSS.

Gracia de los Angeles Rodeiro Pérez  
Instituto de Estudios Económicos y Contables

## **METHODS OF MATHEMATICAL ECONOMICS: LINEAR AND NONLINEAR PROGRAMMING, FIXED-POINT THEOREMS**

Joel N. Franklin (2002)

SIAM Classics in Applied Mathematics 37  
XVIII+: 297

ISBN-10: 0-89871-509-1

ISBN-13: 978-0-898715-09-5  
S\$50,50

The book presents interesting applications of Linear and Nonlinear programming to some branches of mathematics, economics etc.. The needed mathematical results are derived and proved. A list of the errata, of this new to this edition, is provided. The contents is: Preface to the Classics Edition; Preface; Errata; Chapter 1: Linear Programming. Introduction to Linear Programming; Linear Programs and Their Duals; How the Dual Indicates Optimality; Basic Solutions; The Idea of the Simplex Methods; Separating Planes for Convex Sets; Finite Cones and the Farkas Alternative; The Duality Principle; Perturbations and Parametric Programming; The Simplex Tableau Algorithm; The Revised Simplex Algorithm; A Simplex Algorithm for Degenerate Problems; Multiobjective Linear Programming; Zero-Sum, Two-Person Games; Integer Programming: Gomory's Method; Network Flows; Assignment and Shortest-Route Problems; The Transportation Problem; Chapter 2: Nonlinear Programming. Wolfe's Method for Quadratic Programming; Kuhn-Tucker Theory; Geometric Programming; Chapter 3: Fixed-Point Theorems. Introduction to Fixed Points; Contraction Mappings; Garsia's Proof of the Brouwer Fixed-Point Theorem; Milnor's Proof of the Brouwer Fixed-Point Theorem; Barycentric Coordinates, Sperner's Lemma, and an Elementary Proof of the Brouwer Fixed-Point Theorem; The Schauder Fixed-Point Theorem; Kakutani's Fixed-Point Theorem and Nash's Theorem for n-Person Games; Index.

H.T. Wong  
Smith and King College

## **DYNAMIC RANDOM WALKS: THEORY AND APPLICATIONS**

Nadine Guillotin-Plantard, and Rene Schott (2006)

ELSEVIER  
XII+278

ISBN-13: 978-0-444-52735-6

ISBN-10: 0-444-52735-4  
GB£58,00

The authors provide an account on the probabilistic progresses realized in the field of dynamic random walks to the readers. Specific applications in computer science, mathematical physics and finance receive a detailed discussed. The researchers interested in the recent developments in probability theory and their applications will welcome it. The eleven chapters of the book contain introductory material for graduate students and are grouped in two parts.

Tajid H. Komir  
Smith and King College

### **INTRODUCTION TO PRECISE NUMERICAL METHODS**

Oliver Aberth (2007)

ACADEMIC PRESS  
XV+272

ISBN-13: 978-0-12-373859-2

ISBN-10: 0-12-373859-8  
US\$79.95

This publication examines computer methods for solving mathematical problems either exactly or to a prescribed accuracy. The book highlights computer methods for solving mathematical problems exactly or to a prescribed accuracy, and explains how to construct precise numerical analysis. A CD-ROM is provided and its executable. The author provides readers with specific examples of problems of elementary numerical analysis with precision as well as exercises.

Alfredo T. García Pedrosa  
Colegio Panamericano de Computación Avanzada

### **PROBABILITÉS : ESTIMATION STATISTIQUE, 3e édition**

Maurice Lethielleux (2006)

DUNOD  
X+155

ISBN-10: 2100498169

ISBN-13: 978-2100498161  
12,80€

El enfoque que tiene esta obra permite al lector aprender la metodología y su aplicación, no tanto la teoría matemática que hay detrás de los métodos estadísticos como el adentrarse en las aplicaciones de la estadística en diversas ramas.

Gracia de los Ángeles Rodeiro Pérez  
Instituto de Estudios Económicos y Contables

### **APPROXIMATE DYNAMIC PROGRAMMING: SOLVING THE CURSES OF DIMENSIONALITY**

Warren B. Powell (2007)

WILEY SERIES IN PROBABILITY AND STATISTICS

ISBN: 9780470171554

Online ISBN: 9780470182963

DOI: 10.1002/9780470182963

XIV+469

US\$116.95

The book is formed of 13 chapters. The first chapter deals with the presentation of A Dynamic Programming (DP) Example for introduction of the subject and discusses the philosophical issues of it such as the Curses of Dimensionality and the Dialect of Dynamic Programming . Chapter 2 develops Models for illustrating how DP works. Chapters 3 and 4 introduce Markov Decision Processes and what he calls “Approximate Dynamic

Programming". Modeling Dynamic Programs is the title of the next chapter where Notational Style Modeling Time and Resources and other key aspects are discussed at large. It closes presenting a complementary issue: A Measure-Theoretic View of Information. Chapters 6 and 7 present the problems appearing with the approximation using Stochastic Methods or Approximating Value Functions. Chapter 11 complements this discussion dealing with Value Function Approximations for some Special Functions arising frequently in practice. Chapters 8 and 9 deal with the horizon problems (ADP for Finite Horizon and Infinite Horizon Problems). The subject of Chapter 10 is Exploration vs. Exploitation. Chapter 12 is concerned with the theoretical and practical issues appearing in different Dynamic Resource Allocation Problems. The last chapter presents some of the Implementation Challenges for solving DP. Many algorithms which serve for solving real life problems are given. The Bibliography is listed through 13 pages. The book has much to offer both practitioners and researchers involved in modeling in this field.

Dilip.C. Perves  
Bhat & Sarkar Consultors

### **BAYESIAN NETWORKS**

Olivier Pourret, Patrick Naimand Bruce Marcot, Editors, ( 2008)

WILEY SERIES: STATISTICS IN PRACTICE

ISBN: 9780470060308

Online ISBN: 9780470994559

DOI: 0.1002/9780470994559

XV+430

US\$110,00

Bayesian Networks is a growing branch and it links artificial intelligence with statistics. The book gives an introduction to Bayesian networks. It should provide the needed information on the theme to professional's related with the theme. Its contents the models for dealing with the treatment of missing input data, the interaction experts-decision makers etc. and points out not only the capabilities of Bayesian networks but also their limitations. A comparison of this technique with other popular alternatives as , fuzzy logic and neural networks for example. The behave of software packages is discussed . Leading experts write the different chapters.

A brief idea of the contents is obtained by looking at the titles and authorship of the chapters given below:

Chapter 1: Introduction to Bayesian Networks written by Olivier Pourret

Chapter 2: Medical Diagnosis written by Agnieszka Oniśko

Chapter 3: Decision Support for Clinical Cardiovascular Risk Assessment written by Ann E. Nicholson, Charles R. Twardy, Kevin B. Korb, Lucas R. Hope

Chapter 4: Complex Genetic Models, written by Paola Sebastiani, Thomas T. Perls

Chapter 5: Crime Risk Factors Analysis, written by Roongrasamee Boondao

Chapter 6: Spatial Dynamics in the Coastal Region of South-Eastern France written by Giovanni Fusco

Chapter 7: Inference Problems in Forensic Science, written by Franco Taroni, Alex Biedermann

Chapter 8: Conservation of Marbled Murrelets in British Columbia, written by

J. Doug Steventon

Chapter 9: Classifiers for Modeling of Mineral Potential, written by Alok Porwal, E. J. M. Carranza

Chapter 10: Student Modeling, written by L. Enrique Sucar, Julieta Noguez

Chapter 11: Sensor Validation, written by Pablo H. Ibarguengoytia, L. Enrique Sucar, Sunil Vadera

Chapter 12: An Information Retrieval System for Parliamentary Documents, written by Luis M. de Campos, Juan M. Fernández-Luna, Juan F. Huete, Carlos Martín, Alfonso E. Romero

Chapter 13: Reliability Analysis of Systems with Dynamic Dependencies, written by Andrea Bobbio, Daniele Codetta-Raiteri, Stefania Montani, Luigi Portinale

Chapter 14: Terrorism Risk Management, written by David C. Daniels, Linwood D. Hudson, Kathryn B. Laskey, Suzanne M. Mahoney, Bryan S. Ware, Edward J. Wright

Chapter 15: Credit-Rating of Companies, written by Shigeru Mase

Chapter 16: Classification of Chilean Wines, written by Manuel A. Duarte-Mermoud, Nicolás H. Beltrán, Sergio H. Vergara  
 Chapter 17: Pavement and Bridge Management, written by Nii O. Attoh-Okine, Olufikayo Aderinlewo  
 Chapter 18: Decision Support on Complex Industrial Process Operation, written by Galia Weidl, Anders L. Madsen, Erik Dahlquist  
 Chapter 19: Predicting Probability of Default for Large Corporates, written by Esben Ejsing, Pernille Vastrup, Anders L. Madsen  
 Chapter 20: Risk Management in Robotics, written by Anders L. Madsen, Anders L. Kalwa, Uffe B. Kærulff  
 Chapter 21: Using Machine Foreknowledge to Enhance Human Cognition, written by Philippe Baumard  
 Chapter 22: Conclusion, written by Patrick Naím

Biswadandu K. Gupta  
 Smith & King College

### **MODES OF PARAMETRIC STATISTICAL INFERENCE**

Seymour Geisser (2006)

#### **WILEY SERIES IN PROBABILITY AND STATISTICS**

**ISBN:** 9780471667261

**Online ISBN:** 9780471743132

**DOI:** 10.1002/0471743135

XV+218

US\$109,25

The author has authored or coauthored 176 scientific articles during his career. With a strong focus on the foundations of theoretical statistical procedures the book gives detailed explanations of different statistical modes of parametric inference. The historical clues of statistical reasoning, given by the need of problem solving, are discussed. They have arisen throughout the centuries. The reader will obtain a better understanding of the logic that leads each mode. The strengths and weaknesses of each methodology are covered and an understanding of the roots of modern developments is obtained.

The book begins with comments on the history of statistical inference. In chapters 2 and 3 the readers obtain the address to Frequentist Analysis and Likelihood Principle. The Bayesian approach receives a similar attention in chapter 6. In chapters 4 and 5 testing is scrutinized by considering the general problem of Testing Hypotheses and the particularities of Unbiased and Invariant Tests. Chapter 7 fundamentals the Theories of Estimation and chapter 8 Set and Interval Estimation.

Different examples and counterexamples are motivating the analysis of how the modes yield both similar and dissimilar results. Detailed discussions of each result make clear the effect of the use of each mode. Hence the effect of the modes is better understood as well as how they work.

It is a fascinating book to have at the library.

C. N. Bouza  
 Universidad de La Habana

### **OPTIMIZATION METHODS IN FINANCE (MATHEMATICS, FINANCE AND RISK)**

Gerard Cornuejols and Reha Tutuncu (2007)

Cambridge Press, Series Mathematics, Finance and Risk (No. 5)

**ISBN-13:** 9780521861700

**ISBN-10:** 0521861705

XVII+358

US\$74.00

This book will be of interest for researchers and graduate students in optimization involved in the study of financial problems. It is clear that optimization modeling is playing an important role in real life financial decisions. The book presents the interrelations between advances in optimization and the existing computational finance more efficiently and accurately. Chapters discussing the theory and efficient solution problems such as volatility estimation, portfolio optimization problems and constructing an index fund, using techniques such as nonlinear optimization models, quadratic programming formulations and integer programming models etc. As it covers the optimization and statistical methods in Finance and the modern portfolio theory- risk management the readers from Finance, Optimization or Statistics will be interested. Consider it as a good source for interfacing between Finance and Operations Research.

C. N. Bouza  
Universidad de La Habana

**PROBABILITÉS, ANALYSES DES DONNÉES ET STATISTIQUES, 2nd edition**

Gilbert Saporta (2006)

TECHNIP

ISBN-10: 2710808145

ISBN-13: 978-2710808145

XXI+622

Este es un buen libro recomendable para el aprendizaje de la estadística cuya segunda edición amplía los contenidos de la primera actualizándolos. La forma elegida para la exposición tiene como objetivo facilitar la comprensión de los conceptos y su aplicación. Reconociendo la importancia de las nuevas tecnologías para el tratamiento de los datos para la enseñanza de la Estadística se ha extendido en la exposición inicial de la materia. Su mercado comprende a estudiantes, investigadores prácticos de cualquier disciplina. Se presupone un nivel de conocimiento en el álgebra y del análisis matemático de un primer ciclo universitario. Tiene 21 capítulos agrupados en 5 partes y comprende las herramientas básicas de las probabilidades, análisis exploratorio de datos, estadística inferencial y modelos predictivos. El análisis de datos incluye el análisis factorial y la clasificación.

Carlo A. Ramírez Rodeiro  
Instituto de Estudios Económicos y Contables

**STATISTIQUE THÉORIQUE ET APPLIQUÉE : TOME 1**

**STATISTIQUE DESCRIPTIVE ET BASES DE L'INFÉRENCE STATISTIQUE**

Pierre Dagnelie (2007)

DE BOECK, COLLECTION MATHÉMATIQUES

ISBN-10: 2804153126

ISBN-13: 978-2804153120

XII+356

39,00€

Este libro está dirigido a un amplio público, ya que puede ser utilizado en cursos de estadística inferencial en varias disciplinas como complemento o texto básico. Tal es el caso de las disciplinas de las ciencias sociales, ciencias biológicas, ciencias naturales y matemáticas. El objetivo de este tomo es desarrollar a un nivel elemental la teoría de la estadística. Los dos primeros capítulos introducen nociones sobre la obtención de los datos y es seguido por los conceptos de estadística descriptiva (en una y dos dimensiones), las nociones de probabilidad así como el uso de las distribuciones y los principios inferenciales de la estadística.

Nadia Cruz  
INMAT-Biometría

**ESTADÍSTICA INFERENCIAL**

Humberto Llinás Solano (2006)

EDICIONES UNINORTE  
XV+424

ISBN: 9588252245  
COL\$ 65,000

Esta obra contiene los métodos básicos de la estadística descriptiva, la estadística inferencial, el análisis de decisiones, y el control de procesos que se incluyen en los cursos introductorios y de nivel intermedio de la estadística en las ingenierías y la administración de empresas. Los conceptos y los métodos se presentan de manera clara y concisa, y se han minimizado las explicaciones tediosas a favor de la presentación de ejemplos concretos ya que este libro ha sido desarrollado especialmente para quienes están interesados en la aplicación de las técnicas de la estadística, se omiten las demostraciones matemáticas

Jesús M<sup>a</sup>. Estenoz Palencia  
Instituto de Estudios Económicos y Contables

### **LES TECHNIQUES DE SONDAGE**

Pascal Ardilly (2006)

TECHNIP  
XX+675

ISBN-10: 2710808471

ISBN-13: 978-2710808473  
63,00€

Este libro, centrado en técnicas de muestreo e ideas para resolver problemas reales, ofrece una presentación clara de los principios básicos del muestreo en la práctica moderna de las encuestas. El libro está organizado de tal forma que puede ser utilizado lográndose un balance apropiado de teoría y práctica para las metas de un curso de licenciatura. Los ejercicios al final de cada capítulo permiten a los estudiantes dominar el material y propician la exploración posterior con encuestas, el diseño de encuestas y la experimentación con diversos diseños de encuestas y estimadores. Esta versión es una notablemente mejorada de la versión anterior incluyendo nuevos modelos y enfoques como el uso de muestreo balanceado, muestreo indirecto, no respuestas y muestreo repetido en el tiempo. Se dedica una parte substancial a la solución de la estimación de la varianza en encuestas complejas, pequeñas poblaciones etc. Su lectura requiere de conocimientos básicos del álgebra y de estadística y probabilidades,

Juan de Dios Albuquerque Ríos  
Instituto de Estudios Económicos y Contables

### **PROBABILISTIC METHODS FOR FINANCIAL AND MARKETING INFORMATICS**

Richard Neapolitan and Xia Jiang (2007)

MORGAN KAUFFMAN  
X+ 432

ISBN-13: 978-0-12-370477-1

ISBN-10: 0-12-370477-4  
GB£39.99

This book is a needed reference on the use of probabilistic methods for predicting how a certain financial technology behaves, as is the case in investment, advertising, operational risk measurement, credit scoring and related themes. Basic techniques are presented and the application in data management, data mining and other similar techniques of the so called Artificial Intelligence for business and marketing information leads its approach. The contents is Informatics and Bayesian Networks; Introduction to Informatics; Basics of Probability and Statistics; Algorithms for Bayesian Networks; Decision Trees and Influence Diagrams. II: Business Informatics: Collaborative Filtering; Targeted Advertising; Market Basket Analysis; Venture Capital Decision Making; Measuring Operational Risk; Credit Scoring. Applications to Investment Science.

J.C. Shong  
Demeshonian College

### **THE PROBABILISTIC METHOD, 3rd edition**

Noga Alon and Joel H. Spencer (2008)

WILEY

XII+384

ISBN: 978-0-470-17020-5

This book is the third edition of well known oeuvre on the probabilistic methods in combinatorics . The book develops a discussion on techniques based on expectations and variances, martingales and correlation inequalities. It explores new and fruitful application areas of probabilistic methods as discrepancy and random graphs and theoretical computer science.

The present version reflects the reactions of the audiences as well as some of some other textbooks, at my guess.

Sovandep.H. Kumar

Institute of Computer Engineering and Business Management

### **REGRESSION ANALYSIS**

Rudolf Freund, William Wilson and Ping Sa (2006)

ACADEMIC PRESS

ISBN-13: 978-0-12-088597-8

ISBN-10: 0-12-088597-2

XV+ 480

US\$ 93.95

Focusing on giving students an understanding of the purpose of regression analyses and model building a review of the basics and an introduction to Linear Models is given in the first chapter. Then Simple Linear Regression, Linear and Multiple Regression are treated where assessing fit and reliability for drawing conclusions are highlighted. The book demonstrates how to take in consideration the effect of Multicollinearity and the existence of problems with the model and/or the observations. In that spirit Nonlinear Models, the use of Indicator Variables, modeling with Categorical Response Variables and Generalized Linear Models are discussed. This text is an excellent tool for learning how to use regression analysis techniques to solve and gain insight into real-life problems.

A.S. Akiva

Nosharkart Women College

### **STABILITY OF DYNAMICAL SYSTEMS**

Xiaoxin Liao, L.Q. Wang and P. Yu (2007)

ELSEVIER

ISBN-13: 978-0-444-53110-0

ISBN-10: 0-444-53110-6

XVI+ 718

US\$150

The contents of the book is the following: Preface; Chapter 1. Fundamental Concepts and Mathematical Tools; Chapter 2. Linear Systems with Constant Coefficients; Chapter 3. Time-Varying Linear Systems; Chapter 4. Lyapunov Direct Method; Chapter 5. Development of Lyapunov Direct Method; Chapter 6. Nonlinear Systems with Separate Variables; Chapter 7. Iteration Method for Stability; Chapter 8. Dynamical Systems with Time Delay; Chapter 9. Absolute Stability of Nonlinear Control Systems; Chapter 10. Stability



of Neural Networks; Chapter 11. Limit Cycle, Normal Form and Hopf Bifurcation Control. It may be considered as a good monograph that presents a state-of-the-art on the advances in fundamental stability theories and methods for dynamic systems, of ODE and DDE types, and in limit cycle, normal form and Hopf bifurcation control of nonlinear dynamic systems. Hence I consider that it is suitable for Graduate students in applied mathematics, mechanics, control theory, theoretical physics, mathematical biology, information theory, and scientific computation.

G.T. Das  
Savindra Gupta. College

### **STATISTIQUE DESCRIPTIVE : APPLICATIONS AVEC EXCEL ET LA CALCULATRICE**

Etienne Bressoud et Jean-Claude Kahané (2008)

SYNTHEX  
XXIX+250

ISBN-10: 2744072370

ISBN-13: 978-2744072376

27,00€

Esta obra tiene una doble intención. Por un lado, introducir al lector en los conceptos fundamentales de la Estadística Descriptiva y, por otro lado, dar las soluciones informáticas usando desarrolladas en Microsoft Excel. El libro no presupone conocimientos previos sobre el tema. Este le abre un mercado pues puede ser un material de consulta, profesionistas de diferentes disciplinas (Ingeniería, Sociología, Psicología, Medicina, Economía, Mercadotecnia, etc.), como también para comerciantes, empresarios y estudiantes que deseen adquirir los conocimientos necesarios sobre el tema.

Federico González Provenza  
Instituto de Estudios Económicos y Contables

### **TABLE OF INTEGRALS, SERIES, AND PRODUCTS**

Alan Jeffrey and Daniel Zwillinger (2007)

ACADEMIC PRESS  
XII+ 1200

ISBN-13: 978-0-12-373637-6

ISBN-10: 0-12-373637-4

US\$ 94.95

A first edition dates to 1965. The new edition are the result of revisions and enlargements made regularly. This is the seventh edition and includes a fully searchable CD-Rom. The users are commonly professionals and student of Pure and applied mathematics, engineers, scientists and physicists. The Contents are tables of Elementary Functions; Indefinite Integrals of Elementary Functions; Definite Integrals of Elementary Functions; Combinations involving trigonometric and hyperbolic functions and power; Indefinite Integrals of Special Functions; Definite Integrals of Special Functions; Associated Legendre Functions; Special Functions; Hypergeometric Functions; Vector Field Theory; Algebraic Inequalities; Integral Inequalities; Matrices and related results; Determinants; Norms; Ordinary differential equations; Fourier, Laplace, and Mellin Transforms and the z-transform .

Inés N. Rodríguez Almendros  
INMAT

### **A WAVELET TOUR OF SIGNAL PROCESSING: THE SPARSE WAY**

Stéphane Mallat (2008)

ACADEMIC PRESS  
XXVI+700

ISBN-13: 978-0-12-374370-1

GB£49.99

The author is a well known specialist in the area who can be considered as one of the gurus on wavelet signal processing. The contents are updated with all the cutting edge developments, such as multiwavelets, alpert, non-separable and quincunx wavelets. The book brings together principles and applications of wavelet signal processing and points out aspects of its intuitive understanding together with the mathematical foundations. A large set of real life applications are discussed covering noise removal, deconvolution, audio and image

compression, singularity and edge detection, multifactorial analysis, and time-varying frequency measurements. It must be in the library of R&D engineers and university researchers connected with image and signal processing or Signal processing.

Ingram J. Brown  
INMAT and Stat&OR Consult

#### WORKING WITH DYNAMIC CROP MODELS

ELSEVIER

ISBN-13: 978-0-444-52135-4

ISBN-10: 0-444-52135-6

Daniel Wallach, David Makowski and James Jones editors (2006)

XV+ 462

US\$ 87,95

This volume is dedicated to a very important and has two main objectives: the first is to show that bringing together different mathematical and statistical methods which are essential in crop modeling. The book presents mathematical and statistical methods, now accessible to crop modelers, which are necessary in the development, analysis and applications. It will be essential for learning and a reference source for those interested in understanding and applying theoretical methods to crop models. This book will also be of value for other specialties linked with dynamic models of complex systems.

The chapters are:

- 1 The two forms of crop models, D. Wallach
- 2 Evaluating crop models, D. Wallach
- 3 Uncertainty and sensitivity analysis for crop models, H. Monod, C. Naud, D. Makowski
- 4 Parameter estimation for crop models, D. Makowski, J. Hillier, D. Wallach, B. Andrieu, M.-H. Jeuffroy
- 5 Data assimilation with crop models, D. Makowski, M. Guerif, J. W. Jones, W. Graham
- 6 Representing and optimizing management decisions with crop models J. E. Bergez, F. Garcia, D. Wallach
- 7 Using crop models for multiple fields, D. Leenhardt, D. Wallach, P. Le Moigne, M. Guerif, A. Bruand, M. A. Casterad
- 8 Introduction to section II
- 9 Fundamental concepts of crop models illustrated by a comparative approach, N. Brisson, J. Wery, K. Boote
- 10 Crop models with genotype parameters, M-H Jeuffroy, A. Barbottin, J. W. Jones, J. Lecoer
- 11 Model assisted genetic improvement of crops C.D. Messina, K.J. Boote, C. Loffler, J.W. Jones, and C.E. Vallejos
- 12 Parameterization and evaluation of a corn crop model, D. Wallach.
- 13 Evaluation of a model for kiwifruit, F. Lescourret and D. Wallach
- 14 Sensitivity and uncertainty analysis of a static denitrification model. B. Gabrielle .
- 15 Sensitivity analysis of PASTIS, a model of nitrogen transport and transformation in the soil, P. Garnier
- 16 Sensitivity analysis of GENESYS, a model for studying the effects of cropping system on gene flow, N. Colbach and N. Molinari
- 17 Data assimilation and parameter estimation for precision agriculture with the crop model STICS, M. Guerif, V. Houles, D. Makowski and C. Lauvernet
- 18 Application of extended and ensemble Kalman filters to soil carbon estimation, J. Jones and W. Graham
- 19 Analyzing and improving corn irrigation strategies with MODERATO, a combination of a corn crop model and a decision modelm J. E. Bergez, J. M. Deumier and B. Lacroix
- 20 Managing wheat for ethanol production. A multiple criteria approach C. Loyce, J. P. Rellier and J. M. Meynard

It includes an Appendix with the needed. Statistical notions.

Irving A. Brown  
Brown, Roura and Queiros Consultors S.A.

#### MÉTHODES DE PRÉVISION À COURT TERME , 2nd edition

Guy Mélard et Michel Carbon (2008)

UNIVERSITE DE BRUXELLES COLLECTION : STATISTIQUE ET MATHÉMATIQUES APLIQUEES

ISBN-10: 2800414081  
XX+537

ISBN-13: 978-2800414089  
33,00€

Este libro se dedica a tratar un tema de creciente interés en el mundo actual implicado dialécticamente por el desarrollo de datos temporales. Esta segunda edición refleja el interés del tema. Este libro tiene como mira su uso por los estudiantes como complementado de sus conocimientos estadísticos. El software utilizado como kernel es Time Series Expert. Un Cd es suministrado. Los contenidos son: Conceptos y definiciones, Régression linéal simple, Régression linéal multiple, Auto correlación y errores de prevision, Modelos ARIMA, Método de BOX-JENKINS, Regresión con errores auto correlacionados, Método X-12-ARIMA y Método TRAMO/SEATS.

María Isabel Ferrara Pérez  
Instituto de Estudios Económicos y Contables

**MATHÉMATIQUES POUR LES SCIENCES COGNITIVES : AVEC DES APPLICATIONS AUX RÉSEAUX DE NEURONES, AU TRAITEMENT DU SIGNAL, À L'IMAGERIE CÉRÉBRALE ET À LA STATISTIQUE**

Hervé Abdi et Dominique Valentin (2006)  
PUG (21 avril 2006) Collection : Sciences cognitive  
ISBN-10: 2706112913  
xx+357

ISBN-13: 978-2706112911

Este es un libro de gran valor para los especialistas envueltos en el tema. Este presenta el núcleo teórico de la matemática que soporta el desarrollo de estas modernas técnicas de análisis de datos. Se destaca el papel del instrumental matemático de la teoría que soporta el trabajo con matrices incluyendo, pseudo inversas, descomposición de vectores etc, as como los productos de convolución el uso de tensores etc. En otra línea están el uso de los conceptos de la correlación, transformadas discretas de Fourier etc. Se destaca como los métodos estadísticos están presentes cuando se utilizan modelos que descansan en las técnicas agrupadas en los conocidos métodos del análisis de la varianza, regresión múltiple, los análisis de componentes principales, de correspondencia, procuste y discriminante, así como en el escalamiento multidimensional. Las aplicaciones discutidas son fundamentalmente modelos del reconocimiento de imágenes, que incluye las cerebrales, el análisis de textos, la evaluación sensorial entre otros. Los ejemplos numéricos son desarrollados usando códigos MATLAB.

V. Puzynin  
Smith and King College

**MODÉLISATIONS STOCHASTIQUES ET SIMULATIONS**

Pierre Vallois (2007)  
ELLIPSES MARKETING  
XII+287

ISBN-10: 2729836640

ISBN-13: 978-2729836641  
32,00€

The simulation of random phenomena is one of the common challenges of real world applications. Therefore, sampling-based computational methods have become a fundamental part of the numerical toolset of both practitioners and researchers. This book provides a solid treatment of the different aspects of modeling and simulation of both variables and stochastic processes. A variety of such sampling-based methods is given and MAPLE is used for supporting the computations. The readers must have a good on classic probability knowledge. Some steps to the mathematical analysis of their diverse applications are sketched. The role of the studied models, in the solution of real life problems in medicine, biology, finance markets, telecommunications etc., give an special role to his book in teaching and consulting.

V. Puzynin  
Smith and King College

**LE MODÈLE LINÉAIRE PAR L'EXEMPLE : RÉGRESSION, ANALYSE DE LA VARIANCE ET PLANS D'EXPÉRIENCE ILLUSTRÉS AVEC R, SAS ET SPLUS**

Jean-Marc Bardet et Jean-Marc Azaïs (2006)

DUNOD

ISBN-10: 2100495593

ISBN-13: 978-2100495597

XVII+326

32,30€

Linear models are central to the practice of statistics and form the foundation of a vast range of statistical methodologies. This book visits Linear Models using the support of R, SAS and SPLUS. Are examined regression and analysis of variance, demonstrated the different methods available, and established in which situations each one applies. The programs permitting to compute using R, SAS et Splus are given as well as the numeric et graph outputs. The reader have a set of exercises that allow to train in the use of them. The corrections together with the data basis are available at the site web [www.dunod.com](http://www.dunod.com).

Irving A. Brown

Brown, Roura and Queiros Consultors S.A.

**PROBABILITÉ : EXERCICES CORRIGÉS**

Hervé Carrieu (2008)

EDP SCIENCES, COLLECTION : ENSEIGNEMENT SUP

ISBN-10: 2759800067

ISBN-13: 978-2759800063

X+145

16,00€

La resolución de problemas constituye un elemento necesario para completar la formación en Probabilidad y Estadística por consiguiente, una docencia planteada bajo tal premisa deja tras de sí una extensa colección de ejercicios. Este libro representa una selección de los problemas. En los ejercicios se presentan distintas situaciones-tipo propias que por su nivel y enfoque el texto resulta adecuado como apoyo en la resolución de problemas concernientes a una asignatura de estas características en escuelas politécnicas. Asimismo, su utilidad puede extenderse a otras licenciaturas en ciencias experimentales en las que exista una asignatura de fundamentos de Estadística, orientada fundamentalmente a su aprendizaje como herramienta instrumental.

N. Cruz

INMAT-Biometría

**ROBUST PORTFOLIO OPTIMIZATION AND MANAGEMENT**

Frank J. Fabozzi, Petter N. Kolm, Dessislava Pachamanova and Sergio M. Focardi (2007)

WILEY

ISBN-10: 047192122X

ISBN-13: 978-0471921226

XX+496

US\$95.00

This book covers robust estimates, robust portfolio construction, error control, Bayesian estimates which are quite new topics and directions on portfolio management research. It is well written. Pachamanova is a well known expert in Robust Optimization. Its contents are clustered in 4 parts and an independent chapter. They are 14 chapters together. The independent chapter is the first one and gives an Introduction (Quantitative Techniques in the Investment Management Industry, Central Themes of This Book, Overview of the Book). PART 1's theme is Portfolio Allocation: Classical Theory and Extensions. It clusters 4 chapters which deal

with the following themes: Mean-Variance Analysis and Modern Portfolio Theory (The Benefits of Diversification, Mean-Variance Analysis: Overview, Classical Framework for Mean-Variance Optimization, The Capital Market Line, Selection of the Optimal Portfolio When There Is a Risk-Free Asset, More on Utility Functions: A General Framework for Portfolio Choice); Advances in the Theory of Portfolio Risk Measures (Dispersion and Downside Measures, Portfolio Selection with Higher Moments through Expansions of Utility, Polynomial Goal Programming for Portfolio Optimization with Higher Moments, Some Remarks on the Estimation of Higher Moments, The Approach of Malevergne and Sornette); and Portfolio Selection in Practice (Portfolio Constraints Commonly Used in Practice, Incorporating Transaction Costs in Asset-Allocation Models, Multiaccount Optimization). PART TWO is devoted to Robust Parameter Estimation and it also contains 4 chapters: Classical Asset Pricing (Definitions, Theoretical and Econometric Models, Random Walk Models, General Equilibrium Theories, Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT)), Forecasting Expected Return and Risk (Dividend Discount and Residual Income Valuation Models, The Sample Mean and Covariance Estimators, Random Matrices, Arbitrage Pricing Theory and Factor Models, Factor Models in Practice, Other Approaches to Volatility Estimation, Application to Investment Strategies and Proprietary Trading), Robust Estimation (The Intuition behind Robust Statistics, Robust Statistics, Robust Estimators of Regressions, Confidence Intervals), Robust Frameworks for Estimation: Shrinkage, Bayesian Approaches, and the Black-Litterman Model (Practical Problems Encountered in Mean-Variance Optimization, Shrinkage Estimation, Bayesian Approaches). PART THREE, Optimization Techniques, contains 3 chapters: Mathematical and Numerical Optimization (Mathematical Programming, Necessary Conditions for Optimality for Continuous Optimization Problems, Optimization Duality Theory, How Do Optimization Algorithms Work?); Optimization under Uncertainty (Stochastic Programming, Dynamic Programming, Robust Optimization); Implementing and Solving Optimization Problems in Practice (Optimization Software Practical Considerations When Using Optimization Software, Implementation Examples, Specialized Software for Optimization Under Uncertainty). PART FOUR, titled Robust Portfolio Optimization has the chapters :Robust Modeling of Uncertain Parameters in Classical Mean-Variance Portfolio Optimization (Portfolio Resampling Techniques, Robust Portfolio Allocation, Some Practical Remarks on Robust Portfolio Allocation Models); The Practice of Robust Portfolio Management: Recent Trends and New Directions (Some Issues in Robust Asset Allocation, Portfolio Rebalancing, Understanding and Modeling Transaction Costs, Rebalancing Using an Optimizer), Quantitative Investment Management Today and Tomorrow (Using Derivatives in Portfolio Management, Currency Management. Benchmarks, Quantitative Return-Forecasting Techniques and Model-Based Trading Strategies, Trade Execution and Algorithmic Trading). The APPENDIX A. gives the Data Description.

S.V. Choudhuri  
Savindra Gupta College

## **METODOS DE OPTIMIZACION**

Maria D. Soto Torres (2006)

DELTA PUBLICACIONES  
XV+332

ISBN: 978-84-96477-42-1

EAN: 9788496477421  
21,00€

Este libro presenta material actualizado sobre los métodos de optimización y sus soportes computacionales. Este será una buena guía para los lectores que les llevará a través de la teoría que soporta los resultados más importantes del tema explorando el campo de las aplicaciones de los diversos tópicos.

Ramiro Rodeiro Pérez  
Instituto de Estudios Económicos y Contables

## **DYNAMIC OPTIMIZATION AND DIFFERENTIAL GAMES**

Terry L. Friesz, (2008)

SERIES: INTERNATIONAL SERIES IN OPERATIONS RESEARCH & MANAGEMENT SCIENCE

ISBN: 978-0-387-72777-6

XXI+ 480

114,75 €

This book is easy-to-read and addresses problematic of the dialectic Operations Research- Management Science where multiple agents are involved in the game. It may be used as a textbook or as a reference one by students, engineers, mathematicians, economists, operation researchers, and social scientists that must use dynamic optimization and differential games. The book treats deterministic models and methods as well as stochastic optimal control and stochastic differential games . The main aspects of deterministic, continuous time, optimal control theory from both the classical calculus of variations perspectives and the more modern approach of infinite dimensional mathematical programming are studied . It contents is the following: Preface.- Introduction.- Nonlinear programming and discrete time optimal control.- The classical calculus of variations and optimal control in continuous time.- Infinite dimensional mathematical programming.- Static Cournot-Nash-Bertrand games and finite dimensional variational inequalities.- Cournot-Nash-Bertrand differential games.- Stochastic differential variational inequalities and stochastic dynamic games.- Dynamic supply, production and distribution planning.- Dynamic traffic assignment.- Dynamic competitive revenue management in competition.- Index.

S. Panov  
Quality Control Advisors Inc.

### **SAS COMPANION NONPARAMETRIC STATISTICS**

Scott J. Richter and James J. Higgins (2005)

DUXBURY PRESS  
X+112

ISBN-10: 0534422209

ISBN-13: 978-0534422202  
US\$49,95

It is well known that SAS is at the best in the statistical software market. If you are going to rely on SAS then use SAS COMPANION FOR NONPARAMETRIC STATISTICS. The authors present SAS-computed examples, which are self-contained. You can use the data, enter them into SAS as they appear, and execute. Hence you will be able to deal with the creation of SAS data sets before using the programs. SAS codes for nonparametric analyses are given after developing a brief introduction to the method to be illustrated. Attention, how to analyze the outputs as a statistician is out of the book's scope, you need to have the skills.

Pedro Albuquerque  
INMAT-División de Biometría

### **LINEAR PROGRAMMING WITH MATLAB**

Michael C. Ferris, Olvi L. Mangasarian, and Stephen J. Wright (2007)

MPS-SIAM Series on Optimization 7  
XII + 266

ISBN 978-0-898716-43-6  
US\$45.00

This is a textbook where linear programming theory is introduced and MATLAB protocols are used as basis for implementing the algorithms and theory. The first chapters can be unimportant for a mathematical knower as they contents linear algebra basics, the simplex method, duality, the solving of large linear problems, sensitivity analysis, and parametric linear programming. In later chapters, the authors discusses quadratic programming, linear complementarity, interior-point methods, and selected applications of linear programming to approximation and classification problems.

The book is carefully written. Specific examples and concrete algorithms are developed. The topics are clearly developed with a large number of numerical examples worked out. In two appendices additional information on linear algebra, convexity, and nonlinear functions and on available MATLAB commands are given. MATLAB codes at a Web site maintained by the authors may be visited.

Irving A. Brown  
Brown, Roura and Queiros Consultors S.A.

**PROGRAMMING: FOUNDATIONS AND EXTENSIONS, 3rd edition.**

Robert J. Vanderbei (2007)

SPRINGER  
XII+464

ISBN-10: 0387743871

ISBN-13: 978-0387743875  
CDN\$101.33

Many advances have taken place in this field. Despite these advances and the development of new computing methods, several basic theories and methods remain important today. This book is an introduction to the field of optimization which emphasizes the themes of linear programming, convex analysis, network flows, integer programming, quadratic programming, and convex optimization.

This book is intended for undergraduate and graduate students of mathematics and economics; it requires no background in these areas except an understanding of elementary calculus and linear algebra.

F. Chang  
Nosharkart Women College

**ESTADISTICA APLICADA A LOS NEGOCIOS Y LA ECONOMIA DE LA EMPRESA.**

D. Lind, W. Marchal y S. Wathen (2008)

MCGRAW-HILL INTERAMERICANA DE ESPAÑA  
XXXII+ 858

ISBN 978-970-10-6674-4  
50,00 €

El objetivo de este libro es proporcionar a los estudiantes de las diferentes áreas de negocios un análisis introductorio de las aplicaciones de la estadística descriptiva y de la estadística inferencial. Dado que el mundo actual procesa grandes volúmenes de información, el gran reto de la estadística está en saber escoger de manera crítica la información y en ser capaz de reducirla en forma concisa y significativa para hacer interpretaciones, juicios y tomar decisiones efectivas, por ello, esta edición incluye los comandos necesarios para obtener resultados de los programas Excel y Minitab;

Alberto G. Pedrosa  
INMAT

**INTRODUCCIÓN A LA INFERENCIA ESTADÍSTICA**

Doris Gómez Ticerán, Jorge Condado Jáuregui, Ysabel Adriazola Cruz y Olga Solano Dávila (2008)

UNMSM, Fondo Editorial  
XXI+ 483

ISBN 9972-46-282-X  
35,99 €

Este es un nuevo libro que tiene como mérito el fijar las llamadas Pautas básicas del SPSS y MATLAB para el análisis estadístico. El resto del contenido es lo clásico: probabilidades, estimación tests bajo normalidad y para chi-cuadrado así como regresión y correlación.

Juana Raquel Amorós  
INMAT-Biometría

**OPTIMIZATION IN MEDICINE (OPTIMIZATION & ITS APPLICATIONS, VOL. 12**

Carlos J. Alves, Panos M. Pardalos M., Luis Nunes Vicente, editors (2008)

Springer  
XV+216

ISBN: 978-0-387-73298-5  
84,95 €

The Center for International Mathematics Thematic term on Optimization organized in the period July 20-22, 2005 the Workshop On Optimization in Medicine. This book presents a selection of the contributions. The papers contained in the book are:

The influence of dose grid resolution on beam selection strategies in radiotherapy treatment design,. Ryan Acosta, Matthias Ehrgott, Allen Holder, Daniel Nevin, Josh, Reese, and Bill Salter.

Decomposition of matrices and static multileaf collimators: a survey, Matthias Ehrgott, Horst W. Hamacher, and Marc Nußbaum

Neuro-dynamic programming for fractionated radiotherapy planning, Geng Deng and Michael C. Ferris

Randomized algorithms for mixed matching and covering in hypergraphs in 3D seed reconstruction in brachytherapy, Helena Fohlin, Lasse Kliemann, and Anand Srivastav

Global optimization and spatial synchronization changes prior to epileptic seizures, Shivkumar Sabesan, Levi Good, Niranjan Chakravarthy, Kostasm Tsakalis, Panos M. Pardalos, and Leon Iasemidis

Optimization-based predictive models in medicine and biology, Eva K. Lee

Optimal reconstruction kernels in medical imaging, Alfred K. Louis

Optimal control in high intensity focused ultrasound surgery. Tomi Huttunen, Jari P. Kaipio, and Matti Malinen

Jeanette Scheneweiss  
BROUQUE Consultors SA