

News / Anuncios

Conference and Place / Conferencia y Lugar	Date and Contact / Fecha y Contactos
Informs Annual Meeting. New Orleans 2005 New Orleans, Louisiana	November 13-16, 2005 http://www.Informs.Org/Conf/No2005
Informs Simulation Conference Winter Simulation Conference 2005 Orlando, Fl. USA	December 4-7, 2005 http://www.Informs.Org/Conf/No2005
61 st Annual Deming Conference on Applied Statistics Atlantic City. New Jersey. USA	December 5-9, 2005 demingconference.com
7 th International Conference on Operations Research Havana. Cuba	March 20-24, 2006 sira@matcom.uh.cu
Conférence Internationale sur les Mathématiques de l'Optimisation et de la Décision Université antilles-Guyane, Guadeloupe	April 18-21, 2006 http://gala.univ-perp.fr/~ausssel/CIMODE06/
The International Conference on Information Systems, Logistics and Supply Chain (ILS'06) Lyon, France	May 15-17, 2006 http://www.fucam.ac.be
SIAM Conference on Imaging Science Radisson Hotel Metrodome Minneapolis, Minnesota	May, 15-17, 2006
12 th IFAC Symposium on Information Control Problems in Manufacturing INCOM'2006 Saint Etienne, France	May 17-19, 2006 http://www.emse.fr/incom06/index.html
Third International Workshop on Freight Transportation and Logistics Altea, Spain	May 23-26, 2006 http://www.ifors.org/panorama/conferences
Fourth International Chemometrics Research Meeting (ICRM 2006) Veldhoven, The Netherlands	May 28-June 01, 2006 secretariat@icm.info
CAD'06. The 2006 CAD Conference and Exhibition Phuket, Thailand	June 19-23, 2006 http://www.cadconferences.com
International Conference on Establishment Surveys III Montreal, Quebec, Canada	June 18-21, 2006 to ices3@census.gov
Hong Kong International 2006 Hong Kong, China	June 25-28, 2006 http://www.informs.org/Conf/Hongkong06/
The 8 th Valencia Meeting on Bayesian Statistics Somewhere in the Spanish coast	Sometime in June 2006 valenciameting@uv.es
Conference on Financial Mathematics and Engineering Boston Park Plaza Hotel Boston, Massachuset	July 10-12, 2006
21 IBC2006. XXIII International Biometrics Conference Montreal, Quebec, Canada	July 16-21, 2006 http://www.ibc2006.org
International Conference on Establishment Surveys III Montreal, Quebec, Canada	June 18-21, 2006 James.Hanley@McGill.CA
EURO XXI. 21 st European Conference on Operational Research, 2006 Reykjavik, Iceland	July 2-5, 2006 http://www.euro2006.org

VECPAR '2006 7 th International Meeting on High Performance Computing for Computational Science Universidade Federal do Rio de Janeiro (UFRJ) e Instituto Nacional de Matemática Pura e Aplicada (IMPA) Rio de Janeiro, Brazil	July 10-12, 2006 http://vecpar.fe.up.pt/2006/
7 th International Conference Multi-Objective Programming and Goal Programming Loire Valley (city of Tours) - France	June 12-14, 2006 http://www.MOPGP06.org
International Statistical Institute 56 th Biennial Session in Lisboa Lisboa, Portugal	August 22-29, 2006 isi@cbs.nl
2006 Joint Statistical Meetings Seattle, Washington. To Be Held at the Seattle Convention Center.	August 6-10, 2006 Meetings@Amstat.Org
Informs Annual Meeting 2006 Pittsburgh, Pa, USA	November 5-8, 2006 http://www.informs.org/conf/No2005
SIAM Conference on Computational Science & Engineering TBD	Sometiem in February, 2007
Puerto Rico International 2007 Río Grande, Puerto Rico	July 8-11, 2007 http://www.informs.org/
2007 Joint Statistical Meetings. Salt Lake City. Utah. To be held at the Salt Palace Convention Center	July 29-august 2, 2007 Meetings@Amstat.Org
Informs Annual Meeting 2006 Seattle, Wa, USA	November 4-7, 2007 http://www.Informs.Org/
2008 Joint Statistical Meetings. Denver, Colorado. To be held at the Denver Convention Center	August 3-7, 2008 Meetings@Amstat.Org
2009 Joint Statistical Meetings Washington. Dc. To be held at the Washington Convention Center	August 2-6, 2009 Meetings@Amstat.Org

Book Reviews | Reseñas

Stochastic optimization in continuous time

Fwu-Ranq Chang (2004)

Cambridge University Press ISBN 0-521-83406-6

Xvi_326 \$50.00

The theme of this book is Stochastic Calculus. It develops the corresponding theory for models with economic applicability. Without losing in rigorously the mathematical proofs are maintained at a minimum because of the intention of providing a book for graduate courses for economists.

It is divided into two parts.

Part I deals with the needed elements on Stochastic Calculus. The first three chapters form it. Chapter one presents a measure theory based introduction to probability theory. It is remarkable the manner of fixing the dialectical relation between information set (a common term to the economists) and σ -algebra (a theoretical mathematical concept). The author formalises it within the framework of Stochastic Processes. Then conditional expectation is discussed. More than 20 examples are developed for illustrating the concepts and discussions. Chapter two gives the essentials of Wiener processes and reinforces the discussion on the fact that it is a Markov Process where the normal distribution models the transition probabilities. Chapter three presents the kernel of Stochastic Calculus. The discussion allows to study Black-Scholes option price in Finance and some models of Investment theory.

The second part is on stochastic optimisation. Another 3 chapters compose it. Chapter four discusses the issues of solving dynamic problems under uncertainty: Bellman equations, Structure of Stochastic Optimisation problems, Optimal Control, differentiability of the value function, transversability conditions, verification theory, etc. Some examples are developed for illustrating how to apply Bellman equations in the solution of problems such as consumption, portfolio, index bonds, exhaustive resources, uncertain lifetime, life insurance and recourse utility. Chapter five. Presents reasoning and methods for deriving closed form representations of the value function appearing in different economic problems. They go from a naive approach to sophisticated methods. The use of inverse Optimization for obtaining a characterisation of the structure of the economic problem is discussed. Chapter six is devoted to the presentation of two broad classes of boundary problems (nonnegative constraint and optimal stopping rules with determined classes).

The book is well written and must be useful in graduate courses for economists and may have the same property in courses for other professionals willing to go into the mathematics of economical models.

A list of more that 120 entries is given. A set of motivating exercises is proposed.

*C. N. Bouza
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A First Course in Combinatorial Optimization

Jon Lee (2004)

Cambridge University Press

(ISBN 0-521-01012-8/pbk and 0-521-81151-1/hpb

xvi_211 \$32.00 [pbk] and \$90.00 [hpb]

As the title suggests it is another introductory book in Combinatorial Optimisation. It is intended to be for graduate courses in Operations Research. I think that in some universities the contents should not be too much in their under-graduates courses.

The book starts with an introduction, which motivates the problematic present in discrete optimization. Its connections with basic mathematics (algebra, geometry, numerical analysis, topology, etc.) and optimization is exposed. An example is discussed at large through the chapter for motivating and illustrating the purposes of the subject.

The first chapter, numbered zero, presents the needed basic knowledge in Linear Programming (Weyl's theorem, for polytopes, Farkas Lemma, Duality, Minkowsky and Complementarity theorems as well as Primal and Dual Simplex method, Lagrangian Relaxation Graphs, etc.).

Following the usual numeration Chapter 1 develops the concepts to be used in the sequel by introducing Matroids and Greedy algorithms. Different examples are discussed (vertex packing a star, maximum

spanning tree scheduling and swapping). Chapter 2 has as central theme the development of algorithms for solving Minimum Weight Dipaths problems. The Bellman-Ford , Floyd-Warshall and Dijkstra algorithms are presented. Problems usually encountered in applications are proposed for solving (recovering the Dipaths, binding, negative weight dicycle, minimum weight dipaths). Chapter 3 discusses the obtention of the maximal cardinality using Matroids intersection. Some simple applications (bipartite matching [BM], generic rigidity in the plane[GRP], Motion, directed Hamiltonian tours) are used for developing the key ideas. Different theoretical results as the Theorem of Planar Generic Rigidity are enumerated and some of them are proved. Sources for obtaining the proofs are cited. Chapter 4 is confined to matching in graphs. Berge's theorem is proved together with the Matching Matroids Result. The matching polytope problem is also discussed at large. A presentation of the Assignment Problem algorithm and Edmonds-Johnson algorithm are presented . Different examples are worked out.

The other 4 chapters follow a similar line for presenting Flows and Cuts, Cutting Planes, Branch and Bound and the optimization of submodular functions.

The notation and the terminology used in the book are given in an Appendix.

Additional lectures are recommended at the end of each chapter. A list with more than 30 bibliographical sources is given.

The text is certainly useful enough for recommending it as a text but it lacks of presenting and discussing which are the packages available, commercially or in the Web, that can be used for computing the presented combinatorial optimization problems.

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**Stochastic Models in operations research.
Vol.1 Stochastic Processes and Operating Characteristics.
Unabridged reprint of the 1982 original**

Daniel P.Hayman, and Matthew J.J Sobel
Dover Publications ISBN 0-486-43259
Xii_547 \$29.95

During the last decades the use of stochastic models in optimization has been revolutionised with the development of informatics. This fact is a motivation for the republication of this book from the 1982's edition made by McGraw Hill. To study stochastic models arising in the practice of Operations Research [OR] is a challenge that this book overcomes. Commonly in OR it is necessary to model processes and systems which involve multiple uncertainty sources and the distortions may be described, often, by models related with Stochastic Processes [SP]. Then the modeller needs to have a knowledge going beyond the general theory, as he must be able of dealing with particular models such as Markov Chains [MC] and Processes, Queuing etc. This stochastic models are used for modelling, summarising and/or capturing the uncertainty present in the data.

Different books deal with optimization in a stochastic frame work, looking for an approach to modelling OR problems, see for example Pflug, G. Ch. (1996, Kluwer). The book under review deals with the general conceptualisation of the theory of stochastic processes [SP], operating characteristics and stochastic systems focusing in their role in modelling usual problems appearing in OR's practices.

It is divide into two parts and introduction is the first chapter.

Part A deals with SP and models through 9 chapters, numbered from 2 to 10. In Chapter 2 different models of queues are presented as well as the ideas of posterior analysis. Some usually encountered OR's problems are developed (computer maintenance, congestion, occupancy, cash management, reservoir regulation, inventory, replenishment , harvesting, etc.). Chapter 3 addresses the basic models and ideas of SP; chapter 4 provides an introduction to Birth and Death processes through a reanalysis of the problems discussed in the previous chapter. The use of Kalman equations for transition functions, the steady state problems and other issues on M/M/1 queues are treated. It contains an extensive study of queues with Poisson arrivals and exponential service times. Chapters 5 and 6 are devoted to present Renewal Theory and how to deal with its concepts and models at large. Poisson SP and the distribution of the sum of random variables are studied. A discussion on the use of approximations to the analysis of simulation experiments in M/G/1 queues is developed. The main features of the existent theory on infinitely many servers queue are given. Sufficient conditions for the existence of steady state distribution for the different Operating Characteristics of GI/G/c queues are derived. The next three chapters deal with Markov Models. Chapter 7 is lengthy and develops the main issues related with Discrete MC. They play a key role in the analysis of M/G/1 queues as well as in other

stochastic models. The representation through digraphs is presented and six examples are discussed for establishing how this approach works in OR's modelling. The fact that renewal processes may be embedded in MC is discussed. Chapter 8 provides a similar discussion for the Continuous time MC and the next one on Semi- Markov and Markov Renewal. The first part closes with a short but rather complete discussion on Ergodicity for Stationary and Regenerative SP.

Part B develops a set of issues related with qualitative aspects of queuing, Chapter 11 considers models of storage systems and the generalities of some particular queuing models [work-in-systems, multi-server, queuing disciplines and priorities etc.]. Chapter 12 develops a similar exposition with important problems in a family of network of queues. SP's are used for describing how networks evolution and enhance to model more efficiently. Jackson Networks are presented and its modelling role in the study of the somewhat paradigmatic Multiprogram Computer System problem is developed. Chapter 13 points key results in Bounds and approximations to the OCs of important models as the delay in G1/G/1 and its applications, diffusion processes, steady state exponential delay, M/G/c queues etc.

The book contains 62 figures, 8 tables and an Appendix which provides the basics on Probability Theory and Mathematical Calculus. Each chapter includes bibliographical notes, a list of references and recommended further lecture.

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Invariant probabilities of Markov-Feller Operators and their supports

R. Zaharopol [2005]

Frontiers in Mathematics Series. Birkhäuser 26.80 USD
ISBN 3-7643-7134-x ; ISBN 13: 978-3-7643-7134-0 xiii+108

This book provides a good exposition of Markov-Feller's operators and Feller processes. It is adequate for those coming into the field and to specialists looking for a compendium of modern results in the theme. The interest in the theme is motivated by the importance of probability and the study of discrete –time homogeneous Markov processes in random phenomena as time series and convolution operators.

The first chapter presents the basic definitions and notation together with a broad set of results in topology and functional analysis needed for going on. It is good source for a short course for beginners. Chapter 2 is devoted to the derivation of the supporting formulae of ergodic measures, motions on orbits and their relation with invariant measures, topological lower mass and Markov-Feller pairs and operators. An extension of Krylov-Bogoloubov-Beboutoff ergodic decomposition is obtained and Oxtoby-Ulam theorem is extended. In chapter 3 the invariance of the probabilities of these pairs is analyzed, that they are uniquely ergodic only IFF dominant generic points exist. Chapter 4 introduces a class of $C_0(X)$ equicontinuous Markov-Feller pairs and several properties of it are proved. Many proofs of well-known theorems are original and many results are new.

A list of 78 papers and books is given. It will be useful in bookcase of Applied Mathematics departments.

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Measuring Biological Diversity

A. E. Maguiran [2003]

Blackwell Publishing 54.95 USD
ISBN 0-632-05633-9 viii+256

This book presents an original essay on the measurement of Biodiversity. It is composed of 7 chapters. The first one gives an account of the objectives of the oeuvre, the state of the art of the theme and the available software's Web sites. Chapter 2 discusses how the variation of abundance may be quantified. Graphical representations for comparative studies, are presented and illustrated through 9 different figures. Some statistical models are considered [the log and geometrical series, distributional approaches, goodness of fit as well as, McArthur, Tohishi, Hughe's dynamic, Caswell's neutral and Hubbel's neutral theory models]. The use of them in investigating the way of the manifestation of the abundance of species takes place in a set of 8 pages. Chapter 3 presents a description of the usage of richness measures. The concept is placed and the most popular indexes are presented: Margalif's and Menhiick's. They are easy computing indexes. The usage of accumulation curves and how to manage them are discussed. The abundance's shape and its use are described under parametric and non-parametric approaches. The second approach is by length the most popularly approach in practical applications. The author gives the essentials of the measures proposed by A. Chao [1984, A nonparametric estimation of the number of species. *Scand. J. Stat.*, 11, 265-270] and A. Chao & S.M. Lee [1992, Estimating the number of classes via simple coverage. *J. Amer. Stat. Ass.* 87, 210-17], R.S. Chazdon *et al.* [1998,

In "Forest Biodiversity research monitoring & modeling: conceptual background and old world case studies", ed. F. Dall Meire & J.A. Comiskey, Parthnow Pub.] among others. The proposed richness indexes and variances their are given. A comparison of some indexes is proposed using real world data.

Chapter 4 is directed to the discussion of diversity indices and some clues for choosing a particular measure is given. The dialectic of the relation diversity-richness is discussed at length. She presents the parametric measures the log series α , lognormal λ , Q statistics and the Shannon index as well as some related measures as Brillouin, Simpson, McIntosh, Berger-Parker, Nee-Harvey-Cotgreave, Camargo and Smith-Wilson indices as non parametric. Taxonomic functional based diversity indices are described. Chapter 5 presents the comparison of diversity through the concepts of individual based, sample-based, sampling effort, sample size, units of abundance, rarefaction and the ranking of communities. Jackknife is proposed for developing statistical tests. Chapter 6 focuses the study of diversity and its change in a continuous [space or time] and Chapter 7 closes the exposition with a discussion of the challenge that the involved scientific must face.

Each chapter ends with a summary of the contents. The book ends with a list of more than 350 titles running from 1921 to 2002. 9 real life examples are worked out. This is notable book for biometricians.

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The theory of Harmonic Space (New Geometry) - Strategic Geometry in the Economic Space

Sergey Lutkov (2004)
Pravda Severa 77pp
ISBN 5-85879-086-9

We have the posthumous oeuvre of the author. He provided a new geometry that allows to model theoretical economical models. The main theme is to model economic events belonging to a Riemannian Space. The set of economic events is considered a continuous of the system's phenomena. The continuity of the space permits to analyze economical objects looking for maximizing the benefits in a mathematically tractable frame. This theory seems to be of special importance for including environmental phenomena into the economical analysis of systems. From an economical point of view the main component is the firm which is named economic subject. Different qualifications of a subject permits to establish structures, which are dynamically structured. The author based the theory in the Theory of Harmonic Spaces where the integrity, infinitesimal continuity and other concepts and properties have a particular behavior. This structure allows considering simultaneously firms, objects, phenomena under the obedience of economic laws. We can distinguish in this structure some issues that characterizes an economic system:

- Each economical agent has needs [consumption vector] and works looking for obtaining the richness that permits to satisfy his consumption aims.
- The firm looks for satisfying the economic plans.
- The market places limits to production, technology etc, and they are function of economic ideas.
- The manifold defines classes and limits manifolds not only to economical ideas but to regions, countries and other economical territorial formations.
- A cost function describes systematic properties of the economic subjects fixing its values [accumulative utility or richness].
- The function is non uniformly distributed and the curvature of the space permits to obtain a description of the subjects, integrality and differentiability.
- The tensor manifolds describe an economical subject at all the levels.
- As a result general systematic properties of the economic subjects can be determined.

The proposed geometry is used for describing strategic games theory and managing laws. Subjective behaviors, positioning as rational choice, benefit transformation. They are described qualitatively using this point of view. A similar discussion of modern marketing concepts related with strategic management is developed.

This monograph is a result of a maturation of mathematical approach to economic modeling. The approach proposed poses a challenge to specialties to push on the ideas present in the oeuvre. It is a universal pity that the author is not in this world with us for developing this task.

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