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Daniel A. KLAIN, Gian-Carlo ROTA. — **Introduction to geometric probability.** — Un vol. broché, 14×22, de XIV, 178 p. — ISBN 0-521-59654-8. — Prix: £12.95 (relié: £35.00). — Cambridge University Press, Cambridge, 1997.

In this book, the theory of intrinsic volumes due to Hadwiger, McMullen, Santaló and others is presented, along with a complete and elementary proof of Hadwiger's characterization theorem of invariant measures in Euclidean n-space. The theory of the Euler characteristic is developed from an integral-geometric point of view. The authors prove the fundamental theorem of integral geometry, namely the kinematic formula. Finally the analogies between invariant measures on polyconvex sets and measures on order ideals of finite partially ordered sets are investigated.

Isi MITRANI. — **Probabilistic modelling.** — Un vol. broché, 15×23, de X, 223 p. — ISBN 0-521-58530-9. — Prix: £16.95 (relié: £45.00). — Cambridge University Press, Cambridge, 1998.

Probabilistic modelling is the most cost-effective means of performance and reliability evaluation of complex dynamic systems. The necessary fundamentals of probability theory are included, as well as an introduction to renewal, Poisson and Markov processes. Models arising in the fields of manufacturing, computing and communications, involving single or multiple service stations and one or more customer classes, are examined in some detail. Both exact and approximate solution methods are discussed, including recent techniques such as spectral expansion. Special attention is devoted to models of systems subject to breakdowns and repairs.

Statistique

A.C. DAVISON, D.V. HINKLEY. — **Bootstrap methods and their application.** — Cambridge series in statistical and probabilistic mathematics. — Un vol. broché, 18×26, de X, 582 p. + 1 disquette d'accompagnement. — ISBN 0-521-57471-4. — Prix: £24.95 (relié: £70.00). — Cambridge University Press, Cambridge, 1997.

Bootstrap methods are computer-intensive methods of statistical analysis that use simulation to calculate standard errors, confidence intervals and significance tests. This book gives a broad and up-to-date coverage of bootstrap methods with numerous applied examples, together with the underlying general concepts and basic theory without emphasis on mathematical rigour, developed in a coherent way with the necessary theoretical basis. Each chapter includes both practical and theoretical exercises. A valuable supplement is a disk of purpose-written S-plus programs for implementing the methods described in the text.

Ruma FALK. — **Understanding probability and statistics: a book of problems.** — Un vol. broché, 15,5×23, de XIII, 239 p. — ISBN 1-56881-071-7. — Prix: US$25.00. — A.K. Peters, Wellesley, Massachusetts, 1997.

This is a book of creative statistical problems intended to allay the mathematical fears of the average student through "experiencing the revelation of understanding". The collection encompasses a range of problems from high-school to graduate level and takes the active, hands-on approach to the assimilation of basic concepts. Through the use of humor and the familiar, the author has made an often overwhelming subject less intimidating. Because neither calculus nor other techniques of higher mathematics are required for arriving at solutions, the book is quite appropriate for non-mathematicians.

Bernard FLURY. — **A first course in multivariate statistics.** — Springer texts in statistics. — Un vol. relié, 21,5×24,5, de XIII, 713 p. — ISBN 0-387-98206-X. — Prix: DM 148.00. — Springer, New York, 1997.

The book starts at an elementary level, developing concepts of multivariate distributions from first principles. A chapter on the multivariate normal distribution reviews the classical parametric theory. Methods of estimation are explored using the plus-in principle as well as maximum likelihood. Two chapters on discrimination and classification, including logistic regression, are at the core of the book. Methods of testing hypotheses are developed from heuristic principles, followed by likelihood ratio tests and permutation tests. The powerful self-consistency is used to introduce principal components as a method of approximation. The book concludes with a chapter on finite mixture analysis, a topic of great practical and theoretical importance.

David A. HARVILLE. — **Matrix algebra from a statistician's perspective.** — Un vol. relié, 16,5×24,5, de XVII, 630 p. — ISBN 0-387-94978-X. — Prix: DM 108.00. — Springer, New York, 1997.

This book presents matrix algebra in a way that is well suited for those with an interest in statistics or a related discipline. It provides thorough and unified coverage of the fundamental concepts along with the specialized topics encountered in areas of statistics, such as linear statistical models and multivariate analysis. It includes a number of very useful results that have only been available from relatively obscure sources. Detailed proofs are provided for all results.

C. MALAGUERRA, S. MORGENTHALER, E. RONCHETTI, (Editors). — **Conference on statistical science honouring the bicentennial of Stefano Franscini's birth,** Ascona, November 18-20, 1996. — Monte Verità. — Un vol. relié, 17,5×24, de 245 p. — ISBN 3-7643-5707-X. — Prix: SFr. 88.00. — Birkhäuser Verlag, Basel, 1997.

Franscini was the first Italian-speaking Swiss to become a member of the Swiss Government and he spearheaded the use of statistics in policy fields such as education, economic development and politics. The first part of the book gives a historical appraisal of Stefano Franscini's life and work. The second part comprises papers on the relationship between statistical science and official statistics. The third and final part features a series of studies on new and emerging methodological issues in survey sampling and data analysis, highlighting some key repercussions of applied statistics research on data analysis in general and survey data analysis in particular.

Stephan MORGENTHALER. — **Introduction à la statistique.** — Méthodes mathématiques pour l'ingénieur, vol. 9. — Un vol. broché, 16×24, de X, 317 p. — ISBN 2-88074-372-9. — Prix: SFr. 66.30. — Presses polytechniques et universitaires romandes, Lausanne, 1997.

Première introduction en statistique et en probabilités, cet ouvrage traite les méthodes les plus courantes et donne une base théorique. Le début du livre consiste en une discussion sur les données susceptibles d'être soumises à une analyse statistique, et une initiation concise aux probabilités. Puis sont présentées les approches majeures de la statistique, soit l'estimation et les méthodes inférentielles. Enfin la dernière partie aborde différents outils statistiques. Complété par des exercices, ce livre est conçu comme un support pour un cours de deux semestres.

Julia K. PARRISH, Wiliam M. HAMNER, (Editors). — **Animal groups in three dimensions.** — Un vol. relié, 18,5×26, de XVII, 378 p. — ISBN 0-521-46024-7. — Prix: £60.00. — Cambridge University Press, Cambridge, 1998.

This book is about the ways in which many animals form groups, for instance, schools of fish, flocks of birds, etc... Covering both invertebrate and vertebrate species, the authors investigate

three-dimensional animal aggregations from a variety of disciplines, from physics to mathematics to biology. The first section of the book is devoted to the various methods used to collect three-dimensional data over time. The second section focuses on analytical methods used to quantify pattern, group kinetics, and inter-individual interactions within the group. The section on behavioral ecology and evolution deals with the functions of aggregative behavior from the point of view of an inherently selfish individual member. The final section presents an alternative to the empirical study of animal aggregation by the use of models.

Alvin C. RENCHER. — **Multivariate statistical inference and applications.** — Wiley series in probability and statistics. Texts and reference section. — Un vol. relié, 16×24, de XX, 559 p. + 1 disquette. — ISBN 0-471-57151-2. — Prix: £60.00. — John Wiley & Sons, New York, 1998.

This text is a user-friendly introduction to basic multivariate analysis theory and practice for statistics with little or no background in theoretical statistics. Among the many special features are: Clear, step-by-step explanations of all key concepts and procedures along with original, easy-to-follow proofs, numerous problems, examples and tables of distributions, many real-world data sets drawn from a wide range of disciplines, reviews of univariate procedures that give rise to multivariate techniques, an extensive survey of the world literature on multivariate analysis, an in-depth review of matrix theory, a disk including all the data sets and SAS command files for all examples and numerical problems found in the book.

Analyse numérique

M.D. BUHMANN, A. ISERLES, (Editors). — **Approximation theory and optimization: tributes to M.J.D. Powell.** — Un vol. relié, 15,5×23,5, de XIII, 220 p. — ISBN 0-521-58190-7. — Prix: £35.00. — Cambridge University Press, Cambridge, 1997.

This volume is derived from invited talks given at a meeting celebrating the sixtieth birthday of Professor Powell and, reflecting his own achievements, focuses on innovative work in optimization and in approximation theory. The individual papers have been written by leading authorities in their subjects and are a mix of expository articles and surveys of new work. They have all been reviewed and edited to form a coherent volume that represents the state of the art in an important discipline within mathematics, with highly relevant applications throughout science and engineering.

Werner HAUSSMANN, Kurt JETTER, Manfred REIMER, (Editors). — **Multivariate approximation: recent trends and results**. — Proceedings of the 2nd International Conference on Multivariate Approximation Theory held at Witten-Bommerholz, Germany, September 29-October 4, 1996. — Mathematical research, vol. 101. — Un vol. relié, 18×24, de 320 p. — ISBN 3-05-501770-6. — Prix: DM 138.00. — Akademie Verlag, Berlin, Wiley-VCH, Weinheim, 1997.

This is the presentation of the main results of the 2nd International Conference on Multivariate Approximation. There are contributions to the following topics: interpolation and hyperinterpolation on the sphere, quadrature, discrepancy and spherical designs, multivariate convex spline interpolation, triangular finite element spaces, polar form of splines, refinable spline pairs, local box dimension of fractal functions, symbolic treatment of algebraic systems, harmonic approximation and boundary behaviour... synthesis and analysis with multivariate wavelets and frames.