

Analyse numérique

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R.L. Stens: Sampling by generalized kernels. — A. Fischer: Sampling theory and wavelets. — N. Dyn: Approximation by translates of a radial function. — T. Pogány: Almost sure sampling restoration of band-limited stochastic signals. — M.M. Dodson and M.G. Beaty: Abstract harmonic analysis and the sampling theorem.

Joseph B. KADANE, Mark J. SCHERVISH, Teddy SEIDENFELD, (Editors). — **Rethinking the foundations of statistics.** — Cambridge studies in probability, induction, and decision theory. — Un vol. broché, 15,5×23, de x, 388 p. — Prix: £15.95 (relié: £42.50). — ISBN 0-521-64975-7. — Cambridge University Press, Cambridge, 1999.

This important collection of essays is a synthesis of foundational studies in Bayesian decision theory and statistics. An overarching topic of the collection is how the norms for Bayesian decision making should apply in settings with more than one rational decision maker. The essays then trace out some of the consequences of this turn for Bayesian statistics. There are four principal themes to the collection: cooperative, non-sequential decisions; the representation and measurement of “partially ordered” preferences; non-cooperative, sequential decisions; and pooling rules and Bayesian dynamics for sets of probabilities.

C. Radhakrishna RAO, Helge TOUTENBURG. — **Linear models: least squares and alternatives.** — Second edition. — With contributions by Andreas Fieger. — Springer series in statistics. — Un vol. relié, 16,5×24,5, de xv, 427 p. — ISBN 0-387-98848-3. — Prix: DM 136.00. — Springer, New York, 1999.

This book provides an up-to-date account of the theory and applications of linear models. It can be used as a text for courses in statistics at the graduate level as well as an accompanying text for other courses in which linear models play a part. The authors present a unified theory of inference from linear models with minimal assumptions, not only through least squares theory, but also using alternative methods of estimation and testing based on convex loss functions and general estimating equations. The book includes a discussion of: sensitivity analysis and model selection, incomplete data sets including regression diagnostics to identify non-MCAR-processes, the analysis of categorical data based on a unified presentation of generalized linear models including GEE-methods for correlated response.

Analyse numérique

Werner HAUSSMANN, Kurt JETTER, Manfred REIMER, (Editors). — **Advances in multivariate approximation.** — Proceedings of the 3rd International Conference on Multivariate Approximation Theory held at Witten-Bommerholz, Germany, September 27-October 2, 1998. — Mathematical research, vol. 107. — Un vol. relié, 18×24,5 de 334 p. — ISBN 3-527-40236-5. — Prix: DM 198.00. — Wiley-VCH, Berlin, 1999.

The following topics are covered: Node distributions on the sphere. Positive quadratures. Discrepancy and spherical designs. Fekete points. Interpolation and hyperinterpolation on the sphere. Modelling of geopotential data. Periodic, monotone and convex approximations. Stability of the fast Fourier transform. Interpolation with bivariate splines and periodic functions. Range restricted interpolation. Saturation phenomena for box spline operators. Universal harmonic functions. Best one-sided approximation by harmonic and blending functions. Besov regularity for the Stokes problem. Spherical polynomial approximations. Simultaneous approximation in the Dirichlet space. Weighted K-functionals and moduli of smoothness.

Bernard HÉRON, Françoise ISSARD-ROCH, Colette PICARD. — **Analyse numérique: exercices et problèmes corrigés.** — Sciences sup. — Un vol. broché, 17×24, de XII, 292 p. — ISBN 2-10-004372-2. — Prix: FF 175.00. — Dunod, Paris, 1999, diffusé en Suisse par Havas Services Suisse, Fribourg.

Ce recueil d'exercices et de problèmes d'analyse numérique s'adresse tout particulièrement aux étudiants de licence et de maîtrise de mathématiques, de mathématiques et ingénierie mathématique (MIM) et de mécanique et aux élèves-ingénieurs. Les énoncés, progressifs, sont répartis en cinq grands chapitres: Analyse matricielle; équations aux dérivées partielles elliptiques; optimisation; approximation d'équations aux dérivées partielles; méthodes numériques itératives. Les solutions, très détaillées et accompagnées de commentaires et de renvois bibliographiques, permettent une assimilation active des notions abordées.

Informatique

Jerry GLYNN, Theodore GRAY. — **The beginner's guide to Mathematica® Version 4.** — Un vol. relié, 20×23, de VIII, 434 p. — ISBN 0-521-77769-0. — Prix: £47.50. — Cambridge University Press, Cambridge, 2000.

This is a new edition of the book *The beginner's guide to Mathematica*. It teaches the basics of *Mathematica*'s powerful new Version 4, including chapters on its new high speed numerics, statistics and data analysis, and image processing. It also includes chapters on the interactive system for typesetting equations, on using style sheets, defining functions, creating graphs and notebooks, and on applying useful problem-solving techniques. Many concepts are illustrated with real life examples written in the authors' engaging dialog style.

George GRÄTZER. — **First steps in LATEX.** — Un vol. broché, 19×23,5, de XX, 131 p. — ISBN 0-8176-4132-7. — Prix: SFr. 36.00. — Birkhäuser, Boston, and Springer, New York, 1999.

This book is for the scientist, or technical typist who needs to learn quickly how to typeset articles containing mathematical formulas. This book will provide a quick introduction to LaTeX, including the American Mathematical Society's enhancements, so that your first article can be typeset in only a few hours. Key features include: simple and direct approach, "formula building blocks" to learn how to type math, a "formula gallery" to practise math formulas, samples to demonstrate the basic structure of LaTeX and AMS articles, useful appendices containing mathematical and text symbol tables, and a brief discussion of TeX, LaTeX, and the internet, a unique "Quick Finder" – supplementing a detailed table of contents and index – to look up common terms used in word processing and desktop publishing applications.

Arthur O. PITTENGER. — **An introduction to quantum computing algorithms.** — Progress in computer science and applied logic, vol. 19. — Un vol. relié, 16×24, de XII, 138 p. — ISBN 3-7643-4127-0. — Prix: SFr. 84.00. — Birkhäuser, Boston, 2000.

The purpose of this monograph is to provide the mathematically literate reader with an accessible introduction to the theory of quantum computing algorithms. The author briefly describes the historical context of quantum computing and provides the motivation, notation, and assumptions appropriate for quantum statistics, a non-dynamical, finite dimensional model of quantum mechanics. A discussion of the basic algorithms of Simon, Deutsch and Jozsa sets the stage for the presentation of Grover's search algorithm and Shor's factoring algorithm, key algorithms which crystallized interest in the practicality of quantum computers. The last part of