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whose state space is equipped with the structure of an infinite, locally-finite graph, or as a particular case, of a finitely generated group. The transition probabilities are assumed to be adapted to the underlying structure in some way that must be specified precisely in each case. From the probabilistic viewpoint, the question is what impact the particular type of structure has on various aspects of the behaviour of the random walk. Conversely, random walks may also be seen as a useful tool for classifying, or at least describing, the structure of graphs and groups. Links with spectral theory and discrete potential theory are also discussed.

## **Statistique**

Cees DIKS. — **Nonlinear time series analysis: methods and applications.** — Nonlinear time series and chaos, vol. 4. — Un vol. relié, 16×22,5, de VII, 209 p. — ISBN 981-02-3505-4. — Prix: £ 18.00. — World Scientific, Singapore, 1999.

The currently established methods for the analysis of time series were developed mainly in two fields: statistical time series analysis and the theory of dynamical systems. A prolific cross-fertilization has recently started to develop between these areas, and it is the author's intention to present some theory and methods in view of this development, indicating the connections between the two fields wherever possible. The author has tried to keep the material accessible to a readership with an interest in nonlinear time series analysis from a wide variety of research areas; only modest mathematical background knowledge is assumed and examples are given throughout to illustrate the ideas behind the methods presented.

Subir GHOSH, (Editor). — **Multivariate analysis, design of experiments, and survey sampling.** — Statistics: textbooks and monographs, vol. 159. — Un vol. relié, 16,5×23,5, de XVIII, 663 p. — ISBN 0-8247-0052-X. — Prix: US\$ 195.00. — Marcel Dekker, New York, 1999.

Featuring the work of nearly 50 international leaders, this book provides a risk prediction model for optimally selecting inspection samples from shipments containing items of highly variable monetary value... reviews recent progress on obtaining approximation to sampling distributions involved in sequentially designed experiments... studies the influence of random effects on the hazard rate, survival function, and other measures of dependence in survival models... investigates statistical model evaluation problems from an information theoretic point of view... considers the effects of elliptical populations for test statistics from multivariate normal theory... supplies a nonstandard introduction to (multiple) correspondence analysis and some of its generalizations... discusses generalized multivariate analysis of variance (MANOVA) models... analyzes work on the Bayesian analysis and design of  $M/M/c$  (including  $M/M/1$  and  $M/M/\infty$ ) queues... and more.

J.R. HIGGINS and R.L. STENS, (Editors). — **Sampling theory in Fourier and signal analysis: advanced topics.** — Oxford science publications. — Un vol. relié, 16×24, de XIII, 296 p. — ISBN 0-19-853496-5. — Prix: £ 60.00. — Oxford University Press, Oxford, 1999.

P.L. Butzer, M. Hauss: Applications of sampling theory to combinatorial analysis, Stirling numbers, special functions and the Riemann zeta function. — W.J. Walker: Sampling theory and the arithmetic Fourier transform. — J.R. Higgins: Derivative sampling – a paradigm example of multichannel methods. — D.H. Mugler: Computational methods in linear prediction for band-limited signals based on past samples. — W.N. Everitt and G. Nasri-Roudsari: Interpolation and sampling theories and linear ordinary boundary value problems. —

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. Beatty: 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 3<sup>rd</sup> 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.