extended account of a term if required. Many of the definitions are accompanied by graphical material to aid understanding. The book is a 50% expansion of Everitt's earlier dictionary.

David GRIFFITHS, W. Douglas STIRLING, K. Laurence WELDON. — **Understanding data: principles & practice of statistics.** — Un vol. broché, 18×24,5, de XIV, 401 p. — ISBN 0-471-33734-X. — Prix: £24.95. — John Wiley, Chichester, 1998.

This textbook is intended for introductory courses in statistics. It provides concepts and tools that will enable students to analyse data intelligently. The text provides a serious introduction to applied statistics that will suit any student. Statistical concepts and tools are best learned through guided experiences in data analysis. Emphasis is placed on collection, display, examination, summary and presentation of data before developing mathematical and inferential data. The level of mathematics is kept to a minimum, yet the concepts necessary for an understanding of statistics are carefully explained. This understanding is exercised in all aspects of the book.

Wiebe R. PESTMAN. — **Mathematical statistics: an introduction.** — De Gruyter textbook. — Un vol. broché, 17×24, de IX, 545 p. — ISBN 3-11-015356-4. — Prix: DM 79.00. — Walter de Gruyter, Berlin, 1998.

The text covers compulsory fundamental topics like estimation theory, sufficiency, hypothesis testing, analysis of variance, and non-parametric methods. Moreover, there are also introductory sections, about the Kolmogorov-Smirnov test, von Mises differentiation, influence functions, robustness, metrics on sets of distribution functions, smoothing techniques, bootstrap methods, and density estimation. The final chapter of the book contains a first course in vectorial statistics and multiple regression analysis.

Wiebe R. PESTMAN, Ivo B. ALBERINK. — **Mathematical statistics: problems and detailed solutions.** — De Gruyter textbook. — Un vol. broché, 17×24, de IX, 325 p. — ISBN 3-11-015358-0. — Prix: DM 79.00. — Walter de Gruyter, Berlin, 1998.

This book contains some 250 problems in mathematical statistics, varying in difficulty, together with their solutions. The book is primarily intended as a solutions manual to the textbook *Mathematical statistics – an introduction* (de Gruyter 1998), which also includes the problems. The text can be used by mathematics, natural science and economics students who have mastered the topics of a first-year course in calculus and linear algebra.

Analyse numérique

Yu.E. ANIKONOV, B.A. BUBNOV and G.N. EROKHIN. — **Inverse and ill-posed sources problems.** — Inverse and ill-posed problems series. — Un vol. relié, 16,5×24,5, de 239 p. — ISBN 90-6764-273-8. — Prix: DM 187.00. — VSP, Utrecht, 1997.

In this book, the authors have considered different settings of inverse problems of mathematical physics, both in linear and nonlinear cases. Emphasis is given to unique solvability and the search for constructive methods. In general, the problems considered are multidimensional. Effective methods for source recovery are given for sources of different nature. The suggested methods and results will be valuable for the development of both theoretical and practical problems of simulation and determining the sources on the basis of multidimensional inverse problems of mathematical physics.

D. BAINOV and V. KOVACHEV, (Editors). — **Proceedings of the third International Colloquium on Numerical Analysis: Plovdiv, Bulgaria, 13-17 August, 1994.** — Un vol. relié, 16,5×24, de 229 p. — ISBN 90-6764-193-6. — Prix: DM 161.00. — VSP, Utrecht, 1995.

The third International Colloquium on Numerical Analysis was organized by UNESCO and the Plovdiv Technical University, with the help of many international mathematical organizations. This proceedings volume contains selected invited talks which deal with the following topics: numerical methods of algebra, analysis, ordinary and partial differential equations. This book will be of value and interest to researchers and postgraduate students in the field of applied and pure mathematics, computer science and engineering.

John P. BOYD. — **Weakly nonlocal solitary waves and beyond-all-orders asymptotics: generalized solitons and hyperasymptotic perturbation theory.** — Mathematics and its applications, vol. 442. — Un vol. relié, 17×25, de XIX, 590 p. — ISBN 0-7923-5072-3. — Prix: Dfl.450.00. — Kluwer Academic Publishers, Dordrecht, 1998.

This text represents the first thorough examination of weakly nonlocal solitary waves. The book describes a class of waves which radiate away from the core of the disturbance but are nevertheless very long-lived nonlinear disturbances. Specific examples are provided in the areas of water waves, particle physics, dynamical systems theory, etc. A second theme is the description of hyperasymptotic perturbation theory and other extensions of standard perturbation methods. A third theme involves the use of Chebyshev and Fourier numerical methods to compute solitary waves. A fourth theme is the description of a large number of non-soliton problems in quantum physics, hydrodynamics, instability, etc. Later chapters provide a thorough examination of matched asymptotic expansions in the complex plane, the small denominator problem in Poincaré-Linstead ("Stokes") expansions, multiple scale extensions in powers of the hyperbolic secant and tangent functions and hyperasymptotic perturbation theory.

A. ISERLES, (Editor). — **Acta numerica,** vol. 7, 1998. — Un vol. relié, 18×25,5, de 377 p. — ISBN 0-521-64316-3. — Prix: £40.00. — Cambridge University Press, Cambridge, 1998.

Russel E. Caflisch: Monte Carlo and quasi-Monte Carlo methods. — Ronald A. De Vore: Nonlinear approximation. — Ilse C.F. Ipsen: Relative perturbation results for matrix eigenvalues and singular values. — Heinz-Otto Kreiss and Jens Lorenz: Stability for time-dependent differential equations. — M.J.D. Powell: Direct search algorithms for optimization calculations. — G.A. Watson: Choice of norms for data fitting and function approximation.

Joseph W. JEROME, (Editor). — **Modelling and computation for applications in mathematics, science, and engineering.** — Numerical mathematics and scientific computation. — Un vol. relié, 16,5×24, de XI, 215 p. — ISBN 0-19-850080-7. — Prix: £55.00. — Clarendon Press, Oxford, 1998.

This book provides a wide cross-section of the interdisciplinary uses of mathematics at a high level. The strength of the volume is its development of cutting-edge topical applications, studied with advanced numerical and algorithmic techniques, in a rigorous mathematical setting. The contributors are outstanding applied and computational mathematicians. Researchers and students of applied mathematics, and scientists and engineers engaged in scientific computing, will find here both fruitful areas for further research and clear expositions of topical subjects.

V.P. TANANA. — **Methods for solution of nonlinear operator equations.** — Inverse and ill-posed problems series. — Un vol. relié, 17×25, de 241 p. — ISBN 90-6764-272-X. — Prix: DM 189.00. — VSP, Utrecht, 1997.

Although there a large number of works devoted to nonlinear theory of ill-posed problems, there are few applications of this theory. In this monograph the author tries to solve this problem by considering the widest class of nonlinear equations and systems which play an important role in applications. For this class of equations the general regularization theory is constructed, and the problem of finite-dimensional approximations of regularized solutions is solved.

V.P. TANANA. — **Methods for solving operator equations.** — Inverse and ill-posed problems series. — Un vol. relié, 16,5×24,5, de 223 p. — ISBN 90-6764-237-1. — Prix: DM 205.00. — VSP, Utrecht, 1997.

This monograph thoroughly investigates the methods for solving linear operator equations from the viewpoint of their stability relative to disturbance of the initial information. It focuses the operator equations: $Au=f$, where u, f are desired and given elements of certain metric spaces (U and F respectively), and A is given operator acting from U onto F. The concept of an optimum to a method for solving the equation $Au=f$ with an approximately given operator is introduced and an analysis of the methods from the viewpoint of their optimums is pursued. Problems of regularizing operator equations with a disturbance in the operator are considered. General schemes for finite-dimensional approximation of regularized solutions are also formulated and investigated.

G. WINTHER ALTHAUS and E. SPEDICATO. — **Algorithms for large scale linear algebraic systems: applications in science and engineering.** — NATO ASI series, Series C: Mathematical and physical sciences, vol. 508. — Un vol. relié, 16,5×24,5, de VI, 407 p. — ISBN 0-7923-4975-X. — Prix: Dfl. 335.00. — Kluwer Academic Publishers, Dordrecht, 1998.

An overview of the most successful algorithms and techniques for solving large, sparse systems of equations and some algorithms and strategies for solving optimization problems. The most important topics dealt with concern iterative methods, especially Krylov methods, ordering techniques, and some iterative optimization tools.

Informatique

Kevin R. COOMBES, Brian R. HUNT, Ronald L. LIPSMAN, John E. OSBORN, Garrett J. STUCK. — **The *Mathematica*® primer.** — Un vol. broché, 19,5×23, de XVII, 214 p. — ISBN 0-521-63715-5. — Prix: £16.95 (relié: £50.00). — Cambridge University Press, Cambridge, 1998.

This book is a short, focused introduction to *Mathematica*®. Written for the beginning user, this engaging book contains an explanation of essential *Mathematica*® commands and interface. *Mathematica*® can be used to graph functions, solve equations, perform statistical tests, etc. In addition, it incorporates word processing and desktop publishing features for combining mathematical computations with text and graphics. You can even use it to create documents and graphics for the Web. Written for Version 3 of the program, this book can be used with earlier versions of *Mathematica*®.