Analyse combinatoire

cumbersome search for perfect mathematical solutions to embrace instead solutions which are "good enough". Computers have brought new practicality to mathematics and mathematical applications, and if mathematicians want their work to be relevant to the problems of the modern world they must increasingly recognize "the importance of being fuzzy", Sangalli warns.

Analyse combinatoire

Daniel BENEST, Claude FORESCHLÉ, (Editors). — **Analysis and modelling of discrete dynamical systems.** — Advances in discrete mathematics and applications, vol. 1. — Un vol. relié, 16×23,5, de X, 319 p. — ISBN 90-5699-625-8. — Prix: £45.00. — Gordon and Breach Science Publishers, Amsterdam, distributed by Marston Book Services, Abingdon, Oxon, U.K., 1998.

The theory of discrete dynamical systems, or mappings, has important applications in a number of domains of modern physics, including celestial mechanics and fluid mechanics. This volume provides a comprehensive introduction to the general study of mappings, with particular emphasis on their applications to the dynamics of the solar system. Featuring chapters based on lectures delivered by a panel of international experts at the School on Discrete Dynamical Systems (February 1996, Aussois, France), this book offers graduate students and reseachers in the field a single source for information that, until now, has been available only in widely dispersed journal articles.

Stephen B. MAURER, Anthony RALSTON. — **Discrete algorithmic mathematics.** — Second edition. — Un vol. relié, 19×24, de XIX, 884 p. — ISBN 1-56881-091-1. — Prix: US$59.00. — A.K. Peters, Natick, Massachussets, 1998.

Written in a clear and lively style, the book's emphasis is on themes and ideas, making it coherent and extensive. Special features include: extensive and detailed study of algorithms, emphasis on the recursive and inductive paradigms, thorough coverage of topics like difference equations, probability, and logic, a large number of problems with a hints and answers section and a complete index.

Bruce E. SAGAN, Richard P. STANLEY, (Editors). — **Mathematical essays in honor of Gian-Carlo Rota.** — Progress in mathematics, vol. 161. — Un vol. relié, 16×24, de IX, 463 p. — ISBN 3-7643-3872-5. — Prix: SFr. 148.00. — Birkhäuser, Boston, 1998.

The mathematical essays in this volume pay tribute to Gian-Carlo Rota on the occasion of his 64th birthday. The breadth and depth of Rota's interests, research, and influence are reflected in such areas as combinatorics, invariant theory, geometry, algebraic topology, representation theory, and umbral calculus, the latter being the subject of a paper coauthored by Rota himself. Other important areas of research that are touched in this outstanding collection include special functions, commutative algebra, and statistics.

Richard P. STANLEY. — **Enumerative combinatorics, vol. 2.** — Cambridge studies in advanced mathematics, vol. 62. — Un vol. relié, 16×23,5, de XII, 581 p. — ISBN 0-521-56069-1. — Prix: £45.00. — Cambridge University Press, Cambridge, 1999.

This volume covers the composition of generating functions, trees, algebraic generating functions, *D*-finite generating functions, noncommutative generating functions, and symmetric functions. The chapter on symmetric functions provides the only available treatment of this subject suitable for an introductory graduate course and focusing on combinatorics, especially

the Robinson-Schensted-Knuth algorithm. Also covered are connections between symmetric functions and representation theory. An appendix (written by Sergey Fomin) covers some deeper aspects of symmetric function theory, including jeu de taquin and the Littlewood-Richardson rule.

Ordre, treillis

George GRÄTZER. — **General lattice theory.** — 2nd ed. — Un vol. relié, 17,5×24, de XIX, 663 p. — ISBN 3-7643-5239-6. — Prix: SFr. 198.00. — Birkhäuser Verlag, Basel, 1998.

The core of *General Lattice Theory* combines the advantages of an introductory text with those of a monograph to introduce the general reader to lattice theory and to bring the expert up to date on the most recent developments. In this present edition, the work has been significantly updated and expanded. It contains an extensive new bibliography of 530 items and has been supplemented by eight appendices authored by an exceptional group of experts. The first appendix, written by the author, briefly reviews developments in lattice theory, specifically, the major results of the last 20 years and solutions of the problems proposed in the first edition.

Théorie des nombres

Rolf BERNDT, Ralf SCHMIDT. — **Elements of the representation theory of the Jacobi group.** — Progress in mathematics, vol. 163. — Un vol. relié, 16×24, de XIII, 213 p. — ISBN 3-7643-5922-6. — Prix: SFr. 88.00. — Birkhäuser Verlag, Basel, 1998.

The Jacobi group is a semidirect product of a symplectic group with a Heisenberg group. This text gathers for the first time from the representation theory of this group in both local (archimedean and non-archimedean) cases and in the global number field case. Via a bridge to Waldpurger's theory for the metaplectic group, complete classification theorems for irreducible representations are obtained. Further topics include differential operators, Whittaker models, Hecke operators, spherical representations and theta functions. The global theory is aimed at the correspondence between automorphic representations and Jacobi forms.

John H. CONWAY, Richard K. GUY. — **Le livre des nombres.** — Un vol. broché, 15,5×24, de VII, 310 p. — ISBN 2-212-03638-8. — Prix: FF 189.00. — Eyrolles, Paris, 1998.

Le livre des nombres est une source qui aborde le nombre sous ses différents aspects. — Le nombre et les langues: Comment les langues ont-elles créé le mot associé à un nombre? Quels sont les mots qui en dérivent? — Le comptage des nombres: Comment, par des arrangements appropriés, les mathématiciens ont-ils trouvé des relations entre des nombres dont les applications sont d'une incroyable variété? — La description des familles de nombres: L'inventivité des hommes est sans limite et l'on découvre comment et pourquoi ces familles se sont multipliées et continuent à se développer. Ce livre très complet, montre aussi la force de la géométrie dans la découverte de propriétés arithmétiques et algébriques. Cet ouvrage est accessible aux lecteurs non mathématiciens.

Dinakar RAMAKRISHNAN, Robert J. VALENZA. — **Fourier analysis on number fields.** — Graduate texts in mathematics, vol. 186. — Un vol. relié, 16×24, de XXI, 350 p. — ISBN 0-387-98436-4. — Prix: DM 79.00. — Springer, New York, 1999.

The general aim of this book is to provide a modern approach to number theory through a blending of complementary algebraic and analytic perspectives, emphasizing harmonic analysis on topological groups. The more particular goal is to cover John Tate's visionary thesis, giving