

# Géométrie

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E. RAMÍREZ DE ARELLANO, M.V. SHAPIRO, L.M. TOVAR, N.L. VASILEVSKI, (Editors). — **Complex analysis and related topics.** — Operator theory advances and applications, vol. 114. — Un vol. relié, 17,5×24, de 284 p. — ISBN 3-7643-6228-6. — Prix: SFr. 138.00. — Birkhäuser, Basel, 2000.

This volume is a collection of up-to-date research and expository papers on different aspects of complex analysis, including relations to operator theory and hypercomplex analysis. The articles cover many important and essential subjects, such as the Schrödinger equation, sub-elliptic operators, Lie algebras and superalgebras, Toeplitz and Hankel operators, reproducing kernels and  $\mathbf{Q}_p$  spaces, among others. Most of the papers were presented at the International Symposium on Complex Analysis and Related Topics, held in Cuernavaca (Morelos), Mexico, in November 1996.

Jürgen ROSSMANN, Peter TAKÁČ, Günther WILDENHAIN, (Editors). — **The Maz'ya anniversary collection, volume 1: On Maz'ya's work in functional analysis, partial differential equations and applications.** — Operator theory advances and applications, vol. 109. — Un vol. relié, 17,5×24, de XII, 364 p. — ISBN 3-7643-6201-4. — Prix: SFr. 198.00. — Birkhäuser, Basel, 1999.

V.G. Maz'ya is author or co-author of more than 300 scientific works on various fields of functional analysis, function theory, numerical analysis, partial differential equations and their applications. This collection of articles in two volumes is dedicated to him on the occasion of his 60<sup>th</sup> birthday. This first volume contains surveys on his work in different fields of mathematics or on areas to which he made essential contributions. Other articles of this book have their origin in the common work with Maz'ya.

Jürgen ROSSMANN, Peter TAKÁČ, Günther WILDENHAIN, (Editors). — **The Maz'ya anniversary collection, volume 2: Rostock Conference on Functional Analysis, Partial Differential Equations and Applications.** — Operator theory advances and applications, vol. 110. — Un vol. relié, 17,5×24, de XVI, 352 p. — ISBN 3-7643-6202-2. — Prix: SFr. 198.00. — Birkhäuser, Basel, 1999.

This is the second volume of a collection of articles dedicated to V.G. Maz'ya on the occasion of his 60<sup>th</sup> birthday. It contains most of the invited lectures of the Conference on Functional Analysis, Partial Differential Equations and Applications held in Rostock in September 1998 in honor of V.G. Maz'ya. Here different problems of functional analysis, potential theory, linear and nonlinear partial differential equations, theory of function spaces and numerical analysis are treated. The authors, who are outstanding experts in these fields, present surveys as well as new results.

## **Géométrie**

Michel ALESSANDRI. — **Thèmes de géométrie: groupes en situation géométrique.** — Agrégation de mathématiques. — Un vol. broché, 17×24, de 254 p. — ISBN 2-10-004556-3. — Prix: FF 175.00. — Dunod, Paris, 1999, diffusé en Suisse par Havas Services Suisse, Fribourg.

La première partie de ce livre développe et illustre abondamment le langage géométrique des actions de groupes. La seconde propose quatre thèmes de réflexion présentés sous la forme de problèmes dont les niveaux sont variés et dont le corrigé très détaillé est largement commenté: deux aspects géométriques du groupe modulaire; les sous-groupes de torsion des groupes linéaires; quelques réflexions sur la géométrie vectorielle euclidienne; une introduction

à la géométrie hyperbolique en dimension deux. Chacun de ces textes est autonome, et peut aussi bien servir à préparer l'écrit du concours qu'à enrichir bon nombre de leçons d'oral en algèbre-géométrie et en analyse.

James W. ANDERSON. — **Hyperbolic geometry**. — Springer undergraduate mathematics series. — Un vol. broché,  $17 \times 23,5$ , de IX, 230 p. — ISBN 1-85233-156-9. — Prix: DM 59.00. — Springer, London, 1999.

This book provides a self-contained introduction to the subject, taking the approach that hyperbolic geometry consists of the study of those quantities invariant under the action of a natural group of transformations. Topics covered include the upper half-space model of the hyperbolic plane, Möbius transformations, the general Möbius group and the subgroup preserving path length in the upper half-space model, arc-length and distance, the Poincaré disc model, convex subsets of the hyperbolic plane, the Gauss-Bonnet formula for the area of a hyperbolic polygon and its applications.

J.-R. SACK, J. URRUTIA, (Editors). — **Handbook of computational geometry**. — Un vol. relié,  $17 \times 25$ , de X, 1027, 43 p. — ISBN 0-444-82537-1. — Prix: Dfl. 375.00. — Elsevier, Amsterdam, 2000.

This handbook will be an important source of information for all of us interested in one way or another in computational geometry. The book presents chapters which survey in detail most of the research available to date in this field. It contains survey papers in the following fundamental topics: arrangements, Voronoi diagrams, geometric data structures (incl. point location, convex hulls, etc.), spatial data structures, polygon decomposition, randomized algorithms, derandomization, parallel computational geometry (deterministic and randomized) visibility, art gallery and illumination problems, closest point problems, link distance problems, similarity and geometric objects, Davenport-Schinzel sequences, and spanning trees and spanners. There are also three chapters devoted to applications of computer geometry to other fields of science: geographical information systems, geometric shortest paths and network optimization, and mesh generation. In addition, there is a chapter devoted to robustness and numerical issues, and chapters on animation and graph drawing.

## ***Géométrie différentielle***

S.S. CHERN, W.H. CHEN, K.S. LAM. — **Lectures on differential geometry**. — Series on university mathematics, vol. 1. — Un vol. broché,  $15,5 \times 21,5$ , de X, 356 p. — ISBN 981-02-4182-8. — Prix: £ 19.00. — World Scientific, Singapore, 1999.

The present book is a translation and an expansion of an introductory text based on a lecture series delivered in Peking University in 1980. This translation aims at preserving, as far as possible, both the contents and style of Professor Chern's lectures. *Contents*: Differentiable manifolds. — Multilinear algebra. — Exterior differential calculus. — Connections. — Riemannian geometry. — Lie groups and moving frames. — Complex manifolds. — Finsler geometry. — Historical notes. — Differential geometry and theoretical physics.

Franki J.E. DILLEN, Leopold C.A. VERSTRAELEN, (Editors). — **Handbook of differential geometry, vol. 1**. — Un vol. relié,  $17,5 \times 24,5$ , de XI, 1054 p. — ISBN 0-444-82240-2. — Prix: Dfl. 350.00. — North-Holland, Amsterdam, 2000.

All chapters of the Handbook are written by experts in the area and contain a large bibliography. The authors have freedom on the length, style and depth of their contributions. In