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Mesure et intégration

M. CARTER, B. VAN BRUNT. — **The Lebesgue-Stieltjes integral: a practical introduction.** — Undergraduate texts in mathematics. — Un vol. relié, 16×24 , de IX, 228 p. — ISBN 0-387-95012-5. — Prix : DM 89.00. — Springer, New York 2000.

The authors aim to introduce the Lebesgue-Stieltjes integral on the real line in a natural way as an extension of the Riemann integral. They make the treatment as practical as possible. The evaluation of Lebesgue-Stieltjes integrals is discussed in detail, as are the key theorems of integral calculus as well as the standard convergence theorems. The book then concludes with the brief discussion of multivariate integrals and surveys of L^p spaces and some applications. Exercises, which extend and illustrate the theory, and provide practice in techniques, are included.

Fonctions d'une variable complexe

Steven G. KRANTZ. — **Handbook of complex variables.** — Un vol. relié, 16×24 , de XXIV, 290 p. — ISBN 0-8176-4011-8. — Prix : SFr. 128.00. — Birkhäuser, Boston, 2000.

This text is a comprehensive reference work for scientists and engineers who need to know and use essential information and methods involving complex variables and analysis. Its focus is on basic concepts and informational tools for mathematical practice: solving problems in applied mathematics, science and engineering. The information is self-contained and accessible to a broad readership. All the indispensable ideas are presented, as well as applications topics and a brief survey of available computer software. The material has been carefully organized for quick, convenient reference by specialists and non-specialists alike.

Fonctions de plusieurs variables complexes

P. DOLBEAULT, A. IORDAN, G. HENKIN, H. SKODA, J.-M. TRÉPREAU, (Editors). — **Complex analysis and geometry: International Conference in honor of Pierre Lelong.** — Progress in mathematics, vol. 188. — Un vol. relié, 16×24 , de XIV, 241 p. — ISBN 3-7643-6352-5. — Prix : SFr. 98.00. — Birkhäuser, Basel, 2000.

The book opens with an exposition of the achievements of Pierre Lelong on plurisubharmonic functions, closed positive currents, and their further study by other mathematicians. Moreover, a list of eleven open problems is given. All other contributions contain new results related, for example, to the following items: capacities, product of positive currents, L^2 extension theorems, Bergman kernels and metrics, new properties of convex domains of finite type: non compact boundaries of Levi-flat hypersurfaces of C^2 , compact boundary problems as application of compactly supported measures orthogonal to polynomials, Hartogs' theorem on some open subsets of a projective manifold, Malgrange vanishing theorem with support conditions, etc.

Jacque FARAUT, Soji KANEYUKI, Adam KORÁNYI, Qi-keng LU, Guy ROOS. — **Analysis and geometry on complex homogeneous domains.** — Progress in mathematics, vol. 185. — Un vol. relié, $16,5 \times 24$, de XVII, 540 p. — ISBN 0-8176-4138-6. — Prix : SFr. 118.00. — Birkhäuser, Boston, 2000.

This introductory text covers a number of important areas in complex analysis and geometry. Written by experts in their respective fields, each of the five chapters unfolds from the basics to the more complex. Unlike other more laborious introductory texts, the exposition here is rapid-paced and efficient, without compromising proofs and examples that enable the reader to grasp

the essentials. The most basic type of domain examined is the bounded symmetric domain originally described and classified by Cartan and Harish-Chandra. *Contents*: Function spaces on complex semi-groups, by Jacques Faraut. — Graded Lie algebras and pseudo-Hermitian symmetric spaces, by Soji Kaneyuki. — Function spaces on bounded symmetric domains, by Adam Korányi. — The heat kernels of non compact symmetric spaces, by Qi-keng Lu. — Jordan triple systems, by Guy Roos.

Jiji KAJIWARA, Zhong LI, Kwang Ho SHON, (Editors). — **Finite or infinite dimensional complex analysis.** — Proceedings of the seventh international colloquium. — Lecture notes in pure and applied mathematics, vol. 214. — Un vol. broché, 17,5×25,5, de xiv, 630 p. — ISBN 0-8247-0442-8. — Prix: US\$195.00. — Marcel Dekker, New York, 2000.

Presenting the proceedings from the Seventh International Colloquium on Finite or Infinite Dimensional Complex Analysis held in Fukuoka, Japan, this state-of-the-art reference offers multiple perspectives and numerous research examples on complex variables, Clifford algebra variables, hyperfunctions, and numerical analysis. Exhibiting exclusive contributions by over 80 specialists in the field, *Finite or Infinite Dimensional Complex Analysis...* discusses the main branches of complex analysis and its applications... explores a variety of dimensions in Clifford algebra such as quaternionic and octonionic variables... covers polynomials including the Pisier-Schütt theorem... investigates various aspects of holomorphic functions—extensions, ideals, mappings, and Schauder decompositions... details research on Hardy and Chern classes... applies the Hamiltonian Algorithm to acoustics... and much more.

Thomas PETERNELL, Frank-Olaf SCHREYER, (Editors). — **Complex analysis and algebraic geometry: a volume in memory of Michael Schneider.** — Un vol. relié, 17×25, de x, 406 p. — ISBN 3-11-016204-0. — Prix: DM 298.00. — Walter de Gruyter, Berlin, 2000.

The volume consists of invited refereed papers dedicated to the memory of Michael Schneider. The contributions cover a wide spectrum in complex analysis and algebraic geometry; the main focus is on: higher dimensional varieties and Kähler geometry, moduli spaces and deformation theory, surfaces and 4-manifolds, real algebraic geometry. A part of the articles grew out of a symposium in honour of Michael Schneider (18.5.1942-29.8.1997), held in Bayreuth in June 1998 with about 80 participants.

Equations différentielles ordinaires

Werner BALSER. — **Formal power series and linear systems of meromorphic ordinary differential equations.** — Universitext. — Un vol. relié, 16,5×24,5, de xviii, 299 p. — ISBN 0-387-98690-1. — Prix: DM 94.00. — Springer, New York, 2000.

Simple ordinary differential equations may have solutions in terms of power series whose coefficients grow at such a rate that the series has a radius of convergence equal to zero. In fact, every linear meromorphic system has a formal solution of a certain form, which can be relatively easily computed, but which generally involves such power series diverging everywhere. In this book, the author presents the classical theory of meromorphic systems of ODEs in the new light shed upon it by the recent achievements in the theory of summability of formal power series.

Peter E. HYDON. — **Symmetry methods for differential equations: a beginner's guide.** — Cambridge texts in applied mathematics. — Un vol. broché, 15,5×23, de xi, 213 p. — ISBN 0-521-49786-8. — Prix: £18.95 (relié: £50.00). — Cambridge University Press, Cambridge, 2000.

Symmetry is the key to solving differential equations. There are many well-known techniques for obtaining exact solutions, but most of them are merely special cases of a few powerful