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Kapitel: Fonctions de plusieurs variables complexes

equations in the complex plane, numerical methods, and more. Part II contains conformal mappings, asymptotic expansions, and the study of Riemann-Hilbert problems. The authors also provide an extensive array of applications, illustrative examples, and homework exercises. The new edition has been improved throughout and is ideal for use in introductory undergraduate level courses in complex variables.

John Mackintosh HOWIE. — **Complex analysis.** — Springer undergraduate mathematics series. — Un vol. broché, 18×24, de XI, 260 p. — ISBN 1-85233-733-8. — Prix: €29.95. — Springer, London, 2003.

This book takes account of the varying needs and backgrounds and provides a self-study text for students in mathematics, science and engineering. Beginning with a summary of what the student needs to know at the outset, it covers all the topics likely to feature in a first course in the subject, including: complex numbers, differentiation, integration, Cauchy's theorem and its consequences, applications of contour integration, Laurent series and the residue theorem, conformal mappings and harmonic functions. A brief final chapter explains the Riemann hypothesis, the most celebrated of all the unsolved problems in mathematics, and ends with a short descriptive account of iteration, Julia sets and the Mandelbrot set. Clear and careful explanations are backed up with worked examples and more than 100 exercises, for which full solutions are provided.

Fonctions de plusieurs variables complexes

James CARLSON, Stefan MÜLLER-STACH, Chris PETERS. — **Period mappings and period domains.** — Cambridge studies in advanced mathematics, vol. 85. — Un vol. relié, 16×23,5, de XVI, 430 p. — ISBN 0-521-81466-9. — Prix: £65.00. — Cambridge University Press, Cambridge, 2003.

The basic theory as developed by Griffiths is explained in the first part of the book. Then, in the second part spectral sequences and Koszul complexes are introduced and are used to derive results about cycles on higher dimensional algebraic varieties such as the Noether-Lefschetz theorem and Nori's theorem. Finally, in the third part differential geometric methods are explained leading up to proofs of Arakelov-type theorems, the theorem of the fixed part, the rigidity theorem, and more. Higgs bundles and relations to harmonic maps are discussed, and this leads to striking results such as the fact that compact quotients of certain period domains can never admit a Kähler metric or that certain lattices in classical Lie groups can't occur as the fundamental group of a Kähler manifold.

Ian GRAHAM, Gabriela KOHR. — **Geometric function theory in one and higher dimensions.** — Monographs and textbooks in pure and applied mathematics, vol. 255. — Un vol. relié, 15,5×23,5, de XV, 530 p. — ISBN 0-8247-0976-4. — Prix: US$185.00. — Marcel Dekker, New York, 2003.

This text/reference is the first book to combine classical results in univalent complex function theory and generalizations of these results to several complex variables. It presents a unique overview of current progress in the field, including the authors' personal research detailing valuable results that lead to improvements in existence theorems for the Loewner differential equation in higher dimensions. Focusing on growth, distortion, covering theorems, and coefficient estimates, this book discusses the compactness of the analog of the Carathéodory class in several variables... offers a detailed study of Loewner chains in one variable and in several variables... studies various classes of univalent mappings according to their geometrical

definitions... examines the theory of linear-invariant families on the Euclidean unit ball and the polydisc... introduces the infinite-dimensional theory of univalent mappings... and provides numerous exercises in each chapter.

Équations différentielles ordinaires

William E. BOYCE, Richard C. DIPRIMA. — **Équations différentielles.** — Adaptation française: Richard LABONTÉ, avec la collaboration de Fernand BAUDET, traduction de l'américain: Louise DUROCHER. — Un vol. broché, 21×27,5, de X, 630 p. — ISBN 2-89461-715-1. — Prix: SFr. 110.50. — Chenelière/McGraw-Hill, Montréal, 2002, diffusé par Servidis, Lonay, Suisse.

Avant-propos: Cet ouvrage a été rédigé du point de vue du mathématicien dont l'intérêt pour les équations différentielles peut être soit théorique, soit pratique, soit quelque part entre les deux. Nous avons cherché à combiner un exposé solide et précis (mais non abstrait) de la théorie élémentaire des équations différentielles avec beaucoup d'accent sur les méthodes de résolution, l'analyse et l'approximation des solutions. Ce manuel s'adresse d'abord aux étudiants de premier cycle en mathématiques, en sciences ou en ingénierie... Le préalable essentiel est la connaissance pratique du calcul différentiel et intégral acquise durant un cours de deux ou trois semestres ou l'équivalent... un bon manuel doit pouvoir être adapté à diverses stratégies d'enseignement. Cela implique au moins deux choses. Premièrement, le professeur doit pouvoir choisir les sujets qu'il désire traiter et l'ordre dans lequel il souhaite enseigner cette matière. Deuxièmement, le manuel doit être utile aux étudiants qui ont accès à une grande variété de technologies. Le présent manuel permet cette souplesse car nous nous sommes efforcés dans la mesure du possible de rendre chaque chapitre indépendant les uns des autres...

Équations aux dérivées partielles

Yu. Ya. BELOV. — **Inverse problems for partial differential equations.** — Inverse and ill-posed problems series. — Un vol. relié, 16×24,5, de VIII, 211 p. — ISBN 90-6764-358-0. — Prix: € 128.00. — VSP, Utrecht, 2002.

This monograph is devoted to identification problems of coefficients in equations of mathematical physics. It investigates the existence and uniqueness of the solutions for identification coefficient problems in parabolic and hyperbolic equations and equation systems of composite type. It includes a study on the problems with Cauchy data and equations in which the Fourier transform with respect to the chosen variable is supposed to occur. Differential properties of solutions for direct problems and their behaviour under great values of time are studied on the basis of solution properties for direct problems. In addition, identification problems with one or two unknown coefficients are investigated.

Systèmes dynamiques et théorie ergodique

R. Daniel MAULDIN, Mariusz URBAŃSKI. — **Graph directed Markov systems: geometry and dynamics of limit sets.** — Cambridge tracts in mathematics, vol. 148. — Un vol. relié, 16×23, de XI, 281 p. — ISBN 0-521-82538-5. — Prix: £37.50. — Cambridge University Press, Cambridge, 2003.

The main focus of this book is the exploration of the geometric and dynamic properties of a far reaching generalization of a conformal iterated function system – a graph directed Markov