

Fonctions de plusieurs variables complexes

Objektyp: **Chapter**

Zeitschrift: **L'Enseignement Mathématique**

Band (Jahr): **44 (1998)**

Heft 1-2: **L'ENSEIGNEMENT MATHÉMATIQUE**

PDF erstellt am: **21.07.2024**

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used as a component of a lecture course tailored to the particular audience. Parts of the book are suitable for a final year undergraduate course or for a master's level course. A number of applications are given, principally to number theory and arithmetic progressions (through Van der Waerden's theorem and Szemerédi's theorem).

H.A. PRIESTLEY. — **Introduction to integration.** — Oxford science publications. — Un vol. relié, $16,5 \times 24$, de x, 306 p. — ISBN 0-19-850124-2. — Prix: £40.00. — Clarendon Press, Oxford, 1997.

The book begins with a simplified Lebesgue-style integral (in lieu of the more traditional Riemann integral), intended for a first course in integration. This suffices for elementary applications, and serves as an introduction to the core of the book. The final chapters present selected applications, mostly drawn from Fourier analysis. The emphasis throughout is on integrable functions rather than on measure. Prerequisites are the rudiments of integral calculus and a first course in real analysis.

Beloslav RIECAN and Tibor NEUBRUNN. — **Integral, measure, and ordering.** — Mathematics and its application, vol. 411. — Un vol. relié, $16,5 \times 24,5$, de XIII, 378 p. — ISBN 0-7923-4566-5. — Prix: Dfl. 285.00. — Kluwer Academic Publishers, Dordrecht, 1997.

This book is concerned with three main themes. The first deals with ordering structures such as Riesz spaces and lattice ordered groups and their relation to measure and integration theory. The second is the idea of fuzzy sets, which is quite new, particularly in measure theory. The third subject is the construction of models of quantum mechanical systems, mainly based on fuzzy sets. In this way some recent results are systematically presented. This volume is suitable not only for specialists in measure and integration theory, ordered spaces, probability theory and ergodic theory, but also for students of theoretical and applied mathematics.

Fonctions d'une variable complexe

Srishti D. CHATTERJI. — **Cours d'analyse, vol. 2: Analyse complexe.** — Un vol. broché, 16×24 , de XX, 536 p. — ISBN 2-88074-346-X. — Prix: SFr. 89.00. — Presses polytechniques et universitaires romandes, Lausanne, 1997.

L'objectif principal de ce volume est de donner une introduction à la théorie classique des fonctions holomorphes d'une variable complexe. Les fonctions holomorphes sont présentées en utilisant les équations de Cauchy-Riemann et leurs développements en séries entières. Les théorèmes principaux de la théorie de Cauchy ainsi que leur utilisation pour l'étude des séries de Taylor et de Laurent sont présentés en détail. Quelques fonctions spéciales (comme gamma, zêta) sont introduites avec soin. Les applications conformes (y compris le théorème de Riemann) sont traitées en détail. Une introduction à la théorie des fractions continues complexes est donnée comme illustration de différents modes de présentation des fonctions holomorphes. Le livre termine avec une courte introduction rigoureuse aux surfaces de Riemann.

Fonctions de plusieurs variables complexes

Fausto DI BIASE. — **Fatou type theorems: maximal functions and approach regions.** — Progress in mathematics, vol. 147. — Un vol. relié, 16×25 , de VIII, 152 p. — ISBN 0-8176-3976-4. — Prix: SFr. 78.00. — Birkhäuser, Boston, 1998.

One of the basic issues involved in the understanding of the boundary behavior of harmonic (holomorphic) functions, defined on domains in real (complex) Euclidean spaces and subject to

certain growth conditions, is the description of the regions of approach to the boundary, along which the functions converge almost everywhere to their boundary values. This fundamental chapter of analysis was reopened in 1984 by A. Nagel and E.M. Stein, with the discovery of approach regions of convergence that are larger than the natural approach regions. This monograph provides an introduction, as well as an exposition of the latest results in an active area of research

Equations aux dérivées partielles

Ferruccio COLOMBINI, Nicolas LERNER. — **Geometrical optics and related topics.** — Progress in nonlinear differential equations and their applications, vol. 32. — Un vol. relié, 16,5 × 24,5 de vi, 361 p. — ISBN 0-8176-3958-6. — Prix: SFr. 138.00. — Birkhäuser, Boston, 1997.

This volume contains 14 research papers which are expanded versions of conferences given at a meeting held in Cortona, Italy in the fall of 1996. The topics include blowup questions for quasilinear equations in 2-d, time decay of waves in L^p , uniqueness results for systems of conservation laws in 1-d, concentration effects for critical nonlinear wave equations, diffraction of nonlinear waves, propagation of singularities in scattering theory, and caustics for semilinear oscillations. Other topics linked to microlocal analysis are Sobolev spaces in Weyl-Hörmander calculus, local solvability for pseudodifferential equations, and hypoellipticity for highly degenerate operators.

Michael DEMUTH, Bert-Wolfgang SCHULZE, (Editors). — **Differential equations, asymptotic analysis, and mathematical physics.** — Mathematical research, vol. 100. — Un vol. relié, 18,5 × 24, de 424 p. — ISBN 3-05-501769-2. — Prix: DM 148.00. — Akademie Verlag, Berlin, 1997.

This volume contains a collection of original papers, associated with the International Conference on Partial Differential Equations, held in Potsdam, July 29 to August 2, 1996. This event is connected with the activities of the Max Planck Research Group for Partial Differential Equations at Potsdam. The main topics concern recent progress in partial differential equations, microlocal analysis, pseudo-differential operators on manifolds with singularities, aspects of differential geometry and index theory, operator theory and operators algebras, stochastic spectral analysis, semigroups, Dirichlet forms, Schrödinger operators, semiclassical analysis, and scattering theory.

Michael DEMUTH, Elmar SCHROHE, Bert-Wolfgang SCHULZE, Johannes SJÖSTRAND, (Editors). — **Spectral theory, microlocal analysis, singular manifolds.** — Mathematical topics, vol. 14. — Advances in partial differential equations. — Un vol. relié, 18 × 24,5, de 366 p. — ISBN 3-05-501776-5. — Prix: DM 148.00. — Akademie Verlag, Berlin, Wiley-VCH, Weinheim 1997.

The first contribution addresses domain perturbations for generalized Schrödinger operators and the influence of the capacity on spectral data. The next topic is the scattering of weakly interacting solitons for nonlinear Schrödinger equations. There follows an article discussing the minimal smoothness assumptions on the domain under which the asymptotics of the counting function for the eigenvalues of elliptic boundary value problems can be determined. Fourier integral operators with degenerate phase function are studied. Further articles are devoted to the regularity and asymptotics of solutions to partial differential equations on singular manifolds.