serve as an introduction to contemporary mathematics as a whole as it develops background material from algebraic topology, differential geometry, the calculus of variations, elliptic PDE, and algebraic geometry. It is unique among textbooks on Riemann surfaces in including an introduction to Teichmüller theory. The analytic approach is likewise new as it is based on the theory of harmonic maps. For this 2nd edition the author has further improved aspects of presentation of various parts of the text.

Fonctions de plusieurs variables complexes

Ingrid BAUER, Fabrizio CATANESE, Yujiro KAWAMATA, Thomas PETERNELL, Yum-Tong SIU, (Editors). — **Complex geometry: collection of papers dedicated to Hans Grauert**. — Un vol. relié, 16 × 24, de XXII, 340 p. — ISBN 3-540-43259-0. — Prix: SFr. 133.00. — Springer, Berlin, 2002.

This book is a collection of research articles in algebraic geometry and complex analysis dedicated to Hans Grauert. The contributions of the authors and editors have been put together to honor the distinguished scientist whose inspiration and pioneering fundamental work have left such a widespread and lasting impact on the field. The volume contains important new results, solutions to longstanding conjectures, elegant new proofs and new perspectives for future research. The topics range from surface theory and commutative algebra, linear systems, moduli spaces, classification theory, Kähler geometry to holomorphic dynamical systems.

Klaus FRITZSCHE, Hans GRAUERT. — **From holomorphic functions to complex manifolds**. — Graduate texts in mathematics, vol. 213. — Un vol. relié, 16 × 24, de XV, 392 p. — ISBN 0-387-95395-7. — Prix: € 64.95. — Springer, New York, 2002.

This book is an introduction to the theory of complex manifolds. The authors' intent is to familiarize the reader with the most important branches and methods in complex analysis of several variables and to do this as simply as possible. Therefore, the abstract concepts involving sheaves, coherence, and higher-dimensional cohomology have been completely avoided. Only elementary methods such as power series, holomorphic vector bundles, and one-dimensional cocycles are used. Nevertheless, deep results can be proved, for example, the Remmert-Stein theorem for analytic sets, finiteness theorems for spaces of cross sections in holomorphic vector bundles, and the solution of the Levi problem. Each chapter is complemented by a variety of examples and exercises. The only prerequisite needed to read this book is a knowledge of real analysis and some basic facts from algebra, topology, and the theory of one complex variable. The book can be used as a first introduction to several complex variables as well as a reference for the expert.

Jeffery D. McNEAL, (Editor). — **Complex analysis and geometry.** — Proceedings of a conference at the Ohio State University, June 3-6, 1999. — Ohio State University Mathematical Research Institute publications, vol. 9. — Un vol. relié, 17,5 × 24,5, de 191 p. — ISBN 3-11-016809-X. — Prix: € 98.00. — Walter de Gruyter, Berlin, 2001.

The conference was devoted to some recent developments in complex analysis, with particular emphasis on developments arising from PDE methods and techniques in algebraic and differential geometry. The articles in this volume are written in a more expository style and contain significant, new results which are previously unpublished. — *Contents:* M.S. Baouendi, Linda Preiss Rothschild, Dmitri Zaitsev: Points in general position in real-analytic submanifolds in C^N. – David E. Barrett: Holomorphic motion of circles through affine bundles. – Bo Berndtsson: Weighted estimates for the delta bar-equation. – Michael Christ: Hypoellipticity in the infinitely degenerate regime. Spiraling and nonhypoellipticity. – John P. D'Angelo:

Positivity conditions for real-analytic functions. – Peter Ebenfelt, Xiajun Huang: On a generalized reflection principle in $\mathbb{C}^2$. – Siqi Fu, Emil J. Straube: Compactness in the delta bar-Neumann problem. – Joseph J. Kohn: Hypoellipticity at non-subelliptic points. – Yum-Tong Siu: Very ampleness part of Fujita's conjecture and multiplier ideal sheaves of Kohn and Nadel.

Claude SABBAH. — **Déformations isomonodromiques et variétés de Frobenius.** — Collection Mathématiques. — Collection Savoirs Actuels. — Un vol. broché, 15,5 × 23, de XVI, 289 p. — ISBN 2-86883-534-1 (EDP Sciences), 2-271-05569-0 (CNRS Editions). — Prix: €42.00. — EDP Sciences/CNRS Editions, Paris.

La théorie des déformations isomonodromiques est une machine à produire des systèmes non linéaires d'équations différentielles ou aux dérivées partielles dans le domaine complexe et ce, à partir d'une équation ou d'un système d'équations linéaires d'une variable complexe. La notion de structure de Frobenius sur une variété, apparue d'abord dans la théorie des singularités, puis développée sous l'impulsion de motivations physiques, en est une belle application. Ce texte est issu de plusieurs cours dispensés dans le cadre de la formation doctorale des universités de Paris VI, Bordeaux I et Strasbourg ainsi que lors d'une école sur les variétés de Frobenius au CIRM (Luminy).

Équations aux dérivées partielles

Michel CHIPOT. — *l* **goes to plus infinity**. — Birkhäuser advanced texts. — Un vol. relié, 17 × 24, de VIII, 180 p. — ISBN 3-7643-6646-X. — Prix: SFr. 78.00. — Birkhäuser, Basel, 2002.

Many physical problems are meaningfully formulated in a cylindrical domain. When the size of the cylinder goes to infinity, the solutions, under certain symmetry conditions, are expected to be identical in every cross-section of the domain. The proof of this, however, is sometimes difficult and almost never given in the literature. The present book partially fills this gap by providing proofs of the asymptotic behavior of solutions to various important cases of linear and nonlinear problems in the theory of elliptic and parabolic partial differential equations.

Giuseppe DA PRATO, Jerzy ZABCZYK. — **Second order partial differential equations in Hilbert spaces.** — London Mathematical Society lecture note series, vol. 293. — Un vol. broché, 15 × 23, de XVI, 379 p. — ISBN 0-521-77729-1. — Prix: £29.95. — Cambridge University Press, Cambridge, 2002.

Partial differential equations for functions defined on infinite dimensional Hilbert spaces are natural generalizations of well known parabolic and elliptic equations for which the theory is now classical. The main aim of the authors is to present a state of the art treatment of this theory in a unified way. The tools used are the theory of measures on Banach spaces, semigroup and interpolation theories as well as the theory of stochastic evolution equations. The book is divided into three parts devoted respectively to the theory in the spaces of continuous functions, to the theory in Sobolev spaces with respect to Gaussian measures and to applications to control theory. Numerous comments and references in the book point the reader to more specialized results not covered here.

Jürgen JOST.— **Partial differential equations.** — Graduate texts in mathematics, vol. 214. — Un vol. relié, 16 × 24,5, de XI, 325 p. — ISBN 0-387-95428-7. — Prix: €59.95. — Springer, New York, 2002.

The author focuses on elliptic equations and systematically develops the relevant existence schemes, always with a view toward nonlinear problems. These are maximum principle methods