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Topologie des variétés, analyse globale et analyse des variétés

Fritz GESZTESY, Helge HOLDEN. — **Soliton equations and their algebro-geometric solutions, vol. 1: (1+1)-dimensional continuous models.** — Cambridge studies in advanced mathematics, vol. 79. — Un vol. relié, 16×23,5, de XII, 505 p. — ISBN 0-521-75307-4. — Prix: £65.00. — Cambridge University Press, Cambridge, 2003.

The focus of this book is on algebro-geometric solutions of completely integrable, nonlinear, partial differential equations in (1+1) dimensions, also known as soliton equations. Explicitly treated integrable models include the KdV, AKNS, sine-Gordon, and Camassa-Holm hierarchies as well as the classical massive Thirring system. An extensive treatment of the class of algebro-geometric solutions in the stationary as well as time-dependent contexts is provided. The formalism presented includes trace formulas, Dubrovin-type initial value problems, Baker-Akhiezer functions, and theta function representations of all relevant quantities involved. The book uses techniques from the theory of differential equations, spectral analysis, and elements of algebraic geometry (most notably, the theory of compact Riemann surfaces). The presentation is rigorous, detailed, and self-contained with ample background material in various appendices.

Andrzej GRANAS, James DUGUNDJI. — **Fixed point theory.** — Springer monographs in mathematics. — Un vol. relié, 16×24, de XV, 690 p. — ISBN 0-387-00173-5. — Prix: €84.95. — Springer, New York, 2003.

This monograph gives a carefully worked-out account of the most basic principles and applications of the theory of fixed points. Until now, a treatment of many of the discussed topics has been unavailable in book form. The presentation is self-contained and is accessible to a broad spectrum of readers. The main text is complemented by numerous exercises, detailed comments, and a comprehensive bibliography.

Y. KOMORI, V. MARKOVIC , C. SERIES, (Editors). — **Kleinian groups and hyperbolic 3-manifolds: proceedings of the Warwick Workshop, September 2001.** — London Mathematical Society lecture note series, vol. 299. — Un vol. broché, 15×23, de VII, 384 p. — ISBN 0-521-54013-5. — Prix: £39.95. — Cambridge University Press, Cambridge, 2003.

The subject of Kleinian groups and hyperbolic 3-manifolds is currently undergoing explosively fast development, with many old problems and conjectures close to resolution. This volume, proceedings of the Warwick Workshop in September 2001, contains expositions of many of these breakthroughs including Minsky's lectures on the first half of the proof of the Ending Lamination Conjecture, the Bers Density Conjecture by Brock and Bromberg, the Tameness Conjecture by Kleineidam and Souto, the state of the art in cone manifolds by Hodgson and Kerckhoff, and the counter-example to Thurston's K=2 conjecture by Epstein, Marden and Markovic. It also contains Jørgensen's famous paper *On pairs of once punctured tori* in print for the first time.

I. MOERDIJK, J. MRČUN. — **Introduction to foliations and Lie groupoids**. —Cambridge studies in advanced mathematics, vol. 91 — Un vol. relié, 16×24, de IX, 173 p. — ISBN 0-521-83197-0 — Prix: £30.00. — Cambridge University Press, Cambridge, 2003.

This book gives a quick introduction to the theory of foliations, Lie groupoids, and Lie algebroids. An important feature is the emphasis on the interplay between these concepts; Lie groupoids form an indispensable tool for the study of the transverse structure of foliations as well as their noncommutative geometry, while the theory of foliations has immediate applications to the Lie theory of groupoids and their infinitesimal algebroids. The book starts with a

detailed presentation of the main classical theorems in the theory of foliations, then proceeds to Molino's theory, foliation, and finally Lie algebroids. Among other things, the authors discuss to what extent Lie's theory for Lie groups and Lie algebras holds in the more general context of groupoids and algebroids. Based on the authors' extensive teaching experience, this book contains numerous examples and exercises making it ideal for graduate students and their instructors.

David MOND, Marcelo José SAIA, (Editors). — **Real and complex singularities**. — Lecture notes in pure and applied mathematics, vol. 232. — Un vol. broché, 18×25,5, de VIII, 326 p. — ISBN 0-8247-4091-2. — Prix: US$175.00. — Marcel Dekker, New York, 2003.

Offering a selection of invited papers on singularity theory presented at the Sixth Workshop on Real and Complex Singularities held at Instituto de Ciências Matemáticas e de Computação-USP, São Carlos, São Paulo, Brazil, this reference discusses the most recent results and applications of singularity theory to related areas such as algebraic geometry, quantum cohomology, geometry, and dynamical systems. This book contains papers on Frobenius manifolds and the construction of global moduli spaces for isolated hypersurface singularities... global topological invariants of stable maps from a surface to the plane... indices of Newton nondegenerate vector fields and a conjecture of Loewner for surfaces in $\mathbf{R}^4$ ... transversal Whitney topology and singularities of Haefliger foliations... and deformations of boundary singularities and noncrystallographic Coxeter groups.

Probabilités et processus stochastiques

Bernt ØKSENDAL. — **Stochastic differential equations: an introduction with applications.** — Sixth edition. — Universitext. — Un vol. broché, 15,5×23,5 de XXIII, 360 p. — ISBN 3-540-04758-1. — Prix: €34.95. — Springer, Berlin, 2003.

For the sixth edition the author has added further exercises and, for the first time, solutions to many of the exercises are provided. — *Contents:* Introduction. — Some mathematical preliminaries. — Itô integrals. — The Itô formula and the martingale representation theorem. — Stochastic differential equations. — The filtering problem. — Diffusions: basic properties. — Other topics in diffusion theory. — Applications to boundary value problems. — Application to optimal stopping. — Application to stochastic control. — Application to mathematical finance. — Normal random variables. — Conditional expectation. — Uniform integrability and martingale convergence. — An approximation result. — Solutions and additional hints to some of the exercises. — References.

Statistique

Jim ALBERT, Jay BENNETT. — **Curve Ball: baseball, statistics, and the role of chance in the game.** — Revised edition. — Un vol. broché, 15,5×23,5, de XXII, 410 p. — ISBN 0-387-00193-X. — Prix: €22.95. — Copernicus Books, an imprint of Springer-Verlag, New York, 2003.

We're surrounded – some might say inundated – by baseball statistics. We find them in newspapers and magazines, in books and on the back of baseball cards, and on TV, radio, and the Internet. The question is, can fans – or anyone – make sense of this proliferating data? Authors Jim Albert and Jay Bennett believe we all can, given just a slightly more sophisticated approach to statistics. In this revised and updated paperback edition, the authors take a fresh look at time-