Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 44 (1998)
Heft: 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

Kapitel: Fonctions de variables réelles

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ramifications. Starting off with several models of hyperbolic space and its group of motions the authors discuss the spectral theory of the Laplacian and Selberg's theory for cofinite groups. The interplay with arithmetic is demonstrated by means of the groups PSL(2) over rings of quadratic integers, their Eisenstein series and their associated Hermitian forms. A comprehensive chapter on concrete examples of arithmetic and non arithmetic cofinite groups enhances the usefulness of this work for a wide audience of mathematicians.

E.I. KHUKHRO. — ***p*-automorphisms of finite *p*-groups.** — London Mathematical Society lecture note series, vol. 246. — Un vol. broché, 15×23, de XVII, 204 p. — ISBN 0-521-59717-X. — Prix: £24.95. — Cambridge University Press, Cambridge, 1998.

This book provides a detailed but concise account of the theory of structure of finite p-groups admitting p-automorphisms with few fixed points. The relevant preliminary material on Lie rings is introduced and the main theorems of the book on the solubility of finite p-groups are then presented. The proofs involve notions such as viewing automorphisms as linear transformations, associated Lie rings, powerful p-groups, and the correspondences of A.I. Mal'cev and M. Lazard given by the Baker-Hausdorff formula. Many exercises are included.

Groupes topologiques et groupes et algèbres de Lie

E.A. DE KERF, G.G.A. BÄUERLE, A.P.E. TEN KROODE. — **Lie algebras, Part 2: Finite and infinite dimensional.**

Lie algebras and applications in physics. — Studies in mathematical physics, vol. 7. — Un vol. relié, 16×23, de X, 554 p. — ISBN 0-444-82836-2. — Prix: Dfl. 265.00. — North-Holland, Amsterdam, 1997.

Extensions of Lie algebras. — Explicit construction of affine Kac-Moody algebras. — Representations – enveloping algebra techniques. — The Weyl group and integrable representations. — More on representations. — Characters and multiplicities. — Quarks, leptons and gauge fields. — Lie algebras of infinite matrices. — Representations of loop algebras. — KP-hierarchies. — Conformal symmetry.

Juan TIRAO, David A. VOGAN, Jr., Joseph A. WOLF, (Editors). — **Geometry and representation theory of real and *p*-adic groups.** — Progress in mathematics, vol. 158. — Un vol. relié, 16×24, de X, 323 p. — ISBN 0-8176-3941-4. — Prix: SFr. 118.00. — Birkhäuser, Boston, 1998.

The representation theory of Lie groups plays an important rôle in both classical and recent developments in mathematics and physics. The 14 expository articles in this book provide a fast-paced and thorough introduction to the more active parts of representation theory and to some of its ongoing applications. These expositions contain many interesting conjectures and indications of fruitful future research areas. Some of these directions are filled in by the research articles of Bratten, Burde, Garnica, Galina, Johnson and Levstein-Tiraboshi.

Fonctions de variables réelles

Alan F. BEARDON. — **Limits: a new approach to real analysis.** — Undergraduate text in mathematics. — Un vol. relié, 16×24, de IX, 189 p. — ISBN 0-387-98274-4. — Prix: DM 58.00. — Springer, New York, 1997.

This book includes all the standard material such as sequences, infinite series, continuity, differentiation, and integration, together with worked examples and exercises. By unifying and

simplifying all the various notions of limit, the author has succesfully presented a unique and novel approach to the subject matter that has not previously appeared in book form. The author defines what is meant by a limit just once, and all of the subsequent limiting processes are viewed as special cases of this one definition. In this way the subject matter attains a unity and coherence that is missing in the traditional approach.

Douglas S. BRIDGES. — **Foundations of real and abstract analysis.** — Graduate texts in mathematics, vol. 174. — Un vol. relié, 16×24, de XIV, 322 p. — ISBN 0-387-98239-6. — Prix: DM 79.00. — Springer, New York, 1997.

The core chapters of this volume provide a complete course on metric, normed, and Hilbert spaces, and include many results and exercises seldom found in texts on analysis at this level. The author covers an unusually wide range of material in a clear and concise format, including elementary real analysis, Lebesgue integration on **R**, and an introduction to functional analysis. This makes a versatile text suited for courses on real analysis, metric spaces, and abstract analysis. Of special interest is the unique collection of nearly 750 exercises, many with guidelines for their solutions.

Shouchuan HU and Nikolas S. PAPAGEORGIOU. — **Handbook of multivalued analysis, vol. 1: Theory.** — Mathematics and its applications, vol. 419. — Un vol. relié, 16,5×24,5, de XV, 964 p. — ISBN 0-9723-4682-3. — Prix: Dfl. 695.00. — Kluwer Academic Publishers, Dordrecht, 1997.

Multivalued analysis is a remarkable mixture of many different fields of mathematics, such as topology, measure theory, nonlinear functional analysis and applied mathematics. This two-volume work provides a comprehensive survey of the general theory and applications of set-valued analysis. The existing books on the subject deal with either one particular domain of the subject or present primarily the finite dimensional aspects of the theory. In contrast, this volume gives a complete picture of the subject, including important new developments that occurred in recent years and detailed bibliography. Although the presentation of the subject assumes some knowledge from various areas of mathematical analysis, the authors have made every effort, including the addition of an appendix, to keep the work self-contained.

Mesure et intégration

Gerhard KELLER. — **Equilibrium states in ergodic theory**. — London Mathematical Society student texts, vol. 42. — Un vol. broché, 15×23, de IX, 178 p. — ISBN 0-521-59534-7. — Prix: £13.95 (relié: £37.50). — Cambridge University Press, Cambridge, 1998.

This book provides a detailed introduction to the ergodic theory of equilibrium states giving equal weight to two of its most important applications, namely to equilibrium statistical mechanics on lattices and to (time discrete) dynamical systems. — *Contents:* Elementary examples of equilibrium states. Some basic ergodic theory. Entropy. Equilibrium states and pressure. Gibbs measures. Equilibrium states and derivatives. Appendix, collecting a number a facts from analysis, measure theory and probability theory used throughout the book.

Mark POLLICOTT, Michiko YURI. — **Dynamical systems and ergodic theory.** — London Mathematical Society student texts, vol. 40. — Un vol. broché, 15×23, de XIII, 179 p. — ISBN 0-521-57599-0. — Prix: £14.95 (relié: £40.00). — Cambridge University Press, Cambridge, 1998.

This book is an essentially self-contained introduction to topological dynamics and ergodic theory. It is divided into a number of relatively short chapters with the intention that each may be