

Théorie des groupes et généralisations

Objektyp: **Chapter**

Zeitschrift: **L'Enseignement Mathématique**

Band (Jahr): **45 (1999)**

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

PDF erstellt am: **26.04.2024**

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topology and been introduced in algebraic geometry about thirty years ago. Building on the algebraic form described in *Intersection Theory* by W. Fulton, Paul Roberts presents further developments and important algebraic applications that were not known at the time Fulton's book was written. Some of these applications come from the author's own work.

Askar A. TUGANBAEV. — **Semidistributive modules and rings.** — Mathematics and its applications, vol. 449. — Un vol. relié, 17×25 , de x, 352 p. — ISBN 0-7923-5209-2. — Prix: Dfl. 290.00. — Kluwer Academic Publishers, Dordrecht, 1998.

This is the first monograph on the theory of semidistributive modules and rings. It investigates such topics as the relationship between semidistributive modules and flat, projective, injective, multiplication, as well as Bézout modules. The volume concludes with an extensive bibliography. It can be recommended as an introduction to structural and homological ring theory, and will prove useful for postgraduates and researchers specialising in algebra.

Catégories, algèbre homologique, cohomologie des groupes

David M. CLARK, Brian A. DAVEY. — **Natural dualities for the working algebraist.** — Cambridge studies in advanced mathematics, vol. 57. — Un vol. relié, $16 \times 23,5$, de xii, 356 p. — ISBN 0-521-45415-8. — Prix: £40.00. — Cambridge University Press, Cambridge, 1998.

The theory of natural dualities, as presented in this text, is broad enough to encompass many known dualities through a rich assortment of substantive theorems yet concrete enough to be used to generate an array of previously undiscovered dualities. This text will serve as a user manual for algebraists, for category theorists and for those who use algebra in their work, particularly mathematicians and computer scientists interested in non-classical logics. As the first text devoted to the theory of natural dualities, it provides an efficient path through a large body of results, examples and applications in this subject which is otherwise available only in scattered research papers.

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C.M. CAMPBELL, E.F. ROBERTSON, N. RUSKUC, G.C. SMITH, (Editors). — **Groups St Andrews 1997 in Bath, I and II.** — London Mathematical Society lecture note series, vol. 260, 261. — Deux vol. brochés, $15,5 \times 23$, de x, 737 p. pour l'ensemble. — ISBN 0-521-65588-9 (vol. 1), 0-521-65576-5 (vol. 2). — Prix: £29.95 (vol. 1), £29.95 (vol. 2). — Cambridge University Press, Cambridge, 1999.

This two-volume book contains selected papers from the international conference "Groups St Andrews 1997 in Bath". The articles are arranged in roughly alphabetical order and cover a wide spectrum of modern group theory. There are articles based on lecture courses given by five main speakers together with refereed survey and research articles contributed by other conference participants. Proceedings of earlier "Groups St Andrews" conferences have had a major impact on the development of group theory and these volumes should be equally important.

Peter J. CAMERON. — **Permutation groups.** — London Mathematical Society student texts, vol. 45. — Un vol. broché, 15×23 , de x, 220 p. — ISBN 0-521-65378-9. — Prix: £15.95 (relié: £42.50). — Cambridge University Press, Cambridge, 1999.

Permutation groups are one of the oldest topics in algebra. Their study has recently been revolutionised by new developments, particularly the classification of finite simple groups, but also relations with logic and combinatorics, and importantly, computer algebra systems have

been introduced that can deal with large permutation groups. This book gives a summary of these developments, including an introduction to relevant computer algebra systems, sketch proofs of major theorems, and many examples of applying the classification of finite simple groups.

R.W. CARTER, J. SAXL. (Editors). — **Algebraic groups and their representations.** — NATO ASI Series. Series C: Mathematical and physical sciences, vol. 517. — Un vol. relié, $17 \times 24,5$, de XVIII, 374 p. — ISBN 0-7923-5251-3. — Prix: Dfl. 320.00. — Kluwer Academic Publishers, Dordrecht, 1998.

This volume contains 19 articles written by speakers at the Advanced Study Institute on “Modular representations and subgroup structure of algebraic groups and related finite groups” held at the Isaac Newton Institute, Cambridge, from 23rd June to 4th July 1997. Articles on representation theory are written by Andersen on tilting modules, Carter on canonical bases, Cline, Parshall and Scott on endomorphism algebras, James and Kieschev on the symmetric group, Littelmann on the path model, Lusztig on homology bases, McNinch on semisimplicity in prime characteristic, Robinson on block theory, Scott on Lusztig’s character formula, and Tanisaki on highest weight modules. Articles on subgroup structure are written by Setz and Brundan on double cosets, Liebeck on exceptional groups, Saxl on subgroups containing special elements, and Guralnick on applications of subgroup structure. Steinberg gives a new, short proof of the isomorphism and isogeny theorems for reductive groups. Aschbaker discusses the classification of quasisimple groups and Borovik the classification of finite Morley rank.

Dikran DIKRANJAN, Luigi SALCE, (Editors). — **Abelian groups, module theory, and topology.** — Proceedings in honor of Adalberto Orsatti’s 60th birthday. — Lecture notes in pure and applied mathematics, vol. 201. — Un vol. broché, $17,5 \times 25,5$, de xv, 444 p. — ISBN 0-8247-1937-9. — Prix: US\$ 165.00. — Marcel Dekker, Inc., New York, 1998.

This book investigates currently popular topics in abelian group theory and provides a solution to a long-standing problem on automorphisms of p -groups... studies endomorphism rings and automorphism groups of torsion-free modules over PIDs and valuation domains... highlights dualities between the categories of abstract and topological modules, and analyzes self-dual locally compact abelian groups... investigates modules related to equivalences and dualities... explores various classes of rings and commutative rings with Acc for irreducible ideals... provides new structural results for valuation and Prüfer domains, as well as a technique to build Noetherian domains inside an ideal-adic completion... elucidates applications of Roelke uniformity in the study of the unitary groups of Hilbert spaces... etc.

Lino di MARTINO, William M. KANTOR, Guglielmo LUNARDON, Antonio PASINI, Maria Clara TAMBURINI, (Editors). — **Groups and geometries.** — Siena Conference, September 1996. — Trends in mathematics. — Un vol. relié, 17×24 , de XII, 261 p. — ISBN 3-7643-5881-5. — Prix: SFr. 128.00. — Birkhäuser Verlag, Basel, 1998.

In this book, special attention was drawn to the interplay between group-theoretic methods and geometric and combinatorial ones. Expanded versions of many of the talks appear in these proceedings. Algebraists and geometers will encounter in this conference record a stimulating collection of ideas stemming from work in such areas as 1) the classification of finite simple groups; 2) the structure and properties of groups of Lie type over finite and algebraically closed fields of finite characteristic; 3) buildings, and the geometry of projective and polar spaces; and 4) geometries of sporadic simple groups.