

# Anneaux et algèbres

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## Anneaux et algèbres

Daniel D. ANDERSON, Ira J. PAPICK, (Editors). — **Ideal theoretic methods in commutative algebra: in honor of James A. Huckaba's retirement.** — Lecture notes in pure and applied mathematics, vol. 220. — Un vol. broché,  $18 \times 25,5$  de IX, 358 p. — ISBN 0-8247-0553-X. — Prix: US\$ 165.00. — Marcel Dekker, New York, 2001.

This volume compiles research papers presented at the Conference of Ideal Theoretic Methods in Commutative Algebra held at the University of Missouri, Columbia. These proceedings include current research that illustrates the diversity of thought in the field of commutative algebra, particularly multiplicative ideal theory, and presenting survey articles on abstract ideal theory, going down, stable domains, prime producing polynomials, and integrality properties in rings with zero divisors. Written by leading mathematicians this book is an excellent resource for commutative algebraists, algebraic geometers and number theorists.

Gary F. BIRKENMEIER, Jae Keol PARK, Young Soo PARK, (Editors). — **International Symposium on Ring Theory.** — Trends in mathematics. — Un vol. relié,  $16 \times 24$ , de XVIII, 445 p. — ISBN 0-8176-4158-0. — Prix: SFr. 188.00. — Birkhäuser, Boston, 2001.

This volume consists of a collection of invited research papers and survey articles, many presented at the 3<sup>rd</sup> Korea-China-Japan International Symposium on Ring Theory held jointly in Korea with the 2<sup>nd</sup> Korea-Japan Ring Theory Seminar. The selected papers and articles examine wide-ranging developments and methodologies in various areas, including classical ring theory, representation theory, module theory, abelian group theory, Lie algebras, Hopf algebras, and quantum groups. Also included is a section devoted to open problems to motivate further research.

Jean FRESNEL. — **Anneaux.** — Actualités scientifiques et industrielles, vol. 1447. — Collection formation des enseignants et formation continue. — Un vol. broché,  $17,5 \times 24$ , de xv, 359 p. — ISBN 2-7056-1447-8. — Prix: FF 160.00. — Hermann, Paris, 2001.

L'ouvrage s'adresse aux étudiants de premier cycle, de licence ou de maîtrise de mathématiques, et constitue un excellent outil pour les candidats aux concours du CAPES et de l'agrégation. Les notions classiques sont abordées de façon élémentaire et rigoureuse: anneau, corps, homomorphisme, idéal, anneau quotient... Les résultats de base sont démontrés: propriétés de l'anneau principal, théorèmes de Galois, théorème de transfert aux anneaux de polynômes... Chaque chapitre se termine par des exercices permettant d'aboutir à des résultats nouveaux: le petit théorème de Fermat, celui de Wilson, les nombres de Mersenne... Au total, 260 exercices qui font l'originalité de l'ouvrage.

Ángel GRANJA, José Ángel HERMIDA, Alain VERSCHOREN, (Editors). — **Ring theory and algebraic geometry: proceedings of the fifth International Conference (SAGA V) in León, Spain.** — Lecture notes in pure and applied mathematics, vol. 221. — Un vol. broché,  $18 \times 25,5$ , de xv, 339 p. — ISBN 0-8247-0559-9. — Prix: US\$ 165.00. — Marcel Dekker, New York, 2001.

Based on papers presented at the fifth International Conference on Algebra and Algebraic Geometry (SAGA V) held at the University of León, Spain, this book focuses on the interaction between algebra and algebraic geometry, including high-level research papers and surveys contributed by over 40 specialists from more than 15 countries world wide, describing Abelian groups and lattices, algebras and binomial ideals, cones and fans, affine and projective algebraic varieties, simplicial and cellular complexes, polytopes, and arithmetics.

T. Y. LAM. — **A first course in noncommutative rings.** — Second edition. — Graduate texts in mathematics, vol. 131. — Un vol. broché,  $15,5 \times 23,5$ , de xix, 385 p. — ISBN 0-387-95325-6. — Prix : DM 106.89. — Springer, New York, 2001.

This book, an outgrowth of the author's lectures at the University of California at Berkeley, is intended as a textbook for a one-semester course in basic ring theory. The material covered includes the Wedderburn-Artin theory of semisimple rings, Jacobson's theory of the radical, representation theory of groups and algebras, prime and semiprime rings, primitive and semi-primitive rings, division rings, ordered rings, local and semilocal rings, perfect and semiperfect rings, and so forth. More than 400 exercises testing the understanding of the general theory in the text are included in this new edition.

Günter SCHEJA, Uwe STORCH. — **Regular sequences and resultants.** — Research notes in mathematics, vol. 8. — Un vol. relié,  $16 \times 23,5$ , de viii, 142 p. — ISBN 1-56881-151-9. — Prix : US\$ 30.00. — A.K. Peters, Natick, Mass., 2001.

This book provides a valuable complement to sparse elimination theory in that it presents, in careful detail, the algebraic difficulties of working over general base rings, which is essential for many applications including arithmetic geometry. In particular, a new approach to the construction and interpretation of resultants and their divisors has been developed using explicit duality for complete intersections. Necessary tools concerning monoids of weights, generic polynomials, and regular sequences are treated independently in the first part of the book. Supplements added to each section provide extra details and insightful examples.

## *Catégories, algèbre homologique, cohomologie des groupes*

Jürgen KOSLOWSKI, Austin MELTON, (Editors). — **Categorical perspectives.** — Trends in mathematics. — Un vol. relié,  $16 \times 24$ , de x, 281 p. — ISBN 0-8176-4186-6. — Prix : SFr. 148.00. — Birkhäuser, Boston, 2001.

This book consists of introductory surveys as well as articles containing original research and complete proofs devoted mainly to the theoretical and foundational developments of category theory and its applications to other fields. A number of articles in the areas of topology, algebra, and computer science reflect the varied interests of George Strecker to whom this work is dedicated. Notable also are an exposition of the contributions and importance of George Strecker's research and a survey chapter on general category theory.

## *Théorie des groupes et généralisations*

Pierre-Alain CHERIX, Michael COWLING, Paul JOLISSAINT, Pierre JULG, Alain VALETTE. — **Groups with the Haagerup property : Gromov's a-T-menability.** — Progress in mathematics, vol. 197. — Un vol. relié,  $16,5 \times 24$ , de vii, 126 p. — ISBN 3-7643-6598-6. — Prix : SFr. 78.00. — Birkhäuser, Basel, 2001.

The aim of this book is to cover, for the first time in book form, various aspects of the Haagerup property. New characterisations are brought in, using ergodic theory or operator algebras. Several new examples are given, and new approaches to previously known examples are proposed. Connected Lie groups with the Haagerup property are completely characterized. The book, which ends with a list of open questions, will be of interest to graduate students and researchers in the fields of geometry, group theory, harmonic analysis, ergodic theory, and operator algebras.