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## ***Géométrie algébrique***

David EISENBUD, (Editor). — **Commutative algebra, algebraic geometry, and computational methods.** — Un vol. broché, 15,5 × 23,5, de xvii, 320 p. — ISBN 981-4021-50-4. — Prix: DM 109.00. — Springer, Singapore, 1999.

This volume contains papers presented at the International Conference on Commutative Algebra, Algebraic Geometry, and Computational Methods held in Hanoi in 1996, and papers written subsequently. It features both expository articles as well as research papers on a range of currently active areas in commutative algebra, algebraic geometry (particularly surveys on intersection theory) and combinatorics. A special feature is a section on the life and work of Wolfgang Vogel, who was an organizer of the conference.

Klaus HULEK, Fabrizio CATANESE, Chris PETERS, Miles REID, (Editors). — **New trends in algebraic geometry.** — EuroConference on Algebraic Geometry, Warwick, July 1996. — London Mathematical Society lecture note series, vol. 264. — Un vol. broché, 15,5 x 23, de x, 484 p. — ISBN 0-521-64659-6. — Prix: £29.95. — Cambridge University Press, Cambridge, 1999.

Several articles from this book are expository: among these a beautiful short exposition by Paranjape of the new and very simple approach to the resolution of singularities; a detailed essay by Ito and Nakamura on the ubiquitous  $A$ ,  $D$ ,  $E$  classification, centred around simple surface singularities; a discussion by Morrison of the new special Lagrangian approach to giving geometric foundations to mirror symmetry; and two deep, informative surveys by Siebert and Behrend on Gromow-Witten invariants treating them from the point of view of both algebraic and symplectic geometry.

Silvio LEVY, (Editor). — **The eightfold way: the beauty of Klein's quartic curve.** — Mathematical Sciences Research Institute publications, vol. 35. — Un vol. relié, 16 × 24, de x, 331 p. — ISBN 0-521-66066-1. — Prix: £35.00. — Cambridge University Press, Cambridge, 1999.

Felix Klein discovered in the 1870s that the simple equation  $x^3y+y^3z+z^3x=0$  (in complex projective coordinates) describes a surface having many remarkable properties, including 336-fold symmetry - the maximum possible for any surface of this genus. The mathematical sculptor Helaman Ferguson has tried to distill some of the beauty and remarkable properties of this surface in the form of a sculpture that he entitled *The Eightfold Way*. This volume seeks to explore the rich tangle of properties and theories surrounding this object. It contains a text written by W. Thurston to explain the sculpture, a broad overview of the position of the Klein quartic in mathematics, a historical overview, a richly illustrated essay by Helaman Ferguson, an exploration of related curves, the first English translation of Klein's seminal article "On the order-seven transformation of elliptic functions".

Freddy VAN OYSTAEYEN, (Editor). — **Commutative algebra and algebraic geometry.** — Proceedings of the Ferrara Meeting in honor of Mario Fiorentini. — Lecture notes in pure and applied mathematics, vol. 206. — Un vol. broché, 18 × 25,5, de xviii, 312 p. — ISBN 0-8247-1990-5. — Prix: US\$ 150.00. — Marcel Dekker, New York, 1999.

Presenting recent developments and new results based upon, and inspired by the work of Fiorentini, the book contains contributions by over 25 leading international mathematicians in the areas of commutative algebra and algebraic geometry. This book thoroughly discusses almost numerical invariants of algebraic curves, monomial curves, cohomology of surfaces,

Gorenstein algebras, space curves, Nagata's theorem, Betti numbers, canonical curves, Green's theorem, Cohen-Macaulay rings, closed subschemes, deformations of projective subschemes..., etc.

## *Algèbre linéaire et multilinéaire, théorie des matrices*

Jean FRESNEL. — **Espaces quadratiques, euclidiens, hermitiens.** — Actualités scientifiques et industrielles, vol. 1445. — Collection Formation des enseignants et formation continue. — Un vol. broché, 17,5 × 24, de xi, 315 p. — Prix: FF 160.00. — Hermann, Paris, 1999.

Cet ouvrage traite de l'algèbre bilinéaire et propose 150 exercices. L'objectif essentiel est l'étude des espaces vectoriels munis d'une forme bilinéaire symétrique, ainsi que l'étude du groupe des automorphismes préservant cette structure. La partie la plus conséquente de l'ouvrage est consacrée aux espaces vectoriels euclidiens. Les exercices fournis permettent d'aboutir avec des moyens élémentaires, à des résultats réputés délicats. Cet ouvrage est né du contact permanent de l'auteur avec les candidats à l'Agrégation externe et interne de mathématiques.

Fuzhen ZHANG. — **Matrix theory: basic results and techniques.** — Universitext. — Un vol. relié, 16 × 24, de xiii, 277 p. — ISBN 0-387-98696-0. — Prix: DM 89.50. — Springer, New York, 1999.

The aim of this book is to present concisely fundamental ideas, results, and techniques in linear algebra and mainly matrix theory. The book contains eight chapters covering various topics ranging from similarity and special types of matrices to Schur complements and matrix normality. Each chapter focuses on the results, techniques, and methods that are beautiful, interesting, and representative, followed by carefully selected problems. Many theorems are given several different proofs. The book can be used as a text or a supplement for a linear algebra and matrix theory class or seminar for advanced undergraduate or graduate students.

## *Anneaux et algèbres*

John A. BEACHY. — **Introductory lectures on rings and modules.** — London Mathematical Society student texts, vol. 47. — Un vol. broché, 15,5 × 23, de viii, 238 p. — ISBN 0-521-64407-0. — Prix: £15.95. — Cambridge University Press, Cambridge, 1999.

The focus of this book is the study of the noncommutative aspects of rings and modules, and the style will make it accessible to anyone with a background in basic abstract algebra. Features of interest include an early introduction of projective and injective modules; a module theoretic approach to the Jacobson radical and the Artin-Wedderburn theorem; the use of Baer's criterion for injectivity to prove the structure theorem for finitely generated modules over a principal ideal domain; and applications of the general theory to the representation theory of finite groups. Optional material includes a section on modules over the Weyl algebras and a section on Goldie's theorem.

David E. DOBBS, Marco FONTANA, Salah-Eddine KABBAJ, (Editors). — **Advances in commutative ring theory.** — Proceedings of the third International Conference on Commutative Ring Theory in Fez, Morocco. — Lecture notes in pure and applied mathematics, vol. 205. — Un vol. broché, 18 × 25,5, de xi, 555 p. — ISBN 0-8247-7147-8. — Prix: US\$195.00. — Marcel Dekker, New York, 1999.

The book covers monoid rings and the  $n$ -generator property... factorization and irreducibility criteria, class group, integer-valued polynomials, Skolem properties, and normsets... Koszul