Zeitschrift: L'Enseignement Mathématique
Band: 46 (2000)
Heft: 3-4: L'ENSEIGNEMENT MATHÉMATIQUE

Kapitel: Catégories, algèbre homologique, cohomologie des groupes

Freddy VAN OYSTAEYEN. — **Algebraic geometry for associative algebras.** — Pure and applied mathematics, vol. 232. — Un vol. broché, 15,5×23,5, de VI, 286 p. — ISBN 0-8247-0424-X. — Prix: US$145.00. — Marcel Dekker, New York, 2000.

This innovative reference/text facilitates the origin of a noncommutative topology that provides, for the first time, the possibility to define an underlying space where geometric properties can be phrased and studied—resulting in a scheme theory that sustains the duality between algebraic geometry and commutative algebra to the noncommutative level. It constructs the scheme theory from the interaction between graded and filtered algebras appearing as a general deformation principle among geometries. *Algebraic Geometry for Associative Algebras* fully introduces noncommutative topology, deformation of structure schemes, new cohomological methods, homological algebra and regularity conditions, divisor theory using noncommutative valuations, reductions of algebras, microlocalization and quantum sections, formal completion along subvarieties, and more.

Freddy VAN OYSTAEYEN, Manuel SAORIN, (Editors). — **Interactions between ring theory and representations of algebras: proceedings of the conference held in Murcia, Spain.** — Lecture notes in pure and applied mathematics, vol. 210. — Un vol. broché, 17,5×25,5, de VIII, 449 p. — ISBN 0-8247-0367-7. — Prix: US$185.00. —Marcel Dekker, New York, 2000.

Based on a set of lectures and invited papers presented at a recently held meeting in Murcia, Spain, organized by the European Commission's Training and Mobility of Researchers Programme, this monograph contains up-to-date information on the structure of representation theory of groups and algebras and on general ring theoretic methods related to the theory. This title provides a wide selection of international viewpoints on Artin, path, matrix, group, Noetherian semigroup, and Hopf and multiplier Hopf algebras, quantized coordinate and quantum determinantal rings, Maranda's and duality theorems, prime spectra and ideals, and associated primes and weakly associated primes, Cohen-Macaulay, D-Gorenstein, static and $A_1(k)$-modules, as well as covers and envelopes of modules, and more.

Catégories, algèbre homologique, cohomologie des groupes

M. Scott OSBORNE. — **Basic homological algebra.** — Graduate texts in mathematics, vol. 196. — Un vol. broché, 16×24, de X, 395 p. — ISBN 0-387-98934-X. — Prix: DM 98.00. — Springer, New York, 2000.

This book is intended for one-quarter, two-quarter, or one-semester courses in homological algebra. The aim is to cover Ext and Tor early and without distraction. It includes several further topics, which can be pursued independently of each other. Many of these, such as Lazard's theorem, long exact sequences in Abelian categories, the Ext product, or the relation between Krull dimension and global dimension, are hard to find elsewhere. The intended audience is second- or third-year graduate students in algebra, algebraic topology, or any other field that uses homological algebra.

K théorie

A.J. BERRICK and M.E. KEATING. — **Categories and modules: with *K*-theory in view.** — Cambridge studies in advanced mathematics, vol. 67. — Un vol. relié, 15,5×23,5, de XVII, 361 p. — ISBN 0-521-63276-5. — Prix: £35.00. — Cambridge University Press, Cambridge, 2000.

This book develops aspects of category theory fundamental to the study of algebraic *K*-theory. Ring and module theory illustrates category theory which provides insight into more advanced topics in module theory. Starting with categories in general, the text then examines