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Kapitel: Théorie des groupes et généralisations

containing simple objects... details coil algebras whose repetitive algebra is tame... analyzes Hopf algebras... and more.

Shahn MAJID. — **A quantum groups primer.** — London Mathematical Society lecture note series, vol. 292. — Un vol. relié, 23×15, de X, 169 p. — ISBN 0-521-01041-1. — Prix : £24.95. — Cambridge University Press, Cambridge, 2002.

This book provides a self-contained introduction to quantum groups as algebraic objects. Based on the author's lecture notes for a Part III pure mathematics course at Cambridge University, it is suitable for use as a textbook for graduate courses in quantum groups or as a supplement to modern courses in advanced algebra. The book assumes a background knowledge of basic algebra and linear algebra. Some familiarity with semisimple Lie algebras would also be helpful. The book is aimed as a primer for mathematicians interested in quantum groups, algebraic groups, knot theory and noncommutative geometry, but will also be useful for mathematical physicists.

Théorie des groupes et généralisations

Michael J. COLLINS, Brian J. PARSHALL, Leonard L. SCOTT, (Editors). — **Modular representation theory of finite groups.** — Proceedings of a Symposium held at the University of Virginia, Charlottesville, Virginia, May 8-15, 1998. — Un vol. relié, 18×25, de XII, 262 p. — ISBN 3-11-016367-5. — Prix : € 108.00. — Walter de Gruyter, Berlin, 2001.

The thrust of the book is towards the q-Schur algebra methods and the functorial methods that have been developed in recent years both for the study of representations of finite groups of Lie type in nondefining characteristic and for the abstract study of blocks of group algebras, the two predominant themes of the Symposium. Some results, and all references, have been updated since the Symposium so that this book, through its own content and with its extensive bibliographies, will serve as an invaluable resource both for established researchers and for graduate students who wish to gain a wide general knowledge of the subject starting from a single source.

A. A. IVANOV and S. V. SHPECTOROV. — **Geometry of sporadic groups II : representations and amalgams.** — Encyclopedia of mathematics and its applications, vol. 91. — Un vol. relié, 16×23,5, de XVIII, 286 p. — ISBN 0-521-62349-9. — Prix : £50.00. — Cambridge University Press, Cambridge, 2002.

The two-volume set of this work provides a complete self-contained proof of the classification of geometries associated with sporadic simple groups: Petersen and tilde geometries. This volume contains a study of the representations of the geometries under consideration in GF(2)-vector spaces as well as in some non-Abelian groups. The central part is the classification of the amalgam of maximal parabolics, associated with a flag transitive action on a Petersen or tilde geometry. The classification is based on the method of group amalgams, the most promising tool in modern finite group theory. Through systematic treatment of group amalgams, the authors establish a deep and important mathematical result.

Péter T. NAGY, Karl STRAMBACH. — **Loops in group theory and Lie theory.** — De Gruyter expositions in mathematics, vol. 35. — Un vol. relié, 25×18, de XI, 361 p. — ISBN 3-11-017010-8. — Prix : € 148.00. — Walter de Gruyter, Berlin, 2002.

In this book the theory of binary systems is considered as a part of group theory and, in particular, within the framework of Lie groups. The novelty is the consequent treatment of topological and differentiable loops as topological and differentiable sections in Lie groups. The interplay of methods and tools from group theory, differential geometry, and the theory of foliations is what gives a special flavour to the results presented in this book. It is the first monograph

devoted to the study of global loops. So far books on differentiable loops deal with local loops, and in contrast to Lie groups for non-associative local structures there are, in general, no global forms.

Groupes topologiques; groupes et algèbres de Lie

Andrew BAKER. — **Matrix groups: an introduction to Lie group theory.** — Springer undergraduate mathematics series. — Un vol. broché, 17×24, de XI, 330 p. — ISBN 1-85233-470-3. — Prix: € 34.95. — Springer, London, 2002.

The main focus is on matrix groups, i.e., closed subgroups of real and complex general linear groups. The first part studies examples and describes the classical families of simply connected compact groups. The second part introduces the idea of a Lie group and studies the associated notion of a homogeneous space using orbits of smooth actions. Throughout, the emphasis is on providing an approach that is accessible to readers equipped with a standard undergraduate toolkit of algebra and analysis.

Andrew PRESSLEY, (Editor). — **Quantum groups and Lie theory.** — London Mathematical Society lecture notes series, vol. 290. — Un vol. broché, 15×22,5, de VIII, 234 p. — ISBN 0-521-01040-3. — Prix: £27.95. — Cambridge University Press, Cambridge, 2001.

To discuss the most fruitful directions for future research, many of the world's leading figures in the area of quantum groups met at the Durham Symposium on Quantum Groups in the summer of 1999, and this volumes provides an excellent overview of the material presented there. It includes important surveys of both cyclotomic Hecke algebras and the dynamical Yang-Baxter equation. Plus contributions that treat the construction and classification of quantum groups of the associated solutions of the quantum Yang-Baxter equation. The representation theory of quantum groups is discussed, as is the function algebra approach to quantum groups, and there is a new look at the origins of quantum groups in the theory of integrable systems.

Fonctions de variables réelles

Piotr MIKUSIŃSKI, Michael D. TAYLOR. — **An introduction to multivariable analysis from vector to manifold.** — Un vol. relié, 24×16, de X, 295 p. — ISBN 0-8176-4234-X. — Prix: SFr. 136.00. — Birkhäuser, Boston, 2002.

The main topics of the book are: systematic exposition supported by numerous examples and exercises from the computational to the theoretical; brief development of linear algebra in $\mathbf{R}^N$; review of the elements of metric space theory; treatment of standard multivariable material: differentials as linear transformations, the inverse and implicit function theorems; Taylor's theorem, the change of variables for multiple integrals; Lebesgue integration introduced in a concrete way rather than via measure theory; later chapters move beyond $\mathbf{R}^N$ to manifolds and analysis on manifolds, covering the wedge product, differential forms, and the generalized Stokes' theorem.

Fonctions d'une variable complexe

Roger GODEMENT. — **Analyse mathématique III: fonctions analytiques, différentielles et variétés, surfaces de Riemann.** — Un vol. broché, 15,5×23,5, de IX, 338 p. — ISBN 3-540-66142-5. — Prix: € 42.61. — Springer, Berlin, 2002.

Les volumes 3 et 4 de cet ouvrage traitent principalement des fonctions analytiques (théorie de Cauchy, théorie analytique des nombres et fonctions modulaires), ainsi que du calcul différentiel sur les variétés, avec un exposé de l'intégrale de Lebesgue, en suivant d'assez près le célèbre cours donné longtemps par l'auteur à l'Université Paris VII. On reconnaîtra dans ce nouvel ouvrage le style inimitable de l'auteur, et pas seulement par son refus de l'écriture condensée en usage dans de nombreux manuels.