Groupes topologiques; groupes et algèbres de Lie

recaps the basic definitions and results, up to and including Lagrange's theorem, and then continues to explore topics such as the isomorphism theorems and group actions. Later chapters include material on chain conditions and finiteness conditions, free groups and the theory of presentations. In addition, a novel chapter of "entertainments" takes the basic theory and plays with it to obtain an assortment of results that will show a little of what can be done with the theoretical machinery.

Groupes topologiques ; groupes et algèbres de Lie

Jürgen FUCHS. — **Affine Lie algebras and quantum groups.** — Cambridge monographs on mathematical physics. — Un vol. broché, 19×23,5, de XIV, 433 p. — ISBN 0-521-48412-X. — Prix : £23.95. — Cambridge University Press, Cambridge, 1992.

This is an introduction to the theory of affine Lie algebras, to the theory of quantum groups, and to the interrelationships between these two fields that are encountered in conformal field theory. The description of affine algebras covers the classification problem, the connection with loop algebras, and representation theory including modular properties. The necessary background from the theory of semisimple Lie algebras is also provided. The discussion of quantum groups concentrates on deformed enveloping algebras and their representation theory, but other aspects such as R-matrices and matrix quantum groups are also dealt with.

Karl-Hermann NEEB. — **Holomorphy and convexity in Lie theory.** — De Gruyter expositions in mathematics, vol. 28. — Un vol. relié, 17×25, de XXI, 778 p. — ISBN 3-11-015669-5. — Prix : DM 298.00. — Walter de Gruyter, Berlin, 2000.

From the preface : "This monograph is devoted to the circle of ideas connecting *holomorphic* and unitary representations with invariant *convexity in Lie algebras.* The background of these ideas comprises many classical concepts... The irreducible unitary representations of Lie groups we are dealing with in this book are highest weight representations ; in some sense these are infinite-dimensional analogs of irreducible representations of compact groups. Among the irreducible unitary representations, they can be characterized by the property that they permit a holomorphic extension to a certain complex manifold S which is a semigroup containing the group in its boundary... The *main objective* of this book is to describe the interplay between holomorphic representations of complex semigroups, their complex geometry and analysis, and invariant convexity in the Lie algebra g and its dual g^*. We briefly refer to this circle of ideas as *holomorphic representation theory.*

Fonctions de variables réelles

N.L. CAROTHERS. — **Real analysis.** — Un vol. broché, 17,5×25,5, de XIII, 401 p. — ISBN 0-521-49756-6 (relié : 0-521-49749-3). — Prix : £19.95 (relié : £52.50). — Cambridge University Press, Cambridge, 2000.

This is a course in real analysis directed at advanced undergraduates and beginning graduate students in mathematics and related fields. Presupposing only a modest background in real analysis or advanced calculus, the book offers something to specialists and non-specialists. The course consists of three major topics : metric and normed linear spaces, function spaces, and Lebesgue measure and integration on the line. In an informal style, the author gives motivation and overview of new ideas, while supplying full details and proofs. He includes historical commentary, recommends articles for specialists and non-specialists, and provides exercises and suggestions for further study.