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Groupes topologiques; groupes et algèbres de Lie

Claude CHEVALLEY. — **Theory of Lie groups, I.** — Princeton landmarks in mathematics. — Un vol. broché, 15×23, de VII, 213 p. — ISBN 0-691-04990-4. — Prix: US\$19.95. — Princeton University Press, Princeton, 1999.

This famous book was the first treatise on Lie groups in which a modern point of view was adopted systematically, namely, that a continuous group can be regarded as a global object. To develop this idea to its fullest extent, Chevalley incorporated a broad range of topics, such as the covering spaces of topological spaces, analytic manifolds, integration of complete systems of differential equations on a manifold, and the calculus of exterior differential forms.

J.J. DUISTERMAAT, J.A.C. KOLK. — **Lie groups.** — Universitext. — Un vol. broché, 15,5×23,5, de VIII, 344 p. — ISBN 3-540-15293-8. — Prix: DM 79.00. — Springer, Berlin, 1999.

The aim of the book is to give a broad introduction to the field with an emphasis on using differential-geometrical methods, in the spirit of Lie himself. The structure of compact Lie groups is analyzed in terms of the action of the group on itself by conjugation. The book culminates in the classification of the representations of compact Lie groups and in their realization as sections of holomorphic line bundles over flag manifolds. The relations with algebraic and analytic models are also discussed. A review of the required background material is provided in appendices.

Jing-Song HUANG. — **Lectures on representation theory.** — Un vol. broché, 15,5×21,5, de IX, 189 p. — ISBN 981-02-3725-1. — Prix: £18.00. — World Scientific, Singapore, 1999.

This book is an expanded version of the lectures given at the Nankai Mathematical Summer School in 1997. Parts I-III of the book cover the relatively elementary material of representation theory of finite groups, simple Lie algebras and compact Lie groups. These theories are a natural continuation of linear algebra. The last chapter of Part III includes some recent results on extension of Weyl's construction to exceptional groups. Part IV covers some advanced material on infinite-dimensional representations of non-compact groups such as the orbit method, minimal representations and dual pair correspondences, which introduces some directions of the current research in representation theory.

Mesure et intégration

Lee Peng YEE, Rudolf VÝBORNÝ. — **Integral: an easy approach after Kurzweil and Henstock.** — Australian Mathematical Society lecture series, vol. 14. — Un vol. broché, 15×23, de XII, 311 p. — ISBN 0-521-77968-5. — Prix: £24.95. — Cambridge University Press, Cambridge, 2000.

The history of integration is a long and interesting one, and its roots can be traced as far back as the ancient Greeks. The first genuinely rigorous definition of an integral was that given by Riemann, and further (more general, and so more useful) definitions have since been given by Lebesgue, Denjoy, Perron, Kurzweil and Henstock, and this culminated in the work of McShane. This textbook provides an introduction to this theory, and it presents a unified yet elementary approach that is suitable for beginning graduate and final-year undergraduate students.