influence in various fields of analysis such as degree and fixed point theory. nonlinear elliptic boundary value problems, abstract evolutions equations, quasilinear parabolic systems, fluid dynamics, Fourier analysis, and the theory of function spaces. Contributors are A. Ambrosetti, S. Angenent, W. Arendt, M. Badiale, T. Bartsch, Ph. Bénilan, Ph. Clément, E. Fasangova, M. Fila, D.de Figueiredo, K. Gripenberg, G. Da Prato, E.N. Dancer, D. Daners, E. DiBenedetto, D.J. Diller, J. Escher, G.P. Galdi, Y. Giga, T. Hagen, D.D. Hai, M. Hieber, H. Hofer, C. Imbusch, K. Ito, P. Krejči, S.-O. Londen, A. Lunardi, T. Miyakawa, P. Quittner, J. Prüss, V.V. Pukhnachov, P.J. Rabier, P.H. Rabinowitz, M. Renardy, B. Scarpellini, B.J. Schmitt, K. Schmitt, G. Simonett, H. Sohr, V.A. Solonnikov, J. Sprekels, M. Struwe, H. Triebel, W. von Wahl, M. Wiegner, K. Wysocki, E. Zehnder and S. Zheng.

Bengt FORNBERG. — **A practical guide to pseudospectral methods.** — Cambridge monographs on applied and computational mathematics, vol. 1. — Un vol. broché. 15.5×23. de X. 231 p. — ISBN 0-521-64564-6. — Prix: £40.00. — Cambridge University Press. Cambridge. 1999.

During the last two decades. pseudospectral methods have emerged as alternatives to better known computational procedures, such as finite difference and finite element methods of numerical solution. These areas include computational fluid dynamics. wave motion, and weather forecasting. This book explains how, when and why this pseudospectral approach works. In order to make the subject accessible to students as well as researchers and engineers. the subject is presented using illustrations. examples. heuristic explanations. and algorithms rather than rigorous theoretical arguments. A key theme of the book is to establish and exploit the close connection that exists between pseudospectral and finite difference methods.

Paul KOOSIS. — **Introduction to H_p spaces.** — Second edition. corrected and augmented. — With two appendices by V.P. HAVIN. — Cambridge tracts in mathematics. vol. 115. — Un vol. relié. 15.5×23.5. de XIV. 287 p. — ISBN 0-521-45521-9. — Prix: £45.00. — Cambridge University Press. Cambridge. 1999.

The first edition of this well-known book was noted for the clear and accessible exposition of the basic theory of Hardy spaces from the concrete point of view (in the unit circle and the half plane). The intention was to give the reader. assumed to know basic real analysis. a secure foothold in the basic theory, and the ability to understand its applications in other areas. For this reason, emphasis is placed on methods and the ideas behind them rather than on the accumulation of as many results as possible. Computations are done in detail and there are many diagrams. The second edition retains that intention. but the coverage has been extended. The author has included two appendices by V.P. Havin, on Peter Jones' interpolation formula. and Havin's own proof of the weak sequential completeness of $L_1/H_1(0)$.

Systèmes dynamiques et théorie ergodique

Renato FERES. — **Dynamical systems and semisimple groups: an introduction.** — Cambridge tracts in mathematics. vol. 126. — Un vol. relié. 16×23.5. de XVI. 245 p. — ISBN 0-521-59162-7. — Prix: £35.00. — Cambridge University Press. Cambridge. 1998.

This book comprises a systematic. self-contained introduction to the Margulis-Zimmer theory and provides an entry into current research. The author develops in a detailed and self contained way the main results on Lie groups. Lie algebras. and semisimple groups. including basic facts normally covered in first courses on manifolds and Lie groups plus topics such as integration of infinitesimal actions of Lie groups. He then derives the basic structure theorems

for the real semisimple Lie groups, such as the Cartan and Iwasawa decompositions, and gives an extensive exposition of the general facts and concepts from topological dynamics and ergodic theory, including detailed proofs of the multiplicative ergodic theorem and Moore's ergodic theorem.

Jacek GRACZYK, Grzegorz ŚWIATEK. — **The real Fatou conjecture.** — Annals of mathematics studies, No. 144. — Un vol. broché, 15,5×23,5, de VIII, 148 p. — ISBN 0-691-00258-4. — Prix: US$22.50. — Princeton University Press, Princeton, 1998.

In 1920, Pierre Fatou expressed the conjecture that all critical points of a rational map of the Riemann sphere tend to periodic orbits under iteration. This conjecture remains the main open problem in the dynamics of iterated maps. In this book, the authors provide a rigorous proof of the Real Fatou Conjecture. In spite of the apparently elementary nature of the problem, its solution requires advanced tools of complex analysis. The authors have written a self-contained and complete version of the argument, accessible to someone with no knowledge of complex dynamics and only basic familiarity with interval maps.

M.G. NADKARNI. — **Basic ergodic theory.** — Second edition. — Birkhäuser advanced texts. — Un vol. relié, 17×24, de VI, 149 p. — ISBN 3-7643-5816-5. — Prix: SFr. 58.00. — Birkhäuser Verlag, Basel, 1995.

A new feature of the book is that the basic topics of ergodic theory such as the Poincaré recurrence lemma, induced automorphisms and Kakutani towers, compressibility and E. Hopf's theorem, the theorem of Ambrose on representation of flows are treated at the descriptive set-theoretic level before their measure-theoretic or topological versions are presented. In addition, topics centering around the Glimm-Effros theorem are discussed, topics which have so far not found a place in texts on ergodic theory. In this second edition, a section on rank one automorphisms and a brief discussion of the ergodic theorem due to Wiener and Wintner have been added.

M.G. NADKARNI. — **Spectral theory of dynamical systems.** — Birkhäuser advanced texts. — Un vol. relié, 17,5×24, de VII, 182 p. — ISBN 3-7643-5817-3. — Prix: SFr. 78.00. — Birkhäuser Verlag, Basel, 1998.

This book introduces some basic topics in the spectral theory of dynamical systems, but also includes advanced topics such as a theorem due to H. Helson and W. Parry, and another due to B. Host. Moreover, Ornstein's family of mixing rank one automorphisms is described with construction and proof. Systems of imprimitivity, and their relevance to ergodic theory, are discussed. Baire category theorems of ergodic theory, scattered in the literature, are derived in a unified way. Riesz products are considered, and they are used to describe the spectral types and eigenvalues of rank one automorphisms.

Equations aux différences finies, équations fonctionnelles

Peter A. CLARKSON, Frank W. NIJHOFF, (Editors). — **Symmetries and integrability of difference equations.** — London Mathematical Society lecture note series, vol. 255. — Un vol. broché, 15,5×23, de XVI, 424 p. — ISBN 0-521-59699-8. — Prix: £27.95. — Cambridge University Press, Cambridge, 1999.

There has, in recent years, been a remarkable growth of interest in the area of discrete integrable systems. Much progress has been made by applying symmetry groups to the study of