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James C. ROBINSON. — **Infinite-dimensional dynamical systems: from basic concepts to actual calculations: an introduction to dissipative parabolic PDEs and the theory of global attractors.** — Cambridge texts in applied mathematics. — Un vol. broché, 15×23, de xvii, 461 p. — ISBN 0-521-63564-0. — Prix: £24.95. — Cambridge University Press, Cambridge, 2001.

This book develops the theory of global attractors for a class of parabolic PDEs that includes reaction-diffusion equations and the Navier-Stokes equations, two examples that are treated in detail. A lengthy chapter on Sobolev spaces provides the framework that allows a rigorous treatment of existence and uniqueness of solutions for both linear time-independent problems (Poisson's equation) and the nonlinear evolution equations, that generate the infinite-dimensional dynamical systems of the title. Attention then turns to the global attractor, a finite-dimensional subset of the infinite-dimensional phase space that determines the asymptotic dynamics. In particular, the concluding chapters investigate in what sense the dynamics restricted to the attractor are themselves "finite-dimensional".

### *Équations aux différences finies, équations fonctionnelles*

Martin BOHNER, Allan PETERSON. — **Dynamic equations on time scales: an introduction with applications.** — Un vol. relié, 18,5×26, de x, 358 p. — ISBN 0-8176-4225-0. — Prix: SFr. 108.00. — Birkhäuser, Boston, 2001.

The study of dynamic equations on a measure chain (time scale) goes back to its founder S. Hilger (1988), and is a new area of still fairly theoretical exploration in mathematics. Motivating the subject is the notion that dynamic equations on measure chains can build bridges between continuous and discrete mathematics. Further, the study of measure chain theory has led to several important applications, e.g., in the study of insect population models, neural networks, heat transfer, and epidemic models. Parts of the book may be used in a special topics seminar at the senior undergraduate or beginning graduate levels. Finally, the work may serve as a reference to stimulate the development of new kinds of equations with potentially new applications.

### *Analyse de Fourier, analyse harmonique abstraite*

Lokenath DEBNATH, (Editor). — **Wavelet transforms and time-frequency signal analysis.** — Un vol. relié, 16,5×24, de xx, 423 p. — ISBN 0-8176-4104-1. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2001.

This volume is designed as a new source for modern topics dealing with wavelets, wavelet transforms, time-frequency signal analysis and other applications for future development of this new, important and useful subject for mathematics, science and engineering. Its main features include: A broad coverage of recent material on wavelet analysis, and time-frequency signal analysis and other applications that are not usually covered in other recent reference books. The material presented in this volume brings together a rich variety of ideas that blend most aspects of the subject mentioned above. This volume brings together a detailed account of major recent developments in wavelets, wavelet transforms, time-frequency signal analysis.

### *Transformations intégrales, calcul opérationnel*

R.B. PARIS, D. KAMINSKI. — **Asymptotics and Mellin-Barnes integrals.** — Encyclopedia of mathematics and its applications, vol. 85. — Un vol. relié, 16×24, de xvi, 422 p. — ISBN 0-521-79001-8. — Prix: £65.00. — Cambridge University Press, Cambridge, 2001.

This work is a comprehensive account of the properties of Mellin-Barnes integrals and their application to problems involving special functions, primarily the determination of asymptotic