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features, lifetimes, and peculiar ways of interacting. This book provides an introduction to this complex area of study. It covers a variety of topics, including soliton theory, nonlinear lattices, excitable media, perturbation theory, and the theory of quantum lattices, with a strong emphasis on the applications to experimental reality. It is designed to serve as both a textbook and as a general reference for students and researchers of nonlinear dynamics.

Dennis SERRE. — **Systems of conservation laws, 1: Hyperbolicity, entropies, shock waves.** — Translated by I.N. Sneddon. — Un vol. relié, 18×25,5, de xxii, 263 p. — ISBN 0-521-58233-4. — Prix: £40.00. — Cambridge University Press, Cambridge, 1999.

This book sets up the foundations of the modern theory of conservation laws describing the physical models and mathematical methods, leading to the Glimm scheme. Building on this the author then takes the reader to the current state of knowledge in the subject. In particular, he studies in detail viscous approximations, paying special attention to viscous profiles of shock waves. The maximum principle is considered from the viewpoint of numerical schemes and also in terms of viscous approximation. Small waves are studied using geometrical optics methods. Finally, the initial-boundary problem is considered in depth.

### *Systemes dynamiques et theorie ergodique*

Clark ROBINSON. — **Dynamical systems: stability, symbolic dynamics, and chaos.** — Second edition. — Studies in advanced mathematics. — Un vol. relié, 19×26, de 506 p. — ISBN 0-8493-8495-8. — Prix: DM 165.00. — CRC Press, Boca Raton, 1999, distributed by Springer, Berlin.

The book treats the dynamics of both iteration of functions and solutions of ordinary differential equations. This second edition provides a revised discussion of the saddle node bifurcation, a new section on the horseshoe for a flow with a transverse homoclinic point, material on horseshoes for nontransverse homoclinic points, indicating recent extensions to the understanding of how horseshoes arise, information proving the ergodicity of a hyperbolic toral automorphism, a new chapter on Hamiltonian systems.

### *Approximations et developpements en serie*

Gheorghe MICULA and Sanda MICULA. — **Handbook of splines.** — Mathematics and its applications, vol. 462. — Un vol. relié, 16,5×24,5, de xvi, 604 p. — ISBN 0-7923-5503-2. — Prix: Dfl. 495.00. — Kluwer Academic Publishers, Dordrecht, 1999.

The purpose of this book is to give a comprehensive approach to the theory of spline functions, from the introduction of the phrase “spline” by I.J. Schoenberg in 1946 to the newest theories of spline-wavelets or spline-fractals, emphasizing the significance of the relationship between the general theory and its applications. In addition, it provides new material on spline function theory, as well as a fresh look at basic methods in spline functions. An extensive reference section is provided.

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

Michael W. FRAZIER. — **An introduction to wavelets through linear algebra.** — Undergraduate texts in mathematics. — Un vol. relié, 16,5×24,5, de xvi, 501 p. — ISBN 0-387-98639-1. — Prix: DM 98.00. — Springer, New York, 1999.

This introduction to wavelets assumes a basic background in linear algebra (reviewed in Chapter 1) and real analysis at the undergraduate level. Fourier and wavelet analyses are first