Book Announcements

GLENDINNING, P., *Stability, Instability and Chaos,* Cambridge Texts in Applied Mathematics, Cambridge University Press, New York, 1993, 350 pages, $63.96.

Purpose: This textbook overviews an introductory discussion of nonlinear dynamical systems and ordinary differential equations with an emphasis on geometric interpretations of transition to instability.

Contents: Stability; linear differential equations; linearization and hyperbolic systems; two-dimensional dynamics; periodic orbits; bifurcation theory; chaos; global bifurcation theory.

MEYER, Y., *Wavelets,* Cambridge Texts in Applied Mathematics, Cambridge University Press, New York, 1993, 238 pages, $49.95.

Purpose: This reference gives an advanced presentation of the theory of wavelets by one of the pioneers in this rapidly emerging field of study with applications in signal processing and dynamical systems analysis.

Contents: Fourier series and integrals; filtering and sampling; multiresolution analysis; orthonormal wavelet bases; nonorthogonal wavelets; wavelets and Hardy spaces; wavelets and spaces of functions and distributions.

RUDE, U., *Mathematical and Computational Techniques for Multilevel Adaptive Methods,* Society for Industrial and Applied Mathematics, SIAM, Philadelphia, PA, 1993, 152 pages, $23.00.

Purpose: This book gives a description of a wide class of multilevel adaptive methods applicable to diverse applications in simulation and optimization.

Contents: Theory of multilevel adaptive methods; multilevel splittings; virtual global grid refinement techniques; multilevel adaptive relaxation algorithms.

DRIANKOV, D., HELLENDOORN, H., and REINFRANK, M., *An Introduction to Fuzzy Control,* Springer-Verlag, Berlin, 1993, 316 pages.

Purpose: This text provides an excellent self-contained discussion of the fundamentals of fuzzy set theory and its application to fuzzy control.

Contents: Fuzzy sets; fuzzy relations; approximate reasoning; fuzzy knowledge-based control; rule base; data base; inferences; fuzzification/defuzzification; nonlinear fuzzy control; adaptive fuzzy control; stability of fuzzy control systems.