

Book Announcements

LASIECKA, I. and TRIGGIANI, R., *Differential and Algebraic Riccati Equations with Application to Boundary/Point Control Problems: Continuous Theory and Approximation Theory*, Lecture Notes in Control and Information Sciences, series edited by M. Thoma and A. Wyner, Springer-Verlag, New York, 1991.

Purpose: This text discusses in detail the theoretical foundation of optimal control in function spaces and its representation via abstract Riccati equations.

Contents: Abstract differential Riccati equations; abstract Cauchy problem; existence and uniqueness results; heat equation; plate equation with boundary control; Schrodinger equation with boundary control; wave equation with point control; approximation methodologies; theory of convergent approximations.

BANKS, H. T., *Control and Estimation in Distributed Parameter Systems*, Society for Industrial and Applied Mathematics, Philadelphia, PA, 1992, 227 pages, \$56.50.

Purpose: This reference summarizes current methodologies in control and estimation for systems governed by partial differential equations.

Contents: Frequency domain methods for infinite dimensional systems; state space and time domain methods for infinite dimensional systems.

DAUBECHIES, I., *Ten Lectures on Wavelets*, Society for Industrial and Applied Mathematics, Philadelphia, PA, 1992, 357 pages, \$37.50.

Purpose: This book gives a broad presentation on the fundamental theory of the rapidly developing field of wavelet analysis for digital filter design, digital signal processing, and image processing.

Contents: Continuous wavelet transforms; discrete wavelet transforms; multiresolution analysis; compactly supported wavelets; topics in digital signal and image processing.

CHUI, C., *An Introduction to Wavelets*, Academic Press, New York, 1992, 264 pages.

Purpose: This well-written book gives an overview of the theory of wavelet analysis as is applicable to digital signal and image processing, with a special emphasis on spline-based and biorthogonal wavelets.

Contents: Fourier analysis; windowed Fourier analysis; wavelet transforms; cardinal spline analysis; biorthogonal wavelets; cardinal spline wavelets; orthogonal wavelets.