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Chapter 5 - Conventional PID RegulatorSECOND-ORDER CT PROCESS WITH DEAD-TIME; OBSERVER-BASED PID REGULATOR; Chapter 6 - Control of Stochastic Processes; MINIMUM VARIANCE (MV) REGULATOR; GENERALIZED MINIMUM VARIANCE REGULATOR; PREDICTION OF DETERMINISTIC SIGNALS; PREDICTION OF STOCHASTIC SIGNALS; Chapter 7 - Control of Multivariable Processes; YOULA-PARAMETERIZED MIMO CLOSED-LOOP CONTROL; YOULA-PARAMETERIZED MIMO REGULATOR FOR THE ``NAIVE'' PROCESS MODEL; CONTROL OF INVERSE STABLE MIMO PROCESS MODELS; DECOUPLING CONTROL OF MIMO PROCESS MODELS
DECOUPLING CONTROL USING YOULA-PARAMETERIZED MIMO REGULATORSDECOUPLING EXAMPLES; MIMO PROCESS MODELS LINEAR IN PARAMETER MATRICES; MIMO PREDICTIVE REGULATORS; MIMO MINIMUM VARIANCE (MV) REGULATOR; Chapter 8 - Control of Nonlinear Cascade Processes; SIMPLE NONLINEAR CASCADE MODELS; NONLINEAR PROPORTIONAL-INTEGRAL-DERIVATIVE (PID) REGULATOR FOR NONLINEAR CASCADE MODELS; Chapter 9 - Robust Control; 9.1 ROBUSTNESS OF YOULA-PARAMETERIZED REGULATOR; 9.2 LIMITS OF REGULATOR ROBUSTNESS; 9.3 GAP METRICS; 9.4 DIALECTIC BETWEEN PERFORMANCE AND ROBUSTNESS; 9.5 PRODUCT INEQUALITIES
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A.1.4 TOEPLITZ MATRICES

Sommario/riassunto

This book covers the most important issues from classical and robust control, deterministic and stochastic control, system identification, and adaptive and iterative control strategies. It covers most of the known control system methodologies using a new base, the Youla parameterization (YP). This concept is introduced and extended for TDOF control loops. The Keviczky-Banyasz parameterization (KP) method developed for closed loop systems is also presented. The book is valuable for those who want to see through the jungle of available methods by using a unified approach, and for those who want