Book Announcements

HARRIS, C.J., Royal Military College of Science, and **VALENCIA, J.M.E.**, Universidade do Minho, *The Stability of Input-Output Dynamical Systems.* Academic Press, Orlando, FL, 1983, 268 pages. $49.00.

Purpose: The purpose of this book is to develop a mathematically rigorous approach for the analysis of multi-input, multi-output dynamical systems based solely on the input-output spaces of the system. The only system representation allowed a priori is the description of the properties of the input-output map. The descriptions of other representations (for example, the transfer functions) are deduced from these properties. Because of its mathematical level, this book seems to be aimed at researchers rather than students.

Contents: Mathematical preliminaries. Reimann surfaces and the generalized principal of the argument. Representation of multipliers. Linear input-output stability theory. Extended space theory in the study of system operators. Stability of nonlinear multivariable systems—circle criteria. Stability of nonlinear multivariable systems—passivity results. References. Bibliography. Subject index.

TEO, K.L., University of New South Wales and National University of Singapore, and **WU, Z.S.**, Zhongshan University, *Computational Methods for Optimizing Distributed Systems.* Academic Press, Orlando, FL, 1984, 317 pages. $62.00.

Purpose: This book is devoted to the study of computational algorithms for solving optimal control problems associated with distributed parameter systems, in particular, with first and second boundary-value problems of a linear, second-order, parabolic, partial differential equation. While the prerequisites for this book are elements of measure theory and functional analysis usually taught at the senior university level, these topics are summarized in the first chapter.

Contents: Mathematical background. Boundary value problems of parabolic type. Optimal control of first boundary problems: strong variation techniques. Optimal policy of first boundary problems: gradient techniques. Relaxed controls and the convergence of optimal control algorithms. Optimal control problems involving second boundary-value problems. Appendices. References. List of notations. Index.

BOGART, T.E. JR., University of Southern Mississippi, *Laplace Transforms: Theory and Experiments.* John Wiley & Sons, New York, 1983, 148 pages. $14.95.

Purpose: This book has been written as a beginning-level text in Laplace transforms and experimentation in circuit analysis. Hence the only prerequisites are calculus and basic circuit theory. After the theory of Laplace transforms is presented, each of the subsequent chapters is formulated as an experiment.

Contents: Laplace transform theory. Transfer functions. Frequency response and bode plots. Asymptotic bode plots; lead and lag networks. Transients in DC networks. Transients in AC networks. Initial conditions. Mesh analysis. Superposition. The initial and final value theorems. The shifting theorem. Appendix.

SMIRNOV, G.M., Boston University, *Oscillation Theory of Optimal Processes.* John Wiley & Sons, New York, 1984, 154 pages. $29.95.

Purpose: This book is intended for use in graduate courses on the analysis and design of optimal dynamic systems and for independent study by engineers and applied mathematicians. The book presumes some knowledge of calculus, ordinary differential equations, and matrix algebra.

Contents: Introduction. Oscillation criteria in the theory of optimal processes. Linear theory of optimal control. General position conditions. *p*-intervality conditions. Computation of optimal processes. References. Index.

OSYCZKA, A., University of Cracow, *Multicriterion Optimization in Engineering.* Ellis Horwood Limited, Chichester, UK, 1984, 175 pages. $54.95.

Purpose: Multicriterion optimization is presented along the lines of Pareto and min-max optima. The basic methods of solving linear and nonlinear problems are presented in a manner which does not require an extensive mathematical background. FORTRAN codes are presented for the most universal methods.

Contents: Introduction to the formulation of the multicriterion optimization problem. Multicriterion mathematical programming problem. Methods based on function scalarization. Methods based on min-max approach. Network multicriterion optimization. Optimization examples. References. Appendices. Symbols and notations. Author index. Subject index.

Errata

Absolute Stability of Symmetric Highly Maneuverable Missiles

M. Guelman
Rafael, Ministry of Defence, Haifa, Israel
[J. Guidance, **8**, 660-662 (1985)]

EQUATIONS (10), (11), (15), (27), and (28) should correctly read as follows:

$$M_q = N_r \equiv 2\zeta\omega_n \tag{10}$$

$$M_\alpha = N_\beta \equiv \omega_n^2 \tag{11}$$

$$\dot\alpha = -\alpha/\tau_a - \beta p - q \tag{15}$$

$$|\dot r| = \sqrt{x_1} \tag{27}$$

$$|\dot\alpha| = \sqrt{x_2} \tag{28}$$

On p. 661, in the paragraph following Eq. (23), the sentence beginning, "Moreover, due to the dependence..." should be emended to read: "Moreover, due to the dependence of the induced roll moment $\mathcal{L}$ on the total angle of attack, α_T will also tend to zero for $t \to \infty$."

The author gratefully acknowledges Mr. A. Inbar for bringing to his attention these typographical errors.