

entiation, and the solution of ordinary differential equations. The part on partial differential equations is a bit brief but does convey much information that is needed by the engineer.

All in all, it is a fine text for engineers.

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86[P, Z].—JOHN PESCHON, Editor, *Disciplines and Techniques of Systems Control*, Blaisdell Publishing Company, New York, 1965, xi + 547 pp., 24 cm. Price \$12.50.

This is an excellent collection of articles by different authors devoted to an exposition of a number of recent developments in the field of control theory. The list of chapter headings gives a quick idea of the contents: L. Pun and J. Peschon, "The State of the Art of Automatic Control"; E. W. Henry, "The Basic Mathematics of Automatic Control"; J. Peschon, "Multivariable and Timeshared Systems"; L. G. Shaw, "Optimum Stochastic Control"; J. Peschon and H. B. Smets, "Nonlinear Control Systems: Selected Topics"; A. M. Letov, "Liapunov's Theory of Stability of Motion"; A. A. Feldbaum, "Optimal Systems"; C. L. McClure, "Reference Stabilization and Inertial Guidance Systems"; J. Peschon, L. Pun, and S. K. Mitter, "Computer Process Control"; and R. C. Amara, "Systems Engineering: Its Principles, Practices, and Prospects".

The inclusion of the articles by Letov and Feldbaum make the volume of particular importance. Not only are these authors outstanding in their domains, but, in addition, they are able to give the American reader an overall view of both American and Russian work in these new areas.

The book is highly recommended for students and teachers, and, in general, for all those who want to understand what some of the problems and achievements of modern control theory are.

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87[P, Z].—J. WOLFOWITZ, *Coding Theorems of Information Theory*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1962, 125 pp., 23.5 cm. Price \$9.35.

In this monograph the author proves 21 coding theorems, 16 strong converses, and eight weak converses for different kinds of channels.

There are 10 chapters: one on the discrete memory-less channel, with particular treatment of the binary symmetric channel and the finite-state channel with state calculable by both sender and receiver or only by the sender; another chapter on compound channels (classes of channels) including channels with feedback; two chapters on finite- and infinite-memory channels; one on the semicontinuous memory-less channel; and one on continuous channels with additive Gaussian noise.

Since its publication the monograph has had a considerable and positive influence on mathematical work on coding theory. Many of its results are due in part to, or have been refined by, the author. The proofs are clear and elegant.