Book Selection

Edited by BERNARD WARNER

Optimization Theory with Applications.

DONALD A. PIERRE.

John Wiley, New York, 1969. xv+612 *pp.* 150*s.*

With a title involving "optimization" and "application" I was surprised—and felt cheated—to find that the obvious areas of O.R. interest were not included in this book. The techniques expected are all present—in a highly mathematical form—but the presence of numbers appears to be accidental except in the chapters on simplex, search and dynamic programming.

The main chapters of the book are concerned with calculus of variations; spectrum factorization and frequency optimization; linear programming (simplex); non-linear programming and search techniques; dynamic programming; and a maximum principle. These are all about the same length and average 70 pages. The other sections on classical minima and maxima and a series of appendices account for the remaining 150 pages. These subjects are treated reasonably clearly for the mathematical reader and each chapter has the merit of many exercises.

There are few applications, and all of them refer to electrical circuits. This is understandable since the author is clearly writing for electrical engineers. The claim that this is an applications book is, however, suspect; the book contains a number of undefined symbols which I had difficulty in interpreting. The book illustrates the annoying American habit of ignoring work of authors writing in journals published outside the U.S.; of 531 references cited there are only 13 papers by authors in the U.K., and one of these is dated 1873.

As a reference book on optimization tools in electrical engineering this book may fulfil a purpose; O.R. practitioners interested in applications should avoid it.

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