

*Recent Advances in Optimizations Techniques*, edited by A. Lavi and Th. P. Vogl. Proceedings of a Symposium, sponsored by the I.E.E.E. and the Optical Society of America, held at Carnegie Institute of Technology, Pittsburgh, in April 1965. John Wiley and Sons, Ltd., London and New York, 1966; 656 pp, 95 sh.

As indicated in its preface, this book is a series of papers by "practioners in nonlinear optimization"; this means that priority was given to studies concerned with implementation and application. In fact, roughly one third of the papers (30 in total) is mainly technical, giving interesting illustrations of real-life problems. Further, about the same number of papers is concerned with the description and comparison of optimization programmes. Some of these are general-purpose programmes, consisting of various procedures, from which a choice is made by a master routine, depending upon the kind of problem presented. The remaining studies are of a more fundamental nature; whereas some of these are mere research notes, other papers of this kind deserve being mentioned explicitly. This applies to a study of a class of linear integer problems (of the pseudo-assignment type), and to a paper on dynamic inference decision problems. These examples also give an indication of the diversity of subject matter presented: as could be expected, the book does not show too much coherence. On the other hand, some guidance in this respect is provided in the from of an extensive, though necessarily incomplete bibliography, with annotations.

In general, the problems dealt with fall into just two broad categories, which are indicated as "design optimization of static systems" and "trajectory and performance optimization of dynamic systems", respectively. Most of the papers in the first category are concerned with non-linear programming; one of these, cited incorrectly in the bibliography, is on geometric programming (which deals with generalized polynomial functions and constraints). In addition, there are two papers about integer programming, and another on search techniques. The problems of the second category involve the applications of the variational calculus and of dynamic programming to systems with either deterministic or stochastic inputs. The most interesting papers of this class might seem to be those dealing with the synthesis of control on following an optimal trajectory.

J. S. Folkers