matical understanding. To the reviewer, a contradiction is implied, which, it is doubtful, was intended. It is considered dangerous to suggest to students that physical intuition may be used in solving problems, without parallel mathematical analysis of the properties of the analogous systems involved. Otherwise, there is nothing that can be cited to detract from the value of *Analog Simulation* as a unique contribution to its field.

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33[Z].—W. OPPELT, Compiler, *Anwendung von Rechenmaschinen bei der Berechnung von Regelvorgängen* (*Application of Computing Machines to the Computation of Servomechanisms*), R. Oldenbourg, Verlag, Munich, 1958, 128 p., 24 cm. Price DM 16.80.

This book consists of ten papers presented at a meeting in Düsseldorf on November 8, 1957. The authors and titles are:

1. E. Bucovics	On the Use of Small Digital Computers for the Solution of Fundamental Problems of Servomechanics
2. J. B. Reswick	A Simple Graphical Method for Deconvolution
3. A. Ieonhard	A Special Computer for Polynomials
4. R. Herschel	On the Design of Analog Circuits for Problems of Servomechanics
5. O. Foellinger & G. Schneider	Comparison of Computations for Servomechanisms using Computing Machines of Different Types
6. E. Buehler	On the Mechanical System with Friction and its Electronic Equivalent
7. H. Witsenhausen	Application of Analog Computers for Optimizing Discontinuous Control Circuits with Randomly Varying Input Parameters
8. D. Ernst	Practical Work with Analog Computers
9. Th. Stein	On the Usefulness of Analog Experiments in Practical Applications
10. W. Roth	Investigation of the Control Characteristics of Electric Generator Sets by the Use of Analog Computers

(All papers are in German, except the second.)

Only two papers consider digital computers: No. 1 describes in much detail the use of an IBM 604 calculating punch for some basic problems; No. 5 compares the accuracy and speed of two analog computers (one mechanical, one electronic) with that obtained on the IBM 650 in the BELL interpretative mode. The comparison is unfair, however, since the Runge-Kutta method is used for solving a system of linear differential equations with constant coefficients (time: 27 sec./step for a system of six equations!).

There is no space here for reviewing each paper separately, so that the following statements may do some injustice to individual papers. Most authors report mainly on their practical work and experiences, not on new theoretical results. There are a

fair number of references, but some are geographically biased and/or obsolete. The book gives an interesting picture of the local situation (Germany and Austria) in the mid-fifties; but as far as applications of computing machines, and in particular digital computers, are concerned, it was almost obsolete when it appeared in 1958 and is, of course, even more nearly obsolete today.

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