in two chapters, as are stability and stability criteria. These pages appear particularly instructive and well presented. The chapter on the filtering properties of linear systems is preceded by a comprehensive discussion of the kinetics of random processes in general. Similarly, the chapter on stability criteria for fixed systems is preceded by a discussion of the stability of linear systems in general.

In the concluding chapter, the authors illustrate how the different techniques of analysis discussed earlier in the book apply to various types of systems, finite and infinite, with continuously distributed parameters. Infinite systems with lumped parameters (cascade networks) are not included.

Some familiarity with the elements of matrix algebra is taken for granted, as is some knowledge of the theory of analytical functions, complex integration and such subjects as the calculus of residues, which is used in evaluating integrals and in connection with the complex Laplace inversion integral and the Nyquist criterion. The positive-real-function approach is not used. Altogether the book does not deal with system theory proper and could equally well be entitled "Linear System Analysis." For a course on this subject, bridging undergraduate and graduate levels, as well as for self study, it can be well recommended. The excellent presentation customary in a McGraw-Hill production, and the relatively low price, make it even more attractive.

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Bernhard Gross, director of the Division of Scientific and Technical Information for the International Atomic Energy Agency, is the author of a number of publications on linear systems.

DEFINITE INTEGRALS

ASYMPTOTIC EXPANSIONS. By E. T. Copson. 120 pp. Cambridge University Press, Cambridge, England, 1965. $6.00.

by J. Gillis

The kernel of this excellent little book was a short monograph written by the author for the Admiralty Computing Service in 1943. The new version covers essentially the same ground as the original text; integration by parts, stationary phase, saddle point, and steepest descent. However care has been taken to incorporate many developments of the past twenty years, for example, the vander Corput neutralizer, Erdelyi's development of the integration by parts method, and the methods of Chester, Friedman, and Ursell for handling coalescing saddle points. In fact it is encouraging to note that even in this well worked area of classical analysis there is still room for new ideas.

The scope of the work is limited to methods for evaluating definite integrals, and this presumably explains the exclusion of the Darboux method and of phase integral methods of WKBJ type. However, the methods presented are worked out clearly and fully and are abundantly illustrated by nontrivial examples. The book constitutes a useful addition to mathematical literature.

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J. Gillis is a member of the Department of Applied Mathematics at the Weizmann Institute of Science in Rehovoth, Israel.

A FUNDAMENTAL EFFECT

MÖSSBAUER EFFECT: PRINCIPLES AND APPLICATIONS. By Gunther K. Wertheim. 116 pp. Academic, New York, 1964. Cloth $5.50; paper $2.45.

by R. B. Lindsay

It is sometimes asserted that the day of the simple, fundamental physical effect is over, and that future physical discoveries will be made only with large-scale, expensive apparatus. That the opposite is true has, however, been demonstrated on numerous occasions, and in recent years rather dramatically by the observation of the Mössbauer effect, which has the added interest of having resulted from the university graduate work of the discoverer. Dating from 1959 it has already led to an impressive body of new research in nuclear and solid-state physics.

The objective of the small volume under review, written by a well known member of the staff of the Bell Tele-

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The reviewer is dean of the graduate school at Brown University.