special interest is the author's use of the zeta-transform to study Markovian processes.

In attempting to treat so much material in the advanced portion of the book, the author is not able to maintain the same clarity found in the first part of the book. Some topics are explained thoroughly in the advanced part, but others are poorly developed and confusing. I count the first half a great success as a lucid introduction to these topics. However, the second half is more useful when augmented by readings from other sources. A minor irritation is an abundance of typographical errors. Its use as a text is possible for many types of courses; it has a useful bibliography and index but no exercises. It is a wide-ranging book with sections comprehensible at many levels of mathematical sophistication.

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1. CLAUDE BERGE, *The Theory of Graphs and Its Applications*, Methuen, London, 1962.
2. J. C. C. MCKINSEY, *An Introduction to the Theory of Games*, McGraw-Hill, New York, 1952.
3. A. KAUFMANN & R. CRUON, *Dynamic Programming*, Academic Press, New York, 1967.

63[4].—WERNER GLASMACHER & DIETMAR SOMMER, *Implizite Runge-Kutta-Formeln*, Westdeutscher Verlag, Köln, 1966, 178 pp., 24 cm. Price DM 44.00.

Implicit Runge-Kutta methods based on Gauss-Legendre quadrature formulae were introduced by Ceschino and Kuntzmann [1] and by the reviewer [2]. Methods based on Lobatto and on Radau quadrature formulae were introduced by the reviewer [3]. These methods have the property that if m is the number of stages, then the order is $2m$ for the Gauss case, $2m - 2$ for the Lobatto case, and $2m - 1$ for the two types of the Radau case. A disadvantage of the methods for integrating differential equations in practice is their implicit nature.

The only previous tables of the coefficients of the methods are those of the reviewer [4], which give coefficients to 20D for methods of the four types with orders not exceeding 20. The present tables give coefficients to 24S for the four methods up to $m = 20$. In addition to the tables, full descriptions of the evaluation methods are given, including an Algol programme and flow charts.

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1. F. CESCHINO & J. KUNTZMANN, *Problèmes Différentiels de Conditions Initiales*, Dunod, Paris, 1963.
2. J. C. BUTCHER, "Implicit Runge-Kutta processes," *Math. Comp.*, v. 18, 1964, pp. 50–64.
3. J. C. BUTCHER, "Integration processes based on Radau quadrature formulas," *Math. Comp.*, v. 18, 1964, pp. 233–244.
4. J. C. BUTCHER, *Tables of Coefficients for Implicit Runge-Kutta Processes*, ms. of 9 sheets deposited in the UMT file [see *Math. Comp.*, v. 19, 1965, p. 348, RMT 56].

64[4].—MINORU URABE, *Nonlinear Autonomous Oscillations, Analytical Theory*, Academic Press, New York, 1967, xi + 330 pp., 24 cm. Price $16.00.

This monograph contains results in the theory of nonlinear autonomous oscillations, most of them based on the author's research. The main topic is the analytical