today than at the time of its first appearance. It should certainly not be compared with any of the newer systematic and comprehensive treatises of the field, such as L. Hörmander's excellent work (Springer-Academic Press, 1963). As stated before, the value of this monograph is rather the clear and detailed presentation of one unified and original approach to the solution of some of the basic problems in the theory of partial differential equations, even though this approach has now become part of a larger theory. It appears to this reviewer that the value of the translation might have been enhanced even more if an up-to-date, annotated bibliography had been provided to supply the student with the necessary bridge to the present state of the field.

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87[X].—L. Fox, *Numerical Solution of Ordinary and Partial Differential Equations*, Addison-Wesley Publishing Company, Inc., Reading, Mass., 1962, ix + 509 p., 23.5 cm. Price $10.00.

This volume is another useful addition to the expanding library in the field of numerical analysis devoted to the solution of differential equations by numerical methods. The material is based on a series of lectures presented at the Oxford University Computing Laboratory during the summer of 1961. The areas covered include the following: (1) ordinary differential equations; (2) integral equations; (3) introduction to partial differential equations; and (4) practical problems in partial differential equations.

Although the lectures were delivered by a number of workers in the field, the book achieves a remarkable degree of coherence. The editor, L. Fox, and the contributors (D. F. Moyers, *et al.*) also deserve much credit for the promptness of the publication and the lucidity of the presentation.

The first section treats the solution of ordinary differential equations by the method of finite differences. It covers such topics as the Runge-Kutta method, eigenvalue problems, and Chebyshev approximation. Of special interest is the discussion of stability as it relates to the solution of ordinary differential equations. The author finds it useful to classify several types of instability, such as inherent instability, partial instability, and strong instability.

Section 2 discusses the numerical solution of integral equations, including such topics as Fredholm equations of the first, second, and third kinds, equations of Volterra type, integro-differential equations in nuclear collision problems, and the Hartree-Fack equation.

Section 3 contains a readable exposition of the methods in common use for the numerical solution of partial differential equations of hyperbolic, elliptic, and parabolic types.

Section 4 contains a discussion of illustrative problems involving partial differential equations solved by the methods of finite differences, selected from a representative cross-section of modern physics and engineering.

Although generally well done, the book does show the signs of haste in many spots, and should be improved in later editions.

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