

that the method of least squares satisfies these criteria. Here constraints are handled by the method of penalty functions. Various special techniques for handling eigenvalue problems are given. A comparison of the least-squares method with others is made. The least-squares method is applied to the problem of fuel depletion in a nuclear reactor and the results are compared with those obtained by standard methods. Excellent results are obtained.

The book contains numerous examples which illustrate the effectiveness of the various methods employed. The basic theory upon which the method is based is summarized in appendices. No attempt is made to give a priori error estimates.

The book should prove to be useful to one who is interested in solving problems and to be instructive to one who is interested in theory. Many useful ideas are set forth. The examples are well chosen and illustrate difficulties as well as advantages of a particular method.

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40[X].—FRANCIS B. HILDEBRAND, *Methods of Applied Mathematics*, Second Edition, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1965, ix + 362 pp., 24 cm. Price \$10.00.

This volume is the second edition of a book published originally in 1952. It consists of three long chapters entitled "Matrices and Linear Equations," "Calculus of Variations and Applications," and "Integral Equations." The first edition contained an additional chapter entitled "Difference Equations." This chapter has been removed and is to be expanded and published as a separate volume.

The material in each chapter is essentially independent of the other chapters. Each chapter is a brief but reasonably comprehensive treatment of the topic from an applied point of view. There are a large number of problems and a list of answers is given at the back of the book.

In order to fairly appraise the book it is necessary to consider it in conjunction with the author's text *Advanced Calculus for Applications*, together with his forthcoming book on difference equations and finite-difference methods. The present volume is an obvious extension of *Advanced Calculus for Applications*, containing additional topics which could not be included there. The two volumes can be nicely used in a three- or four-semester course on methods of applied mathematics at an intermediate level. The book can also be used for reference or self study. It is well written, and considerable care has been taken in introducing the topics in each chapter. It can be highly recommended if used as noted above.

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41[X].—L. B. RALL, Editor, *Error in Digital Computation*, Volume I, John Wiley & Sons, Inc., New York, 1965, ix + 324 pp., 24 cm. Price \$6.75.

This book is the proceedings of an advanced seminar conducted by the Mathematics Research Center, United States Army at the University of Wisconsin, October 5-7, 1964. As such it contains five papers based on the addresses of the invited speakers. The latter part of the book consists of a bibliography of books and papers on error analysis taken from the Mathematical Reviews.