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HEMMERLE, WILLIAM J. *Statistical Computations on a Digital Computer*. Blaisdell Publishing Company, Waltham, Massachusetts, 1967. x+230 pp. $7.50.

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The author of this book is taking a somewhat liberal view of the area of "statistical computations." For included in his coverage are Chapter 1, Numerical Methods of Approximation, Interpolation and Integration; Chapter 2, Monte Carlo Procedures; Chapter 3, Multiple Regression Computations; Chapter 4, Computation and Application of Characteristic Roots and Vectors; and Chapter 5, Analysis of Variance Computations. Although a more narrow definition of statistical computation would be confined to the subjects of Chapters 2, 3 and 5, the liberal view taken by the author is laudable and rewarded by numerous applications of the subject matter area of the other chapters to statistical problems. Accordingly, the treatment of the subject of Chapters 1 and 4, whilst giving a very competent treatment from a *general* numerical analysis point of view are, naturally, somewhat biased towards the statistical applications. Notable among these are the applications of characteristic roots and vectors to principle component analysis and factor analysis.

With regard to the more statistically oriented chapters, perhaps the most notable is Chapter 5 (dealing with analysis of variance computations) in which the authors own system called AARDVARK naturally receives prominence. Notable about AARDVARK is the conceptual simplicity of the operator calculus associated with it and its generality of dealing both with balanced experimental design as well as with generalizations to unequal cell frequency-data analysis, and analysis of covariance. As might be expected, these latter generalizations are confined to a completely fixed model.

With regard to the Monte Carlo procedures (Chapter 2), the treatment is somewhat more restricted. The generation of random numbers by the so-called product residue method is rightly stressed (IBM Reference Manual C-8011); however, the accounts of variance reduction methods in Monte Carlo calculations only deal with the very basic techniques. Likewise, the "rejection methods" are only lightly touched.

Chapter 4 dealing with multiple regression analysis is very competent but, of course, confined to the high speed computer aspects of linear model methodology.