

3. E. J. HANNAN, *Multiple Time Series*, Wiley, New York, 1970.

4. D. E. DUDGEON & R. M. MERSEREAU, *Multidimensional Digital Signal Processing*, Prentice-Hall, Englewood Cliffs, N. J., 1984.

32[65–06].—A. ISERLES & M. J. D. POWELL (Editors), *The State of the Art in Numerical Analysis*, The Institute of Mathematics and its Applications Conference Series, Vol. 9, Oxford Univ. Press, Oxford, 1987, xiv + 719 pp., 24 cm. Price \$98.00.

A welcome tradition seems to be evolving in England to organize a conference once a decade to review progress made in numerical analysis during the past ten years. The volume under review contains the proceedings of the third such conference, held at the University of Birmingham, April 14–18, 1986. (For the two preceding conferences, see [1], [2].) An attempt has again been made to survey the entire field of numerical analysis. This resulted in 23 contributions, written by acknowledged experts, covering such areas as numerical linear algebra (eigenvalues, statistical applications, sparse matrices), approximation theory (multivariate approximation, splines, best approximation and regression analysis, complex elementary functions), optimization (linear and quadratic programming, nonlinear constraints), nonlinear equations (tensor methods, bifurcation problems, secant updating techniques), the influence of machine architectures on numerical analysis (vector and parallel processors), ordinary differential equations (stability theory, stiff problems, order stars), integral equations (Fredholm and Volterra equations, boundary integral equations), and partial differential equations (multigrid, Galerkin, and finite element methods, free and moving boundary problems, nonlinear conservation laws).

W. G.

1. J. WALSH (ed.), *Numerical Analysis: An Introduction*, Academic Press, London, 1966.

2. D. A. H. JACOBS (ed.), *The State of the Art in Numerical Analysis*, Academic Press, London, 1977. [Review **26**, *Math. Comp.*, v. 32, 1978, p. 1325.]

33[41–06].—J. C. MASON & M. G. COX (Editors), *Algorithms for Approximation*, Clarendon Press, Oxford, 1987, xvi + 694 pp., 24 cm. Price \$125.00.

This volume contains 12 invited and 29 contributed papers presented at an international conference at the Royal Military College of Science in Shrivenham, England, during July 15–19, 1985. Practical and algorithmic aspects of approximation are given particular emphasis. The contributions are organized in three primary sections: I. Development of Algorithms, II. Applications, III. Software, the first two being further subdivided into subsections 1. Spline approximation and smoothing, 2. Spline interpolation and shape preservation, 3. Multivariate interpolation, 4. Least square methods, 5. Rational approximation, 6. Complex and nonlinear approximation, 7. Computer-aided design and blending, and 8. Applications in numerical analysis, 9. Applications in partial differential equations, 10. Applications in other disciplines, respectively.

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