

Modeling and Physical Applications. Especially timely are the discussion of currently available software packages, such as ELLPACK, ITPACK, MODULEF, and the Yale Sparse Matrix Package; the possibilities offered by vector and parallel computers; and the numerical modeling of semiconductors.

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15[41–06, 30E10, 33A65, 41A05, 41A20, 41A21].—P. R. GRAVES-MORRIS, E. B. SAFF & R. S. VARGA (Editors), *Rational Approximation and Interpolation*, Lecture Notes in Math., vol. 1105, Springer-Verlag, Berlin, 1984, xii + 528 pp., 24 cm. Price \$25.50.

This volume contains the proceedings of the Conference on Rational Approximation and Interpolation, held at the University of South Florida, Tampa, Florida, December 12–16, 1983. It opens with four survey papers: “The Faber Operator” by J. Milne Anderson, “Survey on Recent Advances in Inverse Problems of Padé Approximation Theory” by G. López Lagomasino & V. V. Vavilov, “Some Properties and Applications of Chebyshev Polynomial and Rational Approximation” by J. C. Mason, “Polynomial, Sinc and Rational Function Methods for Approximating Analytic Functions” by F. Stenger, and is followed by 39 research articles on such topics as approximation and interpolation theory, block structures of Padé and other tables, circuit theory, convergence theory, critical phenomena, location of zeros and poles, and numerical methods. The vitality of the field, and the excitement generated by some of the recent advances, can be felt even upon a cursory reading of these proceedings.

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16[78–06, 78A45].—WOLFGANG-M. BOERNER et al. (Editors), *Inverse Methods in Electromagnetic Imaging*, Parts 1 and 2, Reidel, Dordrecht, Holland, 1985, xxxii + 1347 pp., 24½ cm. Price \$145.00.

The proceedings of the NATO Advanced Research Workshop on Inverse Methods in Electromagnetic Imaging, held at Bad Windsheim, Germany, September 18–24, 1983, these volumes comprise 70 papers, organized into five topics: Mathematical inverse methods and transient techniques, numerical inversion methods, polarization utilization in the electromagnetic vector inverse problem, image quality and image resolution in remote sensing and surveillance, holographic and tomographic imaging and related phase problems. Dealing with notoriously ill-posed problems, the papers on numerical methods should be of particular interest to readers of this journal.

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17[58Fxx, 70Kxx].—P. FISCHER & WILLIAM R. SMITH (Editors), *Chaos, Fractals, and Dynamics*, Lecture Notes in Pure and Appl. Math., vol. 98, Marcel Dekker, New York and Basel, 1985, viii + 261 pp., 25 cm. Price \$59.75 (U. S. and Canada), \$71.50 (all other countries).