33|65–06].—WOLFGANG HACKBUSCH (Editor), *Efficient Solutions of Elliptic Systems*, Notes on Numerical Fluid Mechanics, Vol. 10, Vieweg, Braunschweig, 1984, iii + 154 pp., $22\frac{1}{2}$ cm. Price $20.00.

This book contains 11 papers presented at the GAMM-seminar "Efficient solutions of elliptic systems" at the University of Kiel, January 27–29, 1984. The emphasis is on finite element methods and multi-grid methods.

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This volume originates from a series of lectures given at the University of Technology, Loughborough, England, in April of 1983. The 13 lectures published here, in varying degree of detail, address a number of questions related to sparse matrix problems. Topics receiving special attention are data structures for storing and manipulating sparse matrices, pivotal strategies, the use of the multigrid principle, parallel algorithms and systolic networks. Direct methods as well as iterative techniques are discussed. While most of the contributions deal with the problem of solving systems of linear algebraic equations, there are brief accounts also of sparse eigenvalue problems, linear programming, and systems of nonlinear equations. Applications include those to network theory, geodesy and photogrammetry.

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35|65–06, 68–06, 76–06, 82–06].—R. GLOWINSKI & J. -L. LIONS (Editors), *Computing Methods in Applied Sciences and Engineering, VI*, North-Holland, Amsterdam, 1984, xiii + 728 pp., 23 cm. Price $77.00/Dfl. 200.00.

These are the proceedings of the Sixth International Symposium on Computing Methods in Applied Sciences and Engineering, held in Versailles, France, December 12–16, 1983. One of the focal themes of this symposium was to explore the interplays between numerical methods, mathematical software, computer architectures, and modern technology. There are a total of 50 contributions, addressing topics in numerical algebra and software, nonlinear analysis, multigrid methods, parallel computing, asymptotic expansion and homogenization, particle and spectral methods, structural mechanics, fluid flow, reservoir engineering, and semiconductor technology.

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