

From the foregoing description it can be seen that this textbook covers a wealth of material from a somewhat unusual viewpoint. A number of misprints, mostly minor, were detected. Some of the mathematical notation seems excessive, or excessively pedantic, but not more than is usually observed in texts at this level. The index failed to provide the needed page reference on a few occasions when it was consulted.

The author maintains a World Wide Web site to provide services for and obtain feedback from users. Among the services provided are programs and procedures related to topics in the book, and an errata sheet.

D.W.L.

44[65-02, 65Yxx]—*High performance computing—Problem solving with parallel and vector architectures*, Gary W. Sabot (Editor), Addison-Wesley, Reading, MA, 1995, xvi+246 pp., 24 cm, \$45.14

This book attempts, by means of a number of case studies from scientific computing, to illustrate the techniques for developing efficient programs on high-performance computers. Applications from shock-wave physics and weather prediction have been included. These applications, as well as algorithms from numerical linear algebra, dynamic tree searching, graph theory, and mathematical programming have been implemented in several programming languages, and parallel architectures and their performance analyzed and reported. The chapters of the book correspond to contributed case studies whose intent is to identify and address high-performance computing issues at the application, algorithm, language, and machine levels. The issues of portability and scalability are addressed in the last chapter of the book and within each case study. The spectrum of target machines covered ranges from SIMD and MIMD massively parallel machines to vector machines and network of workstations. The parallelization techniques and methodologies presented are tightly coupled with the particular case studies selected. The material of the book could be useful to application software developers and could provide supplementary topics for an introductory graduate course in high-performance computing.

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45[65F05, 65F15, 65F20, 65F35, 65Y05, 65Y20, 65Y99]—*LAPACK Users' guide*, by E. Anderson, Z. Bai, C. Bischof, J. Demmel, J. Dongarra, J. du Croz, A. Greenbaum, S. Hammarling, A. McKenney, S. Ostrouchov, and D. Sorensen, second edition, SIAM, Philadelphia, PA, 1995, xx+325 pp., 28 cm, softcover, \$28.50

As a successor to the software packages LINPACK and EISPACK, LAPACK provides more efficient and accurate routines for the solutions of dense systems of linear equations, least squares problems, eigenvalue and singular value problems. The second edition of the User's Guide is mainly for the September 30, 1994 release of version 2.0 of the package. In addition to what the first edition offers, the new edition provides pointers to the guides of several related packages including