

*The MATLAB® 5 Handbook*. By Darren Redfern and Colin Campbell. Springer-Verlag, New York. (1998). 488 pages. \$34.95, DM 69.00, öS 504.00, sFr 63.00, GBP 19.50.

Contents:

List of tables. List of figures. Introduction. MATLAB quick start. Linear equations. Sparse matrices. Non-linear equations. Optimization. Integration and differentiation. Ordinary differential equations. Mathematical functions and operators. Symbolic computations. Graphing points and curves. Graphing surfaces and volumes. Animation. Graphics properties. Graphical user-interface functions. Programming in MATLAB. File input/output. Debugging MATLAB programs. Advanced data structures. Object-oriented programming. Miscellaneous. MATLAB resources. Index.

*Steiner Minimal Trees*. By Dietmar Cieslik. Kluwer Academic Publishers, Dordrecht. (1998). 319 pages. \$140.00, NLG 260.00, GBP 89.00.

Contents:

Preface. 1. Introduction. 2. SMT and MST in metric spaces—A survey. 3. Fermat's problem in Banach-Minkowski spaces. 4. The degrees of the vertices in shortest trees. 5. 1-Steiner-minimal-trees. 6. Methods to construct shortest trees. 7. The Steiner ratio of Banach-Minkowski spaces. 8. Generalizations. References. Index.

*Exploring Mathematics with Scientific Notebook*. By Wei-Chi Yang and Jonathan Lewin. Springer-Verlag, Singapore. (1998). 209 pages. \$24.50, DM 49.00, öS 358.00, sFr 45.50, GBP 19.00 (includes CD-ROM).

Contents:

Preface. Acknowledgements. 1. Reading this book on-screen. 2. Getting to know *Scientific Notebook*. 3. A graphical view of limits. 4. Maxima and minima. 6. Integral calculus. 7. Calculating volumes. 8. Linear algebra with Scientific Workplace. 9. Sequences and series. 10. Sequences of functions. 11. Fixed point theorems. Appendix. A. Miscellaneous notes. Index.

*Algorithms and Data Structures in VLSI Design: OBDD—Foundations and Applications*. By Christoph Meinel and Thorsten Theobald. Springer-Verlag, Berlin. (1998). 267 pages. \$49.95, DM 79.00, öS 577.00, sFr 72.00, GBP 30.50.

Contents:

1. Introduction. 2. Basics. I. Data structures for switching functions. 3. Boolean functions. 4. Classical representations. 5. Requirements on data structures in formal circuit verification. II. OBDDs: An efficient data structure. 6. OBDDs—Ordered binary decision diagrams. 7. Efficient implementation of OBDDs. 8. Influence of the variable order on the complexity of OBDDs. 9. Optimizing the variable order. III. Applications and extensions. 10. Analysis of sequential systems. 11. Symbolic model checking. 12. Variants and extensions of OBDDs. 13. Transformation techniques for optimization. Bibliography. Index.

*Programming with Data: A Guide to the S Language*. By John Chambers. Springer-Verlag, New York. (1998). 469 pages. \$39.95, DM 84.00, öS 614.00, sFr 76.50, GBP 32.50.

Contents:

1. Highlights. 2. Concepts. 3. Quick reference. 4. Computations in S. 5. Objects, databases, and chapters. 6. Creating functions. 7. Creating classes. 8. Creating methods. 9. Documentation. 10. Connections. 11. Interfaces to C and Fortran. Appendices. A. Programming in C with S objects. B. Compatibility with older versions.

*DNA Computing: New Computing Paradigms*. By G. Păun, G. Rozenberg and A. Salomaa. Springer-Verlag, Berlin. (1998). 402 pages. \$59.95, DM 89.00, öS 650.00, sFr 81.00, GBP 34.00.

Contents:

Introduction: DNA computing in a nutshell. I. Background and motivation. 1. DNA: Its structure and processing. 2. Beginnings of molecular computing. II. Mathematical theory. 3. Introduction to formal language theory. 4. Sticker systems. 5. Watson-Crick automata. 6. Insertion-deletion systems. 7. Splicing systems. 8. Universality by finite  $H$  systems. 9. Splicing circular strings. 10. Distributed  $H$  systems. 11. Splicing revisited. Bibliography. Index.

*Computational Inelasticity*. By J. C. Simo and T. J. R. Hughes. Springer-Verlag, New York. (1998). 392 pages. \$59.95, DM 124.00, öS 906.00, sFr 113.00, GBP 47.50.

Contents:

Preface. 1. Motivation. One-dimensional plasticity and viscoplasticity. 2. Classical rate-independent plasticity and viscoplasticity. 3. Integration algorithms for plasticity and viscoplasticity. 4. Discrete variational formulation and finite-element implementation. 5. Nonsmooth multisurface plasticity and viscoplasticity. 6. Numerical analysis of general return mapping algorithms. 7. Nonlinear continuum mechanics and phenomenological plasticity models. 8. Objective integration algorithms for rate formulations of elastoplasticity. 9. Phenomenological plasticity models based on the notion of an intermediate stress-free configuration. 10. Viscoelasticity. References. Index.