used in a course on numerical semiconductor modeling, or in a course on advanced multigrid techniques for nonlinear elliptic systems.

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1. T. Kerkhoven, *Piecewise linear Petrov-Galerkin error estimates for the box-method*, SIAM J. Numer. Anal. (1997) (to appear).
2. T. Kerkhoven and Y. Saad, *On acceleration methods for coupled nonlinear elliptic systems*, Numer. Math. **60** (1992), 525–548. MR **92j**:65084

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40[73-06, 73K05, 73K10, 73K15, 73V25]—*Asymptotic methods for elastic structures*, Philippe G. Ciarlet, Luís Trabucho, and Juan M. Viaño (Editors), de Gruyter, New York, 1995, viii+297 pp., $24\frac{1}{2}$ cm, $128.95

This book is the proceedings of the international conference on "Asymptotic Methods for Elastic Structures" held October 4–8, 1993 in Estoril, Portugal. Twenty-one of the twenty-three speakers at the conference contributed papers to this volume, most of which are between ten and fifteen pages in length. The papers deal with a variety of topics in the theory of beams, plates, rods, shells, and their assemblages. The unifying theme is that all these models are lower-dimensional approximations to higher-dimensional elastic structures which have a small thickness. Some of the topics considered are numerical approximation of the models, existence and uniqueness results, controllability, convergence and error estimation between the original and reduced model, the modelling of problems with junctions, and derivation and justification of models by asymptotic expansions.

R.S.F.

41[65-00, 65-04, 41-00, 41-04, 41A15]—*Handbook on splines for the user*, by Eugene V. Shikin and Alexander I. Plis, CRC Press, Boca Raton, FL, 1995, xii+221 pp., 24 cm, $69.95

According to the authors, this book is intended as a handbook for prospective and active spline users. It is not a textbook, it does not provide any proofs, only states results, and it is limited to the description of cubic splines techniques in one and two dimensions, and their implementations, including a set of programs on diskette.

The book consists of four chapters, each one designed to be read independently of the others. Chapter 1 deals with univariate cubic splines for interpolation (with various end conditions) and smoothing. In Chapter 2, the corresponding tensor-product versions, i.e., interpolating and smoothing bicubic splines, are presented. Spline curves are the topics of Chapter 3. After a short introduction of basic curve theory, there are subsections on cubic Bézier curves, B-spline curves, Beta-splines and one on other approaches such as Hermite, Catmull-Rom and implicitly defined spline curves. Finally, spline surfaces are described in Chapter 4. Again, after some introductory material on surfaces, there are subsections on Bézier surfaces, B-spline surfaces and Beta-spline surfaces, and the final one on Hermite and implicit cubic spline surfaces. Each subsection ends with comments on the implementation of the presented methods in the enclosed set of programs called Spline Guide, designed for an IBM PC or compatible machines. The interpolation and smoothing programs for the first two chapters are written in Fortran, the programs for the curves and surfaces of Chapters 3 and 4 are coded in C.

There are no references at the end of each subsection or chapter, only one list at the end of the book, which is very short and leaves out quite a number of pertinent books on splines. Therefore, in my opinion, there is no help for an uninitiated reader to find out about other splines, for example quadratic ones, or about proofs, or even who introduced the concepts and algorithms, which would assist in further studies. The reader is supposed to be content with the material as it is presented in the book and implemented in the programs. Finally, there are instances where the usage of English in the text should have been more carefully monitored by the publisher.

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42[65-01, 65C05, 65C10]—*A primer for the Monte Carlo method*, by Ilya M. Sobol′, CRC Press, Boca Raton, FL, 1994, xx+107 pp., $21\frac{1}{2}$ cm, softcover, $41.95

This is the English translation of a book which first appeared in Russian in 1968 and for which earlier translations into English have been brought out, e.g. by Mir Publishers, Moscow, under the title "The Monte Carlo Method". The book is still useful as a brief introduction to the subject for students. However, the bibliography is rather poor since it contains only 10 items.

H.N.

43[65-01, 68-01, 68U05]—*An introduction to scientific, symbolic, and graphical computation*, by Eugene Fiume, A K Peters, Wellesley, MA, 1995, xvi+306 pp., $23\frac{1}{2}$ cm, $49.95

This undergraduate textbook is positioned at the interface between computer science and mathematics. It can be seen as an applied mathematics course with the field of application being computer graphics. Computer science students will get a useful introduction to the nontrivial mathematical prerequisites of computer graphics, and mathematics students will be exposed to an interesting field of application that is not taken from science or engineering. The topics are widely applicable in many fields, and this justifies the general title of the book.

A theme of the book is that symbolic and graphical uses of computers have become more or less equal partners with strictly numerical processing in developing solutions of scientific and other kinds of problems. These seminumerical uses have been present alongside numerical computation since the beginning of digital electronic computing but their impact has been diminished until recently by the