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

REFERENCES

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