

generalizations, the book develops its topics by relying almost exclusively on particular examples. Each chapter consists of a number of sections, each of which presents a particular physical problem, some special techniques to generate solutions, and, often, physical consequences of the results. My own pedagogical tastes certainly run towards the particular, well-chosen example, although I felt this was perhaps carried to an extreme here. What is often lacking is any kind of general framework for the particular methods introduced, or a discussion of how to ever decide which of the many techniques available to apply to a new problem. Of course, in many cases, this approach is necessitated by the nature of the subject; many of the methods only work in particular instances, and (as in much of applied mathematics) one learns primarily through example. Only in the final section on symmetry groups is there an attempt to develop a general theory which can be readily ported to other contexts. Students especially will profit from the wide repertoire of methods and applications, although I would find it hard to use this book in a course other than as a supplement to more systematic texts. Nevertheless, I can recommend the book to anyone seeking to enlarge their “bag of tricks” for tackling complicated nonlinear problems.

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28[15–02, 65F50].—I. S. DUFF, A. M. ERISMAN & J. K. REID, *Direct Methods for Sparse Matrices*, Monographs on Numerical Analysis, Clarendon Press, Oxford University Press, New York, 1989, xiv + 341 pp., 23 $\frac{1}{2}$ cm. Price \$22.50 paperback.

This is a paperback edition (with corrections) of the 1986 edition of the book. See [1] for a review of the original edition.

W. G.

1. K. Turner, Review 3, *Math. Comp.* 52 (1989), 250–252.

29[53–01, 65D05, 65D07, 65D10, 68U05].—GERALD FARIN, *Curves and Surfaces for Computer Aided Geometric Design—A Practical Guide*, Computer Science and Scientific Computing, Academic Press, Boston, 1988, xv + 334 pp., 23 $\frac{1}{2}$ cm. Price \$39.95.

This book consists of a collection of material on parametric curves and surfaces used in fields known variously as “Computer Aided Design” and “Computer Aided Geometric Design”. The topics covered are, in order of the chapters: the de Casteljaun algorithm, Bézier curves, polynomial interpolation, *B*-spline curves, geometric continuity for curves, conic sections, rational Bézier and *B*-spline curves, tensor product and composite surface patches. Included