

31[65-06, 76-06, 78-06, 35L05, 65C20]—*Mathematical and numerical aspects of wave propagation*, Gary Cohen (Editor), SIAM, Philadelphia, PA, and INRIA, Rocquencourt, France, 1995, xiv+808 pp., 25½ cm, softcover, \$106.00

These are the proceedings of the third international conference on the topic of the book title. The conference was held in April 1995 in French Riviera and featured 8 invited lectures and 88 contributed papers. The book contains short articles or abstracts of 7 invited lectures and 86 contributed papers.

The invited lectures are mostly reviews on different aspects of wave propagation, including multiple scattering, numerical methods for electromagnetic equations, large-time asymptotics for certain wave equations, homogenization and Wigner transforms (only an abstract), inverse problems via layer stripping, approximation via distributed approximating functionals, and applications to marine science. These papers may serve as a good introduction and reference source for people interested in the recent development of wave propagation. Not all the major areas in wave propagation, though, are covered in the invited lectures. For example, wavelets, an important tool in approximations for wave phenomena, are missing.

The contributed papers consist of all oral presentations in Part II and poster presentations in Part III. Part II is also divided into 12 sections, covering water waves, boundary integral equations, numerical methods, electromagnetism, homogenization and asymptotic analysis, absorbing boundary conditions, scattering, guided waves, parallel processing, domain decomposition methods, optimal control and inverse problems, and nonlinear waves. The division of papers into these categories is not sharp though. Many papers may actually fit in different sections. The quality of these contributed papers varies; however, most are good papers containing relevant and recent research results in wave propagation. Some are excellent papers containing important results. About half of the contributed papers are from France.

This book is of interest to researchers in the broad area of wave propagation.

C.-W.S.

32[34-01, 34-04]—*Differential equations with Mathematica*, by Kevin R. Coombes, Brian R. Hunt, Ronald L. Lipsman, John E. Osborn, and Garrett J. Stuck, Wiley, New York, 1995, vi+218 pp., 23½ cm, softcover, \$20.95

The authors' preface and introduction give clear and accurate statements of their goals and the content of the book, some of which are quoted here.

"We designed this supplement to accompany" [1] "... It could, however, easily be used in conjunction with most other ODE texts." True, but it would be easy to get a different impression because the text is so closely connected to [1]: there is a syllabus for use with [1], many problems are taken directly from [1], and there are a good many references to [1] in the review material. Because the content of a first course in ODEs is so standard, I believe the supplement could be used with any of the popular texts, certainly with [2], the text I have been using.

"This supplement changes the emphasis in the traditional ODE course by using a mathematical software system to introduce numerical methods, geometric interpretation, symbolic computation, and qualitative analysis into the course in a basic