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various geometries (mostly two-dimensional and some three-dimensional) under several loading conditions. There are 22 such figures and 20 tables in Nisitani's text while eight figures in Bowie-Freese's text. These are worthwhile and useful as suppliments to Peterson's *Table of Stress Concentration* and to Tada-Paris-Irwin's *Cracks Handbook*

Even though the editor stated in the preface that "The finite-element method has been purposely left out, for it is now becoming common procedure in cases too complex for analysis," one cannot justify the omission of the finite-element method in view of its importance in this class of problems with recent progress of hybrid finite-element methods where singularities at the crack tips are properly carried into the analysis. The reviewer also feels that the usefulness of the book will be enhanced if it includes an article which emphasizes behavior (asymptotic or boundedness) of these factors upon geometrical parameters rather than solution methods along the lines of the article by Benthem and Koiter in the first volume of the series.

The Numerical Treatment of Integral Equations. By C. T. H. Baker. Clarendon Press, Oxford, 1977. Pages 984. Price $49.50.

REVIEWED BY R. L. TAYLOR[9]

This large book consists of six chapters devoted to integral equations and the solution of integral equations by numerical methods. The first chapter briefly summarizes properties of integral equations and their classification, e.g., linear and nonlinear, first and second type, Fredholm and Voltera. Much of the discussion is very brief and some familiarity with integral equations is necessary to fully comprehend the presentation. The second chapter is devoted to the numerical methods which are used in the remainder of the book. Again, the presentations are brief and the reader may need to consult additional materials on numerical methods. Adequate references are provided to direct readers to pertinent literature.

The remaining four chapters are devoted to numerical solutions for eigenproblems, Fredholm equations, and Voltera equations. More than 250 examples are included to illustrate each topic discussed. Theorems and proofs are provided to augment each method with a convergence theory. More than 450 references are provided to direct readers to cited and other information.

This book will be of considerable interest to those interested in solving integral equations numerically. It provides insights into when methods work and when they do not. It is a valuable complement to the recently published engineering problem-oriented books on integral equations (e.g., Jaswon and Symm or Brebbia). Of considerable interest to proponents of boundary integral methods are the extensive discussions on quadrature, collocation, and Ritz-Galerkin methods.

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The Theory of Elastic Waves and Waveguides. By Julius Miklowitz. North Holland Publishing Co., Amsterdam. 1978. Pages XVI and 618, 180 figures. Price $71.

REVIEWED BY R. K. KAUL[10]

This book is about elastic waves and waveguides. To some extent it is a research monograph, and should cater to the needs of an experienced audience. Graduate students involved in research will also find it profitable by studying topics selectively, because the compass of the contents of the book is quite wide.

The book has eight chapters and no attempt will be made to discuss in detail the technical matters contained in each chapter. The first two chapters (pp. 19–118), deal with the fundamentals of linear elasticity theory and elastodynamic waves. Most of the material in these two chapters is now classic and can be found discussed rigorously in several recent books dealing with elasticity, potential theory, and initial value problems. The author has tried to bring these topics together in the first two chapters of this book. Chapters 3 and 4 (pp. 119–229) deal with reflection and refraction of waves at an interface, and elastic waveguides in plates and rods. Again some of the material is classic, but a major part of this section is devoted to Mindlin's contribution in this area, and the author has presented it reasonably well. Some of the results dealing with complex segments and *coincidence* are heuristic in nature, and are presented in the same style as perceived by Professor Mindlin over two decades ago. All of these results are well known in the areas of "advanced analysis" and "critical point theory," and this reviewer would have liked to see them presented in a more rigorous setting. Chapter 5 (pp. 231–296) deals with integral transforms and asymptotic theory. Again the approach is heuristic and is well presented. Recent research in this area, when the saddle points coalesce, or when a saddle point approaches a branch point or a pole are not discussed, though in pulse propagation problems they play a dominant role near stationary values of group velocity, as in the case of Skalak's problem. Chapters 6, 7, and 8 (pp. 298-367-485-571) form a large part of the book and contain both classic and new research material. The topics of discussion are transient waves in elastic half space, elastic waveguides such as rods and plates, and pulse scattering problems by cylindrical and spherical obstacles. A large part of the material is of research nature and shows the prominent role played by the author in the development of this subject. This part of the book is especially well written and is suitable for someone with a minimal exposure to asymptotics and its application in pulse propagation problems. The author has done a thorough and patient job of explaining tedious details, which makes this section of the book a good place to start learning this topic.

This is a monograph written by an expert in a progressing field and therefore it is a very welcome addition to the literature. It is well written, provides a large amount of references,and presents a systematic account of the subject of elastic waves. It is a valuable book for someone considering learning the subject and can be warmly recommended. In the opinion of this reviewer, it is a worthwhile publication.

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