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BOOK REVIEWS

***Finite Element Programs for Axisymmetric Problems in Engineering*, by C.T.F. Ross. Publisher: Wiley & Sons, New York, 1984, ISBN 0-470-20035-9, price U.S. $75.00**

This is an interesting book which contains many small size BASIC programs for various axisymmetric problems, although there are a number of presentations which may mislead readers because of the lack of details in the explanations. In particular, the description about the formulations based on a precise theory of structural mechanics is not sufficiently clear. The formulations are correct, but some of their derivations are not clearly stated. Notations are sometimes very confusing and the meaning of the numbers in the tables is also difficult to understand. However, the treatment of axisymmetric problems in this book is quite unique, and the programs are useful for learning the nature of axisymmetric problems. These programs may be very handy for those engineers involved in the design of structures who do not want to learn the commercially available general purpose finite element codes such as NASTRAN, ANSYS, and others.

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***Mathematical Model for the Analysis and Optimization of Elastoplastic Structures*, by A.A. Cyras, in: Ellis Horwood Series in Engineering Science. Publisher: Halsted Press, a division of Wiley & Sons, New York, U.S.A., ISBN 0-470-20020-0, price U.S. $39.95**

Elastoplastic analysis plays a crucial role in efficient design of buildings and machine parts. The basic aspects of structural mechanics are covered in senior and first year graduate level courses. *B.G. Neal*'s classic, *The Plastic Methods of Structural Analysis* (Chapman & Hall, London), has secured its position as perhaps the most commonly used introductory text in such courses. In the book being reviewed here, *Cyras* has provided an elegant and rigorous extension of such concepts on a more mathematically oriented framework. The motivation is to formulate discrete methods which will be appropriate in computer-oriented design analysis. The author has performed an exceptional task by constructing elastoplastic analysis and optimization as dual pairs of mathematical programming problems in a systematic fashion. Now that all designers who perform computer analysis are familiar with the discrete scheme of the finite element method, the energy based approximations treated in the book will not be that remote.

The author focuses on static as well as kinematic formulations with monotonically increasing, cyclic, and movable loads in the analysis of elastoplastic deformation of frame, plate, and shell type structures. The treatment is terse and does not contain illustrative examples in this monograph styled book.