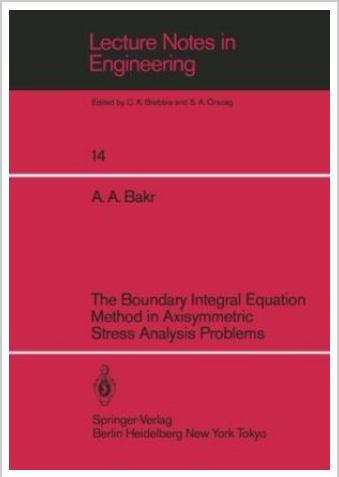

The Boundary Integral Equatio Method in Axisymmetric Stress Analysis Problems

By Adib A. Bakr

Springer. Paperback. Condition: New. 213 pages. Dimensions: 9.6in. x 6.7in. x 0.5in.The Boundary Integral Equation (BIE) or the Boundary Element Method is now well established as an efficient and accurate numerical technique for engineering problems. This book presents the application of this technique to axisymmetric engineering problems, where the geometry and applied loads are symmetrical about an axis of rotation. Emphasis is placed on using isoparametric quadratic elements which exhibit excellent modelling capabilities. Efficient numerical integration schemes are also presented in detail. Unlike the Finite Element Method (FEM), the BIE adaptation to axisymmetric problems is not a straightforward modification of the two or three-dimensional formulations. Two approaches can be used; either a purely axisymmetric approach based on assuming a ring of load, or, alternatively, integrating the three-dimensional fundamental solution of a point load around the axis of rotational symmetry. Throughout this ook, both approaches are used and are shown to arrive at identi cal solutions. The book starts with axisymmetric potential problems and extends the formulation to elasticity, thermoelasticity, centrifugal and fracture mechanics problems. The accuracy of the formulation is demonstrated by solving several practical engineering problems and comparing the BIE solution to analytical or other numerical methods such as...

Reviews

An incredibly amazing ebook with perfect and lucid answers. It is writter in basic terms and never difficult to understand. Its been written in an exceptionally basic way and it is only right after i finished reading this ebook in which in fact modified me, affect the way i really believe.

-- ***Beverly Hoppe***

Extremely helpful for all class of individuals. Better then never, though i am quite late in start reading this one. I realized this publication from my i and dad suggested this ebook to discover.

-- ***Adela Schroeder II***