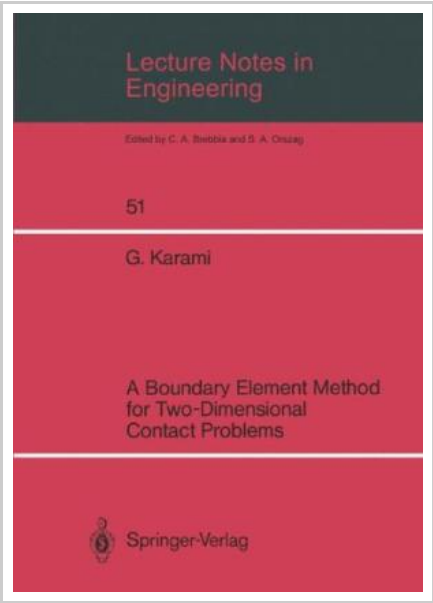

Lecture Notes in Engineering A Boundary Element Method for Two-Dimensional Contact Problems

By Ghodratollah Karami

Springer. Paperback. Book Condition: New. Paperback. 243 pages. Dimensions: 9.5in. x 6.7in. x 0.6in.The Boundary Element Method (BEM) has been established as a powerful numerical tool for the analysis of continua in recent years. The method is based on an attempt to transfer the governing differential equations into integral equations over the boundary. Thus, the discretization scheme or the intro duction of any approximations must be done over the boundary. This book presents a BEM for two-dimensional elastic, thermo -elastic and body-force contact problems. The formulation is implemented for the general case of contact with various fric tional conditions. The analysis is limited to linear elasto statics and small strain theory. Following a review of the basic nature of contact problems, the analytical basis of the direct formulation of the BEM method is described. The numerical implementation employs three-noded isoparametric line elements for the representa tion of the boundary of the bodies in contact. Opposite nodal points in equi-length element-pairs are defined on the two surfaces in the area which is expected to come into contact under an increasing load. The use of appropriate contact IV conditions enables the integral equations for the two bodies to be coupled together. To...

Reviews

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