Development of Finite Elements for Two-Dimensional Structural Analysis Using the Integrated Force Method (Paperback)



Filesize: 5.94 MB

Reviews

Absolutely essential study pdf. It is writter in basic words and phrases rather than hard to understand. I am just happy to tell you that this is basically the finest pdf i actually have study during my personal lifestyle and can be he very best publication for actually. (Shyanne Senger)

DEVELOPMENT OF FINITE ELEMENTS FOR TWO-DIMENSIONAL STRUCTURAL ANALYSIS USING THE INTEGRATED FORCE METHOD (PAPERBACK)



Independently Published, United States, 2018. Paperback. Condition: New. Language: English. Brand new Book. The Integrated Force Method has been developed in recent years for the analysis of structural mechanics problems. This method treats all independent internal forces as unknown variables that can be calculated by simultaneously imposing equations of equilibrium and compatibility conditions. In this paper a finite element library for analyzing two-dimensional problems by the Integrated Force Method is presented. Triangular- and quadrilateral-shaped elements capable of modeling arbitrary domain configurations are presented. The element equilibrium and flexibility matrices are derived by discretizing the expressions for potential and complementary energies, respectively. The displacement and stress fields within the finite elements are independently approximated. The displacement field is interpolated as it is in the standard displacement method, and the stress field is approximated by using complete polynomials of the correct order. A procedure that uses the definitions of stress components in terms of an Airy stress function is developed to derive the stress interpolation polynomials. Such derived stress fields identically satisfy the equations of equilibrium. Moreover, the resulting element matrices are insensitive to the orientation of local coordinate systems. A method is devised to calculate the number of rigid body modes, and the present elements are shown to be free of spurious zero-energy modes. A number of example problems are solved by using the present library, and the results are compared with corresponding analytical solutions and with results from the standard displacement finite element method. The Integrated Force Method not only gives results that agree well with analytical and displacement method results but also outperforms the displacement method in stress calculations. Kaljevic, Igor and Patnaik, Surya N. and Hopkins, Dale A. Glenn Research Center NASA-TM-4655, E-9240, NAS 1.15:4655 RTOP

Read Development of Finite Elements for Two-Dimensional Structural Analysis Using the Integrated Force Method (Paperback) Online
Download PDF Development of Finite Elements for Two-Dimensional Structural Analysis Using the Integrated Force Method (Paperback)

Relevant Books



Ross and Wilson Anatomy and Physiology in Health and Illness (Paperback)

Elsevier Health Sciences, United Kingdom, 2014. Paperback. Condition: New. 12th Revised edition. Language: English. Brand new Book. Ross and Wilson has been the number one choice for over a million students since it first published,...

Read eBook

»



A Succinct Account of a Machine, Newly Invented for the Cure of PR]Ternatural Curvatures of the Spine: Together with a Detail of Several Cases, in Which This Machine Has Been Tried with Great

Gale Ecco, Print Editions, United States, 2010. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****. The 18th century was a wealth of knowledge, exploration and rapidly growing technology and expanding...

Read eBook

>>



The Essential Guide to Telecommunication (Paperback)

Pearson Education (US), United States, 2019. Paperback. Condition: New. 6th edition. Language: English. Brand new Book. "Annabel Dodd has cogently untangled the wires and switches and technobabble of the telecommunications revolution and explained how the...

Read eBook

»



Genuine new book Essentials of Leadership: Principles and Practice (4th Edition) (U.S.) Shiliboge. (U.S.(Chinese Edition)

paperback. Condition: New. Ship out in 2 business day, And Fast shipping, Free Tracking number will be provided after the shipment.Paperback. Pub Date:2012-05-01 Pages: 280 Publisher: Welcome to Our Publishing House of Electronics Industry....

Read eBook

»



Design and Development of Low Cost Adsorbents

LAP Lambert Academic Publishing Nov 2013, 2013. Taschenbuch. Condition: Neu. Neuware - Clean and pure water is one of the implicit requisites for a healthy human population. However the growing industrialization and extensive use of...

Read eBook

»



The Gold Digger Notebook: A Blank Lined Writing Notebook with a Fake Book Cover to Carry in Public (Paperback)

Independently Published, United States, 2019. Paperback. Condition: New. Language: English. Brand new Book. Would you like get some attention? Don't mind people gazing at you in public places such as the airplane, train and bus?

Read PDF

>>



A Description of the New-Invented Table Air-Pump: With the Manner of Performing the Most Curious Experiments Upon It: The Figures of the Air-Pump Glasses, and All the Machines Belonging to It (Paperback)

Gale Ecco, Print Editions, United States, 2010. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****. The 18th century was a wealth of knowledge, exploration and rapidly growing technology and expanding

Read PDF

>>



DEWALT Electrical Code Reference: Based on the NEC 2014 (DEWALT Series)

DEWALT, 2014. Condition: New. book.

Read PDF

**



A Particular Account of the Electrical Experiments Hitherto Made Publick, with Variety of New Ones, and Full Instructions for Performing Them: To Which Is Annex d, the Description of a Compleat Electrical Machine

Gale Ecco, Print Editions, United States, 2010. Paperback. Condition: New. Language: English. Brand New Book ***** Print on Demand *****. The 18th century was a wealth of knowledge, exploration and rapidly growing technology and expanding

Read PDF

..



Writing with Hemingway: A Writer's Exercise Book (Paperback)

Createspace Independent Publishing Platform, United States, 2016. Paperback. Condition: New. Language: English. Brand new Book. A work of creativity such as an artist's song, a dance, a musical instrument, a paint brush, produce a vision

Read PDF

»