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Nota di contenuto	Front Cover; The Finite Element Method: Its Basis and Fundamentals; Copyright Page; Contents; Preface; Chapter 1. The standard discrete system and origins of the finite element method; 1.1 Introduction; 1.2 The structural element and the structural system; 1.3 Assembly and analysis of a structure; 1.4 The boundary conditions; 1.5 Electrical and fluid networks; 1.6 The general pattern; 1.7 The standard discrete system; 1.8 Transformation of coordinates; 1.9 Problems; Chapter 2. A direct physical approach to problems in elasticity: plane stress; 2.1 Introduction 2.2 Direct formulation of finite element characteristics 2.3

Generalization to the whole region- internal nodal force concept abandoned; 2.4 Displacement approach as a minimization of total potential energy; 2.5 Convergence criteria; 2.6 Discretization error and convergence rate; 2.7 Displacement functions with discontinuity between elements - non-conforming elements and the patch test; 2.8 Finite element solution process; 2.9 Numerical examples; 2.10 Concluding remarks; 2.11 Problems

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4.3 Rectangular elements- some preliminary considerations 4.4 Completeness of polynomials; 4.5 Rectangular elements- Lagrange family; 4.6 Rectangular elements- 'serendipity' family; 4.7 Triangular element family; 4.8 Line elements; 4.9 Rectangular prisms - Lagrange family; 4.10 Rectangular prisms - 'serendipity' family; 4.11 Tetrahedral elements; 4.12 Other simple three-dimensional elements; 4.13 Hierarchic polynomials in one dimension; 4.14 Two- and three-dimensional, hierarchical elements of the 'rectangle' or 'brick' type; 4.15 Triangle and tetrahedron family

4.16 Improvement of conditioning with hierarchical forms

Sommario/riassunto

The Sixth Edition of this influential best-selling book delivers the most up-to-date and comprehensive text and reference yet on the basis of the finite element method (FEM) for all engineers and mathematicians. Since the appearance of the first edition 38 years ago, The Finite Element Method provides arguably the most authoritative introductory text to the method, covering the latest developments and approaches in this dynamic subject, and is amply supplemented by exercises, worked solutions and computer algorithms. The classic FEM text, written by the subject's leading authors
