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| 1. Record Nr.           | UNINA9910790765503321                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Autore                  | Zienkiewicz O. C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Titolo                  | The finite element method for solid and structural mechanics / / O.C. Zienkiewicz, CBE, FRS, previously UNESCO Professor of Numerical Methods in Engineering, International Centre for Numerical Methods in Engineering, Barcelona, Spain, previously Director of the Institute for Numerical Methods in Engineering, University of Wales, Swansea, UK, R.L. Taylor, Professor in the Graduate School, Department of Civil and Environmental Engineering, University of California at Berkeley, CA, USA, D.D. Fox, Dassault Systemes SIMULIA, Providence, RI, USA                                                                                                                                                                                                                                                                                                                                                                                                              |
| Pubbl/distr/stampa      | Oxford : , : Butterworth-Heinemann, , 2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ISBN                    | 9780080951362 (electronic bk)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Edizione                | [Seventh edition.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Descrizione fisica      | 1 online resource (xxxi, 624 pages) : illustrations (some color)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Collana                 | Gale eBooks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Disciplina              | 624.1/71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Soggetti                | Continuum mechanics - Mathematics<br>Structural analysis (Engineering) - Mathematics<br>Finite element method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Note generali           | Bibliographic Level Mode of Issuance: Monograph                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nota di bibliografia    | Includes bibliographical references and indexes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nota di contenuto       | chapter 1. General problems in solid mechanics and nonlinearity -- chapter 2. Galerkin method of approximation : irreducible and mixed forms -- chapter 3. Solution of nonlinear algebraic equations -- chapter 4. Inelastic and nonlinear materials -- chapter 5. Geometrically nonlinear problems : finite deformation -- chapter 6. Material constitution for finite deformation -- chapter 7. Material constitution using representative volume elements -- chapter 8. Treatment of constraints : contact and tied interfaces -- chapter 9. Pseudo-rigid and rigid-flexible bodies -- chapter 10. Background mathematics and linear shell theory -- chapter 11. Differential geometry and calculus on manifolds -- chapter 12. Geometrically nonlinear problems in continuum mechanics -- chapter 13. A nonlinear geometrically exact rod model -- chapter 14. A nonlinear geometrically exact shell model -- chapter 15. Computer procedures for finite element analysis. |
| Sommario/riassunto      | The Finite Element Method for Solid and Structural Mechanics is the key                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

text and reference for engineers, researchers and senior students dealing with the analysis and modeling of structures, from large civil engineering projects such as dams to aircraft structures and small engineered components. This edition brings a thorough update and rearrangement of the book's content, including new chapters on: Material constitution using representative volume elements Differential geometry and calculus on manifolds Background mathematics and linear shell theory Focusing on the core knowledge, mathematical and analytical tools needed for successful structural analysis and modeling, The Finite Element Method for Solid and Structural Mechanics is the authoritative resource of choice for graduate level students, researchers and professional engineers. A proven keystone reference in the library of any engineer needing to apply the finite element method to solid mechanics and structural design. Founded by an influential pioneer in the field and updated in this seventh edition by an author team incorporating academic authority and industrial simulation experience. Features new chapters on topics including material constitution using representative volume elements, as well as consolidated and expanded sections on rod and shell models --

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