

1. Record Nr.	UNINA9910959960603321
Titolo	Computational nonlinear mechanics in aerospace engineering // edited by Satya N. Atluri
Pubbl/distr/stampa	Washington, D.C., : American Institute of Aeronautics and Astronautics, c1992
ISBN	1-60086-618-2 1-60086-399-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (563 p.)
Collana	Progress in astronautics and aeronautics, , 0079-6050 ; ; v. 146
Altri autori (Persone)	AtluriSatya N
Disciplina	629.1/01515355
Soggetti	Aerodynamics - Mathematics Airplanes - Materials - Mathematical models Nonlinear mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""Cover""; ""Title""; ""Copyright""; ""Preface""; ""Table of Contents""; ""Chapter 1. Simplified Computational Methods for Elastic and Elastic-Plastic Fracture Problems""; ""Chapter 2. Field-Boundary Element Method for Nonlinear Solid Mechanics""; ""Chapter 3. Nonlinear Problems of Aeroelasticity""; ""Chapter 4. Finite Element Simulation of Compressible Flows with Shocks""; ""Chapter 5. Fast Projection Algorithm for Unstructured Meshes""; ""Chapter 6. Control of Numerical Diffusion in Computational Modeling of Vortex Flow"" ""Chapter 7. Stochastic Computational Mechanics for Aerospace Structures"" ""Chapter 8. Boundary Integral Equation Methods for Aerodynamics""; ""Chapter 9. Theory and Implementation of High-Order Adaptive hp Methods for Analysis of Incompressible Viscous Flows""; ""Chapter 10. Probabilistic Evaluation of Uncertainties and Risks in Aerospace Components""; ""Chapter 11. Finite Element Computation of Incompressible Flows""; ""Chapter 12. Dynamic Response of Rapidly Heated Space Structures"" ""Chapter 13. Computation of Viscous Compressible Flows Using an Upwind Algorithm and Unstructured Meshes"" ""Chapter 14. Structural Optimization""; ""Chapter 15. Nonlinear Aeroelasticity and Chaos""; ""Author Index""

Sommario/riassunto

This book describes the role of nonlinear computational modeling in the analysis and synthesis of aerospace systems with particular reference to structural integrity, aerodynamics, structural optimization, probabilistic structural mechanics, fracture mechanics, aeroelasticity, and compressible flows. Aerospace and mechanical engineers specializing in computational sciences, damage tolerant design, structures technology, aerodynamics, and computational fluid dynamics will find this text a valuable resource.
