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Nota di contenuto	1.Literature Review -- 2.Satellite Configuration Design -- 3.Satellite Structural Design -- 4.Strength -- 5.Stochastic Finite Element and Satellite Structure Design -- 6.Qualification Testing phase of Satellite Structure -- 7.Manufacturing Simulation using Finite Element -- App.A Satellite Mechanical Loads -- App.B. Load Analysis for Base-Driven Random Vibrations.
Sommario/riassunto	Designing satellite structures poses an ongoing challenge as the interaction between analysis, experimental testing, and manufacturing phases is underdeveloped. Finite Element Analysis for Satellite Structures: Applications to Their Design, Manufacture and Testing explains the theoretical and practical knowledge needed to perform design of satellite structures. By layering detailed practical discussions with fully developed examples, Finite Element Analysis for Satellite Structures: Applications to Their Design, Manufacture and Testing provides the missing link between theory and implementation. Computational examples cover all the major aspects of advanced analysis; including modal analysis, harmonic analysis, mechanical and thermal fatigue analysis using finite element method. Test cases are included to support explanations an a range of different manufacturing simulation techniques are described from riveting to shot peening to material cutting. Mechanical design of a satellites

structures are covered in three steps: analysis step under design loads, experimental testing to verify design, and manufacturing. Stress engineers, lecturers, researchers and students will find Finite Element Analysis for Satellite Structures: Applications to Their Design, Manufacture and Testing a key guide on with practical instruction on applying manufacturing simulations to improve their design and reduce project cost, how to prepare static and dynamic test specifications, and how to use finite element method to investigate in more details any component that may fail during testing.
