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Nota di contenuto	Preface; Contents; 1. Introduction; 1.1 Probabilistic Analysis: Bad News; 1.2 Probabilistic Analysis: Good News; 1.3 Convergence of Probability and Anti-Optimization; 2. Optimization or Making the Best in the Presence of Certainty/Uncertainty; 2.1 Introduction; 2.2 What Can We Get from Structural Optimization?; 2.3 Definition of the Structural Optimization Problem; 2.4 Various Formulations of Optimization Problems; 2.4.1 Overview of optimization problems; 2.4.2 Classification of optimization problems; 2.4.3 Parametric programming; 2.4.4 Multiobjective programming 2.5 Approximation by Metamodels 2.6 Heuristics; 2.6.1 Overview of heuristics; 2.6.2 Basic approaches of single-point search heuristics; 2.6.2.1 Neighborhood solutions; 2.6.2.2 Basic algorithm of single-point search heuristics; 2.6.2.3 Greedy method; 2.6.3 Simulated annealing; 2.7 Classification of Structural Optimization Problems; 2.8 Probabilistic Optimization; 2.9 Fuzzy Optimization; 3. General Formulation of Anti-Optimization; 3.1 Introduction; 3.2 Models of Uncertainty; 3.3 Interval Analysis; 3.3.1 Introduction; 3.3.2 A simple

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Sommario/riassunto

The volume presents a collaboration between internationally recognized experts on anti-optimization and structural optimization, and summarizes various novel ideas, methodologies and results studied over 20 years. The book vividly demonstrates how the concept of uncertainty should be incorporated in a rigorous manner during the process of designing real-world structures. The necessity of anti-optimization approach is first demonstrated, then the anti-optimization techniques are applied to static, dynamic and buckling problems, thus covering the broadest possible set of applications. Finally, a

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