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Nota di contenuto	Introduction -- Chapter 1. Manufacturing/in Service Uncertainty and Impact on Life and Performance of Gas Turbines/Aircraft Engines -- Chapter 2. Why Uncertainty Quantification in CFD? The Matrix of Knowledge -- Chapter 3. Mathematical Formulation -- Chapter 4. Uncertainty Quantification Applied to Gas Turbine Components -- Chapter 5. Future developments.
Sommario/riassunto	This book introduces design techniques developed to increase the safety of aircraft engines, and demonstrates how the application of stochastic methods can overcome problems in the accurate prediction of engine lift caused by manufacturing error. This in turn addresses the issue of achieving required safety margins when hampered by limits in

current design and manufacturing methods. The authors show that avoiding the potential catastrophe generated by the failure of an aircraft engine relies on the prediction of the correct behaviour of microscopic imperfections. This book shows how to quantify the possibility of such failure, and that it is possible to design components that are inherently less risky and more reliable. This new, updated and significantly expanded edition gives an introduction to engine reliability and safety to contextualise this important issue, evaluates newly-proposed methods for uncertainty quantification as applied to jet engines. Uncertainty Quantification in Computational Fluid Dynamics and Aircraft Engines will be of use to gas turbine manufacturers and designers as well as CFD practitioners, specialists and researchers. Graduate and final year undergraduate students in aerospace or mathematical engineering may also find it of interest.