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Nota di contenuto	Chapter 1. Cloud Uncertainty Quantification for Runback Ice Formations in Anti-Ice Electro-Thermal Ice Protection Systems -- Chapter 2. Multi-fidelity Surrogate Assisted Design Optimisation of an Airfoil under Uncertainty using Far-Field Drag Approximation -- Chapter 3. Scalable dynamic asynchronous Monte Carlo framework applied to wind engineering problems -- Chapter 4. Multi-Objective Optimal Design and Maintenance for Systems Based on Calendar Times Using MOEA/D-DE -- Chapter 5. From Uncertainty Quantification to Shape Optimization: Cross-Fertilization of Methods for Dimensionality Reduction -- Chapter 6. Multi-Objective Robustness Analysis of the Polymer Extrusion Process -- Chapter 7. Quantification of operational and geometrical uncertainties of a 1.5 stage axial compressor with cavity leakage flows -- Chapter 8. Can Uncertainty Propagation Solve the Mysterious Case of Snoopy ? -- Chapter 9. Robust Particle Filter for

Space Navigation under Epistemic Uncertainty -- Chapter 10. Computing bounds for imprecise continuous-time Markov chains using normal cones -- Chapter 11. Simultaneous Sampling for Robust Markov Chain Monte Carlo Inference -- Chapter 12. Computing Expected Hitting Times for Imprecise Markov Chains -- Chapter 13. Multi-Objective Robust Trajectory Optimization of Multi Asteroid Fly-By Under Epistemic Uncertainty -- Chapter 14. Reliability-based Robust Design Optimization of a Jet Engine Nacelle -- Chapter 15. Bayesian Optimization for Robust Solutions under Uncertain Input -- Chapter 16. Optimization under Uncertainty of Shock Control Bumps for Transonic Wings -- Chapter 17. Multi-objective design optimisation of an airfoil with geometrical uncertainties leveraging multi- delity Gaussian process regression -- Chapter 18. High-Lift Devices Topology Robust Optimisation using Machine Learning Assisted Optimisation -- Chapter 19. Network Resilience Optimisation of Complex Systems -- Chapter 20. Gaussian Processes for CVaR approximation in Robust Aerodynamic Shape Design -- Chapter 21. Inference methods for gas/surface interaction models: from deterministic approaches to Bayesian techniques -- Chapter 22. Bayesian Adaptive Selection Under Prior Ignorance -- Chapter 23. A Machine-Learning Framework for Plasma-Assisted Combustion using Principal Component Analysis and Gaussian Process Regression -- Chapter 24. Estimating exposure fraction from radiation biomarkers: a comparison of frequentist and Bayesian approaches -- Chapter 25. A Review of some recent advancements in Non-Ideal Compressible Fluid Dynamics -- Chapter 26. Dealing with high dimensional inconsistent measurements in inverse problems using surrogate modeling: an approach based on sets and intervals -- Chapter 27. Stochastic Preconditioners for Domain Decomposition Methods -- Index.

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#### Sommario/riassunto

The 2020 International Conference on Uncertainty Quantification & Optimization gathered together internationally renowned researchers in the fields of optimization and uncertainty quantification. The resulting proceedings cover all related aspects of computational uncertainty management and optimization, with particular emphasis on aerospace engineering problems. The book contributions are organized under four major themes: Applications of Uncertainty in Aerospace & Engineering Imprecise Probability, Theory and Applications Robust and Reliability-Based Design Optimisation in Aerospace Engineering Uncertainty Quantification, Identification and Calibration in Aerospace Models This proceedings volume is useful across disciplines, as it brings the expertise of theoretical and application researchers together in a unified framework.

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