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Nota di contenuto	Preface -- PART I: Adjoint Methods for Optimisation, Mesh Adaptation and Uncertainty Quantification -- Gradient projection, constraints and surface regularization methods in adjoint shape optimization, by Pavlos P. Alexias and Eugene De Villiers -- Adjoint Shape Optimisation using model Boundary Representation, by E. Andres-Perez et al. -- CAD and Adjoint based Multipoint Optimization of an Axial Turbine Profile, by Ismael Sanchez Torreguitart, Tom Verstraete, and Lasse Mueller -- A

Comparative Study of Two Different CAD-Based Mesh Deformation Methods for Structural Shape Optimization, by Marc Schwalbach, Tom Verstraete, Jens-Dominik Miller, and Nicolas R. Gauger -- Node-based Adjoint Surface Optimization of U-bend duct for pressure loss reduction, by Giacomo Alessi, Lilla Koloszar, Tom Verstraete, and J. van Beeck -- On the Properties of Solutions of the 2D Adjoint Euler Equations, by Carlos Lozano -- Finite Transformation Rigid Motion Mesh Morpher, by Athanasios G. Liatsikouras, Guillaume Pierrot, Gabriel Fougeron, and George S. Eleftheriou -- The Unsteady Continuous Adjoint Method Assisted by the Proper Generalized Decomposition Method, by V. S. Papageorgiou, K. D. Samouchos and K. C. Giannakoglou -- A Two–Step Mesh Adaptation Tool Based on RBF with application to turbomachinery Optimization Loops, by Flavio Gagliardi, Konstantinos T. Tsiakas and Kyriakos C. Giannakoglou -- Adjoint-based Aerodynamic Optimisation of Wing Shape Using Non-Uniform Rational B-splines, by Xingchen Zhang, Rejish Jesudasan and Jens-Dominik Müller -- PART II: Surrogate-assisted Optimization of Real World problems -- A comparative evaluation of surrogate models for transonic wing shape optimization, by Emiliano Iuliano -- Study of the influence of the initial a-priori training dataset size in the efficiency and convergence of surrogate-based evolutionary optimization, by Daniel Gonzalez Juarez and Esther Andres Perez -- Garteur AD/AG52: Surrogate-based global optimization methods in preliminary aerodynamic design, by E. Andres-Perez et al. -- A Response Surface Based Strategy for Accelerated Compressor Map Computation, by Dmitrij Ivanov, Dieter Bestle, and Christian Janke -- Surrogate-Based Shape Optimization of the ERCOFTAC Centrifugal Pump Impeller, by Remo De Donno and Stefano Rebay and Antonio Ghidoni -- CFD based Design Optimization of a Cabinet Nitrogen Generator, by Bárbara Arizmendi Gutiérrez and Edmondo Minisci -- Delaunay-based global optimization in nonconvex domains defined by hidden constraints, by Shahrouz Ryan Alimo, Pooriya Beyhaghi, and Thomas R. Bewley -- PART III: Applications of optimization in engineering design automation -- Optimized Vehicle Dynamics Virtual Sensing using Metaheuristic Optimization and Unscented Kalman Filter, by Manuel Acosta and Stratis Kanarachos -- On Combinatorial Problem Representation based Ascent Assembly Design Optimization, by Michael Hellwig, Doris Entner, Thorsten Prante, Alexandru-Ciprian Zavoianu, Martin Schwarz, and Klara Fink -- On the Optimization of 2D Path Network Layouts in Engineering Designs via Evolutionary Computation Techniques, by Alexandru-Ciprian Ziivoianu, Susanne Saminger-Platz, Doris Entner, Thorsten Prante, Michael Hellwig, Martin Schwarz, and Klara Fink -- Taking Advantage of 3D Printing so as to Simultaneously Reduce Weight and Mechanical Bonding Stress, by Markus Schatz, Robert Schweikle, Christian Lausch, Michael Jentsch and Werner Konrad -- Interactive Optimization of Path Planning for a Robot Enabled by Virtual Commissioning, by Ruth Fleisch, Doris Entner, Thorsten Prante, Reinhard Pfefferkorn -- Box-Type Boom Design using Surrogate Modeling: Introducing an Industrial Optimization Benchmark, by Philipp Fleck, Doris Entner, Clemens Munzer, Michael Kommenda, Thorsten Prante, Martin Schwarz, Martin Hachl, and Michael Affenzeller -- Knowledge Objects Enable Mass-Individualization, by Joel Johansson and Fredrik Elgh -- Free-form Optimization of a Shell Structure with Curvature Constraint, by Masatoshi Shimoda and Kenichi Ikeya -- Application of game theory and evolutionary algorithm to the regional turboprop aircraft wing optimization, by Pierluigi Della Vecchia, Luca Stingo, Fabrizio Nicolosi, Agostino De Marco, Elia Daniele, and Egidio D' Amato -- Industrial Application of Genetic Algorithms to cost reduction

	of a Wind Turbine equipped with a Tuned Mass Damper, by Jordi Pons-Prats, Marti Coma, Jaume Betran, Xavier Roca and Gabriel Bugeda -- PART IV: Optimization under uncertainty -- Aerodynamic Shape Optimization by Considering Geometrical Imperfections Using Polynomial Chaos Expansion and Evolutionary Algorithms, by Athanasios G. Liatsikouras, Varvara G. Asouti, Kyriakos C. Giannakoglou, and Guillaume Pierrot -- Multiobjective Optimisation of Aircraft Trajectories underWind Uncertainty using GPU Parallelism and Genetic Algorithms, by Daniel Gonzalez-Arribas, Manuel Soler, and Manuel Sanjurjo-Rivo -- Multi-objective Optimization of A-Class Catamaran Foils Adopting a Geometric Parameterization Based on RBF Mesh Morphing, by Marco Evangelos Biancolini, Ubaldo Cella, Alberto Clarich and Francesco Franchini -- Development of an Efficient Multifidelity Non-Intrusive Uncertainty Quantification Method, by Saeed Salehi, Mehrdad Raisee, Michel J. Cervantes and Ahmad Nourbakhsh -- PART V: Multi-disciplinary design optimization -- Evolving Neural Networks to Optimize Material Usage in Blow Molded Containers, by Roman Denysiuk, Fernando M. Duarte, Joao P. Nunes and Antonio Gaspar-Cunha -- Coupled Subsystem Optimization for Preliminary Core Engine Design, by Simon Extra, Michael Lockan, Dieter Bestle, and Peter Flassig -- Progresses in Fluid-Structure Interaction and Structural Optimization Numerical Tools within the EU CS RIBES Project, by Marco Evangelos Biancolini, Ubaldo Cella, Corrado Groth, Andrea Chiappa, Francesco Giorgetti and Fabrizio Nicolosi. .
Sommario/riassunto	This book contains thirty-five selected papers presented at the International Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control with Applications to Industrial and Societal Problems (EUROGEN 2017). This was one of the Thematic Conferences of the European Community on Computational Methods in Applied Sciences (ECCOMAS). Topics treated in the various chapters reflect the state of the art in theoretical and numerical methods and tools for optimization, and engineering design and societal applications. The volume focuses particularly on intelligent systems for multidisciplinary design optimization (mdo) problems based on multi-hybridized software, adjoint-based and one-shot methods, uncertainty quantification and optimization, multidisciplinary design optimization, applications of game theory to industrial optimization problems, applications in structural and civil engineering optimum design and surrogate models based optimization methods in aerodynamic design.