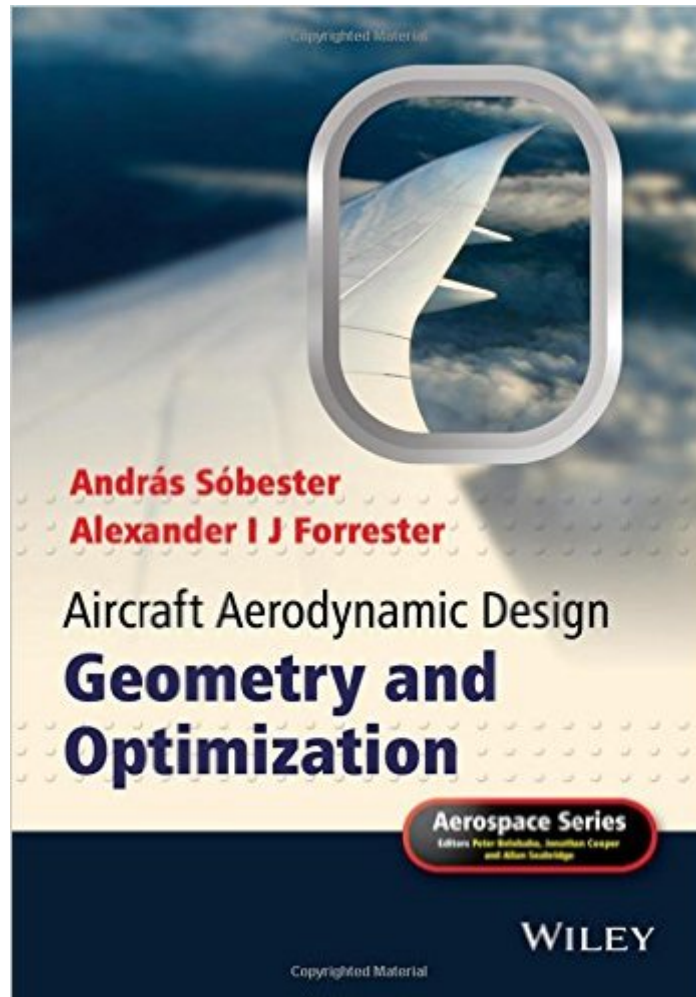


The book was found

# Aircraft Aerodynamic Design: Geometry And Optimization (Aerospace Series)



## Synopsis

Optimal aircraft design is impossible without a parametric representation of the geometry of the airframe. We need a mathematical model equipped with a set of controls, or design variables, which generates different candidate airframe shapes in response to changes in the values of these variables. This model's objectives are to be flexible and concise, and capable of yielding a wide range of shapes with a minimum number of design variables. Moreover, the process of converting these variables into aircraft geometries must be robust. Alas, flexibility, conciseness and robustness can seldom be achieved simultaneously. *Aircraft Aerodynamic Design: Geometry and Optimization* addresses this problem by navigating the subtle trade-offs between the competing objectives of geometry parameterization. It begins with the fundamentals of geometry-centred aircraft design, followed by a review of the building blocks of computational geometries, the curve and surface formulations at the heart of aircraft geometry. The authors then cover a range of legacy formulations in the build-up towards a discussion of the most flexible shape models used in aerodynamic design (with a focus on lift generating surfaces). The book takes a practical approach and includes MATLAB®, Python and Rhinoceros® code, as well as "real-life"™ example case studies. Key features:

- Covers effective geometry parameterization within the context of design optimization
- Demonstrates how geometry parameterization is an important element of modern aircraft design
- Includes code and case studies which enable the reader to apply each theoretical concept either as an aid to understanding or as a building block of their own geometry model
- Accompanied by a website hosting codes

*Aircraft Aerodynamic Design: Geometry and Optimization* is a practical guide for researchers and practitioners in the aerospace industry, and a reference for graduate and undergraduate students in aircraft design and multidisciplinary design optimization.

## Book Information

Series: Aerospace Series

Hardcover: 262 pages

Publisher: Wiley; 1 edition (November 17, 2014)

Language: English

ISBN-10: 0470662573

ISBN-13: 978-0470662571

Product Dimensions: 7 x 0.7 x 9.9 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,429,797 in Books (See Top 100 in Books) #64 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural Dynamics #232 in Books > Engineering & Transportation > Engineering > Aerospace > Aircraft Design & Construction #709 in Books > Textbooks > Engineering > Aeronautical Engineering

[Download to continue reading...](#)

Aircraft Aerodynamic Design: Geometry and Optimization (Aerospace Series) Analysis of Aircraft Structures: An Introduction (Cambridge Aerospace Series) Aircraft Structures for Engineering Students, Fifth Edition (Elsevier Aerospace Engineering) Aircraft Structures for Engineering Students, Fourth Edition (Elsevier Aerospace Engineering) Aircraft Structures for Engineering Students (Elsevier Aerospace Engineering) Introduction to Aircraft Structural Analysis (Elsevier Aerospace Engineering) Aircraft Dispatcher Oral Exam Guide: Prepare for the FAA Oral and Practical Exam to Earn Your Aircraft Dispatcher Certificate (Oral Exam Guide series) Jane's All the World's Aircraft (IHS Jane's All the World's Aircraft) Design and Analysis of Composite Structures: With Applications to Aerospace Structures Aircraft Interior Comfort and Design (Ergonomics Design Management: Theory and Applications) Geometry, Study Guide and Intervention Workbook (MERRILL GEOMETRY) Geometry Illuminated: An Illustrated Introduction to Euclidean and Hyperbolic Plane Geometry (Maa Textbooks) Open Geometry: OpenGL® + Advanced Geometry Geometry (Holt McDougal Larson Geometry) Glencoe Geometry, Student Edition (MERRILL GEOMETRY) Geometry Student Edition CCSS (MERRILL GEOMETRY) Holt McDougal Accelerated Coordinate Algebra/Analytic Geometry A Georgia: Student Workbook Coordinate Algebra/Analytic Geometry A Taxicab Geometry: An Adventure in Non-Euclidean Geometry (Dover Books on Mathematics) Order In Chaos: How The Mandelbrot Set & Fractal Geometry Help Unlock the Secrets of The Entire Universe! (Mandelbrot Set, Fractal Geometry) Geometry, Student Edition (MERRILL GEOMETRY)

[Dmca](#)