

Aircraft Structures For Engineering Students 5th

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Programmieren lernen mit Python : [Einstieg in die Programmierung] Allen Downey 2012

Understanding Aircraft Structures John Cutler 2006-02-10 This book explains aircraft structures so as to provide a basic understanding of the subject and the terminology used, as well as illustrating some of the problems. It provides a brief historical background, and covers parts of the aeroplane, loads, structural form, materials, processes, detail design, quality control, stressing, and the documentation associated with modification and repairs. The Fourth Edition takes account of new materials and the new European regulatory system.

Introduction to Aircraft Aeroelasticity and Loads Jan Robert Wright 2008-02-28

Boundary Layer Transition in the Leading Edge Region of a Swept Cylinder in High Speed Flow Colin P. Coleman 1998

Morphing Wing Technologies Sergio Ricci 2017-10-27 Morphing Wings Technologies: Large Commercial Aircraft and Civil Helicopters offers a fresh look at current research on morphing aircraft, including industry design, real manufactured prototypes and certification. This is an invaluable reference for students in the aeronautics and aerospace fields who need an introduction to the morphing discipline, as well as senior professionals seeking exposure to morphing potentialities. Practical applications of morphing devices are presented—from the challenge of conceptual design incorporating both structural and aerodynamic studies, to the most promising and potentially flyable solutions aimed at improving the performance of commercial aircraft and UAVs. Morphing aircraft are multi-role aircraft that change their external shape substantially to adapt to a changing mission environment during flight. The book consists of eight sections as well as an appendix which contains both updates on main systems evolution (skin, structure, actuator, sensor, and control systems) and a survey on the most significant achievements of integrated systems for large commercial aircraft. Provides current worldwide status of morphing technologies, the industrial development expectations, and what is already available in terms of flying systems Offers new perspectives on wing structure design and a new approach to general structural design Discusses hot topics such as multifunctional materials and auxetic materials Presents practical applications of morphing devices

Advanced Aerospace Materials Haim Abramovich 2019-08-19 Advanced Aerospace Materials is intended for engineers and students of aerospace, materials, and mechanical engineering. It covers the transition from aluminum to composite materials for aerospace structures and will include essential and advanced analyses used in today's aerospace industries. Various aspects of design, failure and monitoring of structural components will be derived and presented accompanied by relevant formulas and analyses.

Structural Mechanics in Lightweight Engineering Christian Mittelstedt 2021-07-01 This book provides a comprehensive yet concise presentation of the analysis methods of lightweight engineering in the context of the statics of beam structures and is divided into four sections. Starting from very general remarks on the fundamentals of elasticity theory, the first section also addresses plane problems as well as strength criteria of isotropic materials. The second section is devoted to the analytical treatment of the statics of beam structures, addressing beams under bending, shear and torsion. The third section deals with the work and energy methods in lightweight construction, spanning classical methods and modern computational methods such as the finite element method. Finally, the fourth section addresses more advanced beam models, discussing hybrid structures as well as laminated and sandwich beams, in addition to shear field beams and shear deformable beams. This book is intended for students at technical colleges and universities, as well as for engineers in practice and researchers in engineering.

Aerospace Manufacturing Technology 1997

Aerospace Alloys Stefano Gialanella 2019-10-30 This book presents an up-to-date overview on the main classes of metallic materials currently used in aeronautical structures and propulsion engines and discusses other materials of potential interest for structural aerospace applications. The coverage encompasses light alloys such as aluminum-, magnesium-, and titanium-based alloys, including titanium aluminides; steels; superalloys; oxide dispersion strengthened alloys; refractory alloys; and related systems such as laminate composites. In each chapter, materials properties and relevant technological aspects, including processing, are presented. Individual chapters focus on coatings for gas turbine engines and hot corrosion of alloys and coatings. Readers will also find consideration of applications in aerospace-related fields. The book takes full account of the impact of energy saving and environmental issues on materials development, reflecting the major shifts that have occurred in the motivations guiding research efforts into the development of new materials systems. Aerospace Alloys will be a valuable reference for graduate students on materials science and engineering courses and will also provide useful information for engineers working in the aerospace, metallurgical, and energy production industries.

Finite Element Method for Solids and Structures Sung W. Lee 2021-06-17 This innovative approach to teaching the finite element method blends theoretical, textbook-based learning with practical application using online and video resources. This hybrid teaching package features computational software such as MATLAB®, and tutorials presenting software applications such as PTC Creo

Parametric, ANSYS APDL, ANSYS Workbench and SolidWorks, complete with detailed annotations and instructions so students can confidently develop hands-on experience. Suitable for senior undergraduate and graduate level classes, students will transition seamlessly between mathematical models and practical commercial software problems, empowering them to advance from basic differential equations to industry-standard modelling and analysis. Complete with over 120 end-of chapter problems and over 200 illustrations, this accessible reference will equip students with the tools they need to succeed in the workplace.

Ökologie Colin R. Townsend 2014-08-12 Diese Softcover-Ausgabe, die ein unveränderter Nachdruck der 2. Auflage (2009) ist, hält das nachgefragte Lehrbuch weiterhin verfügbar. Moderne Ökologie von A bis Z Das renommierte Autorenteam Townsend, Begon und Harper konzentriert sich in diesem Lehrbuch auf die wesentlichen Zusammenhänge in der Ökologie. In anschaulicher, durchgehend vierfarbig gestalteter und leicht verständlicher Form wird ein ausgewogener Überblick vermittelt, der die terrestrische und aquatische Ökologie gleichermaßen berücksichtigt. Für den Praxisbezug wurde großes Gewicht auf die angewandten Aspekte gelegt. Zahlreiche didaktische Elemente und großzügige, farbige Illustrationen erleichtern den Zugang. Es gibt Schlüsselkonzepte am Kapitelanfang, "Fenster" für historische Einschübe, mathematische Hintergründe und ethische Fragen, Zusammenfassungen und Fragen am Kapitelende. Neu in dieser Auflage ist ein eigenes Kapitel zur Evolutionsökologie. Alle anderen Kapitel – insbesondere die zu den angewandten Aspekten – wurden intensiv überarbeitet und hunderte neue Beispiele aufgenommen. Klar und einfach erklärt in diesem Buch.

Grenzschicht-Theorie H. Schlichting 2013-08-13 Die Überarbeitung für die 10. deutschsprachige Auflage von Hermann Schlichtings Standardwerk wurde wiederum von Klaus Gersten geleitet, der schon die umfassende Neuformulierung der 9. Auflage vorgenommen hatte. Es wurden durchgängig Aktualisierungen vorgenommen, aber auch das Kapitel 15 von Herbert Oertel jr. neu bearbeitet. Das Buch gibt einen umfassenden Überblick über den Einsatz der Grenzschicht-Theorie in allen Bereichen der Strömungsmechanik. Dabei liegt der Schwerpunkt bei den Umströmungen von Körpern (z.B. Flugzeugaerodynamik). Das Buch wird wieder den Studenten der Strömungsmechanik wie auch Industrie-Ingenieuren ein unverzichtbarer Partner unerschöpflicher Informationen sein.

Einführung in die Extragalaktische Astronomie und Kosmologie Peter Schneider 2006-02-23 In diesem kompetent geschriebenen Lehrbuch wird, ausgehend von der Beschreibung unserer Milchstraße, die Astronomie der Galaxien und ihrer großräumigen Verteilung eingehend dargestellt und schließlich im kosmologischen Kontext diskutiert. Aufbauend auf eine Einführung in die moderne beobachtende und theoretische Kosmologie wird die Entstehung von Strukturen und astronomischen Objekten im frühen Universum besprochen.

Introduction to Aircraft Aeroelasticity and Loads Jan R. Wright 2015-02-23 As an introduction to aircraft aero elasticity and dynamic loads, this book will not only be welcomed by junior practitioners in industry and graduate students, it will also form an excellent basis for several university courses on aero elasticity.

Civil and Military Airworthiness Kyriakos I. Kourousis 2020-05-27 Airworthiness, as a field, encompasses the technical and non-technical activities required to design, certify, produce, maintain, and safely operate an aircraft throughout its lifespan. The evolving technology, science, and engineering methods and, most importantly, aviation regulation, offer new opportunities and create, new challenges for the aviation industry. This book assembles review and research articles across a variety of topics in the field of airworthiness: aircraft maintenance, safety management, human factors, cost analysis, structures, risk assessment, unmanned aerial vehicles and regulations. This selection of papers informs the industry practitioners and researchers on important issues.

Analysis of Aircraft Structures Bruce K. Donaldson 2008-03-24 As with the first edition, this textbook provides a clear introduction to the fundamental theory of structural analysis as applied to vehicular structures such as aircraft, spacecraft, automobiles and ships. The emphasis is on the application of fundamental concepts of structural analysis that are employed in everyday engineering practice. All approximations are accompanied by a full explanation of their validity. In this new edition, more topics, figures, examples and exercises have been added. There is also a greater emphasis on the finite element method of analysis. Clarity remains the hallmark of this text and it employs three strategies to achieve clarity of presentation: essential introductory topics are covered, all approximations are fully explained and many important concepts are repeated.

Wind Turbines Colin Anderson 2020-02-20 Explains the key aspects of wind turbine technology and its application in a single readable text.

Biplanes at War Wray R. Johnson 2019-04-16 Unlike the relative uniformity of conventional warfare, the peculiarities of small wars prevent a clear definition of rules and roles for military forces to follow. During the small wars era, aviation was still in its infancy, and the US military had only recently begun battling in the skies. The US Marine Corps recognized that flexibility and ingenuity would be critical to the successful conduct of small wars and thus employed the new technology of aviation. In Biplanes at War: US Marine Corps Aviation in the Small Wars Era, 1915–1934, author Wray R. Johnson provides a riveting history of the marines' use of aviation between the world wars, a time in which young soldiers were volunteering to fly in combat when flying itself was a dangerous feat. Starting with Haiti in 1915, Biplanes at War follows the marines' aviation experiences in Haiti, the Dominican Republic, China, and Nicaragua, chronicling how marines used aircraft to provide supporting fires (e.g., dive-bombing) to ground troops in close contact with irregular opponents, evacuate the sick and wounded, transport people and cargo (e.g., to assist humanitarian operations), and even support elections in furtherance of democracy. After years of expanding the capabilities of airplanes far beyond what was deemed possible, the small wars era ended, and the US Marines Corps transitioned into an amphibious assault force. The legacy of the marines' ability to adapt and innovate during the small wars era endures and provides a useful case study. Biplanes at War sheds light on how the marines pioneered roles and missions that have become commonplace for air forces today, an accomplishment that has largely gone unrecognized in mainstream histories of aviation and air power.

Mechanical Engineering Principles John Bird 2019-09-03 A student-friendly introduction to core mechanical engineering topics. This book introduces mechanical principles and technology through examples and applications, enabling students to develop a sound understanding of both engineering principles and their use in practice. These theoretical concepts are supported by 400 fully worked

problems, 700 further problems with answers, and 300 multiple-choice questions, all of which add up to give the reader a firm grounding on each topic. Two new chapters are included, covering the basic principles of matrix algebra and the matrix displacement method. The latter will also include guidance on software that can be used via SmartPhones, tablets or laptops. The new edition is up to date with the latest BTEC National specifications and can also be used on undergraduate courses in mechanical, civil, structural, aeronautical and marine engineering, and naval architecture. A companion website contains the fully worked solutions to the problems and revision tests, practical demonstration videos, as well as a glossary and information on the famous engineers mentioned in the text.

Aircraft Structures David J. Peery 1982
Unmanned Aircraft Design Mohammad Sadraey 2022-05-31 This book provides fundamental principles, design procedures, and design tools for unmanned aerial vehicles (UAVs) with three sections focusing on vehicle design, autopilot design, and ground system design. The design of manned aircraft and the design of UAVs have some similarities and some differences. They include the design process, constraints (e.g., g-load, pressurization), and UAV main components (autopilot, ground station, communication, sensors, and payload). A UAV designer must be aware of the latest UAV developments; current technologies; know lessons learned from past failures; and they should appreciate the breadth of UAV design options. The contribution of unmanned aircraft continues to expand every day and over 20 countries are developing and employing UAVs for both military and scientific purposes. A UAV system is much more than a reusable air vehicle or vehicles. UAVs are air vehicles, they fly like airplanes and operate in an airplane environment. They are designed like air vehicles; they have to meet flight critical air vehicle requirements. A designer needs to know how to integrate complex, multi-disciplinary systems, and to understand the environment, the requirements and the design challenges and this book is an excellent overview of the fundamentals from an engineering perspective. This book is meant to meet the needs of newcomers into the world of UAVs. The materials are intended to provide enough information in each area and illustrate how they all play together to support the design of a complete UAV. Therefore, this book can be used both as a reference for engineers entering the field or as a supplementary text for a UAV design course to provide system-level context for each specialized topic.

Gasturbinen Handbuch Meherwan P. Boyce 2013-07-02 Dieses amerikanische Standardwerk wurde vom Übersetzer angepaßt auf die deutschen Verhältnisse. Es bietet wertvolle Informationen für Installation, Betrieb und Wartung, technische Details der Auslegung, Kennzahlen und vieles mehr.

British Books in Print 1985

Mechanics of Solids Carl Ross 2021-11-01 Mechanics of Solids provides an introduction to the behaviour of solid materials under various loading conditions, focusing upon the fundamental concepts and principles of statics and stress analysis. As the primary recommended text of the Council of Engineering Institutions for university undergraduates studying mechanics of solids it is essential reading for mechanical engineering undergraduates and also students on many civil, structural, aeronautical and other engineering courses. The mathematics in this book has been kept as straightforward as possible and worked examples are used to reinforce key concepts. Practical stress and strain scenarios are covered, including simple stress and strain, torsion, bending, elastic failure and buckling. Many examples are given of thin-walled structures, beams, struts and composite structures. This third edition includes new chapters on matrix algebra, linear elastic fracture mechanics, material property considerations and more on strain energy methods. The companion website www.routledge.com/cw/bird provides full solutions to all 575 further problems in the text, multiple-choice tests, a list of essential formulae, resources for adopting course instructors, together with several practical demonstrations by Professor Ross.

Die Welt von Cyberpunk 2077 Marcin Batylda 2020-08-25 Man schreibt das Jahr 2077. Die Welt ist gespickt mit dystopischen Metropolen. Gewalt, Unterdrückung und Cyberware-Implantate sind hier nicht nur alltäglich, sondern auch notwendig. Jetzt gilt es herauszufinden, warum die Vereinigten Staaten abhängig von ominösen Unternehmen sind und den Freistaat Kalifornien geschaffen haben. Der Leser entdeckt dabei spannende Kybernetik, verheerende Waffen und die Fahrzeugtechnologie von morgen. Die Welt von Cyberpunk 2077 enthält alles, was man über die Geschichte, die Charaktere und die Welt des bereits lang erwarteten Nachfolgers der The Witcher-Videospielreihe von CD Projekt Red wissen muss.

AIAA Journal American Institute of Aeronautics and Astronautics 2008

Mechanics Of Solids And Structures (2nd Edition) David W A Rees 2016-08-04 The fifteen chapters of this book are arranged in a logical progression. The text begins with the more fundamental material on stress and strain transformations with elasticity theory for plane and axially symmetric bodies, followed by a full treatment of the theories of bending and torsion. Coverage of moment distribution, shear flow, struts and energy methods precede a chapter on finite elements. Thereafter, the book presents yield and strength criteria, plasticity, collapse, creep, visco-elasticity, fatigue and fracture mechanics. Appended is material on the properties of areas, matrices and stress concentrations. Each topic is illustrated by worked examples and supported by numerous exercises drawn from the author's teaching experience and professional institution examinations (CEI). This edition includes new material and an extended exercise section for each of the fifteen chapters, as well as three appendices. The broad text ensures its suitability for undergraduate and postgraduate courses in which the mechanics of solids and structures form a part including: mechanical, aeronautical, civil, design and materials engineering.

Offbeat Physics P.I.C. Teixeira 2022-04-29 Offbeat Physics: Machines, Meditations and Misconceptions is a collection of articles on various topics in classical physics that have intrigued the author and their students throughout the years. The book is divided into three parts. Part I -- Machines, comprises chapters that explain or model the workings of a number of machines (understood in a broad sense) on the basis of physical principles. These machines can be as simple as a rolling wheel or as complex as a jet engine. Then in Part II -- Meditations, the authors go beyond the standard examples, experiments and approximations discussed ad nauseam in most physics textbooks, but which are not always very exciting or realistic. For example, what happens when colliding bodies are not perfectly rigid -- as we know real bodies are not? Finally, Part III -- Misconceptions aims to correct misconceptions that students may have about physical phenomena or clarify issues that are often presented misleadingly, confusingly or imprecisely in textbooks, such as the relationship between angular momentum and angular velocity in rotational motion. This is a book for all those who wish to learn

physics beyond the textbooks and from more realistic problems, often occurring in engineering contexts. It will be useful to instructors at all levels, as well as highly motivated students taking General Physics courses in higher education.

Scientific and Technical Aerospace Reports 1995

Aircraft Flight R. H. Barnard 2010 Aircraft Flight provides accurate physical, rather than mathematical, descriptions of the principles of aircraft flight. This popular text gives mechanical engineering and aeronautical engineering students a useful introduction to the subject. The fourth edition has been updated to include important recent developments such as unmanned air vehicles and the low orbit space-plane.

The International Handbook of Space Technology Malcolm Macdonald 2014-07-08 This comprehensive handbook provides an overview of space technology and a holistic understanding of the system-of-systems that is a modern spacecraft. With a foreword by Elon Musk, CEO and CTO of SpaceX, and contributions from globally leading agency experts from NASA, ESA, JAXA, and CNES, as well as European and North American academics and industrialists, this handbook, as well as giving an interdisciplinary overview, offers, through individual self-contained chapters, more detailed understanding of specific fields, ranging through: · Launch systems, structures, power, thermal, communications, propulsion, and software, to · entry, descent and landing, ground segment, robotics, and data systems, to · technology management, legal and regulatory issues, and project management. This handbook is an equally invaluable asset to those on a career path towards the space industry as it is to those already within the industry.

Understanding Aircraft Structures John Cutler 1981 This book explains aircraft structures so as to provide a basic understanding of the subject and the terminology used, as well as illustrating some of the problems. It provides a brief historical background, and covers parts of the aeroplane, loads, structural form, materials, processes, detail design, quality control, stressing, and the documentation associated with modification and repairs. The Fourth Edition takes account of new materials and the new European regulatory system.

Whitaker's Five-year Cumulative Book List 1968

Die Vierte Industrielle Revolution Klaus Schwab 2016-06-27 Die größte Herausforderung unserer Zeit Ob selbstfahrende Autos, 3-D-Drucker oder Künstliche Intelligenz: Aktuelle technische Entwicklungen werden unsere Art zu leben und zu arbeiten grundlegend verändern. Die Vierte Industrielle Revolution hat bereits begonnen. Ihr Merkmal ist die ungeheuer schnelle und systematische Verschmelzung von Technologien, die die Grenzen zwischen der physischen, der digitalen und der biologischen Welt immer stärker durchbrechen. Wie kein anderer ist Klaus Schwab, der Vorsitzende des Weltwirtschaftsforums, in der Lage aufzuzeigen, welche politischen, wirtschaftlichen, sozialen und kulturellen Herausforderungen diese Revolution für uns alle mit sich bringt.

McGraw-Hill Concise Encyclopedia of Science and Technology, Sixth Edition McGraw-Hill Education 2009-06-10 Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. A major revision of this classic encyclopedia covering all areas of science and technology, the McGraw-Hill Concise Encyclopedia of Science and Technology, Sixth Edition, is prepared for students, professionals, and general readers seeking concise yet authoritative overviews of topics in all major fields in science and technology. The McGraw-Hill Concise Encyclopedia of Science and Technology, Sixth Edition, satisfies the needs of readers for an authoritative, comprehensive reference work in a relatively compact format that provides the breadth of coverage of the McGraw-Hill Encyclopedia of Science & Technology, 10th Edition. Written in clear, nonspecialist language understandable to students and general readers, yet with sufficient depth for scientists, educators, and researchers, this definitive resource provides: 7100 concise articles covering disciplines of science and technology from acoustics to zoology Extensively revised content with new and rewritten articles Current and critical advances in fast-developing fields such as biomedical science, chemistry, computing and information technology, cosmology, environmental science, nanotechnology, telecommunications, and physics More than 1600 two-color illustrations 75 full-color plates Hundreds of tables and charts 1300 biographical sketches of famous scientists Index containing 30,000 entries Cross references to related articles Appendices including bibliographies and useful data McGraw-Hill Professional science reference products are supported by MHEST.com, a website offering updates to articles, periodic special features on important scientific topics, multimedia content, and other features enriching the reader's experience. We encourage readers to visit the site often. Fields Covered Include: Acoustics Aeronautics Agriculture Anthropology Archeology Astronomy Biochemistry Biology Chemistry Computers Cosmology Earth Science Engineering Environmental Science Forensic Science Forestry Genetics Geography Immunology Information Science Materials Science Mathematics Medicine and Pathology Meteorology and Climate Science Microbiology Nanotechnology Navigation Neuroscience Oceanography Paleontology Physics Physiology Psychiatry Psychology Telecommunications Theoretical Physics Thermodynamics Veterinary Medicine Virology Zoology

Aircraft Structures for Engineering Students T.H.G. Megson 2012-03-27 Aircraft Structures for Engineering Students, Fifth Edition, is the leading self-contained aircraft structures course text. It covers all fundamental subjects, including elasticity, structural analysis, airworthiness, and aeroelasticity. The author has revised and updated the text throughout and added new examples and exercises using Matlab. Additional worked examples make the text even more accessible by showing the application of concepts to airframe structures. The text is designed for undergraduate and postgraduate students of aerospace and aeronautical engineering. It is also suitable for professional development and training courses. New worked examples throughout the text aid understanding and relate concepts to real world applications Matlab examples and exercises added throughout to support use of computational tools in analysis and design An extensive aircraft design project case study shows the application of the major techniques in the book

Introduction to UAV Systems Paul G. Fahlstrom 2022-04-11 Introduction to UAV Systems The latest edition of the leading resource on unmanned aerial vehicle systems In the newly revised Fifth Edition of Introduction to UAV Systems, an expert team of aviators, engineers, and researchers delivers the fundamentals of UAV systems for both professionals and students in UAV courses. Suitable for students in Aerospace Engineering programs, as well as Flight and Aeronautics programs, this new edition now includes end-of-chapter questions and online instructor ancillaries that make it an ideal textbook. As the perfect complement to the author's Design of Unmanned Aerial Systems, this book includes the history, classes, and missions of UAVs. It covers fundamental topics, like

aerodynamics, stability and control, propulsion, loads and structures, mission planning, payloads, and communication systems. Brand-new materials in areas including autopilots, quadcopters, payloads, and ground control stations highlight the latest industry technologies. The authors also discuss: A thorough introduction to the history of unmanned aerial vehicles, including their use in various conflicts, an overview of critical UAV systems, and the Predator/Reaper A comprehensive exploration of the classes and missions of UAVs, including several examples of UAV systems, like Mini UAVs, UCAVs, and quadcopters Practical discussions of air vehicles, including coverage of topics like aerodynamics, flight performance, stability, and control In-depth examinations of propulsion, loads, structures, mission planning, control systems, and autonomy Perfect for professional aeronautical and aerospace engineers, as well as students and instructors in courses like Unmanned Aircraft Systems Design and Introduction to Unmanned Aerial Systems, Introduction to UAV Systems is an indispensable resource for anyone seeking coverage of the latest industry advances and technologies in UAV and UAS technology.

ECCM-6 A. R. Bunsell 1993

Analysis of Aircraft Structures Bruce K. Donaldson 2008-03-24 As with the first edition, this textbook provides a clear introduction to the fundamental theory of structural analysis as applied to vehicular structures such as aircraft, spacecraft, automobiles and ships. The emphasis is on the application of fundamental concepts of structural analysis that are employed in everyday engineering practice. All approximations are accompanied by a full explanation of their validity. In this new edition, more topics, figures, examples and exercises have been added. There is also a greater emphasis on the finite element method of analysis. Clarity remains the hallmark of this text and it employs three strategies to achieve clarity of presentation: essential introductory topics are covered, all approximations are fully explained and many important concepts are repeated.

Grundlagen der Aeroelastik H.W. Försching 2013-07-29 Aeroelastische Vorgänge, die aus der Einwirkung von Luftströmungen auf elastische Gebilde resultieren, sind eine beinahe alltägliche Erscheinung. Bäume und Halme schwanken unter Windeinwirkung, Fahnen und Segel flattern im Winde und der Wind schließt die bereits im Altertum bekannte Äolsharfe in derselben Weise wie ein Überlandleitungskabel zum "singenden" anregt. Diese und viele andere aeroelastische Phänomene treten in all den Bereichen der Technik auf und führen dort zu ernsthaften und praktisch sehr bedeutsamen Problemstellungen. Insbesondere im Luftfahrzeugbau ist die Beherrschung der dort in einer Vielzahl auftretenden aeroelastischen Probleme eine fundamentale Voraussetzung für eine betriebssichere und optimale Konstruktion. Aber auch im Ingenieur-Hochbau führt der Trend zu immer kühneren und größeren Bauwerken fortwährend zu neuen aeroelastischen Problemen und aeroelastische Gesichtspunkte treten da bei oft als begrenzende Faktoren auf. Der Beginn dieser aeroelastischen Untersuchungen und die ersten Ansätze zur Entwicklung einer theoretischen Grundlage für das Verständnis aeroelastischer Vorgänge fällt in die frühen zwanziger Jahre. Das Gebiet der Aeroelastik ist also eine relativ junge Wissenschaft, die besonders in den vergangenen 15 Jahren eine geradezu stürmische Entwicklung erlebte und sich weiterhin in der Entwicklung befindet. Nichtsdestoweniger hat die Aeroelastik nunmehr insgesamt ein Stadium erreicht, das eine zusammenfassende und generelle Behandlung ihrer fundamentalen Grundlagen ermöglicht.