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SHANE MAXIMILLIAN

A Study of Skin Temperatures of Conical Bodies in Supersonic Flight IGI Global

Model rockets are often linked to fireworks, because the direction of a typical model rocket cannot be controlled either. Therefore, dirigible model rockets are not very common. That is the reason why it was decided to build a steering system for model rocket as a matura paper. This required a deeper knowledge concerning the dynamics of the rocket flight. To be able to adjust the technology, the experimental approach consisted of lab tests and a test launch. The aim of my work was to 1) become familiar with the dynamics of rocket flights, 2) design a dirigible solid-fuel model rocket, and 3) evaluate the design in a lab test and a test launch. After designing a steering system, lab tests were carried out so the freshly designed technology could be tested in a controlled environment. The results showed that the steering system worked under extreme heat and that no unforeseen problems arose. After that, a test flight was done. The rocket there performed unforeseen flips. It seems as if this was because of the bad aerodynamics, which are due to the steering components mostly being outside of the rockets body. To conclude, the dynamics of the rocket flight were examined, and the development consisted of lab tests and a test launch. The aim of work was achieved.

Handbook of Research on Aspects and Applications of Incompressible and Compressible Aerodynamics Routledge

Agreement between measured and calculated temperatures on the nose of a V-2 missile indicates that a method given can be used to calculate skin temperatures under supersonic flight conditions. It is show that by a proper choice of the basic parameters the increase in skin temperatures during a limited time of flight can be held to structurally permissible values.

Advanced Solutions in Diagnostics and Fault Tolerant Control CRC Press

The International Scientific and Technical Conference "Integrated Computer Technologies in Mechanical Engineering"—Synergetic Engineering (ICTM) was established by National Aerospace University "Kharkiv Aviation Institute." The Conference ICTM'2022 was held in Kharkiv, Ukraine, during November 18–20, 2022. During this conference, technical exchanges between the research community were carried out in the forms of keynote speeches, panel discussions, as well as special session. In addition, participants were treated to a series of receptions, which forge collaborations among fellow researchers. ICTM'2022 received 137 papers submissions from different countries. All of these offer us plenty of valuable information and would be of great benefit to experience exchange among scientists in modeling and simulation. The organizers of ICTM'2022 made great efforts to ensure the success of this conference. We hereby would like to thank all the members of ICTM'2022 Advisory Committee for their guidance and advice, the members of program committee and organizing committee, and the referees for their effort in reviewing and soliciting the papers, and all authors for their contribution to the formation of a common intellectual environment for solving relevant scientific problems. Also, we grateful to Springer—Janusz Kacprzyk and Thomas Ditzinger as the editor responsible for the series "Lecture Notes in Networks and Systems" for their great support in publishing these selected papers.

A Catalog of Books Represented by Library of Congress Printed Cards Issued to July 31, 1942 Springer Nature

Recent government and commercial efforts to develop orbital and suborbital passenger and transport aircraft have resulted in a burgeoning of new research. The articles in this book, translated from Russian, were contributed by the world's leading authorities on supersonic and hypersonic flows and heat transfer. This superb book addresses the physics and engineering aspects of ultra high-speed aerodynamic problems. Thorough coverage is given to an array of specific problem-solving equations. Super- and Hypersonic Aerodynamics and Heat Transfer will be essential reading for all aeronautical engineers, mechanical engineers, mathematicians, and physicists involved in this exciting field of research.

The National Union Catalog, Pre-1956 Imprints Springer Nature

This book highlights the latest achievements concerning the theory, methods and practice of fault diagnostics, fault tolerant systems and cyber safety. When considering the diagnostics of industrial processes and systems, increasingly important safety issues cannot be ignored. In this context, diagnostics plays a crucial role as a primary measure of the improvement of the overall system safety integrity level. Obtaining the desired diagnostic coverage or providing an appropriate level of inviolability of the integrity of a system is now practically inconceivable without the use of fault detection and isolation methods. Given the breadth and depth of its coverage, the book will be of interest to researchers faced with the challenge of designing technical and medical diagnosis systems, as well as junior researchers and students in the fields of automatic control, robotics, computer science and artificial intelligence.

NAS Technical Summaries: Numerical Aerodynamic Simulation Program, March 1990 - February 1991 Springer Nature

This volume comprises the second part of the proceedings of the 10th International Conference on Finite Volumes for Complex Applications, FVCA, held in Strasbourg, France, during October 30 to November 3, 2023. The Finite Volume method, and several of its variants, is a spatial discretization technique for partial differential equations based on the fundamental physical principle of conservation. Recent decades have brought significant success in the theoretical understanding of the method. Many finite volume methods are also built to preserve some properties of the continuous equations, including maximum principles, dissipativity, monotone decay of the free energy, asymptotic stability, or stationary solutions. Due to these properties, finite volume methods belong to the wider class of compatible discretization methods, which preserve qualitative properties of continuous problems at the discrete level. This structural approach to the discretization of partial differential equations becomes particularly important for multiphysics and multiscale applications. In recent years, the efficient implementation of these methods in numerical software packages, more specifically to be used in supercomputers, has drawn some attention. The first volume contains all invited papers, as well as the contributed papers focusing on finite volume schemes for elliptic and parabolic problems. They include structure-preserving schemes, convergence proofs, and error estimates for problems governed by elliptic and parabolic partial differential equations. This volume is focused on finite volume methods for hyperbolic and related problems, such as methods compatible with the low Mach number limit or able to exactly preserve steady solutions, the development and analysis of high order methods, or the discretization of

kinetic equations.

Book Catalog of the Library and Information Services Division: Shelf List catalog CRC Press
Wind turbine aerodynamics is one of the central subjects of wind turbine technology. To reduce the levelized cost of energy (LCOE), the size of a single wind turbine has been increased to 12 MW at present, with further increases expected in the near future. Big wind turbines and their associated wind farms have many advantages but also challenges. The typical effects are mainly related to the increase in Reynolds number and blade flexibility. This Special Issue is a collection of 21 important research works addressing the aerodynamic challenges appearing in such developments. The 21 research papers cover a wide range of problems related to wind turbine aerodynamics, which includes atmospheric turbulent flow modeling, wind turbine flow modeling, wind turbine design, wind turbine control, wind farm flow modeling in complex terrain, wind turbine noise modeling, vertical axis wind turbine, and offshore wind energy. Readers from all over the globe are expected to greatly benefit from this Special Issue collection regarding their own work and the goal of enabling the technological development of new environmentally friendly and cost-effective wind energy systems in order to reach the target of 100% energy use from renewable sources, worldwide, by 2050

Integrated Computer Technologies in Mechanical Engineering - 2022 Springer

This book provides multifaceted components and full practical perspectives of systems engineering and risk management in security and defense operations with a focus on infrastructure and manpower control systems, missile design, space technology, satellites, intercontinental ballistic missiles, and space security. While there are many existing selections of systems engineering and risk management textbooks, there is no existing work that connects systems engineering and risk management concepts to solidify its usability in the entire security and defense actions. With this book Dr. Anna M. Doro-on rectifies the current imbalance. She provides a comprehensive overview of systems engineering and risk management before moving to deeper practical engineering principles integrated with newly developed concepts and examples based on industry and government methodologies. The chapters also cover related points including design principles for defeating and deactivating improvised explosive devices and land mines and security measures against kinds of threats. The book is designed for systems engineers in practice, political risk professionals, managers, policy makers, engineers in other engineering fields, scientists, decision makers in industry and government and to serve as a reference work in systems engineering and risk management courses with focus on security and defense operations.

NASA Scientific and Technical Reports Springer

First Published in 2017. Routledge is an imprint of Taylor & Francis, an Informa company.

AVST Morphing Project Research Summaries in Fiscal Year 2001 John Wiley & Sons

NSA is a comprehensive collection of international nuclear science and technology literature for the period 1948 through 1976, pre-dating the prestigious INIS database, which began in 1970. NSA existed as a printed product (Volumes 1-33) initially, created by DOE's predecessor, the U.S. Atomic Energy Commission (AEC). NSA includes citations to scientific and technical reports from the AEC, the U.S. Energy Research and Development Administration and its contractors, plus other agencies and international organizations, universities, and industrial and research organizations. References to books, conference proceedings, papers, patents, dissertations, engineering drawings, and journal articles from worldwide sources are also included. Abstracts and full text are provided if available.

A Transonic Wind-tunnel Investigation of the Static Longitudinal and Lateral Aerodynamic Characteristics of a Proposed Hypersonic Glider with Several Booster Configurations MDPI

This book offers a snapshot of the latest research and developments in road and railway vehicle dynamics. Gathering peer-reviewed contributions to the 27th Symposium of the International Association of Vehicle System Dynamics (IAVSD), held online on August 17–19, 2021, from Saint Petersburg, Russia, it offers extensive information for both researchers and professionals in the field of ground vehicle dynamics, control and design. It covers cutting-edge methods and solutions for solving ground vehicle system dynamics-related problems, concerning control and monitoring, performance, safety and braking of road and rail vehicles, including electric and autonomous ones. Further, it reports on significant advances in vehicle design, and important applications to improve ride comfort. Overall, the book provides academics and professional with a timely reference guide on theories and methods to understand, analyze and improve vehicle stability and dynamics in a broad range of different operating conditions. Chapter "Experimental Validation of a Semi-physical Modelling Approach of the Influence of Tyre Rotation on the Vertical Tyre Force Transmission and Tyre Kinematics" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

Measurements of Aerodynamic Heating Obtained During Demonstration Flight Tests of the Douglas D-558-II Airplane Springer Nature

Selected by Forbes.com as one of the 12 best books about birds and birding in 2016 This much-anticipated third edition of the Handbook of Bird Biology is an essential and comprehensive resource for everyone interested in learning more about birds, from casual bird watchers to formal students of ornithology. Wherever you study birds your enjoyment will be enhanced by a better understanding of the incredible diversity of avian lifestyles. Arising from the renowned Cornell Lab of Ornithology and authored by a team of experts from around the world, the Handbook covers all aspects of avian diversity, behaviour, ecology, evolution, physiology, and conservation. Using examples drawn from birds found in every corner of the globe, it explores and distills the many scientific discoveries that have made birds one of our best known - and best loved - parts of the natural world. This edition has been completely revised and is presented with more than 800 full color images. It provides readers with a tool for life-long learning about birds and is suitable for bird watchers and ornithology students, as well as for ecologists, conservationists, and resource managers who work with birds. The Handbook of Bird Biology is the companion volume to the Cornell Lab's renowned distance learning course, Ornithology: Comprehensive Bird Biology.

Commonwealth Universities Yearbook Springer Nature

Aerodynamics is a science that improves the ability to understand theoretical basics and apply fundamental physics in real-life problems. The study of the motion of air, both externally over an airplane wing and internally over a scramjet engine intake, has acknowledged the significance of studying both incompressible and compressible flow aerodynamics. The Handbook of Research on Aspects and Applications of Incompressible and Compressible Aerodynamics discusses all aspects of aerodynamics from application to theory. It further presents the equations and mathematical models used to describe and characterize flow fields as well as their thermodynamic aspects and applications. Covering topics such as airplane configurations, hypersonic vehicles, and the

parametric effect of roughness, this premier reference source is an essential resource for engineers, scientists, students and educators of higher education, military experts, libraries, government officials, researchers, and academicians.

Nuclear Science Abstracts

This book presents numerical and experimental research in the field of wind energy exploitation in urban environments. It comprises a selection of the best papers from the international colloquium "Research and Innovation on Wind Energy Exploitation in Urban Environment" (TUrbWind), held in Riva del Garda, Italy in June 2017. The book includes contributions from different research fields in urban wind resources, wind energy conversion systems, and urban integration, mainly focusing on the following topics: · concepts for urban and open landscape micro wind turbines, · integration of micro wind turbines in existing structures, · built-environment and high-turbulence sites' impacts on urban wind turbines, · measuring and modeling wind resource in built environments, · rotor performance and wake features of micro wind turbines. It is a valuable resource for researchers and practitioners interested in the integration of wind energy systems and turbines in urban areas.

Super- and Hypersonic Aerodynamics and Heat Transfer

This book constitutes the proceedings of the 12th International Conference on Biomimetic and Biohybrid Systems, Living Machines 2022, in Genoa, Italy, held in July 19-22, 2022. The 44 full papers and 14 short papers presented were carefully reviewed and selected from 67 submissions. They deal with research on novel life-like technologies inspired by the scientific investigation of

biological systems, biomimetics, and research that seeks to interface biological and artificial systems to create biohybrid systems. The conference aims to highlight the most exciting research in both fields united by the theme of "Living Machines."

Aerodynamics

The five-volume set LNCS 14073-14077 constitutes the proceedings of the 23rd International Conference on Computational Science, ICCS 2023, held in Prague, Czech Republic, during July 3-5, 2023. The total of 188 full papers and 94 short papers presented in this book set were carefully reviewed and selected from 530 submissions. 54 full and 37 short papers were accepted to the main track; 134 full and 57 short papers were accepted to the workshops/thematic tracks. The theme for 2023, "Computation at the Cutting Edge of Science", highlights the role of Computational Science in assisting multidisciplinary research. This conference was a unique event focusing on recent developments in scalable scientific algorithms, advanced software tools; computational grids; advanced numerical methods; and novel application areas. These innovative novel models, algorithms, and tools drive new science through efficient application in physical systems, computational and systems biology, environmental systems, finance, and others.

Finite Volumes for Complex Applications X—Volume 2, Hyperbolic and Related Problems

Advances in Dynamics of Vehicles on Roads and Tracks II

Book catalog of the Library and Information Services Division

Wind Energy Exploitation in Urban Environment