

Missile Design And System Engineering

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Missile Guidance and Control Systems - George M. Siouris 2006-05-07
Airborne Vehicle Guidance and Control Systems is a broad and wide- angled engineering and technological area for research, and continues to be important not only in military defense systems but also in industrial process control

and in commercial transportation networks such as various Global Positioning Systems (GPS). The book fills a long-standing gap in the literature. The author is retired from the Air Force Institute and received the Air Force's Outstanding Civilian Career Service Award.
Air and Missile Defense Systems Engineering -

Warren J. Boord 2016-04-06

Air and Missile Defense Systems Engineering fills a need for those seeking insight into the design procedures of the air and missile defense system engineering process. Specifically aimed at policy planners, engineers, researchers, and consultants, it presents a balanced approach to negating a target in both natural and electronic attack environments

Missile Defense and Defeat - Thomas Karako
2017-03-24

The National Defense Authorization Act of 2016 mandates a review of missile defeat policy, strategy, and capability to be completed by January 2018. This upcoming Missile Defeat Review (MDR) represents an opportunity for the Trump administration to articulate a vision for the future of air and missile defense. This collection of expert essays explores how the strategic environment for missile defense and defeat has evolved since 2010 and offers recommendations to help guide and inform the

MDR's development.

Optimal Guidance and Its Applications in

Missiles and UAVs - Shaoming He 2020-05-13

This book presents a comprehensive overview of the recent advances in the domain of optimal guidance, exploring the characteristics of various optimal guidance algorithms and their pros and cons. Optimal guidance is based on the concept of trajectory optimization, which minimizes the meaningful performance index while satisfying certain terminal constraints, and by properly designing the cost function the guidance command can serve as a desired pattern for a variety of mission objectives. The book allows readers to gain a deeper understanding of how optimal guidance law can be utilized to achieve different mission objectives for missiles and UAVs, and also explores the physical meaning and working principle of different new optimal guidance laws. In practice, this information is important in ensuring confidence in the performance and

reliability of the guidance law when implementing it in a real-world system, especially in aerospace engineering where reliability is the first priority.

Aerospace Software Engineering - Christine Anderson 1991

Aerospace Software Engineering brings you the knowledge of some of the finest software engineers in the world in a single volume. This text is an essential guide for the aerospace program manager who must deal with software as part of the overall system and a valuable update for the practicing software engineer.

A Primer for Model-Based Systems Engineering - David Long 2011

This primer addresses the basic concepts of model-based systems engineering. It covers the Model, Language, Behavior, Process, Architecture, and Verification and Validation. It is a call to consider the foundational principles behind those concepts. It is not designed to present novel insights into MBSE so much as to

provide a guided tour of the touchstones of systems design. It is a guide to the new MBSE acolyte and a reminder to the experienced practitioner. It is our hope that you find this primer valuable. We welcome your comments and suggestions about improving it. Much of what we have learned about how it should be organized and presented has come from thoughtful contributions from the readers of the 1st edition.

System Engineering Analysis, Design, and Development - Charles S. Wasson 2015-11-16
Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." -Philip Allen
This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of

concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services. Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-world examples, and exercises, which highlight and reinforce key SE&D concepts and practices. Addresses concepts employed in Model-Based Systems

Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UMLTM) / Systems Modeling Language (SysMLTM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V). Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter

exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

Advanced Systems Thinking, Engineering, and Management - Derek K. Hitchins 2003

Annotation This volume offers a comprehensive understanding of systems ideas and methods, showing professionals in a wide range of high-tech fields how to conceive, design and manage a systems engineering process for optimal results and goal attainment.

The Future of the U.S. Intercontinental Ballistic Missile Force - Lauren Caston
2014-02-04

The authors assess alternatives for a next-generation intercontinental ballistic missile (ICBM) across a broad set of potential

characteristics and situations. They use the current Minuteman III as a baseline to develop a framework to characterize alternative classes of ICBMs, assess the survivability and effectiveness of possible alternatives, and weigh those alternatives against their cost.

Principles of Modern Radar - Mark A. Richards 2010-06-30

Dr. John Milan, radar consultant; formerly 36 years with ITT Gilfillan, IEEE AESS Radar Systems Panel --

Elements of Spacecraft Design - Charles D. Brown 2002

Annotation This text discusses the conceptual stages of mission design, systems engineering, and orbital mechanics, providing a basis for understanding the design process for different components and functions of a spacecraft. Coverage includes propulsion and power systems, structures, attitude control, thermal control, command and data systems, and telecommunications. Worked examples and

exercises are included, in addition to appendices on acronyms and abbreviations and spacecraft design data. The book can be used for self-study or for a course in spacecraft design. Brown directed the team that produced the Magellan spacecraft, and has taught spacecraft design at the University of Colorado. Annotation c. Book News, Inc., Portland, OR (booknews.com).

Missile Flight Simulation - Jeffrey Strickland
2015-10-25

A missile flight simulation is a computational tool that calculates the flight of a missile from launch until it engages the target. The simulation is based on mathematical models of the missile, target and environment. This book provides instruction for the preparation of these mathematical models to simulate the flight of a surface-to-air missile. The 2nd Edition of Missile Flight Simulation provides updated simulation processes using MATLAB(R) and Simulink(TM), while improving and clarifying previous content. The book may be used as a reference or as a

textbook, although it is devoid of exercises. However, the reader is encouraged to perform the simulation of Charter 12 using MATLAB(R) and Simulink(TM), or a programming language such as FORTRAN (see Chapter 10). The book is not intended to be a missile flight engineering reference and does not contain every aspect of missile flight. It provides the appropriate content for simulating missile flight from launch to terminus only.

Missile Design Guide - Eugene L. Fleeman
2022

"The handbook consists of full color figures with self-standing graphs, tables, charts, and diagrams. It is aimed toward the needs of missile engineers, system engineers, system analysts, program managers, aerospace engineering students, and professors. Readers have a quick reference for missile design, missile technologies, launch platform integration, targeting, fire control integration, missile system measures of merit, and the missile system

development process. Topics discussed include: key drivers in the missile design, development, and system engineering process; critical tradeoffs, methods, and technologies in aerodynamic, propulsion, structure, seeker, warhead, fuzing, and subsystems sizing to meet flight performance and other requirements; launch platform and fire control system integration; robustness, lethality, guidance, navigation and control, accuracy, observables, survivability, safety, reliability, and cost considerations; missile sizing examples; missile system and missile technology development process"--

Inventing Accuracy - Donald MacKenzie

1993-01-29

"Mackenzie has achieved a masterful synthesis of engrossing narrative, imaginative concepts, historical perspective, and social concern." Donald MacKenzie follows one line of technology—strategic ballistic missile guidance through a succession of weapons systems to

reveal the workings of a world that is neither awesome nor unstoppable. He uncovers the parameters, the pressures, and the politics that make up the complex social construction of an equally complex technology.

The Secret of Apollo - Stephen B. Johnson
2006-10-31

Winner of the Emme Award for Astronautical Literature from the American Astronautical Society How does one go about organizing something as complicated as a strategic-missile or space-exploration program? Stephen B. Johnson here explores the answer—systems management—in a groundbreaking study that involves Air Force planners, scientists, technical specialists, and, eventually, bureaucrats. Taking a comparative approach, Johnson focuses on the theory, or intellectual history, of "systems engineering" as such, its origins in the Air Force's Cold War ICBM efforts, and its migration to not only NASA but the European Space Agency. Exploring the history and politics of

aerospace development and weapons procurement, Johnson examines how scientists and engineers created the systems management process to coordinate large-scale technology development, and how managers and military officers gained control of that process. "Those funding the race demanded results," Johnson explains. "In response, development organizations created what few expected and what even fewer wanted—a bureaucracy for innovation. To begin to understand this apparent contradiction in terms, we must first understand the exacting nature of space technologies and the concerns of those who create them."

Fundamentals of Space Systems - Vincent L. Pisacane 2005

Fundamentals of Space Systems was developed to satisfy two objectives: the first is to provide a text suitable for use in an advanced undergraduate or beginning graduate course in both space systems engineering and space system design. The second is to be a primer and

reference book for space professionals wishing to broaden their capabilities to develop, manage the development, or operate space systems. The authors of the individual chapters are practicing engineers that have had extensive experience in developing sophisticated experimental and operational spacecraft systems in addition to having experience teaching the subject material. The text presents the fundamentals of all the subsystems of a spacecraft missions and includes illustrative examples drawn from actual experience to enhance the learning experience. It includes a chapter on each of the relevant major disciplines and subsystems including space systems engineering, space environment, astrodynamics, propulsion and flight mechanics, attitude determination and control, power systems, thermal control, configuration management and structures, communications, command and telemetry, data processing, embedded flight software, survivability and reliability, integration and test, mission

operations, and the initial conceptual design of a typical small spacecraft mission.

Seize the High Ground - James A. Walker 2003
"[Seize the high ground is a] narrative history of the Army's aerospace experience from the 1950s to the present. The focus is on ballistic missile defense, from the early NIKE-HERCULES missile program through the SAFEGUARD acquisition site allowed by the 1972 ABM Treaty to the more advanced 'Star Wars' concepts studies toward the end of the century. [What is] covered is not only the technological response to the threat but the organizational and tactical development of the commands and units responsible for the defense mission"--CMH website.

Practical Reliability Engineering and Analysis for System Design and Life-Cycle Sustainment - William Wessels 2019-08-30

In today's sophisticated world, reliability stands as the ultimate arbiter of quality. An understanding of reliability and the ultimate

compromise of failure is essential for determining the value of most modern products and absolutely critical to others, large or small. Whether lives are dependent on the performance of a heat shield or a chip in a lab, random failure is never an acceptable outcome. Written for practicing engineers, *Practical Reliability Engineering and Analysis for System Design and Life-Cycle Sustainment* departs from the mainstream approach for time to failure-based reliability engineering and analysis. The book employs a far more analytical approach than those textbooks that rely on exponential probability distribution to characterize failure. Instead, the author, who has been a reliability engineer since 1970, focuses on those probability distributions that more accurately describe the true behavior of failure. He emphasizes failure that results from wear, while considering systems, the individual components within those systems, and the environmental forces exerted on them. Dependable Products

Are No Accident: A Clear Path to the Creation of Consistently Reliable Products Taking a step-by-step approach that is augmented with current tables to configure wear, load, distribution, and other essential factors, this book explores design elements required for reliability and dependable systems integration and sustainment. It then discusses failure mechanisms, modes, and effects--as well as operator awareness and participation--and also delves into reliability failure modeling based on time-to-failure data considering a variety of approaches. From there, the text demonstrates and then considers the advantages and disadvantages for the stress-strength analysis approach, including various phases of test simulation. Taking the practical approach still further, the author covers Design of Rockets and Space Launch Vehicles - Donald L. Edberg 2020

With growing interest in space activity and numerous new launchers in development, this book is a timely, comprehensive survey of

important concepts and applications. It enhances understanding and provides exposure to practical aspects of design, manufacturing, testing, and engineering associated with these topics.

Differential Game Theory with Applications to Missiles and Autonomous Systems

Guidance - Farhan A. Faruqi 2017-05-30

Differential Game Theory with Applications to Missiles and Autonomous Systems explains the use of differential game theory in autonomous guidance and control systems. The book begins with an introduction to the basic principles before considering optimum control and game theory. Two-party and multi-party game theory and guidance are then covered and, finally, the theory is demonstrated through simulation examples and models and the simulation results are discussed. Recent developments in the area of guidance and autonomous systems are also presented. Key features: Presents new developments and how they relate to established

control systems knowledge. Demonstrates the theory through simulation examples and models. Covers two-party and multi-party game theory and guidance. Accompanied by a website hosting MATLAB® code. The book is essential reading for researchers and practitioners in the aerospace and defence industries as well as graduate students in aerospace engineering. Pre-Milestone A and Early-Phase Systems Engineering - National Research Council 2008-03-11

The ability of U.S. military forces to field new weapons systems quickly and to contain their cost growth has declined significantly over the past few decades. There are many causes including increased complexity, funding instability, bureaucracy, and more diverse user demands, but a view that is gaining more acceptance is that better systems engineering (SE) could help shorten development time. To investigate this assertion in more detail, the US Air Force asked the NRC to examine the role

that SE can play during the acquisition life cycle to address root causes of program failure especially during pre-milestone A and early program phases. This book presents an assessment of the relationship between SE and program outcome; an examination of the SE workforce; and an analysis of SE functions and guidelines. The latter includes a definition of the minimum set of SE processes that need to be accounted for during project development. *MITRE Systems Engineering Guide* - 2012-06-05

Design for Safety - Louis J. Gullo 2018-02-20
A one-stop reference guide to design for safety principles and applications Design for Safety (DfSa) provides design engineers and engineering managers with a range of tools and techniques for incorporating safety into the design process for complex systems. It explains how to design for maximum safe conditions and minimum risk of accidents. The book covers safety design practices, which will result in

improved safety, fewer accidents, and substantial savings in life cycle costs for producers and users. Readers who apply DfSa principles can expect to have a dramatic improvement in the ability to compete in global markets. They will also find a wealth of design practices not covered in typical engineering books—allowing them to think outside the box when developing safety requirements. Design Safety is already a high demand field due to its importance to system design and will be even more vital for engineers in multiple design disciplines as more systems become increasingly complex and liabilities increase. Therefore, risk mitigation methods to design systems with safety features are becoming more important. Designing systems for safety has been a high priority for many safety-critical systems—especially in the aerospace and military industries. However, with the expansion of technological innovations into other market places, industries that had not previously

considered safety design requirements are now using the technology in applications. Design for Safety: Covers trending topics and the latest technologies Provides ten paradigms for managing and designing systems for safety and uses them as guiding themes throughout the book Logically defines the parameters and concepts, sets the safety program and requirements, covers basic methodologies, investigates lessons from history, and addresses specialty topics within the topic of Design for Safety (DfSa) Supplements other books in the series on Quality and Reliability Engineering Design for Safety is an ideal book for new and experienced engineers and managers who are involved with design, testing, and maintenance of safety critical applications. It is also helpful for advanced undergraduate and postgraduate students in engineering. Design for Safety is the second in a series of “Design for” books. Design for Reliability was the first in the series with more planned for the future.

Applied Minds: How Engineers Think - Guru Madhavan 2015-08-03

“Engineers are titans of real-world problem-solving. . . . In this riveting study of how they think, [Guru Madhavan] puts behind-the-scenes geniuses . . . center stage.”—Nature In this engaging account of innovative triumphs, Guru Madhavan examines the ways in which engineers throughout history created world-changing tools, from ATMs and ZIP codes to the digital camera and the disposable diaper. Equal parts personal, practical, and profound, *Applied Minds* charts a path to a future where we borrow strategies from engineering to find inspired solutions to our most pressing challenges.

Space Vehicle Design - Michael Douglas Griffin 2004

Re-Entry and Vehicle Design - Donald P. Legalley 2014-05-12
Ballistic Missile and Space Technology, Volume

IV: Re-Entry and Vehicle Design focuses on the advancements of processes, methodologies, and technologies involved in re-entry and vehicle design, including hypersonics, material structures, propulsion, and communications. The selection first offers information on the pyrolysis of plastics in a high vacuum arc image furnace and aerothermodynamic feasibility of graphite for hypersonic glide vehicles. Discussions focus on aerothermochemical behavior of graphite, transient heat conduction, equilibrium glide trajectory, and apparatus and pyrolysis procedure. The text then takes a look at an engineering analysis of the weights of ablating systems for manned reentry vehicles and trajectories of lifting bodies entering planetary atmospheres at shallow angles. The manuscript ponders on propulsive control of atmospheric entry lifting trajectories, re-entry engineering mechanics, and rocket casing behavior predicted by laboratory tests. Topics include description of testing program, full-scale casing results,

camera design, theoretical correlation, approximate thrust vector optimization, and propellant weight estimation. The selection is a dependable reference for astronauts and researchers interested in re-entry and vehicle design.

Modeling and Simulation of Aerospace Vehicle Dynamics - Peter H. Zipfel 2000

A textbook for an advanced undergraduate course in which Zipfel (aerospace engineering, U. of Florida) introduces the fundamentals of an approach to, or step in, design that has become a field in and of itself. The first part assumes an introductory course in dynamics, and the second some specialized knowledge in subsystem technologies. Practicing engineers in the aerospace industry, he suggests, should be able to cover the material without a tutor. Rather than include a disk, he has made supplementary material available on the Internet. Annotation copyrighted by Book News, Inc., Portland, OR

Modern Missile Guidance - Rafael

Yanushevsky 2018-09-17

Missile Guidance, Second Edition provides a timely survey of missile control and guidance theory, based on extensive work the author has done using the Lyapunov approach. This new edition also presents the Lyapunov-Bellman approach for choosing optimal parameters of the guidance laws, and direct and inverse optimal problems are considered. This material is important for readers working in the areas of optimization and optimal theory. This edition also contains updated coverage of guidance and control system components, since the efficiency of guidance laws depends on their realization. The text concludes with information on the new generation of intercept systems now in development.

Tactical Missile Design - Eugene L. Fleeman 2006

This textbook will provide a basis for including tactical missile design as part of the aerospace engineering curriculum, providing new

graduates with the knowledge they will need in their careers.

Surface-based Air Defense System Analysis -

Robert H. M. Macfadzean 1992

This book constitutes a multidisciplinary introduction to the analysis of air defence systems. It supplies the tools to carry out independent analysis. Individual sections deal with threat missions, observability, manoeuvrability and vulnerability. With the support of several examples, the text illustrates 12 air defence process models. These models form the foundation for any air defence system analysis, covering initial detection to kill assessment.

Missile Design and Systems Engineering -

Eugene L. Fleeman 2012

Presents a comprehensive review of the missile design and systems engineering process. Suitable for aerospace engineering students and professors, this book offers them an understanding of missile design, missile

technologies, launch platform integration, missile system measures of merit and the missile system development process.

Radio Remote-Control and Telemetry and Their Application to Missiles - Jean Marcus 2014-06-28

Radio Remote-Control and Telemetry and their Application to Missiles provide information pertinent to the developments in the design of remote-control and telemetry equipment. This book discusses the problems that occur in remote-control and telemetry, together with various methods that have been used to solve them, in the field of missiles. Organized into nine chapters, this book begins with an overview of the various types of modulation. This text then examines the nature of information and coding, which is intended as a means of gaining a logical grasp of the phenomena in general. Other chapters consider the problems of propagation and of aeriels, which are important topics when the rocket is intended not only to reach great distances, but to follow different flight paths and

altitudes. The final chapter deals with the devices for remote-control and telemetry. This book is a valuable resource for electronics and radio engineers as well as for technicians.

Memorial Tributes - National Academy of Engineering 2017-09-26

This is the 21st Volume in the series Memorial Tributes compiled by the National Academy of Engineering as a personal remembrance of the lives and outstanding achievements of its members and foreign associates. These volumes are intended to stand as an enduring record of the many contributions of engineers and engineering to the benefit of humankind. In most cases, the authors of the tributes are contemporaries or colleagues who had personal knowledge of the interests and the engineering accomplishments of the deceased. Through its members and foreign associates, the Academy carries out the responsibilities for which it was established in 1964. Under the charter of the National Academy of Sciences, the National

Academy of Engineering was formed as a parallel organization of outstanding engineers. Members are elected on the basis of significant contributions to engineering theory and practice and to the literature of engineering or on the basis of demonstrated unusual accomplishments in the pioneering of new and developing fields of technology. The National Academies share a responsibility to advise the federal government on matters of science and technology. The expertise and credibility that the National Academy of Engineering brings to that task stem directly from the abilities, interests, and achievements of our members and foreign associates, our colleagues and friends, whose special gifts we remember in this book.

Design of Guidance and Control Systems for Tactical Missiles - Qi Zaikang 2019-09-09

Design of Guidance and Control Systems for Tactical Missiles presents a modern, comprehensive study of the latest design methods for tactical missile guidance and

control. It analyzes autopilot designs, seeker system designs, guidance laws and theories, and the internal and external disturbances affecting the performance factors of missile guidance control systems. The text combines detailed examination of key theories with practical coverage of methods for advanced missile guidance control systems. It is valuable content for professors and graduate-level students in missile guidance and control, as well as engineers and researchers who work in the area of tactical missile guidance and control.

Advances in Missile Guidance, Control, and Estimation - S.N. Balakrishnan 2016-04-19

Stringent demands on modern guided weapon systems require new approaches to guidance, control, and estimation. There are requirements for pinpoint accuracy, low cost per round, easy upgrade paths, enhanced performance in counter-measure environments, and the ability to track low-observable targets. *Advances in Missile Guidance, Control, and Estimat*

Women in Industrial and Systems

Engineering - Alice E. Smith 2019-09-13

This book presents a diversity of innovative and impactful research in the field of industrial and systems engineering (ISE) led by women investigators. After a Foreword by Margaret L. Brandeau, an eminent woman scholar in the field, the book is divided into the following sections: Analytics, Education, Health, Logistics, and Production. Also included is a comprehensive biography on the historic luminary of industrial engineering, Lillian Moeller Gilbreth. Each chapter presents an opportunity to learn about the impact of the field of industrial and systems engineering and women's important contributions to it. Topics range from big data analysis, to improving cancer treatment, to sustainability in product design, to teamwork in engineering education. A total of 24 topics touch on many of the challenges facing the world today and these solutions by women researchers are valuable for

their technical innovation and excellence and their non-traditional perspective. Found within each author's biography are their motivations for entering the field and how they view their contributions, providing inspiration and guidance to those entering industrial engineering.

Tactical and Strategic Missile Guidance - Paul Zarchan 1997

For both experts and novices, presents the principles of both tactical and strategic missile guidance in a common language, notation, and perspective, with numerous examples to illustrate the concepts. This revised edition (1st ed., 1990) adds three new chapters on the fundamentals of endoatmospheric ballistic targets; a new chapter showing how covariance analysis can be used to analyze missile guidance systems; two new appendices; and included Macintosh and IBM compatible formatted disks containing the FORTRAN code listings presented in the text. Annotation copyright by Book News,

Inc., Portland, OR

Design Technology of Synthetic Aperture Radar - Jiaguo Lu 2019-08-26

An authoritative work on Synthetic Aperture Radar system engineering, with key focus on high resolution imaging, moving target indication, and system engineering technology. Synthetic Aperture Radar (SAR) is a powerful microwave remote sensing technique that is used to create high resolution two or three-dimensional representations of objects, such as landscapes, independent of weather conditions and sunlight illumination. SAR technology is a multidisciplinary field that involves microwave technology, antenna technology, signal processing, and image information processing. The use of SAR technology continues grow at a rapid pace in a variety of applications such as high-resolution wide-swath observation, multi-azimuth information acquisition, high-temporal information acquisition, 3-D terrain mapping, and image quality improvement. Design

Technology of Synthetic Aperture Radar provides detailed coverage of the fundamental concepts, theories, technology, and design of SAR systems and sub-systems. Supported by the author's over two decades of research and practice experience in the field, this in-depth volume systematically describes SAR design and presents the latest research developments. Providing examination of all topics relevant to SAR—from radar and antenna system design to receiver technology and signal and image information processing—this comprehensive resource: Provides wide-ranging, up-to-date examination of all major topics related to SAR science, systems, and software Includes guidelines to conduct grounding system designs and analysis Offers coverage of all SAR algorithm classes and detailed SAR algorithms suitable for enabling software implementations Surveys SAR and computed imaging literature of the last sixty years Emphasizes high resolution imaging, moving target indication, and system

engineering Design Technology of Synthetic Aperture Radar is indispensable for graduate students majoring in SAR system design, microwave antenna, signal and information processing as well as engineers and technicians involved in SAR system techniques.

Ballistic Missile Defense - Ashton B. Carter
2010-12-01

Defense against nuclear attack—so natural and seemingly so compelling a goal—has provoked debate for at least twenty years. Ballistic missile defense systems, formerly called antiballistic missile systems, offer the prospect of remedying both superpowers' alarming vulnerability to nuclear weapons by technological rather than political means. But whether ballistic missile defenses can be made to work and whether it is wise to build them remain controversial. The U.S.-Soviet Anti-Ballistic Missile Treaty of 1972 restricts testing and deployment of ballistic missile defenses but has not prohibited more than a decade of research and development on

both sides. As exotic new proposals are put forward for space-based directed-energy systems, questions about the effectiveness and wisdom of missile defense have again become central to the national debate on defense policy. This study, jointly sponsored by the Brookings Institution and the Massachusetts Institute of Technology, examines the strategic, technological, and political issues raised by ballistic missile defense. Eight contributors take an analytical approach to their areas of expertise, which include the relationship of missile defense to nuclear strategy, the nature and potential applications of current and future technologies, the views on missile defense in the Soviet Union and among the smaller nuclear powers, the meaning of the Anti-Ballistic Missile Treaty for today's technology, and the present role and historical legacy of ballistic missile defense in the context of East-West relations.

The volume editors give a comprehensive introduction to this wide range of subjects and an assessment of future prospects. In the final chapter, nine knowledgeable observers offer their varied personal views on the ballistic missile defense question.

Tactical Missile Propulsion - Gordon E. Jensen
1996

With contributions from the leading researchers and scientists in the field, this volume is a compendium of the latest advances in tactical missile propulsion. The objectives of the book are to provide today's designer with a summary of the advances in potential propulsion systems as well as provide a discussion of major design and selection considerations. Authors were chosen for their demonstrated knowledge of and excellence in their respective fields to ensure a complete and up-to-date summary of the latest research and developments.