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[MATLAB Simulations for Radar Systems Design](#) Feb 05 2021 Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req

[Radar Principles](#) Dec 27 2022 Market_Desc: · Electrical Engineers, Graduate and Senior Level Students studying Radar Principles; Introduction to Radar; Radar Design Principles, Radar Systems Special Features: · It is the most comprehensive summary of the existing literature available on the topic· Engineers solve problems Peebles gives radar engineers all the mathematical details they need in order to understand and apply the underlying principals of radar-the Where from and Why that is missing in other radar books. About The Book: This book presents a comprehensive coverage and summary of the literature on radar. The author is well known and has produced a number of well received textbooks. Peebles offers a more mathematical treatment and provides many problems. This book is designed to be the basis for learning radar principles through self study.

[Communication System Principles](#) Sep 19 2019 Deterministic signal representations; Deterministic signal transfer through networks; Statistical concepts and the description of Random signals and noise; Amplitude modulation; Angle modulation; Pulse and digital modulation; Carrier modulation by digital signals; System power transfer and sensitivity.

[Radar Systems Analysis and Design Using MATLAB Third Edition](#) Jul 30 2020 Developed from the author's graduate-level courses, the first edition of this book filled the need for a comprehensive, self-contained, and hands-on treatment of radar systems analysis and design. It quickly became a bestseller and was widely adopted by many professors. The second edition built on this successful format by rearranging and updating topics and code. Reorganized, expanded, and updated, Radar Systems Analysis and Design Using MATLAB®, Third Edition continues to help graduate students and engineers understand the many issues involved in radar systems design and analysis. Each chapter includes the mathematical and analytical coverage necessary for obtaining a solid understanding of radar theory. Additionally, MATLAB functions/programs in each chapter further enhance comprehension of the theory and provide a source for establishing radar system design requirements. Incorporating feedback from professors and practicing engineers, the third edition of this bestselling text reflects the state of the art in the field and restructures the material to be more convenient for course use. It includes several new topics and many new end-of-chapter problems. This edition also takes advantage of the new features

in the latest version of MATLAB. Updated MATLAB code is available for download on the book's CRC Press web page.

[Pacific Regional Order](#) Oct 21 2019 New policies are needed if the Pacific is to realise its potential as a peaceful, prosperous region, where the Pacific's citizens enjoy good standards of health and education, long lives and many opportunities; where Pacific economic growth is constantly improving, driven by environmentally sustainable service industries; where coups, civil conflict and the dangers of failed states have been relegated to the past; where the Pacific is integrated into the wider region, and is an influential voice in world affairs. Argues that Pacific countries including Australia, need to embrace regional integration to realise this vision. The book sets out a comprehensive plan for realising a Pacific regional community dedicated to promoting sustainable development, security, human rights, the rule of law and democracy.

[Fundamentals of Radar Signal Processing](#) Nov 26 2022 Advances in DSP (digital signal processing) have radically altered the design and usage of radar systems -- making it essential for both working engineers as well as students to master DSP techniques. This text, which evolved from the author's own teaching, offers a rigorous, in-depth introduction to today's complex radar DSP technologies. Contents: Introduction to Radar Systems * Signal Models * Sampling and Quantization of Pulsed Radar Signals * Radar Waveforms * Pulse Compression Waveforms * Doppler Processing * Detection Fundamentals * Constant False Alarm Rate (CFAR) Detection * Introduction to Synthetic Aperture Imaging

[Basic Radar Analysis, Second Edition](#) Oct 13 2021 This highly-anticipated second edition of an Artech House classic covers several key radar analysis areas: the radar range equation, detection theory, ambiguity functions, waveforms, antennas, active arrays, receivers and signal processors, CFAR and chaff analysis. Readers will be able to predict the detection performance of a radar system using the radar range equation, its various parameters, matched filter theory, and Swerling target models. The performance of various signal processors, single pulse, pulsed Doppler, LFM, NLFM, and BPSK, are discussed, taking into account factors including MTI processing, integration gain, weighting loss and straddling loss. The details of radar analysis are covered from a mathematical perspective, with in-depth breakdowns of radar performance in the presence of clutter. Readers will be able to determine the noise temperature of a multi-channel receiver as it is used in active arrays. With the addition of three new chapters on moving target detectors, inverse synthetic aperture radar (ISAR) and constant false alarm rate (CFAR) and new MATLAB codes, this expanded second edition will appeal to the novice as well as the experienced practitioner.

[Introduction to Random Signals and Noise](#) Nov 14 2021 Random signals and noise are present in many engineering systems and networks. Signal processing techniques allow engineers to distinguish between useful signals in audio, video or communication equipment, and interference, which disturbs the desired signal. With a strong mathematical grounding, this text provides a clear introduction to the fundamentals of stochastic processes and their practical applications to random signals and noise. With worked examples, problems, and detailed appendices, Introduction to Random Signals and Noise gives the reader the knowledge to design optimum systems for effectively coping with unwanted signals. Key features: Considers a wide range of signals and noise, including analogue, discrete-time and bandpass signals in both time and frequency domains. Analyses the basics of digital signal detection using matched filtering, signal space representation and correlation receiver. Examines optimal filtering methods and their consequences. Presents a detailed discussion of the topic of Poisson processes and shot noise. An excellent resource for professional engineers developing communication systems, semiconductor devices, and audio and video equipment, this book is also ideal for senior undergraduate and graduate students in Electronic and Electrical Engineering.

[Phased-Array Radar Design](#) Feb 17 2022 This book is a concise yet complete treatment of the relationship between mission-level requirements and specific hardware and software requirements and capabilities. Although focusing on surface-based radars, the material is

general enough to serve as a useful addition to books currently available for this purpose.

Digital Communications Oct 01 2020 Digital Communications is a classic book in the area that is designed to be used as a senior or graduate level text. The text is flexible and can easily be used in a one semester course or there is enough depth to cover two semesters. Its comprehensive nature makes it a great book for students to keep for reference in their professional careers. This all-inclusive guide delivers an outstanding introduction to the analysis and design of digital communication systems. Includes expert coverage of new topics: Turbo codes, Turbo equalization, Antenna Arrays, Digital Cellular Systems, and Iterative Detection. Convenient, sequential organization begins with a look at the history and classification of channel models and builds from there.

Fundamentals of Electro-Optic Systems Design May 20 2022 Using fundamentals of communication theory, thermodynamics, information theory and propagation theory, this book explains the universal principles underlying a diverse range of electro-optical systems. From fiber optics and infra-red imaging to free space communications and laser remote sensing, the authors relate key concepts in science and device engineering to practical systems issues. A broad spectrum of coherent and incoherent imaging and communications systems is considered, accompanied by many real-world examples. The authors also present new insights into LIDAR and free space communications and imaging, providing practical guidance on identifying the fundamental limitations of transmission and imaging through deleterious channels. Accompanied by online examples of processed images and videos, this uniquely tailored guide to the fundamental principles underlying modern electro-optical systems is an essential reference for all practising engineers and academic researchers in optical engineering.

Introduction to Radar Systems Mar 18 2022

Handbook of Radar Signal Analysis Dec 23 2019 This new handbook on radar signal analysis adopts a deliberate and systematic approach. It uses a clear and consistent level of delivery while maintaining strong and easy-to-follow mathematical details. The emphasis of this book is on radar signal types and their relevant signal processing and not on radar systems hardware or components. This handbook serves as a valuable reference to a wide range of audience. More specifically, college-level students, practicing radar engineers, as well as casual readers of the subject are the intended target audience of the first few chapters of this book. As the book chapters progress, these grow in complexity and specificity. Accordingly, later chapters are intended for practicing engineers, graduate college students, and advanced readers. Finally, the last few chapters contain several special topics on radar systems that are both educational and scientifically entertaining to all readers. The presentation of topics in this handbook takes the reader on a scientific journey whose major landmarks comprise the different radar subsystems and components. In this context, the chapters follow the radar signal along this journey from its birth to the end of its life. Along the way, the different relevant radar subsystems are analyzed and discussed in great detail. The chapter contributors of this new handbook comprise experienced academia members and practicing radar engineers. Their combined years of academic and real-world experiences are in excess of 175. Together, they bring a unique, easy-to-follow mix of mathematical and practical presentations of the topics discussed in this book. See the "Chapter Contributors" section to learn more about these individuals.

Probability, Random Variables, and Random Signal Principles Sep 24 2022

Radar Systems Analysis and Design Using MATLAB Oct 25 2022 Developed from the author's graduate-level courses, the first edition of this book filled the need for a comprehensive, self-contained, and hands-on treatment of radar systems analysis and design. It quickly became a bestseller and was widely adopted by many professors. The second edition built on this successful format by rearranging and updating

Radar Jul 22 2022 This comprehensive, up-to-date book describes and details the wide range of modern radar systems and methods currently in use today. From system fundamentals to functional descriptions of their subsystems, the reference covers radar principles, radar technology, and successful applications of that technology, and includes solved examples to illustrate critical principles. Appropriate for radar engineers, electrical engineers, flight test engineers, and those in related disciplines.

Introduction to RF Propagation Jan 16 2022 An introduction to RF propagation that spans all wireless applications This book provides readers with a solid understanding of the concepts involved in the propagation of electromagnetic waves and of the commonly used

modeling techniques. While many books cover RF propagation, most are geared to cellular telephone systems and, therefore, are limited in scope. This title is comprehensive-it treats the growing number of wireless applications that range well beyond the mobile telecommunications industry, including radar and satellite communications. The author's straightforward, clear style makes it easy for readers to gain the necessary background in electromagnetics, communication theory, and probability, so they can advance to propagation models for near-earth, indoor, and earth-space propagation. Critical topics that readers would otherwise have to search a number of resources to find are included: * RF safety chapter provides a concise presentation of FCC recommendations, including application examples, and prepares readers to work with real-world propagating systems * Antenna chapter provides an introduction to a wide variety of antennas and techniques for antenna analysis, including a detailed treatment of antenna polarization and axial ratio; the chapter contains a set of curves that permit readers to estimate polarization loss due to axial ratio mismatch between transmitting and receiving antennas without performing detailed calculations * Atmospheric effects chapter provides curves of typical atmospheric loss, so that expected loss can be determined easily * Rain attenuation chapter features a summary of how to apply the ITU and Crane rain models * Satellite communication chapter provides the details of earth-space propagation analysis including rain attenuation, atmospheric absorption, path length determination and noise temperature determination Examples of widely used models provide all the details and information needed to allow readers to apply the models with confidence. References, provided throughout the book, enable readers to explore particular topics in greater depth. Additionally, an accompanying Wiley ftp site provides supporting MathCad files for select figures in the book. With its emphasis on fundamentals, detailed examples, and comprehensive coverage of models and applications, this is an excellent text for upper-level undergraduate or graduate students, or for the practicing engineer who needs to develop an understanding of propagation phenomena.

Principles of Modern Radar Jul 10 2021 This book, Principles of Modern Radar, has as its genesis a Georgia Tech short course of the same title. This short course has been presented annually at Georgia Tech since 1969, and a very comprehensive set of course notes has evolved during that seventeen year period. The 1986 edition of these notes ran to 22 chapters, and all of the authors involved, except Mr. Barrett, were full time members of the Georgia Tech research faculty. After considerable encouragement from various persons at the university and within the radar community, we undertook the task of editing the course notes for formal publication. The contents of the book that ensued tend to be practical in nature, since each contributing author is a practicing engineer or scientist and each was selected to write on a topic embraced by his area(s) of expertise. Prime examples are Chaps. 2, 5, and 10, which were authored by E. F. Knott, G. W. Ewell, and N. C. Currie, respectively. Each of these three researchers is recognized in the radar community as an expert in the technical area that his chapter addresses, and each had already authored and published a major book on his subject. Several other contributing authors, including Dr. Bodnar, Mr. Bruder, Mr. Corriher, Dr. Reedy, Dr. Trebits, and Mr. Scheer, also have major book publications to their credit.

Introduction to Radar Analysis Jan 04 2021 Introduction to Radar Analysis, Second Edition is a major revision of the popular textbook. It is written within the context of communication theory as well as the theory of signals and noise. By emphasizing principles and fundamentals, the textbook serves as a vital source for students and engineers. Part I bridges the gap between communication, signal analysis, and radar. Topics include modulation techniques and associated Continuous Wave (CW) and pulsed radar systems. Part II is devoted to radar signal processing and pulse compression techniques. Part III presents special topics in radar systems including radar detection, radar clutter, target tracking, phased arrays, and Synthetic Aperture Radar (SAR). Many new exercises are included and the author provides comprehensive easy-to-follow mathematical derivations of all key equations and formulas. The author has worked extensively for the U.S. Army, the U.S. Space and Missile Command, and other military agencies. This is not just a textbook for senior level and graduates students, but a valuable tool for practicing radar engineers. Features Authored by a leading industry radar professional. Comprehensive up-to-date coverage of radar systems analysis issues. Easy to follow mathematical derivations of all equations and formulas Numerous graphical plots and table format outputs. One part of the book is dedicated to radar waveforms and radar signal

processing.

Principles of Modern Radar Aug 23 2022 Dr. John Milan, radar consultant; formerly 36 years with ITT Gilfillan, IEEE AESS Radar Systems Panel --

Introduction to Cosmology Nov 21 2019 A substantial update of this award-winning and highly regarded cosmology textbook, for advanced undergraduates in physics and astronomy.

FPGA-based Implementation of Signal Processing Systems Jan 24 2020 An important working resource for engineers and researchers involved in the design, development, and implementation of signal processing systems The last decade has seen a rapid expansion of the use of field programmable gate arrays (FPGAs) for a wide range of applications beyond traditional digital signal processing (DSP) systems. Written by a team of experts working at the leading edge of FPGA research and development, this second edition of *FPGA-based Implementation of Signal Processing Systems* has been extensively updated and revised to reflect the latest iterations of FPGA theory, applications, and technology. Written from a system-level perspective, it features expert discussions of contemporary methods and tools used in the design, optimization and implementation of DSP systems using programmable FPGA hardware. And it provides a wealth of practical insights—along with illustrative case studies and timely real-world examples—of critical concern to engineers working in the design and development of DSP systems for radio, telecommunications, audio-visual, and security applications, as well as bioinformatics, Big Data applications, and more. Inside you will find up-to-date coverage of: FPGA solutions for Big Data Applications, especially as they apply to huge data sets The use of ARM processors in FPGAs and the transfer of FPGAs towards heterogeneous computing platforms The evolution of High Level Synthesis tools—including new sections on Xilinx's HLS Vivado tool flow and Altera's OpenCL approach Developments in Graphical Processing Units (GPUs), which are rapidly replacing more traditional DSP systems *FPGA-based Implementation of Signal Processing Systems, 2nd Edition* is an indispensable guide for engineers and researchers involved in the design and development of both traditional and cutting-edge data and signal processing systems. Senior-level electrical and computer engineering graduates studying signal processing or digital signal processing also will find this volume of great interest.

Radar Principles Apr 19 2022 An advanced treatment of the main concepts of radar. Systematic and organized, it nicely balances readability with mathematical rigor. Many techniques and examples have been chosen from the radar industry (Rayleigh fluctuating targets are used as they yield simple expressions for the probability of detection), and others for their pedagogical value (Costas signals lead the coded radar signals because their ambiguity function can be intuitively deduced). Ordered statistics is covered in more depth than other CFAR techniques because its performance can be obtained analytically without resorting to simulation methods. Contains many exercises. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

Signal Processing in Radar Systems Feb 23 2020 An essential task in radar systems is to find an appropriate solution to the problems related to robust signal processing and the definition of signal parameters. *Signal Processing in Radar Systems* addresses robust signal processing problems in complex radar systems and digital signal processing subsystems. It also tackles the important issue of defining signal parameters. The book presents problems related to traditional methods of synthesis and analysis of the main digital signal processing operations. It also examines problems related to modern methods of robust signal processing in noise, with a focus on the generalized approach to signal processing in noise under coherent filtering. In addition, the book puts forth a new problem statement and new methods to solve problems of adaptation and control by functioning processes. Taking a systems approach to designing complex radar systems, it offers readers guidance in solving optimization problems. Organized into three parts, the book first discusses the main design principles of the modern robust digital signal processing algorithms used in complex radar systems. The second part covers the main principles of computer system design for these algorithms and provides real-world examples of systems. The third part deals with experimental measurements of the main statistical parameters of stochastic processes. It also defines their estimations for robust signal processing in complex radar systems. Written by an internationally recognized professor and expert in signal processing, this book summarizes investigations carried out over the past 30 years. It supplies

practitioners, researchers, and students with general principles for designing the robust digital signal processing algorithms employed by complex radar systems.

Fundamentals of Radar Engineering May 08 2021 Fundamentals of Radar Engineering

The New Pioneers Aug 11 2021 Imagine a world where there are no building codes, no licensing requirements, no permit fees, no inspectors—no rules or regulations, only common sense and the desire to build something better. This is the world that forged America, the land where the early pioneers and town developers thrived. But this type of open environment is long gone. It's prohibitively expensive for young entrepreneurs to start a business today. In fact, it is almost impossible to build anything unless you are part of a larger organization that has the expertise and resources to navigate the system. Our municipal, state, and federal codes, from business permitting and OSHA compliance to occupational licenses and tax requirements, have blossomed out of control. Today's innovators and builders must ignore the rules, go to places where the rules are not enforced, or figure out how to get around them. *The New Pioneers* is the story of Americans—millennials, immigrants, artists, and entrepreneurs—who are doing just that in cities across the nation, including Detroit, San Diego, New Orleans, Phoenix, and many more. Written by journalist J.P. Faber, *The New Pioneers* shows the entrepreneurs of today, especially those in urban areas, how they can work around obstacles to create wealth and revive our cities. Small business owners and individual builders have the power to fix what's broken in society—if only they are allowed to do so. This book is an optimistic look at how we can rebuild our cities and jump-start more small businesses. It shows how we can make far better use of our resources, both human and physical. *The New Pioneers* paves a road to success in a crumbling world. It's time for the little guy to have a fighting chance to get ahead once again.

FMCW Radar Design Mar 06 2021 Frequency Modulated Continuous Wave (FMCW) radars are a fast expanding area in radar technology due to their stealth features, extremely high resolutions, and relatively clutter free displays. This groundbreaking resource offers engineers expert guidance in designing narrowband FMCW radars for surveillance, navigation, and missile seeking. It also provides professionals with a thorough understanding of underpinnings of this burgeoning technology. Moreover, readers find detailed coverage of the RF components that form the basis of radar construction. Featuring clear examples, the book presents critical discussions on key applications. Practitioners learn how to use time-saving MATLAB® and SystemVue design software to help them with their challenging projects in the field. Additionally, this authoritative reference shows engineers how to analyze FMCW radars of various types, including missile seekers and missile altimeters. Packed with over 600 equations, the book presents discussions on key radar algorithms and their implementation, as well as designing modern radar to meet given operational requirements.

Principles of Electrical Engineering Jun 09 2021

Compressed Sensing in Radar Signal Processing Aug 19 2019 Learn about the most recent theoretical and practical advances in radar signal processing using tools and techniques from compressive sensing. Providing a broad perspective that fully demonstrates the impact of these tools, the accessible and tutorial-like chapters cover topics such as clutter rejection, CFAR detection, adaptive beamforming, random arrays for radar, space-time adaptive processing, and MIMO radar. Each chapter includes coverage of theoretical principles, a detailed review of current knowledge, and discussion of key applications, and also highlights the potential benefits of using compressed sensing algorithms. A unified notation and numerous cross-references between chapters make it easy to explore different topics side by side. Written by leading experts from both academia and industry, this is the ideal text for researchers, graduate students and industry professionals working in signal processing and radar.

Compressed Sensing in Radar Signal Processing Apr 26 2020 Learn about the latest theoretical and practical advances in radar signal processing using tools from compressive sensing.

Radar Signal Analysis and Processing Using MATLAB Aug 31 2020 Offering radar-related software for the analysis and design of radar waveform and signal processing, *Radar Signal Analysis and Processing Using MATLAB*® provides a comprehensive source of theoretical and practical information on radar signals, signal analysis, and radar signal processing with companion MATLAB® code. After an overview of radar systems operation and design, the book reviews elements of signal theory relevant to radar detection and radar signal processing, along

with random variables and processes. The author then presents the unique characteristic of the matched filter and develops a general formula for the output of the matched filter that is valid for any waveform. He analyzes several analog waveforms, including the linear frequency modulation pulse and stepped frequency waveforms, as well as unmodulated pulse-train, binary, polyphase, and frequency codes. The book explores radar target detection and pulse integration, emphasizing the constant false alarm rate. It also covers the stretch processor, the moving target indicator, radar Doppler processing, beamforming, and adaptive array processing. Using configurable MATLAB code, this book demonstrates how to apply signal processing to radar applications. It includes many examples and problems to illustrate the practical application of the theory.

Radar Systems Analysis and Design Using MATLAB Nov 02 2020 An introduction to radar systems should ideally be self-contained and hands-on, a combination lacking in most radar texts. The first edition of Radar Systems Analysis and Design Using MATLAB provided such an approach, and the second edition continues in the same vein. This edition has been updated, expanded, and reorganized to include advances in t

Signal Processing for Passive Bistatic Radar May 28 2020 This cutting-edge resource introduces the basic concepts of passive bistatic radar, such as bistatic geometry, bistatic radar equation and analysis of different illuminating signals. These techniques, although known for almost a century, have not been developed intensively for decades, mainly due to technical limitations, but today, the passive radar concept can be realized in practice, and is of great interest for military and civilian users. This book provides insight into understanding the potential and limitations of passive radar systems, as well as the differences between signal processing in active and passive radar. Each of the signal processing stages typically applied in passive radar is described, including digital beamforming, clutter removal, target detection, localization and tracking. These concepts are illustrated with both simulated and measured data along with examples of passive radar systems. Correlation processing, which is crucial for passive radar operation, is presented, as well as practical approaches for calculating the cross-ambiguity function. The problems of range and velocity-cell migration are also introduced. The book analyzes and compares different antenna array geometries to show readers the appropriate solution for a particular scenario of passive radar. Cartesian tracking is also presented, based on the extended Kalman filter. Parallel and sequential updating approaches are introduced and compared. These concepts are illustrated with both simulated and measured data along with examples of passive radar systems, making this book useful for both novice and advanced practitioners.

Radar Principles, Solutions Manual Jun 21 2022 A comprehensive introduction to radar principles This volume fills a need in industry and universities for a comprehensive introductory text on radar principles. Well-organized and pedagogically driven, this book focuses on basic and optimum methods of realizing radar operations, covers modern applications, and provides a detailed, sophisticated mathematical treatment. Author Peyton Z. Peebles, Jr., draws on an extensive review of existing radar literature to present a selection of the most fundamental topics. He clearly explains general principles, such as wave propagation and signal theory, before advancing to more complex topics involving aspects of measurement and tracking. The last chapter provides a self-contained treatment of digital signal processing, which can be explored independently. Ample teaching and self-study help is incorporated throughout, including: * Numerous worked-out examples illustrating radar theory * Many end-of-chapter problems * Hundreds of illustrations, including system block diagrams, demonstrating how radar functions are achieved * Appended review material and useful mathematical formulas * An extensive bibliography and references. *An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department. Radar Principles is destined to become the standard text on radar for graduate and senior-level courses in electrical engineering departments as well as industrial courses. It is

also an excellent reference for engineers who are typically required to learn radar principles on the job, and for anyone working in radar-related industries as well as in aerospace and naval research.

Principles of Signal Detection and Parameter Estimation Jun 28 2020 This textbook provides a comprehensive and current understanding of signal detection and estimation, including problems and solutions for each chapter. Signal detection plays an important role in fields such as radar, sonar, digital communications, image processing, and failure detection. The book explores both Gaussian detection and detection of Markov chains, presenting a unified treatment of coding and modulation topics. Addresses asymptotic of tests with the theory of large deviations, and robust detection. This text is appropriate for students of Electrical Engineering in graduate courses in Signal Detection and Estimation. DIGITAL SIGNAL PROCESSING: PRINCIPLES ALGORITHMS AND APPLICATIONS Apr 07 2021

Monopulse Principles and Techniques Sep 12 2021 Monopulse is a type of radar that sends additional information in the signal in order to avoid problems caused by rapid changes in signal strength. Monopulse is resistant to jamming which is one of the main reasons it is used in most radar systems today. This updated and expanded edition of an Artech House classic offers you a current and comprehensive treatment of monopulse radar principles, techniques, and applications. The Second Edition features two brand new chapters, covering monopulse countermeasures and counter-countermeasures and monopulse for airborne radar and homing seekers. This essential volume categorizes and describes the various forms of monopulse radar, and analyzes their capabilities and limitations. The book also devotes considerable space to monopulse circuits and hardware components, explaining their functions and performance. This practical resource features numerous photographs and illustrations drawn from actual radar systems and components. This book serves as a valuable reference for both experienced radar engineers and those new to the field.

Introduction to Airborne Radar Dec 03 2020 An introduction to the subject for non-specialists: engineers, technicians, pilots, and aerospace industry marketing, public relations, and customer support personnel. Also a reference for specialists in the field. The completely rewritten and revised Second Edition updates the original published by the Hughes Aircraft Company.

Compressive Sensing for Urban Radar Mar 26 2020 With the emergence of compressive sensing and sparse signal reconstruction, approaches to urban radar have shifted toward relaxed constraints on signal sampling schemes in time and space, and to effectively address logistic difficulties in data acquisition. Traditionally, these challenges have hindered high resolution imaging by restricting both bandwidth and aperture, and by imposing uniformity and bounds on sampling rates. Compressive Sensing for Urban Radar is the first book to focus on a hybrid of two key areas: compressive sensing and urban sensing. It explains how reliable imaging, tracking, and localization of indoor targets can be achieved using compressed observations that amount to a tiny percentage of the entire data volume. Capturing the latest and most important advances in the field, this state-of-the-art text: Covers both ground-based and airborne synthetic aperture radar (SAR) and uses different signal waveforms Demonstrates successful applications of compressive sensing for target detection and revealing building interiors Describes problems facing urban radar and highlights sparse reconstruction techniques applicable to urban environments Deals with both stationary and moving indoor targets in the presence of wall clutter and multipath exploitation Provides numerous supporting examples using real data and computational electromagnetic modeling Featuring 13 chapters written by leading researchers and experts, Compressive Sensing for Urban Radar is a useful and authoritative reference for radar engineers and defense contractors, as well as a seminal work for graduate students and academia.

Principles of Communications Dec 15 2021

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