

Chapter 7 Range Measurement Applications

The Project Management Scorecard
 Modern Vacuum Physics
 Interfacing PIC Microcontrollers
 Knowledge Transfer between Computer Vision and Text Mining
 Accurate Measurement of Optical Properties of Materials
 Advances in Measurement and Assessment Techniques
 Wireless Positioning Technologies and Applications, Second Edition
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Chapter 7 Range Measurement Applications

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KELLEY TANIYA

The Project Management Scorecard William Andrew
 Measuring the Performance of the Hollow State Georgetown
 University Press
Modern Vacuum Physics Springer Science & Business Media
 Modern noise research and assessment techniques are commonly used in the workplace and our personal living environment. Occupational Noise and Workplace Acoustics presents new, innovative, advanced research and evaluation methods of parameters characterizing acoustic field and noise in the working environment, as well as acoustic properties of rooms and noise reduction measures. This includes acoustic field visualization methods, field imaging techniques, wireless sensor networks, and the Internet of Things (IoT); optimization methods using genetic algorithms; acoustic quality assessment methods for rooms; and methods for measuring ultrasonic noise in the frequency range of 10-40 kHz. This book is a valuable resource for individuals and students interested in the areas of acoustic and sound engineering as it provides: The latest techniques and methods in the field of noise reduction and improvement of acoustic comfort, Innovative and advanced acoustic field visualization techniques for those with an auditory impairment, Explains noise reduction through proper workplace design, Discusses use of wireless sensor networks and the IoT for monitoring noise, and Provides acoustic quality assessment methods. "The authors' intention to expound on advanced issues in a lucid and accessible way was rewarded with success. In the book, an expert will find a number of hints helpful in solving actual problems, whereas a layperson will be able to form a view on challenges facing contemporary technology. What should also be emphasized is the book's soundness in documenting these advanced theses and postulates with diligently conducted empirical research. Despite a wide thematic range, the book is written consistently and under no circumstances can be considered a collection of randomly selected problems. The content corresponds fully to the title. The authors are consistent in acquainting the reader with topical scientific issues concerning assessment of acoustic hazards and the methodology of combating them." —Professor Zbigniew Dąbrowski, BEng, PhD, DSc, Warsaw University of Technology
Interfacing PIC Microcontrollers Plural Publishing
 As technologies for wireless communications, including 5G and Internet of Things (IoT), require more complex antennas, practitioners need more information on the best methods to perform measurements on these different types of antennas. This exciting resource provides guidance on the proper design of indoor ranges for RF antenna measurements. The important aspects of specifying the range or resources needed in a

development program are explored. Analysis of existing ranges to determine their suitability for performing specific test that a user of the range may require is also introduced. Readers find in-depth coverage of the design of ranges and how to evaluate the error contributions of the range and the best approach to measure a system, antenna, or other radiating hardware. The book provides information on selecting the right range to make a specific type of measurement and understanding for an RF absorber. Matlab scripts are also included to help readers estimate the performance of an RF absorber. Readers will be able to estimate the required space for a given type of measurement, as well as identify what type of range is the better choice, based on physical limitations and economics. Simple rules for the design of an anechoic chamber, based on the required accuracy and parameters to be measured are described. Packed with examples and references, this book is a prime reference for any practitioner that uses or designs facilities for the measurement of electromagnetic energy.

Knowledge Transfer between Computer Vision and Text Mining Elsevier

This volume is an essential handbook for anyone interested in performing the most accurate spectrophotometric or other optical property of materials measurements. The chapter authors were chosen from the leading experts in their respective fields and provide their wisdom and experience in measurements of reflectance, transmittance, absorptance, emittance, diffuse scattering, color, and fluorescence. The book provides the reader with the theoretical underpinning to the methods, the practical issues encountered in real measurements, and numerous examples of important applications. Written by the leading international experts from industry, government, and academia
 Written as a handbook, with in depth discussion of the topics
 Focus on making the most accurate and reproducible measurements
 Many practical applications and examples
 Taylor & Francis

A comprehensive review of the recent advances in anechoic chamber and reverberation chamber designs and measurements
 Anechoic and Reverberation Chambers is a guide to the latest systematic solutions for designing anechoic chambers that rely on state-of-the-art computational electromagnetic algorithms. This essential resource contains a theoretical and practical understanding for electromagnetic compatibility and antenna testing. The solutions outlined optimise chamber performance in the structure, absorber layout and antenna positions whilst minimising the overall cost. The anechoic chamber designs are verified by measurement results from Microwave Vision Group that validate the accuracy of the solution. Anechoic and Reverberation Chambers fills this gap in the literature by providing a comprehensive reference to electromagnetic measurements, applications and over-the-air tests inside

chambers. The expert contributors offer a summary of the latest developments in anechoic and reverberation chambers to help scientists and engineers apply the most recent technologies in the field. In addition, the book contains a comparison between reverberation and anechoic chambers and identifies their strengths and weaknesses. This important resource: • Provides a systematic solution for anechoic chamber design by using state-of-the-art computational electromagnetic algorithms • Examines both types of chamber in use: comparing and contrasting the advantages and disadvantages of each • Reviews typical over-the-air measurements and new applications in reverberation chambers • Offers a timely and complete reference written by authors working at the cutting edge of the technology • Contains helpful illustrations, photographs, practical examples and comparison between measurements and simulations
 Written for both academics and industrial engineers and designers, Anechoic and Reverberation Chambers explores the most recent advances in anechoic chamber and reverberation chamber designs and measurements.

Accurate Measurement of Optical Properties of Materials
 John Wiley & Sons

Modern Vacuum Physics presents the principles and practices of vacuum science and technology along with a number of applications in research and industrial production. The first half of the book builds a foundation in gases and vapors under rarefied conditions, The second half presents examples of the analysis of representative systems and describe
Advances in Measurement and Assessment Techniques CRC Press
 The concept of improving the use of electromagnetic energy to achieve a variety of qualitative and quantitative spectroscopic measurements on solid and liquid materials has been proliferating at a rapid rate. The use of such technologies to measure chemical composition, appearance, for classification, and to achieve detailed understanding of material interactions has prompted a dramatic expansion in the use and development of spectroscopic techniques over a variety of academic and commercial fields. The Concise Handbook of Analytical Spectroscopy is integrated into 5 volumes, each covering the theory, instrumentation, sampling methods, experimental design, and data analysis techniques, as well as essential reference tables, figures, and spectra for each spectroscopic region. The detailed practical aspects of applying spectroscopic tools for many of the most exciting and current applications are covered. Featured applications include: medical, biomedical, optical, physics, common commercial analysis methods, spectroscopic quantitative and qualitative techniques, and advanced methods. This multi-volume handbook is designed specifically as a reference tool for students, commercial development and quality scientists, and researchers or technologists in a variety of measurement endeavours. Number of Illustrations and Tables: 393 b/w illus., 304 colour illus, 413

tables. Related Link(s)

Wireless Positioning Technologies and Applications, Second Edition CRC Press

Measuring the Performance of the Hollow State is the first in-depth look at the influence of performance measurement on the effectiveness of the federal government. To do this, the authors examine the influence of the Government Performance and Results Act of 1993 (with consideration of the later Program Assessment Rating Tool of 2002) on federal performance measurement, agency performance, and program outcomes. They focus a systematic examination on five agencies in the U.S. Department of Health and Human Services—the Food and Drug Administration, the Centers for Medicare and Medicaid Services, the Health Resources and Services Administration, the National Institutes of Health, and the Indian Health Service. Besides representing a wide range of federal government organizational structures and program formats, these agencies offer a diverse array of third-party arrangements including states, native American tribes, scientists, medical schools, and commercial and nonprofit health care intermediaries and carriers. Exploring the development of performance measures in light of widely varying program mandates, the authors look at issues that affect the quality of this measurement and particularly the influence of program performance by third parties. They consider factors such as goal conflict and ambiguity, politics, and the critical role of intergovernmental relations in federal program performance and performance measurement. Through their findings, they offer illumination to two major questions in public management today—what are the uses and limitations of performance measurement as a policy and management tool and how does performance measurement work when applied to the management of third-party government? While scholars and students in public administration and governmental reform will find this book of particular interest, it will also be of use to anyone working in the public sector who would like to have a better understanding of performance measurement.

Embedded Design by Interactive Simulation CRC Press
Vacuum Technology and Applications reviews the most commonly encountered methods for the production, containment, and measurement of subatmospheric pressure. This book also outlines a number of very important applications of this technology. This text is organized into eight chapters and begins with a brief survey of the fundamental principles of vacuum technology. The succeeding chapters deal with the pumps used for the production of rough-medium and high-ultra-high vacua. These chapters specifically cover their principles, performance, and applications. These topics are followed by a discussion of the devices for residual gas analysis and partial pressure measurement. Other chapters consider the aspects of leak detection using He-specific mass spectrometer and the materials, components, and fabrication of vacuum devices. The final chapters explore the application of vacuum technology in critical areas of industrial activity, such as thin-film technology, semiconductor, metallurgy, and chemical industry. This book will prove useful to practicing mechanical, chemical, and design engineers.

Measurement and Evaluation in Physical Activity Applications CRC Press

This text provides a comprehensive overview of the physical characteristics of polymers from random polymer chains and the statistical concepts of a gaussian chain to crystalline polymers and their kinetics. The main part of the book is concerned with the different physical states and phenomena which are characteristic of polymers. A summary of the most important experimental methods in polymer physics is included. Each chapter provides the reader with problems, for which solutions are given at the end of the book.

Application of LADAR in the Analysis of Aggregate Characteristics Cambridge University Press

Create image processing, object detection and face recognition apps by leveraging the power of machine learning and deep learning with OpenCV 4 and Qt 5 Key Features Gain practical insights into code for all projects covered in this book Understand modern computer vision concepts such as character recognition, image processing and modification Learn to use a graphics processing unit (GPU) and its parallel processing power for filtering images quickly Book Description OpenCV and Qt have proven to be a winning combination for developing cross-platform computer vision applications. By leveraging their power, you can create robust applications with both an intuitive graphical user interface (GUI) and high-performance capabilities. This book will help you learn through a variety of real-world projects on image processing, face and text recognition, object detection, and high-performance computing. You'll be able to progressively build on your skills by working on projects of increasing complexity. You'll begin by creating an image viewer application, building a user interface from scratch by adding menus, performing actions based on key-presses, and applying other functions. As you progress, the book will guide you through using OpenCV image processing and modification functions to edit an image with filters and transformation features. In addition to this, you'll explore the complex motion analysis and facial landmark detection algorithms, which you can use to build security and face detection

applications. Finally, you'll learn to use pretrained deep learning models in OpenCV and GPUs to filter images quickly. By the end of this book, you will have learned how to effectively develop full-fledged computer vision applications with OpenCV and Qt. What you will learn Create an image viewer with all the basic requirements Construct an image editor to filter or transform images Develop a security app to detect movement and secure homes Build an app to detect facial landmarks and apply masks to faces Create an app to extract text from scanned documents and photos Train and use cascade classifiers and DL models for object detection Build an app to measure the distance between detected objects Implement high-speed image filters on GPU with Open Graphics Library (OpenGL) Who this book is for This book is for engineers and developers who are familiar with both Qt and OpenCV frameworks and are capable of creating simple projects using them, but want to build their skills to create professional-level projects using them. Familiarity with the C++ language is a must to follow the example source codes in this book.

Beyond the Kalman Filter: Particle Filters for Tracking Applications Elsevier

This book focuses both on the basics and more complex topics in mechanical measurements such as measurement errors & statistical analysis of data, regression analysis, heat flux, measurement of pressure, and radiation properties of surfaces. End of chapter problems, solved illustrations, and exercise problems are presented throughout the book to augment learning. It is a useful reference for students in both undergraduate and postgraduate programs.

Mechanical Measurements Elsevier

Return on Investment (ROI) remains one of the most challenging and intriguing issues facing human resource development and performance improvement professionals. Drawing on their expertise in developing and implementing ROI programs in human performance and training, Jack J. Phillips, Ph.D., Timothy W. Bothell and G. Lynn Snead demonstrate how you can effectively apply ROI to project management. Today, almost every industry requires employees to manage multiple projects with competing priorities, critical deadlines, and unexpected interruptions—rendering everyone a project manager in some respect. Most employees feel the pressure of juggling any number of key projects simultaneously. Organizations have responded by investing large amounts of both time and money to improve project management, and most strive to justify the efforts and resources dedicated to improving this goal. 'The Project Management Scorecard' is a welcome relief for anyone managing a project or multiple projects, as well as the trainers, human resource development staff, or supervisors charged with measuring, evaluating, and managing project managers. Project Management is one of the hottest topics in business management today, affecting nearly every individual in any organization across the globe. Let three HRD experts show you how to apply the hugely popular ROI process to the key organizational issue of successful project management including: * Project management issues and challenges * Measuring reaction and satisfaction * How to calculate and interpret ROI * Capturing business impact data * Measuring skill and knowledge changes during the project * Monitoring the true costs of the project solution * Converting business measure to monetary values * Forecasting ROI The authors' step-by-step approach allows you to begin the ROI process immediately. Start measuring the success of your project management results today.

PIC BASIC: Programming and Projects Newnes

Progress in Medical Imaging contains a collection of interdisciplinary reviews of subtopics in medical imaging written by internationally known experts. Topics contained in the book include automatic recognition of cells and tissue types in light microscopy, computerized manipulation and assembly of two-dimensional scans of an organ into images of the three-dimensional organ which can be rotated in space, techniques for reducing the image degradation produced by scattering radiation in chest radiography, recent advances in instrumentation, and principles of positron-emission tomography. The final chapters of this book describe the advantages of pseudo-random codes as transmitted signals for ultrasonic flow measurement, imaging, and medium characterization. The primary audience for Progress in Medical Imaging includes engineers, physicists, and students engaged in research, development, or applications of medical imaging.

Academic Press

In the chemical industry, just in time delivery and ever more efficient processes are prime requisites for competitiveness. High end products require a wide product diversity resulting in lower quantities of each single product. The answer to the problem are multiproduct plants designed to meet changing requirements. Already at design stage, different potential requirements are taken into consideration allowing technical equipment to be installed according to the desired product. Reconfiguration can be achieved quickly through exchange of readily available components without costly refitting of the entire plant. This is the first comprehensive source of information on this modern topic, treating the different concepts known for multiproduct plants, their technical realization, possible uses for the production of

chemicals, the choice of the construction materials, as well as safety considerations.

Air and Spaceborne Radar Systems Elsevier

"NCHRP Project 4-34, 'Application of LADAR in the Analysis of Aggregate Characteristics,' was conducted by Virginia Polytechnic Institute and State University, Blacksburg, Virginia, with participation by the University of Illinois at Urbana-Champaign. The objective of the project was to develop and evaluate a laser detection and ranging (LADAR) system capable of precise and accurate measurement of the aggregate characteristics of shape, volume, angularity, surface texture, specific surface area, and volumetric gradation. Ideally, the final system would be applicable to aggregate in three size categories—coarse (2 in. to #4), fine (#4 to #200), and microfine (P200)—and suitable for routine use in research, central, and field laboratories for Portland cement concrete and asphalt concrete mixture design and quality assurance. The project, which developed new equipment and computer algorithms, proved technically challenging. The project team developed a prototype Fourier transform interferometry (FTI) system with fully functional hardware and software. The system can characterize aggregate shape, angularity, texture, surface area, and volume of a wide range of aggregate sizes with high accuracy. Assembly and operation of the FTI system consisting of a chargecoupled device (CCD) camera, a fringe source, a sample platform, and a software package are fully documented in the report. The accuracy and precision of the prototype FTI system are comparable to or better than those of other systems now available to automatically measure aggregate characteristics, but its current range of aggregate size—3/4 in. to #50—is narrower than desired. Extending this size range is possible in the future by using a CCD camera with a larger field of view and increasing the system resolution through appropriate selection of the equipment components."

A Novel Multi-Frequency MIMO Radar John Wiley & Sons

This updated second edition of the Artech House book *Wireless Positioning Technologies and Applications* presents comprehensive coverage of wireless positioning principles and technologies for engineers involved in using or developing wireless location applications. This book explains the basics of GPS and demonstrates the applications of fundamental distance measuring principles. This edition includes updated and expanded chapters on satellite navigation, OFDM (Orthogonal Frequency Division Multiplex), TDOA location facilities in 3GPP LTE specifications, carrier phase measurements and DGPS, wireless sensor networks, MIMO positions, inertial navigation, and data fusion. Moreover, complete coverage of cellular network infrastructure for location, including 4G LTE, and up to-date Bluetooth location in short-range wireless networks is presented as well as modernization programs used for GPS accuracy and reliability. This book helps readers assess available positioning methods for new applications, locate applicable sources for a given technology, and simply difficult engineering and mathematical concepts.

Multiproduct Plants Springer Science & Business Media

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 Estimation* brings together in one volume the latest developments in the three major missile-control components—guidance, control, and estimation—as well as advice on implementation. It also shows how these elements contribute to the overall missile design process. Shares Insights from Well-Known Researchers and Engineers from Israel, Korea, France, Canada, the UK, and the US The book features contributions by renowned experts from government, the defense industry, and academia from the United States, Israel, Korea, Canada, France, and the United Kingdom. It starts from the ground up, developing equations of missile motion. It reviews the kinematics of the engagement and the dynamics of the target and missile before delving into autopilot design, guidance, estimation, and practical implementation issues. Covers Nonlinear Control Techniques as Well as Implementation Issues The book discusses the design of autopilots using new nonlinear theories and analyzes the performance over a flight envelope of Mach number and altitude. It also contains a chapter on the recent integrated-guidance-and-control approach, which exploits the synergy between the autopilot and guidance system design. The book then outlines techniques applied to the missile guidance problem, including classical guidance, sliding mode-based, and differential game-based techniques. A chapter on the use of differential games integrates the guidance law with the estimation of the target maneuver. A chapter on particle filter describes the latest development in filtering algorithms. The final chapters—written by engineers working in the defense industry in the US, Israel, and Canada—consider the design and implementation issues of a command-to-line-of-sight guidance system and autopilots. An Invaluable Resource on the State of the Art of Missile Guidance A guide to advanced topics in missile guidance, control, and estimation, this invaluable book combines state-of-the-art

theoretical developments presented in a tutorial form and unique practical insights. It looks at how tracking, guidance, and autopilot algorithms integrate into a missile system and guides control system designers through the challenges of the design process. [Publications of the National Institute of Standards and Technology ... Catalog](#) Routledge

Nineteen Fact-Filled Charters that contain authoritative treatment of all aspects of dimensional measurement technology make Handbook of Dimensional Measurement the most readable and comprehensive guide available for engineers and technicians engaged in the various stages of industrial production. Design engineers, manufacturing engineers, tool and gage makers, quality control specialists, and reliability experts will find a wealth of practical data as well as complete coverage - both basic and advanced - of dimensional measurement techniques and equipment. The Third Edition of this classic book has been

completely revised to include the computer and electronics revolution in metrology. Virtually every type of measurement instrument and machine, even the newest devices, can be found in these pages. Hundreds of changes, and additions and scores of new illustrations have been incorporated to assure that Handbook of Dimensional Measurement retains its status as the standard reference for the practitioner of dimensional measurement.

[Analytical Techniques for Atmospheric Measurement](#) John Wiley & Sons

Distance measurements in biological systems by EPR The foundation for understanding function and dynamics of biological systems is knowledge of their structure. Many experimental methodologies are used for determination of structure, each with special utility. Volumes in this series on Biological Magnetic Resonance emphasize the methods that involve magnetic resonance. This volume seeks to provide a critical evaluation of EPR methods for determining the distances between two unpaired

electrons. The editors invited the authors to make this a very practical book, with specific numerical examples of how experimental data is worked up to produce a distance estimate, and realistic assessments of uncertainties and of the range of applicability, along with examples of the power of the technique to answer biological problems. The first chapter is an overview, by two of the editors, of EPR methods to determine distances, with a focus on the range of applicability. The next chapter, also by the Batons, reviews what is known about electron spin relaxation times that are needed in estimating distances between spins or in selecting appropriate temperatures for particular experiments. Albert Beth and Eric Hustedt describe the information about spin-spin interaction that one can obtain by simulating CW EPR line shapes of nitroxyl radicals. The information in fluid solution CW EPR spectra of dual-spin labeled proteins is illustrated by Hassane Mchaourab and Eduardo Perozo.

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