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Circuits Fundamentals of Applied Electromagnetics **Electromagnetics for Engineers Handbook of Radar Scattering Statistics for Terrain Signals and Systems** Circuit Analysis and Design **Microwave Remote Sensing: Radar remote sensing and surface scattering and emission theory Image Processing for Engineers Microwave Radar and Radiometric Remote Sensing** Microwave Remote Sensing: Microwave remote sensing fundamentals and radiometry Fundamentals of Applied Electromagnetics **Engineering Signals and Systems Microwave Remote Sensing: Microwave remote sensing fundamentals and radiometry Radar Polarimetry for Geoscience Applications Fundamentals of Engineering Electromagnetics Introduction to Microwave Remote Sensing** *Signals & Systems Computational Electronics* **Introduction to the Physics and Techniques of Remote Sensing** *Probability and Random Processes for Electrical and Computer Engineers* **Principles of Electrodynamics Short Calculus** Fundamentals of Applied Electromagnetics **Transmission Lines for Communications** Fabrication Engineering at the Micro and Nanoscale **Microelectronic Circuits Elements of Engineering Electromagnetics Semiconductor Physics and Devices A Strategy for Active Remote Sensing Amid Increased Demand for Radio Spectrum An Introduction to Transport Phenomena In Materials Engineering, 2nd edition Digital Processing of Synthetic Aperture Radar Data Spotlight Synthetic Aperture Radar** *Elements of Electromagnetics* **Classical Electromagnetic Radiation Hot Sex** Microwave Scattering and Emission Models and Their Applications *Fundamentals of Electromagnetics with MATLAB* Foundations of Applied Electromagnetics *Field Effect Devices A Student's Guide to Waves*

Introduction to Microwave Remote Sensing offers an extensive overview of this versatile and extremely precise technology for technically oriented undergraduates and graduate students. This textbook emphasizes an important shift in conceptualization and directs it toward students with prior knowledge of optical remote sensing: the author dispels any linkage between microwave and optical remote sensing. Instead, he constructs the concept of microwave remote sensing by comparing it to the process of audio perception, explaining the workings of the ear as a metaphor for microwave instrumentation. This volume takes an “application-driven” approach. Instead of describing the technology and then its uses, this textbook justifies the need for measurement then explains how microwave technology addresses this need. Following a brief summary of the field and a history of the use of microwaves, the book explores the physical properties of microwaves and the polarimetric properties of electromagnetic waves. It examines the interaction of microwaves with matter, analyzes passive atmospheric and passive surface measurements, and describes the operation of altimeters and scatterometers. The textbook concludes by explaining how high resolution images are created using radars, and how techniques of interferometry can be applied to both passive and active sensors. The science and engineering of remote sensing--theory and applications The Second Edition of this authoritative book offers readers the essential science and engineering foundation needed to understand remote sensing and apply it in real-world situations. Thoroughly updated to reflect the tremendous technological leaps made since the publication of the first edition, this book covers the gamut of knowledge and skills needed to work in this dynamic field, including: * Physics involved in wave-matter interaction, the building blocks for interpreting data * Techniques used to collect data * Remote sensing applications The authors have carefully structured and organized the book to introduce readers to the basics, and then move on to more advanced applications. Following an introduction, Chapter 2 sets forth the basic properties of electromagnetic waves and their interactions with matter. Chapters 3 through 7 cover the use of remote sensing in solid surface studies, including oceans. Each chapter covers one major part of the electromagnetic spectrum (e.g., visible/near infrared, thermal infrared, passive microwave, and active microwave). Chapters 8 through 12 then cover remote sensing in the study of atmospheres and ionospheres. Each chapter first presents the basic interaction mechanism, followed by techniques to acquire, measure, and study the information, or waves, emanating from the medium under investigation. In most cases, a specific advanced sensor is used for illustration. The book is generously illustrated with fifty percent new figures. Numerous illustrations are reproduced in a separate section of color plates. Examples of data acquired from spaceborne sensors are included throughout. Finally, a set of exercises, along with a solutions manual, is provided. This book is based on an upper-level undergraduate and first-year graduate course taught by the authors at the California Institute of Technology. Because of the multidisciplinary nature of the field and its applications, it is appropriate for students in electrical engineering, applied physics, geology, planetary science, astronomy, and aeronautics. It is also recommended for any engineer or scientist interested in working in this exciting field. Newly corrected, this highly acclaimed text is suitable foradvanced physics courses. The authors present a very accessiblemacroscopic view of classical electromagnetics thatemphasizes integrating electromagnetic theory with physicaloptics. The survey follows the historical development ofphysics, culminating in the use of four-vector relativity tofully integrate electricity with magnetism.Corrected and emended reprint of the Brooks/Cole ThomsonLearning, 1994, third edition. KEY BENEFIT: Widely acclaimed both in the U.S. and abroad, this reader-friendly yet authoritative volume bridges the gap between circuits and new electromagnetics

material. Ulaby begins coverage with transmission lines, leading readers from familiar concepts into more advanced topics and applications. KEY TOPICS: Introduction: Waves and Phasors; Transmission Lines; Vector Analysis; Electrostatics; Magnetostatics; Maxwell's Equations for Time-Varying Fields; Plane-Wave Propagation; Reflection, Transmission, and Waveguides; Radiation and Antennas; Satellite Communication Systems and Radar Sensors. MARKET: A useful reference for engineers. "This is a signals and systems textbook with a difference: Engineering applications of signals and systems are integrated into the presentation as equal partners with concepts and mathematical models, instead of just presenting the concepts and models and leaving the student to wonder how it all relates to engineering."--Preface. This text examines applications and covers statics with an emphasis on the dynamics of engineering electromagnetics. This edition features a new chapter on electromagnetic principles for photonics, and sections on cylindrical metallic waveguides and losses in waveguides and resonators. "This is a signals and systems textbook with a difference: Engineering applications of signals and systems are integrated into the presentation as equal partners with concepts and mathematical models , instead of just presenting the concepts and models and leaving the student to wonder how it all relates to engineering."--Preface. "An excellent reference book. Treatment is thorough in terms of starting from some fundamental assumptions and working through the details so the reader may understand both the mathematical derivation and the physical basis for the resulting phase distribution functions (PDFs). [Fung's] discussion of the dependence of the PDF on the scattering parameters and the range of possible values is extremely helpful, and the illustration of the terrain scattering PDF is quite clear." Written to complement course textbooks, this book focuses on the topics that undergraduates in physics and engineering find most difficult. The classic reference for radar and remote sensing engineers, Handbook of Radar for Scattering Statistics for Terrain, has been reissued with updated, practical software for modern data analysis applications. First published in 1989, this update features a new preface, along with three new appendices that explain how to use the new software and graphical user interface. Python- and MATLAB-based software has been utilized so remote sensing and radar engineers can utilize the wealth of statistical data that came with the original book and software. This update combines the book and software, previously sold separately, into a single new product. The text first presents detailed examinations of the statistical behavior of speckle when superimposed on nonuniform terrain. The Handbook of Radar Scattering Statistics for Terrain then supports system design and signal processing applications with a complete database of calibrated backscattering coefficients. Compiled over 30 years, the statistical summaries of radar backscatter from terrain offers you over 400,000 data points compiled in tabular format. With this text, you'll own the most comprehensive database of radar terrain scattering statistics ever compiled. Derived from measurements made by both airborne and ground-based scatterometer systems, the database includes information from 114 references. The text provides over 60 tables of backscatter data for 9 different surface categories, all derived under strict quality criteria. Rigorous standards for calibration accuracy, measurement precision, and category identification make the database the most reliable source for scattering statistics ever available. A review of the fundamental theory for the transverse electromagnetic mode (TEM) on transmission lines, with emphasis on communications applications. The coverage includes transient performance of relevance for digital systems as well as the more traditional steady-state sinusoidal performance. Active remote sensing is the principal tool used to study and to predict short- and long-term changes in the environment of Earth - the atmosphere, the oceans and the land surfaces - as well as the near space environment of Earth. All of these measurements are essential to understanding terrestrial weather, climate change, space weather hazards, and threats from asteroids. Active remote sensing measurements are of inestimable benefit to society, as we pursue the development of a technological civilization that is economically viable, and seek to maintain the quality of our life. A Strategy for Active Remote Sensing Amid Increased Demand for Spectrum describes the threats, both current and future, to the effective use of the electromagnetic spectrum required for active remote sensing. This report offers specific recommendations for protecting and making effective use of the spectrum required for active remote sensing. The second edition examines in detail three of the most basic members of the field device family to introduce the reader to relevant terms, concepts, models, and analytical procedures. Offers the only consolidated reference on radar polarimetry design, analysis, and application and explains the most recent development in polarization system design and application. Illustrated with 150 figures, 10 tablets, and 9 full-color SAR images. This classic text on fluid flow, heat transfer, and mass transport has been brought up to date in this second edition. The author has added a chapter on “Boiling and Condensation” that expands and rounds out the book’s comprehensive coverage on transport phenomena. These new topics are particularly important to current research in renewable energy resources involving technologies such as windmills and solar panels. The book provides you and other materials science and engineering students and professionals with a clear yet thorough introduction to these important concepts. It balances the explanation of the fundamentals governing fluid flow and the transport of heat and mass with common applications of these fundamentals to specific systems existing in materials engineering. You will benefit from: • The use of familiar examples such as air and water to introduce the influences of properties and geometry on fluid flow. • An organization with sections dealing separately with fluid flow, heat transfer, and mass transport. This sequential structure allows the development of heat transport concepts to employ analogies of heat flow with fluid flow and the development of mass transport concepts to employ analogies with heat transport. • Ample high-quality graphs and figures throughout. • Key points presented in chapter summaries. • End of chapter exercises and solutions to selected problems. • An all new and improved comprehensive index. The 1988 Nobel Prize winner establishes the subject's mathematical background, reviews the principles of electrostatics, then introduces Einstein's special theory of relativity and applies it to topics throughout the book. The basic objective of this highly successful text--to present the concepts of electromagnetics in a style that is clear and interesting to read--is more fully-realized in this Second Edition than

ever before.Thoroughly updated and revised, this two-semester approach to fundamental concepts and applications in electromagnetics begins with vector analysis--which is then applied throughout the text. A balanced presentation of time-varying fields and static fields prepares students for employment in today's industrial and manufacturing sectors.Mathematical theorems are treated separately from physical concepts.Students, therefore, do not need to review any more mathematics than their level of proficiency requires. Sadiku is well-known for his excellent pedagogy, and this edition refines his approach even further. Student-oriented pedagogy comprises: chapter introductions showing how the forthcoming material relates to the previous chapter, summaries, boxed formulas, and multiple choice review questions with answers allowing students to gauge their comprehension. Many new problems have been added throughout the text. For courses in Electromagnetics offered in Electrical Engineering departments and Applied Physics. Designed specifically for a one-semester EM course covering both statics and dynamics, the book uses a number of tools to facilitate understanding of EM concepts and to demonstrate their relevance to modern technology. Technology Briefs provide overviews of both fundamental and sophisticated technologies, including the basic operation of an electromagnet in magnetic recording, the invention of the laser, and how EM laws underlie the operation of many types of sensors, bar code readers, GPS, communication satellites, and X-Ray tomography, among others.A CD-ROM packed with video presentations and solved problems accompanies the tex Large computational resources are of ever increasing importance for the simulation of semiconductor processes, devices and integrated circuits. The Workshop on Computational Electronics was intended to be a forum for the dis cussion of the state-of-the-art of device simulation. Three major research areas were covered: conventional simulations, based on the drift-diffusion and the hydrodynamic models; Monte Carlo methods and other techniques for the solution of the Boltzmann transport equation; and computational approaches to quantum transport which are relevant to novel devices based on quantum interference and resonant tunneling phenomena. Our goal was to bring together researchers from various disciplines that contribute to the advancement of device simulation. These include Computer Sci ence, Electrical Engineering, Applied Physics and Applied Mathematics. The suc cess of this multidisciplinary formula was proven by numerous interactions which took place at the Workshop and during the following three-day Short Course on Computational Electronics. The format of the course, including a number of tutorial lectures, and the large attendance of graduate students, stimulated many discussions and has proven to us once more the importance of cross-fertilization between the different disciplines. This text aims to provide the fundamentals necessary to understand semiconductor device characteristics, operations and limitations. Quantum mechanics and quantum theory are explored, and this background helps give students a deeper understanding of the essentials of physics and semiconductors. ?The book gives an excellent theoretical and practical background of SAR in general and specifically of spotlight SAR. The rich experience of the authors in spotlight SAR processing is reflected by a very detailed summary of the associated theory as well as a lot of SAR image examples. These images illustrate the techniques described in the book and provide a valuable connection to practice. This book can be highly recommended to all scientists and engineers involved in SAR system design and SAR data evaluation.?---International Journal of Electronics and Communications 2-10.3 Multiple Reflection Method CD-ROM contains: 77 interactive modules keyed to text, 85 demonstration exercises, solutions of selected end-of-chapter problems and copies of all figures in the book. Designed for advanced undergraduate or first-year graduate courses in semiconductor or microelectronic fabrication, the third edition of Fabrication Engineering at the Micro and Nanoscale provides a thorough and accessible introduction to all fields of micro and nano fabrication. Fundamental of Engineering Electromagnetics not only presents the fundamentals of electromagnetism in a concise and logical manner, but also includes a variety of interesting and important applications. While adapted from his popular and more extensive work, Field and Wave Electromagnetics, this text incorporates a number of innovative pedagogical features. Each chapter begins with an overview which serves to offer qualitative guidance to the subject matter and motivate the student. Review questions and worked examples throughout each chapter reinforce the student's understanding of the material. Remarks boxes following the review questions and margin notes throughout the book serve as additional pedagogical aids. From the reviews "This is a reprint of the original edition of Lang’s ‘A First Course in Calculus’, which was first published in 1964....The treatment is ‘as rigorous as any mathematician would wish it’....[The exercises] are refreshingly simply stated, without any extraneous verbiage, and at times quite challenging....There are answers to all the exercises set and some supplementary problems on each topic to tax even the most able." --Mathematical Gazette With updates and enhancements to the incredibly successful first edition, Probability and Random Processes for Electrical and Computer Engineers, Second Edition retains the best aspects of the original but offers an even more potent introduction to probability and random variables and processes. Written in a clear, concise style that illustrates the subject’s relevance to a wide range of areas in engineering and physical and computer sciences, this text is organized into two parts. The first focuses on the probability model, random variables and transformations, and inequalities and limit theorems. The second deals with several types of random processes and queuing theory. New or Updated for the Second Edition: A short new chapter on random vectors that adds some advanced new material and supports topics associated with discrete random processes Reorganized chapters that further clarify topics such as random processes (including Markov and Poisson) and analysis in the time and frequency domain A large collection of new MATLAB®-based problems and computer projects/assignments Each Chapter Contains at Least Two Computer Assignments Maintaining the simplified, intuitive style that proved effective the first time, this edition integrates corrections and improvements based on feedback from students and teachers. Focused on strengthening the reader’s grasp of underlying mathematical concepts, the book combines an abundance of practical applications, examples, and other tools to simplify unnecessarily difficult solutions to varying engineering problems in communications, signal processing, networks, and

associated fields. "Designed for a course on image processing (IP) aimed at both graduate students as well as undergraduates in their senior year, in any field of engineering, this book starts with an overview in Chapter 1 of how imaging sensors--from cameras to radars to MRIs and CAT--form images, and then proceeds to cover a wide array of image processing topics. The IP topics include: image interpolation, magnification, thumbnails, and sharpening, edge detection, noise filtering, de-blurring of blurred images, supervised and unsupervised learning, and image segmentation, among many others. As a prelude to the chapters focused on image processing (Chapters 3-12), the book offers in Chapter 2 a review of 1-D signals and systems, borrowed from our 2018 book Signals and Systems: Theory and Applications, by Ulaby and Yagle."--Preface. CD-ROM contains: Demonstration exercises -- Complete solutions -- Problem statements. “A deliciously detailed primer . . . cover[s] the gamut from sensuality to role-playing and everything in between . . . Get ready to rock your sex life!” —Candida Royalle, feminist erotic filmmaker & author of How to Tell a Naked Man What to Do From radio personality Emily Morse and sex educator Jamye Waxman comes all the awesome information of The Joy of Sex without cheesy art or outdated photos. This gorgeously graphic guide to getting it on will appeal to a hip, contemporary audience and is a beautiful book for the cellphone or tablet as well. Comprehensive, filled with useful guidance and hints, lavishly illustrated and no-holds-barred, this is the new definitive guide to sex with hundreds of ideas to enhance your sex life’s playfulness, passion, and possibilities . . . starting tonight! “A simply wonderful book that everyone should have in their collection. The combination of spot-on advice with beautiful, accessible graphics makes this an instant classic. Pick any page to jump-start your own fun evening or weekend. Kudos to the authors for an excellent job.” —Nina Hartley, author of Nina Hartley’s Guide to Total Sex “This book serves up sex education like it’s a beautiful box of Valentine’s day chocolates. Given with a whole lot of love, Hot Sex is a sampler of sweet, sensual snacks in perfect, petite portions that give gooey gratification. Delicious!” —Annie Sprinkle, Ph.D., sexologist, artist, pleasure activist Electromagnetics is credited with the greatest achievements of physics in the 19th century. Despite its long history of development, due to its fundamental nature and broad base, research in applied electromagnetics is still vital and going strong. In recent years electromagnetics played a major role in a wide range of disciplines, including wireless communication, remote sensing of the environment, military defense, and medical applications, among many others. Graduate students interested in such exciting fields of research need a strong foundation in field theory, which was part of the motivation for writing this book on classical electromagnetics but with an eye on its modern applications. Accompanying CD-ROM contains a MATLAB tutorial. A textbook for third and fourth year students in all electrical and computer engineering departments taking electronic circuit courses. . Every chapter features a design problem that tests the problem-solving skills employed by real engineering. Includes textbook CD-ROM "Engineering Signals and Systems Textbook Resources"

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