

## Arrays And Array Methods In Global Seismology

The Most Complete, Up-to-Date Coverage of the Finite Element Analysis and Modeling of Antennas and Arrays Aimed at researchers as well as practical engineers—and packed with over 200 illustrations including twenty-two color plates—Finite Element Analysis of Antennas and Arrays presents: Time- and frequency-domain formulations and mesh truncation techniques Antenna source modeling and parameter calculation Modeling of complex materials and fine geometrical details Analysis and modeling of narrowband and broadband antennas Analysis and modeling of infinite and finite phased-array antennas Analysis and modeling of antenna and platform interactions Recognizing the strengths of other numerical methods, this book goes beyond the finite element method and covers hybrid techniques that combine the finite element method with the finite difference time-domain method, the method of moments, and the high-frequency asymptotic methods to efficiently deal with a variety of complex antenna problems. Complemented with numerous examples, this cutting-edge resource fully demonstrates the power and capabilities of the finite element analysis and its many practical applications.

Microarray technology provides a highly sensitive and precise technique for obtaining information from biological samples, with the added advantage that it can handle a large number of samples simultaneously that may be analyzed rapidly. Researchers are applying microarray technology to understand gene expression, mutation analysis, and the sequencing of genes. Although this technology has been experimental, and thus has been through feasibility studies, it has just recently entered into widespread use for advanced research. The purpose of DNA Arrays: Methods and Protocols is to provide instruction in designing and constructing DNA arrays, as well as hybridizing them with biological samples for analysis. An additional purpose is to provide the reader with a broad description of DNA-based array technology and its potential applications. This volume also covers the history of DNA arrays—from their conception to their ready off-the-shelf availability—for readers who are new to array technology as well as those who are well versed in this field. Stepwise, detailed experimental procedures are described for constructing DNA arrays, including the choice of solid support, attachment methods, and the general conditions for hybridization. With microarray technology, ordered arrays of oligonucleotides or other DNA sequences are attached or printed to the solid support using automated methods for array synthesis. Probe sequences are selected in such a way that they have the appropriate sequence length, site of mutation, and T. This improved and updated second edition covers the theory, development, and design of electro-acoustic transducers for underwater applications. This highly regarded text discusses the basics of piezoelectric and magnetostrictive transducers that are currently being used as well as promising new designs. It presents the basic acoustics as well as the specific acoustics data needed in transducer design and evaluation. A broad range of designs of projectors and hydrophones are described in detail along with methods of modeling, evaluation, and measurement. Analysis of projector and hydrophone transducer arrays, including the effects of mutual radiation impedance and numerical models for elements and arrays, are also covered. The book includes new advances in transducer design and transducer materials and has been completely reorganized to be suitable for use as a textbook, as well as a reference or handbook. The new edition contains corrections to the first edition, end-of-chapter exercises, and solutions to selected exercises. Each chapter includes a short introduction, end-of-chapter summary, and an extensive reference list offering the reader more detailed information and historical context. A glossary of key terms is also included at the end.

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Application-specific regular array processors have been widely used in signal and image processing, multimedia and communication systems, for example, in data compression and HDTV. One of the main problems of application-specific computing is how to map algorithms into hardware. The major achievement of the theory of regular arrays is that an algorithm, represented as a data dependence graph, is embedded into a Euclidean space, where the integer points are the elementary computations and the dependencies between computations are denoted by vectors between points. The process of mapping an algorithm into hardware is reduced to finding, for the given Euclidean space, a new coordinate system that can be associated with the physical properties of space and time - so called space-time. The power of the synthesis method is that it provides a bridge between "abstract" and "physical" representations of algorithms, thus providing a methodological basis for synthesizing computations in space and in time. This book will extend the existing synthesis theory by exploiting the associativity and commutativity of computations. The practical upshot being a controlled increase in the dimensionality of the Euclidean space representing an algorithm. This increase delivers more degrees of freedom in the choice of the space-time mapping and leads, subsequently, to more choice in the selection of cost-effective application-specific designs.

This is the first book to provide a single complete reference on microphone arrays. Top researchers in this field contributed articles documenting the current state of the art in microphone array research, development and technological application.

Introducing protein array technology and its application to the multiplexed detection of proteins, this volume includes novel methods to construct protein arrays using biotin, chemical reagents and chromatographic substrates.

Scientists working or planning to work in the field of cardiovascular research will welcome Practical Methods in Cardiovascular Research as the reference book they have long been waiting for. Not only general aspects of cardiovascular research are well presented, but also detailed descriptions of methods and protocols and practical examples. Written by leading scientists in their field, chapters cover classical methods such as the Langendorff heart or working heart models as well as numerous new techniques and methods. Newcomers and experienced researchers alike will benefit from the troubleshooting guide in each chapter, the extensive reference lists for advanced reading and the great practical experience of the authors. Practical Methods in Cardiovascular Research is therefore a long awaited "must have" for anybody with an interest in cardiovascular research.

Learn everything you need to know about object-oriented JavaScript with this comprehensive guide. Enter the world of cutting-edge development! About This Book This book has been updated to cover all the new object-oriented features introduced in ECMAScript 6 It makes object-oriented programming accessible and understandable to web developers Write better and more maintainable JavaScript code while exploring interactive examples that can be used in your own scripts Who This Book Is For This book is ideal for new to intermediate JavaScript developers who want to prepare themselves for web development problems solved by object-oriented JavaScript! What You Will Learn Apply the basics of object-oriented programming in the JavaScript environment Use a JavaScript Console with complete mastery Make your programs cleaner, faster, and compatible with other programs and libraries Get familiar with Iterators and

Generators, the new features added in ES6 Find out about ECMAScript 6's Arrow functions, and make them your own Understand objects in Google Chrome developer tools and how to use them Use a mix of prototypal inheritance and copying properties in your workflow Apply reactive programming techniques while coding in JavaScript In Detail JavaScript is an object-oriented programming language that is used for website development. Web pages developed today currently follow a paradigm that has three clearly distinguishable parts: content (HTML), presentation (CSS), and behavior (JavaScript). JavaScript is one important pillar in this paradigm, and is responsible for the running of the web pages. This book will take your JavaScript skills to a new level of sophistication and get you prepared for your journey through professional web development. Updated for ES6, this book covers everything you will need to unleash the power of object-oriented programming in JavaScript while building professional web applications. The book begins with the basics of object-oriented programming in JavaScript and then gradually progresses to cover functions, objects, and prototypes, and how these concepts can be used to make your programs cleaner, more maintainable, faster, and compatible with other programs/libraries. By the end of the book, you will have learned how to incorporate object-oriented programming in your web development workflow to build professional JavaScript applications. Style and approach Filled with practical instructions, the book shows you how to implement object-oriented features of JavaScript in the real world. The to-the-point nature of the book will benefit developers who are looking for a fast-paced guide to learn object-oriented JavaScript.

Last Updated: 1st April 2020 Full coverage of all OCA Java Programmer 8 Certification Exam objectives with focus on fundamental concepts. OCA, Oracle Certified Associate Java SE 8 Programmer Fundamentals, Exam 1Z0-808 is a comprehensive study guide for those taking the Oracle Certified Associate Java SE 8 Programmer I exam (1Z0-808). With complete coverage of 100% of the exam objectives, this book provides everything you need to know to confidently take the exam. Written by expert with more than 15 years of industry experience, the book also helps you ace technical interviews by making you aware of things that technical managers focus on. The Java 8 exam requires you to learn new features of the language including functional programming. This book covers all such topics thoroughly. The also book includes coding exercises that will get you moving on "write a lot of code" front. It perfectly complements Enthware mock exams. The book makes it easy to get your doubts cleared by including links to existing discussion on a particular topic. If the existing discussion doesn't address your doubt, you can see more clarification from the Author. **IMPORTANT** - The book **DOES NOT** include mock exams and should be used as a study guide before or while attempting Enthware Mock Exams.

Modern radar, telecommunication, sonar, and radio-astronomy systems use integrated systems, complex signals, and signal processing methods extensively. These systems require the development of new, more efficient systems. One of the major ways to improve radar and sonar systems is to use multichannel systems, the most promising of which employ space-time signal processing. In the last few years the intensive growth in electronics, information processing techniques, microwave and laser technology, electrooptics and holography, acoustics, and optoelectronics have resulted in new scientific and technological research fronts. One of these is the theory and technology of electrooptical array antennas—a new class of receiving antennas whose pattern is controlled by means of coherent optics and holography. Electrooptical array theory and technology have been involved in the study of the power, resolution, and range characteristics of arrays with various coherent optical processors. The practical applications of these systems and methods for building them using contemporary optoelectronics have also been studied.

Master today's MATLAB technical programming language while strengthening problem-solving skills with the help of Chapman's successful MATLAB PROGRAMMING FOR ENGINEERS, 6th Edition. Readers learn how to write clean, efficient and well-documented programs while simultaneously gaining an understanding of the many practical functions of MATLAB. This edition presents the latest version of MATLAB R2018a and work with new MATLAB GUI Apps. The first nine chapters provide a basic introduction to programming and problem solving, while the remaining chapters address more advanced topics, such as I/O, object-oriented programming, and Graphical User Interfaces (GUIs). With its comprehensive coverage, MATLAB PROGRAMMING FOR ENGINEERS, 6th Edition serves as invaluable reference tool for any advancing or practicing engineers who work with MATLAB. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

A guide to Ruby programming covers such topics as datatypes and objects, expressions, classes and modules, control structures, and the Ruby platform.

This detailed book presents a technical overview and practical methodology of a variety of antibody array formats and technologies. As advantages and disadvantages of antibody array types are explored, the volume also delves into practical applications of antibody arrays pertaining to investigations of specific research topics and biological processes as well as guidance on the methods of processing, analysis, and storage of array data. Written for the highly successful Methods in Molecular Biology series, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and cutting-edge, Antibody Arrays: Methods and Protocols aims to empower the reader with the information required to select the most appropriate array for their research application, with the technical knowledge to use and process the array, and with the knowledge to perform analysis that realizes the maximum benefit from the data generated.

DNA array technology is a technique for studying gene expression by comparing samples of different genes. The result is an enormous amount of data that must be carefully analyzed in order for it to be useful and meaningful. This book examines both data analysis and techniques for ensuring optimal experimental conditions. The array approach has applications in a number of model systems, including development, learning and drug abuse. In addition, the technique

has applications in a number of neurological disorders such as Alzheimer's disease, schizophrenia, multiple sclerosis, and neurological cancers.

The radiation from the elements in a cylindrical phased array is analyzed theoretically and experimentally. The theoretical investigation has developed a multimodal analysis method for cylindrical arrays. The method is similar to that for plane arrays, whereby, the field inside the element is represented as the superposition of a set of waveguide modes. The method allows the definition and the precise evaluation of the driving point admittance of the elements. A comparison between the driving point admittance in planar and cylindrical arrays is made and the conditions for the use of Wheeler simulators for cylindrical array element design are set. (Author).

Essential Skills--Made Easy! Create dynamic Web pages complete with special effects using today's leading Web development language. JavaScript: A Beginner's Guide, Third Edition gives you step-by-step coverage of the fundamentals, including variables, functions, operators, event handlers, objects, arrays, strings, forms, and frames. You'll also learn about more advanced techniques, including debugging and security. This hands-on guide explains how JavaScript works with XHTML Transitional and covers the new features available in JavaScript. Get started using JavaScript right away with help from this fast-paced tutorial. Designed for Easy Learning: Key Skills & Concepts--Chapter-opening lists of specific skills covered in the chapter Ask the Expert--Q & A sections filled with bonus information and helpful tips Try This--Hands-on exercises that show you how to apply your skills Notes--Extra information related to the topic being covered Tips--Helpful reminders or alternate ways of doing things Self Tests--End-of-chapter reviews to test your knowledge Annotated syntax--Example code with commentary that describes the programming techniques being illustrated

Scanning arrays present the radar or communications engineer with the ultimate in antenna flexibility. They also present a multitude of new opportunities and new challenges that need to be addressed. In order to describe the needs for phased array development, this book begins with a brief discussion of the history that led to present array antennas. This text is a compact but comprehensive treatment of the scanned array, from the underlying basis for array pattern behavior to the engineering choices leading to successful design. The book describes the scanned array in terms of radiation from apertures and wire antennas and introduces the effects resulting directly from scanning, including beam broadening, impedance mismatch and gain reduction, and pattern squint and those effects of array periodicity including grating and quantization lobes and array blindness. The text also presents the engineering tools for improving pattern control and array efficiency including lattice selection, subarray technology and pattern synthesis. Equations and figures quantify the phenomena being described and provide the reader with the tools to trade-off various performance features. The discussions proceed beyond the introductory material and to the state of the art in modern array design.

Java For Artists: The Art, Philosophy, and Science of Object-Oriented Programming is a Java programming language text/tradebook that targets beginner and intermediate Java programmers.

The latest edition of Java in a Nutshell is designed to help experienced Java programmers get the most out of Java 7 and 8, but it's also a learning path for new developers. Chock full of examples that demonstrate how to take complete advantage of modern Java APIs and development best practices, the first section of this thoroughly updated book provides a fast-paced, no-fluff introduction to the Java programming language and the core runtime aspects of the Java platform. The second section is a reference to core concepts and APIs that shows you how to perform real programming work in the Java environment. Get up to speed on language details, including Java 8 changes Learn object-oriented programming, using basic Java syntax Explore generics, enumerations, annotations, and lambda expressions Understand basic techniques used in object-oriented design Examine concurrency and memory, and how they're intertwined Work with Java collections and handle common data formats Delve into Java's latest I/O APIs, including asynchronous channels Use Nashorn to execute JavaScript on the Java Virtual Machine Become familiar with development tools in OpenJDK

"Get the Java skills you will need to start developing Android apps apps"--Cover.

Written by one of the world's leading experts in the field, this book is intended as an advanced text for courses in antennas, with a focus on the mature but vital background field of aperture antennas. It is aimed at final year, MSc, PhD and post-doctoral students, as well as readers who are moving from academia into industry, beginning careers as wireless engineers, system designers, in R&D, or for practising engineers. It assumes the reader has undertaken an earlier course of study on Maxwell's equations, fields and waves. Some of these topics are summarized in the early few chapters in order to provide continuity and background for the remaining chapters. The aperture antennas covered include the main types of horns, reflectors and arrays as well as microstrip patches, reflectarrays and lenses. To provide more than a superficial treatment of arrays, the topic of mutual coupling is covered in greater detail compared to most similar books in this area. Also included is an introduction to arrays on non-planar surfaces, which are important in applications that involve curved surfaces such as in aerodynamics or for making aperture antennas unobtrusive. A chapter is included on some modern aperture antennas to illustrate design techniques beyond the most common types of aperture antennas described in the early chapters. This is to show where advances have recently been made and where they could be improved in the future. Also included are selective topics that are practical in nature for aperture antennas, namely fabrication and measurement.

If you're a novice programmer and you want to learn C#, there aren't many books that will guide you. Most C# books are written for experienced C++ and Java programmers. That's why Jesse Liberty, author of the best-selling books Programming C# and Programming ASP.NET, has written an entry-level guide to C#. Written in a warm and friendly manner, Learning C# assumes no prior programming experience, and provides a thorough introduction to Microsoft's premier .NET language. The book helps you build a solid foundation in .NET, and shows you how to apply your skills through the use of dozens of tested examples. You'll learn about the syntax and structure of the C# language, including operators, classes and interfaces, structs, arrays, and strings. Better yet, this updated edition of Learning C# has been completely revised to include the latest additions to the C# language plus a variety of learning aids to help lock-in new knowledge and skills. Here's what's new: Extensive revisions to the text and examples to reflect C# 2005 and .NET 2.0 changes An introduction to Visual Studio 2005, the most popular tool for building Windows and web applications More than 200 questions and fully debugged programming exercises with solutions A greater emphasis on event handling New coverage of generics, generic collections, partial classes, anonymous methods and more. By the time you've finished Learning C#, you'll be ready to move on to a more advanced programming guide that will help you create large-scale web and Windows applications. Whether you have a little object-oriented programming experience or you are new to programming altogether, Learning C# will set you firmly on your way to mastering the essentials of the C# language.

You will first be introduced to object-oriented programming, then to the basics of objects in JavaScript. This book takes a do-it-yourself approach when it comes to writing code, because the best way to really learn a programming language is by writing code. You are encouraged to type code into Firebug's console, see how it works and then tweak it and play around with it. There are practice questions at the end of each chapter to help you review what you have learned. For new to intermediate JavaScript developer who wants to prepare themselves for web development problems solved by smart JavaSc.

The comprehensive guide to Visual Basic 2012 Microsoft Visual Basic (VB) is the most popular programming language in the world, with millions of lines of code used in businesses and applications of all types and sizes. In this edition of the bestselling Wrox guide, Visual Basic expert Rod Stephens offers novice and experienced developers a comprehensive tutorial and reference to

Visual Basic 2012. This latest edition introduces major changes to the Visual Studio development platform, including support for developing mobile applications that can take advantage of the Windows 8 operating system. This new edition includes information on developing Win8-compatible Metro applications using pre-loaded templates. Explores the new design features and support for WPF designers. Explains how to develop Windows smartphone apps. Covers new VB language features such as Async and Await. Visual Basic 2012 Programmer's Reference is the programmer's go-to reference for the 2012 edition of Visual Basic.

Accelerate your JavaScript skills by mastering this very important data structure. About This Video: You will feel more comfortable working with arrays in any coding problem you encounter. You will become more familiar with functional methods for working with arrays (reduce, map, filter). You will become familiar with (and use) all the different methods for manipulating an array in JavaScript. You will be able to work with arrays using different techniques. In Detail: Effectively working with arrays is critical to any JavaScript programmer. Arrays are an important data structure, and this course will provide you with the competency you need to master them. In this course, you are going to learn all there is to know about JavaScript arrays. This course starts from the beginning; so, if you are comfortable with JavaScript, you may want to use the first section as a review or skip it. You will learn the basics of iterating an array and some unique ways to create arrays and access elements. You will master all the methods you can use to modify or mutate an array, as well as those methods that are preferred in the functional programming world because they preserve the original array. You will learn how to combine arrays and extract values, and multiple ways to search arrays for values. We end with a look at some array-like collections available in JavaScript and how you can use them. If you learn by doing, this course gives you plenty of opportunities to work on an exercise and then sit back and watch as I go through it. Jump in today and begin mastering JavaScript arrays!

This book covers different topics on optimal design and operations with particular emphasis on chemical engineering applications. A wide range of optimization methods: OCo deterministic, stochastic, global and hybrid OCo are considered. Containing papers presented at the bilateral workshop by British and Lithuanian scientists, the book brings together researchers' contributions from different fields: OCo chemical engineering including reaction and separation processes, food and biological production, as well as business cycle optimization, bankruptcy, protein analysis and bioinformatics. Sample Chapter(s). Chapter 1: Hybrid Methods for Optimisation (520 KB). Contents: Hybrid Methods for Optimisation (E S Fraga); An MILP Model for Multi-Class Data Classification (G Xu & L G Papageorgiou); Studying the Rate of Convergence of the Steepest Descent Optimisation Algorithm with Relaxation (R J Haycroft); Optimal Estimation of Parameters in Market Research Models (V Savani); A Redundancy Detection Approach to Mining Bioinformatics Data (H Camacho & A Salhi); Optimal Open-Loop Recipe Generation for Particle Size Distribution Control in Semi-Batch Emulsion Polymerisation (N Bianco & C D Immanuel); Multidimensional Scaling Using Parallel Genetic Algorithm (A Varoneckas et al.); Evaluating the Applicability of Time Temperature Integrators as Process Exploration and Validation Tools (S Bakalis et al.); Optimal Deflection Yoke Tuning (V Vaitkus et al.); and other papers. Readership: Academics, researchers, practitioners and postgraduates students in operations research and engineering."

In recent years, the increased availability and fidelity of broadband seismic instruments have effectively narrowed the gap between exploration and global seismic applications. Global seismologists are now able to take advantage of high-resolution, often exploration-based, tools to examine rock properties tens to hundreds of kilometers below surface. This book reviews the key assumptions, algorithms and prospects of several important array-based methods in today's global and regional seismic surveys. A short list of topics includes data migration, PP and SS precursors, Radon transform, mantle triplication, P-to-S and S-to-P converted waves, shear-wave splitting, high-resolution seismic tomography, and ambient-noise interferometry. Each approach is presented in a 'cookbook' fashion for easy comparison, implementation and critique by the general readership.

A guide for experienced programmers demonstrates the core JavaScript language, offers examples of common tasks, and contains an extensive reference to JavaScript commands, objects, methods, and properties.

Phased arrays, while traditionally used in radar systems, are now being used or proposed for use in internet of things (IoT) networks, high-speed back haul communication, terabit-per-second satellite systems, 5G mobile networks, and mobile phones. This book considers systems engineering of phased arrays and addresses not only radar, but also these modern applications. It presents a system-level perspective and approach that is essential for the successful development of modern phased arrays. Using practical examples, this book helps solve problems often encountered by technical professionals. Thermal management challenges, antenna element design issues, and architectures solutions are explored as well as the benefits and challenges of digital beam forming. This book provides the information required to train engineers to design and develop phased arrays and contains questions at the end of each chapter that professors will find useful for instruction.

So far there does not exist any theory of adaptive spatial signal processing (ASSP) for signals with uncertain parameters. This monograph is devoted to the development of this theory, which is very important in connection with wide spreading of telecommunications and radio links in the modern society. This theory can be applied for the development of effective radio communications. In the book some original approaches are proposed targeting the development of effective algorithms of ASSP with not exactly known parameters. They include both probabilistic and deterministic approaches for synthesis of robust algorithms of ASSP. The solution of problems also can be reduced to the construction of some operators for the Banach space which is presented in the book. "Methods of Signal Processing for Adaptive Antenna Arrays" targets professionals, students and PhD students in the area of telecommunications and should be useful for everybody connected with the new information technologies. Discover a modern approach to the analysis, modeling and design of high sensitivity phased arrays. Network theory, numerical methods and computational electromagnetic simulation techniques are uniquely combined to enable full system analysis and design optimization. Beamforming and array signal processing theory are integrated into the treatment from the start. Digital signal processing methods such as polyphase filtering and RFI mitigation are described, along with technologies for real-time hardware implementation. Key concepts from interferometric imaging used in radio telescopes are also considered. A basic development of theory and modeling techniques is accompanied by problem sets that guide readers in developing modeling codes that retain the simplicity of the classical array factor method while incorporating mutual coupling effects and interactions between elements. Combining current research trends with pedagogical material suitable for a first-year graduate course, this is an invaluable resource for students, teachers, researchers, and practicing RF/microwave and antenna design engineers.

This book presents the detailed analytical formulation for the RCS of parallel-fed linear dipole array in the presence of mutual coupling. The radar cross section (RCS) of an object represents its electromagnetic (EM) scattering properties for a given incident wave. The analysis of scattered field is critical in military and defence arenas, especially while designing low-observable platforms. It is well-known that the

presence of an antenna/array on the target influences its echo area significantly. The primary cause for such scattering of the incident signals is reflection that occurs within the antenna aperture and its feed network. In this book, the RCS estimation is done based on the signal path within the antenna system. The scattered field is expressed in terms of array design parameters including the reflection and transmission coefficients. The computed results show the variation in the RCS pattern with and without mutual coupling. The effect of finite dipole-length, inter-element spacing, scan angle, array configuration, amplitude distribution and terminating load impedance on the RCS pattern is studied. It is shown that the array RCS can be controlled by choosing optimum design parameters, including terminating impedance and geometric configuration. This book explains each step of the RCS estimation and analysis of dipole array with detailed schematics, tables and illustrations. Moreover, it includes parametric analysis of RCS estimation and control. This book provides an insight into the phenomenon of scattering within the phased array system.

Orthogonal arrays have played a vital role in improving the quality of products manufactured throughout the world. This first book on the subject since its introduction more than fifty years ago serves as a key resource to this area of designing experiments. Most of the arrays obtained by the methods in this book are available electronically. Anyone running experiments - whether in a chemistry lab or a manufacturing plant, or in agricultural or medical research - will find this book useful.

The book addresses surrogate-assisted design of antenna arrays, in particular, how surrogate models, both data-driven and physics-based, can be utilized to expedite procedures such as parametric optimization, design closure, statistical analysis, or fault detection. Algorithms and design frameworks are illustrated using a large variety of examples including real-world printed-circuit antenna and antenna array structures. This unique compendium contains introductory materials concerning numerical optimization, both conventional (gradient-based and derivative-free, including metaheuristics) and surrogate-based, as well as a considerable selection of customized procedures developed specifically to handle antenna array problems. Recommendations concerning practical aspects of surrogate-assisted multi-objective antenna optimization are also given. The methods presented allow for cost-efficient handling of antenna array design problems (involving CPU-intensive EM models) in the context of design optimization and statistical analysis, which will benefit both researchers, designers and graduate students.

ECMAScript 6 represents the biggest update to the core of JavaScript in the history of the language. In *Understanding ECMAScript 6*, expert developer Nicholas C. Zakas provides a complete guide to the object types, syntax, and other exciting changes that ECMAScript 6 brings to JavaScript. Every chapter is packed with example code that works in any JavaScript environment so you'll be able to see new features in action. You'll learn: –How ECMAScript 6 class syntax relates to more familiar JavaScript concepts –What makes iterators and generators useful –How arrow functions differ from regular functions –Ways to store data with sets, maps, and more –The power of inheritance –How to improve asynchronous programming with promises –How modules change the way you organize code Whether you're a web developer or a Node.js developer, you'll find *Understanding ECMAScript 6* indispensable on your journey from ECMAScript 5 to ECMAScript 6.

Develop the strong programming skills needed for professional success with Farrell's *MICROSOFT VISUAL C# 2017: AN INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING, 7E*. Approachable examples and a clear, straightforward style help readers build a solid understanding of both structured and object-oriented programming concepts. You Users master critical principles and techniques that easily transfer to other programming languages. This new edition incorporates the most recent versions of both C# and Visual Studio 2017 to ensure readers have the contemporary skills required in business today. Short You Do It hands-on features and a variety of new debugging exercises, programming exercises, and running case studies help users prepare for success in today's programming environment. Discover the latest tools and expertise for programming success in this new edition. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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