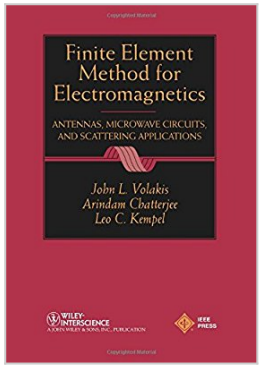

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications

By John L. Volakis, Arindam Chatterjee, Leo C. Kempel

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel

Employed in a large number of commercial electromagnetic simulation packages, the finite element method is one of the most popular and well-established numerical techniques in engineering. This book covers the theory, development, implementation, and application of the finite element method and its hybrid versions to electromagnetics. FINITE ELEMENT METHOD FOR ELECTROMAGNETICS begins with a step-by-step textbook presentation of the finite method and its variations then goes on to provide up-to-date coverage of three dimensional formulations and modern applications to open and closed domain problems. Worked out examples are included to aid the reader with the fine features of the method and the implementation of its hybridization with other techniques for a robust simulation of large scale radiation and scattering. The crucial treatment of local boundary conditions is carefully worked out in several stages in the book.

Sponsored by:
IEEE Antennas and Propagation Society.

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications

By John L. Volakis, Arindam Chatterjee, Leo C. Kempel

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications
By John L. Volakis, Arindam Chatterjee, Leo C. Kempel

Employed in a large number of commercial electromagnetic simulation packages, the finite element method is one of the most popular and well-established numerical techniques in engineering. This book covers the theory, development, implementation, and application of the finite element method and its hybrid versions to electromagnetics. FINITE ELEMENT METHOD FOR ELECTROMAGNETICS begins with a step-by-step textbook presentation of the finite method and its variations then goes on to provide up-to-date coverage of three dimensional formulations and modern applications to open and closed domain problems. Worked out examples are included to aid the reader with the fine features of the method and the implementation of its hybridization with other techniques for a robust simulation of large scale radiation and scattering. The crucial treatment of local boundary conditions is carefully worked out in several stages in the book.

Sponsored by:
IEEE Antennas and Propagation Society.

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel Bibliography

- Sales Rank: #3714643 in Books
- Brand: Brand: Wiley-IEEE Press
- Published on: 1998-06-15
- Released on: 1998-06-01
- Original language: English
- Number of items: 1
- Dimensions: 10.26" h x .94" w x 7.15" l, 1.37 pounds
- Binding: Paperback
- 368 pages

Editorial Review

From the Back Cover
Electrical Engineering Finite Element Method for Electromagnetics Antennas, Microwave Circuits, and Scattering Applications A volume in the IEEE/OUP Series on Electromagnetic Wave Theory Donald G. Dudley, Series Editor Employed in a large number of commercial electromagnetic simulation packages, the finite element method is one of the most popular and well-established numerical techniques in engineering. This book covers the theory, development, implementation, and application of the finite element method and its hybrid versions to electromagnetics. Finite Element Method for Electromagnetics begins with a step-by-step presentation of the finite element method and its variations, and then provides up-to-date coverage of three-dimensional formulations and modern applications to open- and closed-domain problems. Topics covered include:

- Galerkin’s and Ritz methods
- One- and two-dimensional theory and applications
- Three-dimensional development of the method using edge elements and applications
- Mesh truncation schemes
- Matlab sample codes
- Efficient implementation of the finite element method, sparse matrix storage schemes, popular iterative solvers, eigenvalue solutions
- Experiences on code porting to parallel computers

Integral algorithms for fast implementation of the boundary integral matrix-vector products. Written by experts who have extensive experience in both teaching and implementing this method to many applications, Finite Element Method for Electromagnetics a can be used as a textbook for first-year graduate students, as well as a handy reference for engineers and scientists interested in computational electromagnetics. About the IEEE/OUP Series on Electromagnetic Wave Theory Formerly the IEEE Press Series on Electromagnetic Waves, this joint series between IEEE Press and Oxford University Press offers outstanding coverage of the field, with new titles as well as reprintings and revisions of recognized classics that maintain long-term archival significance in electromagnetic waves and applications. Designed specifically for graduate students, practicing engineers, and researchers, this series provides affordable volumes that explore electromagnetic waves and applications beyond the undergraduate level.

About the Author
About the Authors John L. Volakis is professor at the Department of Electrical Engineering and Computer Science at the University of Michigan. He has published more than 140 refereed journal articles and more than 140 conference papers on numerical and analytical techniques in electromagnetics. Dr. Volakis is also coauthor of Approximate Boundary Conditions in Electromagnetics (IEE Press, 1995) and several book chapters.
Arindam Chaterjee has developed three-dimensional computer simulation of electromagnetic fields for scattering and microwave circuits, and is currently a member of the finite element development group for the HFSS finite element commercial package at Hewlett-Packard.
Leo C. Kempel developed three-dimensional antenna simulation packages using the finite element-boundary integral method and has extensive experience with all popular numerical techniques in electromagnetics. He is currently at Mission Research Corporation, Florida, conducting research and development on all aspects of electromagnetics.

Users Review

From reader reviews:

Armando Lemaire:

With other case, little persons like to read book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications. You can choose the best book if you love reading a book. As long as we know about how is important a new book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications. You can add knowledge and of course you can around the world with a book. Absolutely right, simply because from book you can learn everything! From your country till foreign or abroad you will be known. About simple factor until wonderful thing you can know that. In this era, we could open a book as well as searching by internet system. It is called e-book. You should use it when you feel bored stiff to go to the library. Let's examine.

James Fong:

The book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications can give more knowledge and information about everything you want. So why must we leave the good thing like a book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications? Wide variety you have a different opinion about publication. But one aim that book can give many data for us. It is absolutely appropriate. Right now, try to closer with your book. Knowledge or details that you take for that, it is possible to give for each other; it is possible to share all of these. Book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications has simple shape however you know: it has great and big function for you. You can appear the enormous world by open and read a reserve. So it is very wonderful.

Ada Peterson:

Book is to be different for each grade. Book for children until eventually adult are different content. As it is known to us that book is very important usually. The book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications was making you to know about other knowledge and of course you can take more information. It doesn't matter what advantages for you. The reserve Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications is not only giving you much more new information but also for being your friend when you experience bored. You can spend your personal spend time to read your publication. Try to make relationship with all the book Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications. You never feel lose out for everything in case you read some books.

Ida Acord:

The reason? Because this Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications is an unordinary book that the inside of the reserve waiting for you to snap the idea but latter it will zap you with the secret it inside. Reading this book adjacent to it was fantastic author who write the book in such awesome way makes the content inside easier to understand, entertaining means but

still convey the meaning thoroughly. So , it is good for you for not hesitating having this nowadays or you going to regret it. This amazing book will give you a lot of gains than the other book include such as help improving your proficiency and your critical thinking means. So , still want to hold up having that book? If I were you I will go to the reserve store hurriedly.

Read Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel for online ebook

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel books to read online.

Online Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel ebook PDF download

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel Doc

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel Mobipocket

Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel EPub

DF10BKE96XS: Finite Element Method Electromagnetics: Antennas, Microwave Circuits, and Scattering Applications By John L. Volakis, Arindam Chatterjee, Leo C. Kempel