Record Nr. UNINA9910778002503321 Autore Garg Ramesh <1945-> Titolo Analytical and computational methods in electromagnetics / / Ramesh Garg Pubbl/distr/stampa Boston [Mass.]:,: Artech House,, ©2008 [Piscatagay, New Jersey]:,: IEEE Xplore,, [2008] **ISBN** 1-59693-386-0 Descrizione fisica 1 online resource (550 p.) Collana Artech House electromagnetic analysis series Disciplina 621.30151 539.2 Soggetti Electromagnetic waves - Mathematics Electromagnetism - Mathematics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Analytical and Computational Methods in Electromagnetics; Contents: Preface; CHAPTER 1: Basic Principles of Electromagnetic Theory; CHAPTER 2: Analytical Methods and Orthogonal Functions; CHAPTER 3: Green's Function; CHAPTER 4: Contour Integration and Conformal Mapping; CHAPTER 5: Fourier Transform Method; CHAPTER 6: Introduction to Computational Methods; CHAPTER 7: Method of Finite Differences; CHAPTER 8: Finite-Difference Time-Domain Analysis; CHAPTER 9: Variational Methods; CHAPTER 10: Finite Element Method; **CHAPTER 11: Method of Moments** APPENDIX A: Solution Methods for the Set of Simultaneous EquationsAPPENDIX B: Evaluation of Singular Integrals; About the Author: Index Sommario/riassunto Achieve optimal microwave system performance by mastering the principles and methods underlying today's powerful computational tools and commercial software in electromagnetics. This authoritative resource offers you clear and complete explanation of this essential electromagnetics knowledge, providing you with the analytical background you need to understand such key approaches as MoM (method of moments), FDTD (Finite Difference Time Domain) and FEM (Finite Element Method), and Green's functions. This comprehensive

book includes all math necessary to master the material. Moreover, it features numerous solved problems that help ensure your understanding of key concepts throughout the book. To keep you from being bogged down with complex mathematical details (vector calculus) and coding, this comprehensive volume places emphasis on the analysis of the scalar wave equation in Cartesian coordinates. The book also includes multiple choice questions, appropriate for self study or courses, that help clarify concepts without any mathematical burden. Packed with over 1,300 equations, most of the problems presented in the book can be solved using nothing more than calculator. CD-ROM-Included! Includes time-saving Matlabª source code for the problems presented in the book which can be easily modified to help you solve similar problems in the field.