1. Record Nr. UNINA9910813795003321

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Titolo	The partial element equivalent circuit method for electro-magnetic and circuit problems : a paradigm for EM modeling / / Albert E. Ruehli, Giulio Antonini, Lijun Jiang
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, , 2016 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2017]
ISBN	1-119-07840-7 1-119-07839-3 1-119-07838-5
Descrizione fisica	1 online resource (436 pages)
Collana	Wiley - IEEE
Disciplina	621.301/51
Soggetti	Electric circuits - Mathematical models Electromagnetism - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
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Sommario/riassunto

This book provides intuitive solutions to electromagnetic problems by using the Partial Eelement Eequivalent Ccircuit (PEEC) method. This book begins with an introduction to circuit analysis techniques, laws, and frequency and time domain analyses. The authors also treat Maxwell's equations, capacitance computations, and inductance computations through the lens of the PEEC method. Next, readers learn to build PEEC models in various forms: equivalent circuit models, non orthogonal PEEC models, skin-effect models, PEEC models for dielectrics, incident and radiate field models, and scattering PEEC models. The book concludes by considering issues like such as stability and passivity, and includes five appendices some with formulas for partial elements. . Leads readers to the solution of a multitude of practical problems in the areas of signal and power integrity and electromagnetic interference. Contains fundamentals, applications, and examples of the PEEC method. Includes detailed mathematical derivations Circuit-Oriented Electromagnetic Modeling Using the PEEC Techniques is a reference for students, researchers, and developers who work on the physical layer modeling of IC interconnects and packaging, PCBs, and high-speed links.