Record Nr. UNINA9910788571703321 Autore Weiner Maurice Titolo Electromagnetic analysis using transmission line variables [[electronic resource] /] / Maurice Weiner Hackensack, N.J., : World Scientific, c2010 Pubbl/distr/stampa **ISBN** 1-283-14390-9 9786613143907 981-4287-49-0 Edizione [2nd ed.] Descrizione fisica 1 online resource (500 p.) Disciplina 530.141 621.34 Soggetti Electromagnetic fields - Mathematics Electromagnetic theory - Mathematics Electric lines Electromagnetic waves - Transmission Lingua di pubblicazione Inglese Materiale a stampa **Formato** Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Preface; CONTENTS; 1. INTRODUCTION TO TRANSMISSION LINES AND THEIR APPLICATION TO ELECTROMAGNETIC PHENOMENA; 2. NOTATION AND MAPPING OF PHYSICAL PROPERTIES; 3. SCATTERING EQUATIONS; 4. CORRECTIONS FOR PLANE WAVES AND GRID ANISOTROPY EFFECTS; 5. BOUNDARY CONDITIONS AND DISPERSION.: 6. CELL DISCHARGE PROPERTIES AND INTEGRATION OF TRANSPORT PHENOMENA INTO THE TRANSMISSION LINE MATRIX; 7. DESCRIPTION OF TLM ITERATION; 8. SPICE SOLUTIONS; Biography of Maurice Weiner; Index Sommario/riassunto This book employs a relatively new method for solving electromagnetic problems, one which makes use of a transmission line matrix (TLM). The propagation space is imagined to be filled with this matrix. The propagating fields and physical properties are then mapped onto the matrix. Mathematically, the procedures are identical with the traditional numerical methods; however, the interpretation and physical appeal of the transmission line matrix are far superior. Any change in the matrix has an immediate physical significance. What is also very important is

that the matrix becomes a launching pad