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Fields -- 7.2 Ideal Statistical Properties of Electric and Magnetic Fields -- 7.3 Probability Density Functions for the Fields -- 7.4 Spatial Correlation Functions of Fields and Energy Density -- 7.5 Antenna or Test-Object Response -- 7.6 Loss Mechanisms and Chamber Q -- 7.7 Reciprocity and Radiated Emissions -- 7.8 Boundary Fields -- 7.9 Enhanced Backscatter at the Transmitting Antenna -- Problems -- 8. Aperture Excitation of Electrically Large, Lossy Cavities -- 8.1 Aperture Excitation -- 8.2 Power Balance -- 8.3 Experimental Results for SE -- Problems -- 9. Extensions to the Uniform-Field Model -- 9.1 Frequency Stirring -- 9.2 Unstirred Energy -- 9.3 Alternative Probability Density Function -- Problems -- 10. Further Applications of Reverberation Chambers -- 10.1 Nested Chambers for Shielding Effectiveness Measurements. 10.2 Evaluation of Shielded Enclosures -- 10.3 Measurement of Antenna Efficiency -- 10.4 Measurement of Absorption Cross Section -- Problems -- 11. Indoor Wireless Propagation -- 11.1 General Considerations -- 11.2 Path Loss Models -- 11.3 Temporal Characteristics -- 11.4 Angle of Arrival -- 11.5 Reverberation Chamber Simulation -- Problems -- APPENDIX A. VECTOR ANALYSIS -- APPENDIX B. ASSOCIATED LEGENDRE FUNCTIONS -- APPENDIX C. SPHERICAL BESSEL FUNCTIONS -- APPENDIX D. THE ROLE OF CHAOS IN CAVITY FIELDS -- APPENDIX E. SHORT ELECTRIC DIPOLE RESPONSE -- APPENDIX F. SMALL LOOP ANTENNA RESPONSE -- APPENDIX G. RAY THEORY FOR CHAMBER ANALYSIS -- APPENDIX H. ABSORPTION BY A HOMOGENEOUS SPHERE -- APPENDIX I. TRANSMISSION CROSS SECTION OF A SMALL CIRCULAR APERTURE -- APPENDIX J. SCALING -- REFERENCES -- INDEX.

Sommario/riassunto

A thorough and rigorous analysis of electromagnetic fields in cavities. This book offers a comprehensive analysis of electromagnetic fields in cavities of general shapes and properties. Part One covers classical deterministic methods to conclude resonant frequencies, modal fields, and cavity losses; quality factor; mode bandwidth; and the excitation of cavity fields from arbitrary current distributions for metal-wall cavities of simple shape. Part Two covers modern statistical methods to analyze electrically large cavities of complex shapes and properties. Electr

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