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2.5 The Selectivity of Wireless Channels; 2.5.1 Frequency Selectivity; 2.5.2 Spatial Selectivity; 2.5.3 Time Selectivity; 2.5.4 Summary of Channel Characteristics; 2.6 Physical Models of Wireless Systems; 2.6.1 Time-Flat Frequency-Flat (TF/FF) Channels; 2.6.2 Time-Varying Frequency-Flat (TV/FF) Channels; 2.6.3 Time-Flat Frequency-Varying (TF/FV) Channels; 2.6.4 Receiver-Space-Varying Frequency-Flat (RSV/FF) Channels; 2.6.5 Transmitter-Receiver Space-Varying Frequency-Flat (TRSV/FF) Channels; 2.6.6 Paradigms for Wireless Communication; 2.7 Modern Wireless Communication; 2.7.1 Capacity of the SISO Channel; 2.7.2 Capacity of the SISO Varying Channel; 2.7.3 Capacity of the RSV/TF/FF Channel; 2.7.4 MIMO Capacity; 2.8 Conclusion; References; Chapter 3 Handset Communication Antennas, Including Human Interactions; 3.1 Introduction; 3.1.1 Mobile Communication Systems; 3.1.2 Antenna Designs for Handsets; 3.1.3 Interaction with the Human; 3.1.4 Objectives of this Chapter; 3.2 Overview of Popular Handset Antennas; 3.2.1 RF System Introduction; 3.2.2 External Antennas; 3.2.3 Internal Antennas; 3.2.4 Non-Cellular Antennas; 3.2.5 Key Electrical Parameters in Handset Antenna Designs; 3.3 Integration of Multiple Antennas; 3.3.1 Dual-Band PIFA Design; 3.3.2 PIFA and Whip Antenna Combination; 3.3.3 PIFA and GPS IFA Combination; 3.4 Human Interaction in Handset Antenna Design; 3.4.1 Human Head Effect on Handset Antennas; 3.4.2 SAR Consideration in Handset Antenna Designs; 3.4.3 SAR Reduction with a GPS IFA; 3.5 Total Radiated Power (TRP); 3.5.1 Definition of TRP; 3.5.2 PIFA Models in the 1900MHz Band; 3.5.3 SAR and TRP; 3.6 Conclusion; References; Chapter 4 Wireless Channel Model; 4.1 Introduction; 4.1.1 The Deterministic Approach; 4.1.2 The Stochastic Approach; 4.2 The Deterministic Geometrical Model (DGM); 4.2.1 Input Data; 4.2.2 Output Data; 4.2.3 Rays Propagation, Reflection, and Diffraction; 4.2.4 Results; 4.3 The Stochastic Environment Model; 4.3.1 The Large-Scatterers Model (SELM); 4.3.2 The Small-Scatterers Model (SESM)

Sommario/riassunto

Awarded by the International Calabria's Prize! This multidisciplinary volume originates from lectures presented at a short course on wireless communications in Capri, Italy. This globally attended conference has produced an exceptional book written by pioneers in the field. Lecturers at Capri included pillars in the fields of electromagnetics, communications, information technology and mathematics. As communications technology becomes increasingly wireless, an interdisciplinary viewpoint is necessary for professionals to correct problems and avoid others before they occur.<br