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Nota di contenuto	Mobile Communications Design Fundamentals; CONTENTS; Preface; Acknowledgments; Chapter 1 The Mobile Radio Environment; 1.1 Representation of a Mobile Radio Signal; 1.1.1 Description of a Mobile Radio Environment; 1.1.2 Field-Strength Representation; 1.1.3 Mobile Radio Signal Representation; 1.2 Causes of Propagation Path Loss; 1.3 Causes of Fading; 1.3.1 Long-Term Fading, m(t) or m(x); 1.3.2 Short-Term Fading, r0(t) or r0(x); 1.3.3 Classification of Channels; 1.3.4 Effects of Weather; 1.4 Reciprocity Principle; 1.5 Definitions of Necessary Terms and Their Applications; 1.5.1 Averages 1.5.2 Probability Density Function (pdf)1.5.3 Cumulative Probability Distribution (CPD); 1.5.4 Level-Crossing Rate (ler) and Average Duration of Fades (adf); 1.5.5 Correlation and Power Spectrum; 1.5.6 Delay Spread, Coherence Bandwidth, Intersymbol Interference; 1.5.7 Confidence Interval; 1.5.8 False-Alarm Rate and Word-Error Rate; References; Problems; Chapter 2 Prediction of Propagation Loss; 2.1 The Philosophy behind the Prediction of Propagation Loss; 2.2 Obtaining Meaningful Propagation-Loss Data from Measurements; 2.2.1 Determining the Length L 2.2.2 Determining the Number of Sample Points Required over 402.

2.3 Mobile Path and Radio Path; 2.3 Prediction over Flat Terrain; 2.3.1 Finding the Reflection Point on a Terrain; 2.3.2 Classification of Terrain Roughness; 2.3.3 The Reflection Coefficient of the Ground Wave; 2.3.4 Models for Predicting Propagation Path Loss; 2.3.5 A Theoretical Model for Path Loss; 2.3.6 An Area-to-Area Path-Loss Prediction Model; 2.3.7 The Model of Okumura et al.; 2.3.8 A General Path-Loss Formula over Different Environments; 2.4 Point-to-Point Prediction (Path-Loss Prediction over Hilly Terrain)
2.4.1 Point-to-Point Prediction under Nonobstructive Conditions2.4.2 Point-to-Point Prediction under Obstructive Conditions-Shadow Loss; 2.5 Other Factors; 2.5.1 Foliage Effects; 2.5.2 Street Orientation Channel Effect; 2.5.3 The Tunnel and Underpass Effects; 2.6 The Merit of Point-to-Point Prediction; 2.7 Microcell Prediction Model; References; Problems; Chapter 3 Calculation of Fades and Methods of Reducing Fades; 3.1 Amplitude Fades; 3.1.1 Level-Crossing Rates; 3.1.2 Average Duration of Fades; 3.1.3 Distribution of Duration of Fades
3.1.4 Envelope Correlation between Two Closely Spaced Antennas at the Mobile Unit3.1.5 Power Spectrum; 3.2 Random PM and Random FM; 3.2.1 Random Phase r(t); 3.2.2 Random FMr(t); 3.3 Selective Fading and Selective Random FM; 3.3.1 Selective Fading; 3.3.2 Selective Random FM; 3.4 Diversity Schemes; 3.4.1 Macroscopic Diversity (Apply on Separated Antenna Sites); 3.4.2 Microscopic Diversity (Apply on Co-located Antenna Site); 3.5 Combining Techniques; 3.5.1 Combining Techniques on Diversity Schemes; 3.5.2 Combining Techniques for Reducing Random Phase
3.6 Bit-Error Rate and Word-Error Rate in Fading Environment

Sommario/riassunto

Revised and enlarged version that discusses how to design a mobile communications system. Comprehensively examines the mobile radio environment. Covers prediction of propagation loss, calculation and methods of reducing fades, interference, frequency plans and associated schemes, design parameters, signaling and channel access, cellular CDMA, microcell systems, and miscellaneous related systems. Contains chapter-by-chapter references and problems.