

# New Directions In Wireless Communications Research

[DOWNLOAD HERE](#)

1;Preface;6 2;Contents;8 3;Measurement and Modeling of Wireless Channels ;25 3.1;David G. Michelson and Saeed S. Ghassemzadeh;25 3.1.1;Introduction;25 3.1.2;A Brief History;27 3.1.3;Characterization of Wireless Channels;28 3.1.4;Development of New Channel Models;33 3.1.5;Measurement of Wireless Channels;35 3.1.6;Recent Advances in Channel Modeling;37 3.1.6.1;Channel Models for Ultrawideband Wireless Systems;37 3.1.6.2;Channel Models for MIMO-Based Wireless Systems;40 3.1.6.3;Channel Models for Body Area Networks;42 3.1.6.4;Channel Models for Short-Range Vehicular Networks;44 3.1.6.5;Channel Models for 60GHz and Terahertz Systems;46 3.1.7;Conclusions;48 3.1.8;References;49 4;OFDM: Principles and Challenges ;52 4.1;Nicola Marchetti, Muhammad Imadur Rahman, Sanjay Kumar, and Ramjee Prasad;52 4.1.1;Introduction;52 4.1.2;History and Development of OFDM;53 4.1.3;The Benefit of Using Multi-carrier Transmission;54 4.1.4;OFDM Transceiver Systems;57 4.1.5;Analytical Model of OFDM System;58 4.1.5.1;Transmitter;58 4.1.5.2;Channel;60 4.1.5.3;Receiver;61 4.1.5.4;Sampling;64 4.1.6;Advantages of OFDM System;65 4.1.6.1;Combating ISI and Reducing ICI;65 4.1.6.2;Spectral Efficiency;66 4.1.6.3;Some Other Benefits of OFDM System;67 4.1.7;Disadvantages of OFDM System;68 4.1.7.1;Strict Synchronization Requirement;68 4.1.7.2;Peak-to-Average Power Ratio (PAPR);68 4.1.7.3;Co-channel Interference in Cellular OFDM;69 4.1.8;OFDM System Design Issues;69 4.1.8.1;OFDM System Design Requirements;69 4.1.8.2;OFDM System Design Parameters;70 4.1.9;Multi-carrier Based Access Techniques;72 4.1.9.1;Definition of Basic Schemes;72 4.1.10;Single-Carrier vs Multi-carrier, TDE vs FDE;75 4.1.10.1;Single-Carrier FDE;75 4.1.10.2;Single-Carrier vs Multi-carrier, FDE vs TDE;77 4.1.10.3;Analogies and Differences Between OFDM and SCFDE;77 4.1.10.4;Interoperability of SCFDE and OFDM;79 4.1.11;OFDMA: An Example of Future Applications;81 4.1.12;Conclusions;83 4.1.13;References;84 5;Recent Advances in Low-Correlation Sequences ;86 5.1;Gagan Garg, Tor Hellesteth, and P. Vijay Kumar;86 5.1.1;Introduction;86 5.1.2;Cyclic Hadamard Difference Sets;87 5.1.2.1;Introduction;87 5.1.3;The Merit Factor of Binary Sequences;94 5.1.3.1;Introduction;94 5.1.4;Low-Correlation QAM Sequences;99 5.1.4.1;Preliminaries;100 5.1.4.2;Quaternary Family A;101 5.1.4.3;Canonical 16-QAM Family CQ;101

5.1.4.4;Extensions and Improvements;103 5.1.4.5;Example: Generation of a 16-QAM Sequence;106  
5.1.5;Low-Correlation Zone Sequences;107 5.1.6;Additional Notes;109 5.1.6.1;Merit Factor;109  
5.1.6.2;QAM Sequences;110 5.1.6.3;Low-Correlation Zone Sequences;110 5.1.7;Conclusions;111  
5.1.8;References;111 6;Resource Allocation in Wireless Systems ;116 6.1;Jon W. Mark and Lian  
Zhao;116 6.1.1;Introduction;116 6.1.2;System Model;118 6.1.3;The Inverse of S;122 6.1.4;Convergence  
of Power Distribution Law;123 6.1.4.1;With Zero Disturbance;123 6.1.4.2;With Nonzero Disturbance;125  
6.1.4.3;With Power Constraints;126 6.1.4.4;Capacity Analysis;128 6.1.5;Optimal Data Rate Allocation;129  
6.1.5.1;Assumptions;129 6.1.5.2;Optimal Spreading Factor (OSF) Selection;130 6.1.5.3;Rate Selection  
for GRP;130 6.1.6;Joint Rate and Power Adaptation;131 6.1.6.1;OSF-PC;131 6.1.6.2;GRP-PC;132  
6.1.7;Numerical Results;134 6.1.8;Conclusions;138 6.1.9;References;139 7;Iterative Receivers and Their  
Graphical Models ;141 7.1;Ezio Biglieri;141 7.1.1;Introduction;141 7.1.2;MAP Symbol Detection;141  
7.1.2.1;Factor Graphs and the Sum--Product Algorithm;143 7.1.2.2;The Basic Factorization;145  
7.1.3;Channel and Codes: A Menagerie of Factor Graphs;146 7.1.3.1;Modeling the Channel;146  
7.1.3.2;Modeling the Code;148 7.1.4;Equalization;149 7.1.5;Multiuser Detection;152 7.1.6;MIMO  
Detection;153 7.1.7;Multilevel Coded Modulation;155 7.1.8;Convergence of the Iterative Algorithm;155  
7.1.9;Conclusions;157 7.1.10;References;158 8;Fundamentals of Multi-user MIMO Communicatio  
EAN/ISBN : 9781441906731 Publisher(s): Springer, Berlin, Springer US Discussed keywords: OFDM  
Format: ePub/PDF Author(s): Tarokh, Vahid

[DOWNLOAD HERE](#)

### Similar manuals:

[New Directions In Wireless Communications Research](#)

[Selective Mapping Technique For PAPR Reduction In LTE-OFDM Systems](#)

[MIMO-OFDM Wireless Communications With MATLAB](#)

[Avoiding Effects Of OFDM Adjacent Channel Interference By Using Combinations Of Modulation Schemes](#)

[MIMO-OFDM For LTE, WiFi And WiMAX](#)

[OFDM Baseband Receiver Design For Wireless Communications](#)

[Baseband Receiver Design For Wireless MIMO-OFDM Communications](#)

[OFDM And MC-CDMA](#)

[Theory And Applications Of OFDM And CDMA](#)

[LTE For UMTS - OFDMA And SC-FDMA Based Radio Access](#)