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Mounir Hamdi) -- 4.1 Introduction -- 4.2 WiMAX Physical and MAC Layer Description -- 4.3 Research Issues on the MIMO-based Rate Adaptation Algorithms -- 4.4 Constructing a Practical Rate Adaptation Simulation Model for MIMO-based WiMAX Systems -- 4.5 Conclusion -- References -- 5 Phase Noise Estimation in OFDMA Uplink Communications (Yi-Ching Liao, Chung-Kei Yu, I-Hsueh Lin and Kwang-Cheng Chen) -- 5.1 Introduction -- 5.2 Modeling of Phase Noise -- 5.3 Phase Noise in OFDM -- 5.4 Phase Noise in OFDMA -- 5.5 Conclusion -- References -- Part Two Medium Access Control and Network Architecture -- 6 Optimizing WiMAX MAC Layer Operations to Enhance Application End-to-End Performance (Xiangying Yang, Muthaiah Venkatachalam, and Mohanty Shantidev) -- 6.1 Introduction -- 6.2 Overview of WiMAX MAC features -- 6.3 Asymmetric Link Adaptation for TCP -- 6.4 Service-Class Specific Scheduling -- 6.5 Simulations -- 6.6 Other MAC Layer Optimization Techniques -- 6.7 Conclusion -- References 108 -- 7 A Novel Algorithm for Efficient Paging in Mobile WiMAX (Mohanty Shantidev, Muthaiah Venkatachalam, and Xiangying Yang). 7.1 Introduction -- 7.2 Overview of Idle Mode and Paging Operation in Mobile WiMAX Networks -- 7.3 Proposed Paging Algorithm for Mobile WiMAX Networks -- 7.4 Performance Evaluation -- 7.5 Conclusion -- References -- 8 All-IP Network Architecture for Mobile WiMAX (Nat Natarajan, Prakash Iyer, Muthaiah Venkatachalam, Anand Bedekar, and Eren Gonen) -- 8.1 Introduction -- 8.2 WiMAX Network Architecture Principles -- 8.3 Network Architecture -- 8.4 MS Session Control Procedures -- 8.5 Mobility Management -- 8.6 QoS and Policy Architecture -- 8.7 Network Discovery and Selection -- 8.8 Network Interoperability -- 8.9 Conclusion -- References -- Part Three Multi-hop Relay Networks -- 9 Aggregation and Tunneling in IEEE 802.16j Multi-hop Relay Networks (Zhifeng Tao, Koon Hoo Teo, and Jinyun Zhang) -- 9.1 Introduction -- 9.2 Background and Motivation -- 9.3 Tunneling and Aggregation -- 9.4 Performance Evaluation -- 9.5 Conclusion -- References -- 10 Resource Scheduling with Directional Antennas for Multi-hop Relay Networks in a Manhattan-like Environment (Shiang-Jiun Lin, Wern-Ho Sheen, I-Kang Fu, and Chia-Chi Huang) -- 10.1 Introduction -- 10.2 System Setup and Propagation Models -- 10.3 Resource Scheduling Methods -- 10.4 Numerical Results -- 10.5 Conclusion -- References -- 11 Efficient Radio Resource Deployment for Mobile WiMAX with Multi-hop Relays (Yong Sun, Yan Q. Bian, Andrew R. Nix, and Joseph P. McGeehan) -- 11.1 Introduction -- 11.2 System Performance and Enhancement -- 11.3 Effective Efficiency of Multi-hop Relaying -- 11.4 Relay Efficiency without Radio Resource Sharing -- 11.5 Relay Efficiency with Radio Resource Sharing -- 11.6 Directional Distributed Relay Architecture -- 11.7 Case Study of Radio Resource Sharing -- 11.8 Conclusion -- References -- 12 Dimensioning Cellular Multi-hop WiMAX Networks (Christian Hoymann and Stephan Gobbels) -- 12.1 Dimensioning Cellular 802.16 Networks -- 12.2 Dimensioning Cellular Multi-hop 802.16 Networks -- References. Part Four Multimedia Applications, Services, and Deployment -- 13 Cross-Layer End-to-End QoS for Scalable Video over Mobile WiMAX (Jenq-Neng Hwang, Chih-Wei Huang, and Chih-Wei Chang) -- 13.1 Introduction -- 13.2 Critical End-System Techniques -- 13.3 Mobile WiMAX QoS Provisioning -- 13.4 The Integrated Cross-Layer System -- 13.5 Conclusion -- References -- 14 WiBro - A 2.3 GHz Mobile WiMAX: System Design, Network Deployment, and Services (Hyunpyo Kim, Jaekon Lee, and Byeong Gi Lee)

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Sommario/riassunto

The first book to cover one of the hottest subjects in wireless communications today, Mobile WiMAX. Summarises the fundamental theory and practice of Mobile WiMAX. Presents topics at introductory level for readers interested in understanding communication and networking knowledge for Mobile WiMAX, whilst addressing advanced / specialised subjects related to Mobile WiMAX. Contains the latest advances and research from the field and shares knowledge from the key players working in this area Chapter 1 updates Mobile WiMAX status and standards; Chapters 2-6 are related to physical layer transmission; Chapters 7-12 deal with MAC and networking issues; Chapters 13-14 discuss relay networks for mobile WiMAX; and Chapters 15-19 present multimedia networking for mobile WiMAX and application scenarios. Ideal for Mobile WiMAX R&D/practicing engineers (systems, applications and services, field, terminal, IC design, integration), business development professionals, academic researchers. Graduate students conducting research and graduate students studying in mobile WiMAX and next generation wireless communications. Undergraduate students studying mobile WiMAX related subjects.
