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A Low-complexity Tentative Decision Interference Suppression Scheme for Multi-band OFDM
The Journal of the Acoustical Society of America
Wireless Communication Signals
Quality of Service and Resource Allocation in WiMAX
Interference Mitigation for Multi-band OFDM Using Diversity Combining and Erasure Based Methods
Transactions on Engineering Technologies
OFDM and MC-CDMA
Precoding Techniques for Digital Communication Systems
Problem-Based Learning in Communication Systems Using MATLAB and Simulink
Wireless Communications
5G NR Modelling in MATLAB
Proceedings, RAWCON 98
Radio Protocols for LTE and LTE-Advanced

New Developments in High-Pressure Mineral Physics and Applications to the Earth's Interior
LTE Advanced Pro
Multicarrier Techniques for 4G Mobile Communications
Digital Audio Broadcasting
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DASHAWN HESTER

A Low-complexity Tentative Decision Interference Suppression Scheme for Multi-band OFDM

John Wiley & Sons
MIMO-OFDM for LTE, WIFI and WIMAX: Coherent versus Non-Coherent and Cooperative Turbo-Transceivers provides an up-to-date portrayal of wireless transmission based on OFDM techniques augmented with Space-Time Block Codes (STBCs) and Spatial-Division Multiple Access (SDMA). The volume also offers an in-depth treatment of cutting-edge Cooperative Communications. This monograph collates the

latest techniques in a number of specific design areas of turbo-detected MIMO-OFDM wireless systems. As a result a wide range of topical subjects are examined, including channel coding and multiuser detection (MUD), with a special emphasis on optimum maximum-likelihood (ML) MUDs, reduced-complexity genetic algorithm aided near-ML MUDs and sphere detection. The benefits of spreading codes as well as joint iterative channel and data estimation are only a few of the radical new features of the book. Also considered are the benefits of turbo and LDPC channel coding, the entire suite of known joint coding and modulation schemes, space-time coding as well as SDM/SDMA MIMOs within the context of various application examples. The book systematically converts the lessons of Shannon's information theory into design principles applicable to practical wireless systems; the depth of discussions increases towards the end of the book. Discusses many state-of-the-art topics important to today's wireless communications engineers. Includes numerous complete system design examples for the industrial practitioner. Offers a detailed portrayal of sphere detection. Based on over twenty years of research into OFDM in the context of various applications, subsequently presenting comprehensive bibliographies.

The Journal of the

Acoustical Society of America BoD – Books on Demand
Eine vielversprechende Technologie zur Maximierung der Bandbreiteneffizienz in der breitbandigen drahtlosen Kommunikation ist die Raum-Zeit-Kodierung. Theorie und Praxis verbindend, ist dieses Buch die erste umfassende Diskussion von Grundlagen und designorientierten Aspekten von Raum-Zeit-Codes. Single-Carrier und Multi-Carrier-Übertragungen für Einzel- und Mehrnutzerkommunikation werden behandelt.
Wireless Communication Signals John Wiley & Sons
This textbook takes a unified view of the fundamentals of wireless communication and explains cutting-edge concepts in a simple and intuitive way. An abundant supply of exercises make it ideal for graduate courses in electrical and computer engineering and it will also be of great interest to practising engineers.

Quality of Service and Resource Allocation in WiMAX Springer Science & Business Media
During the past two decades, many communication techniques have been developed to achieve various goals such as higher data rate, more robust link quality,andmoreusercapacityinmorerigorouschannelconditions.Themost well known are, for instance, CDMA, OFDM, MIMO, multiuser OFDM, and UWB systems.All these systems havetheir ownunique

superioritywhile they also induce other drawbacks that limit the system performance.
Conventional way to overcome the drawback is to impose most of the computational e?ort in the receiver side and let the transmitter design much simpler than receiver. The fact is that, however, by leveraging reasonable computational e?ort to the transmitter, the receiver design can be greatly simpli?ed. For instance, multiaccess interference (MAI) has long been considered to limit the perf- mance of multiuser systems. Popular solutions to mitigate MAI issue include multiuser detection (MUD) or sophisticated signal processing for interference cancellation such as PIC or SIC. However, those solutions impose great b- den in the receiver. In this case, precoding o?er good solutions to achieve simple transceiver designs as we will mention later in this book. This book is intended to provide a comprehensive review of precoding techniques for digital communications systems from a signal processing p- spective. The variety of selected precoding techniques and their applications makes this book quite di?erent from other texts about precoding techniques in digital communication engineering.
Interference Mitigation for Multi-band OFDM Using Diversity Combining and Erasure Based Methods
Cambridge University Press
Digital Audio Broadcasting revised with the latest

standards and updates of all new developments The new digital broadcast system family is very different from existing conventional broadcast systems. It is standardised in a large number of documents (from ITU-R, ISO/IEC, ETSI, EBU, and others) which are often difficult to read. This book offers a comprehensive and fully updated overview of Digital Audio Broadcasting (DAB, DAB+) and Digital Multimedia Broadcasting (DMB), and related services and applications. Furthermore, the authors continue to build upon the topics of the previous editions, including audio coding, data services, receiver techniques, frequencies, and many others. There are several new sections in the book, which would be otherwise difficult to locate from various sources. Key Features: The contents have been significantly updated from the second edition, including up-to-date coverage of the latest standards Contains a new chapter on Digital Multimedia Broadcasting "Must-have" handbook for engineers, developers and other professionals in the field This book will be of interest to planning and system engineers, developers for professional and domestic equipment manufacturers, service providers, postgraduate students and lecturers in communications technology. Broadcasting engineers in related fields will also find this book insightful.

Transactions on Engineering Technologies

John Wiley & Sons

Mobile Broadband Multimedia Networks: Techniques, Models and Tools for 4G provides the main results of the prestigious and well known European COST 273 research project on the development of next generation mobile and wireless communication systems. Based on the applied research of over 350 participants in academia and industry, this book focuses on the radio aspects of mobile and wireless broadband multimedia communications, by exploring and developing new methods, models, techniques, strategies and tools towards the implementation of 4th generation mobile and wireless communication systems. This complete reference includes topics ranging from transmission and signal processing techniques to antennas and diversity, ultra wide band, MIMO and reference scenarios for radio network simulation and evaluation. This book will be an ideal source of the latest developments in mobile multimedia broadband technologies for researchers, R&D engineers, graduates and engineers in industry implementing simulation models and conducting measurements. Based on the well known and respected research of the COST 273 project ‘Towards Mobile Broadband Multimedia Networks', whose previous models have been adopted by standardisation bodies such as ITU, ETSI and 3GPP Gives methods, techniques, models and tools for developing 4th

generation mobile and wireless communication systems Includes the latest development of key technologies and methods such as MIMO systems, ultra wide-band and OFDM

OFDM and MC-CDMA IOS Press

Radio broadcast engineers seeking to design and operate HD Radio(TM) transmission systems will benefit from the detailed exposition of the technology. The book lays out the entire structure of this digital transmission system. System equations are presented in a manner that is useful to those interested in them, while retaining a clear narrative for those who seek a general understanding of how the technology works. The book also presents a summary of the history of the technology and the NRSC-5 standard, as well as forward-looking information on emerging technologies and applications.

Precoding Techniques for Digital Communication Systems Springer Science & Business Media

Recent developments in the fields of intelligent computing and communication have paved the way for the handling of current and upcoming problems and brought about significant technological advancements. This book presents the proceedings of IConIC 2021, the 4th International Conference on Intelligent Computing, held on 26 and 27 March 2021 in Chennai, India. The principle objective of the annual IConIC

conference is to provide an international scientific forum where participants can exchange innovative ideas in relevant fields and interact in depth through discussion with their peer group. The theme of the 2021 conference and this book is ‘Smart Intelligent Computing and Communication Technology’, and the 109 papers included here focus on the technological innovations and trendsetting initiatives in medicine, industry, education and security that are improving and optimizing business and technical processes and enabling inclusive growth. The papers are grouped under 2 headings: Evolution of Computing Intelligence; and Computing and Communication, and cover a broad range of intelligent-computing research and applications. The book provides an overview of the cutting-edge developments and emerging areas of study in the technological fields of intelligent computing, and will be of interest to researchers and practitioners from both academia and industry.

Problem-Based Learning in Communication Systems Using MATLAB and Simulink Springer

A practical guide to LTE design, test and measurement, this new edition has been updated to include the latest developments This book presents the latest details on LTE from a practical and technical perspective. Written by Agilent’s measurement experts, it offers a valuable insight

into LTE technology and its design and test challenges. Chapters cover the upper layer signaling and system architecture evolution (SAE). Basic concepts such as MIMO and SC-FDMA, the new uplink modulation scheme, are introduced and explained, and the authors look into the challenges of verifying the designs of the receivers, transmitters and protocols of LTE systems. The latest information on RF and signaling conformance testing is delivered by authors participating in the LTE 3GPP standards committees. This second edition has been considerably revised to reflect the most recent developments of the technologies and standards. Particularly important updates include an increased focus on LTE-Advanced as well as the latest testing specifications. Fully updated to include the latest information on LTE 3GPP standards Chapters on conformance testing have been majorly revised and there is an increased focus on LTE-Advanced Includes new sections on testing challenges as well as over the air MIMO testing, protocol testing and the most up-to-date test capabilities of instruments Written from both a technical and practical point of view by leading experts in the field

Wireless Communications

John Wiley & Sons

The 7th International Workshop on Multi-Carrier Systems and Solutions was held in May 2009. In providing the proceedings of that conference, this

book offers comprehensive, state-of-the-art articles about multi-carrier techniques and systems.

5G NR Modelling in MATLAB John Wiley & Sons

Designed to help teach and understand communication systems using a classroom-tested, active learning approach. Discusses communication concepts and algorithms, which are explained using simulation projects, accompanied by MATLAB and Simulink Provides step-by-step code exercises and instructions to implement execution sequences Includes a companion website that has MATLAB and Simulink model samples and templates (password: matlab)

Proceedings, RAWCON 98 Cambridge University Press

With the growing complexity of personal mobile communication systems demanding higher data-rates and high levels of integration using low-cost CMOS technology, overall system performance has become more sensitive to RF analog front-end impairments. Designing integrated transceivers requires a thorough understanding of the whole transceiver chain including RF analog front-end and digital baseband. Communication system engineers have to include RF analog imperfections in their simulation benches in order to study and quantify their impact on the system performance. Here the author explores key RF analog impairments in a transceiver and

demonstrates how to model their impact from a communication system design view-point. He discusses the design aspects of the front end of transceivers (both receivers and transmitters) and provides the reader with a way to optimize a complex mixed-signal platform by taking into account the characteristics of the RF/analog front-end. Key features of this book include: Practical examples illustrated by system simulation results based on WiFi and mobile WiMAX OFDM transceivers An overview of the digital estimation and compensation of the RF analog impairments such as power amplifier distortion, quadrature imbalance, and carrier and sampling frequency offsets An exposition of the challenges involved in the design of both RF analog circuits and DSP communication circuits in deep submicron CMOS technology MATLAB® codes for RF analog impairments models hosted on the companion website Uniquely the book bridges the gap between RFIC design specification needs and communication systems simulation, offering readers RF analog impairments modeling knowledge and a comprehensive approach to unifying theory and practice in system modelling. It is of great value to communication systems and DSP engineers and graduate students who design communication processing engines, RF/analog systems and IC design engineers involved in the design of

communication platforms. Radio Protocols for LTE and LTE-Advanced John Wiley & Sons
Wireless communications has witnessed a tremendous growth during the past decade and further spectacular enabling technology advances are expected in an effort to render ubiquitous wireless connectivity a reality. Currently, a technical in-depth book on this subject is unavailable, which has a similar detailed exposure of OFDM, MIMO-OFDM and MC-CDMA. A further attraction of the joint treatment of these topics is that it allows the reader to view their design trade-offs in a comparative context. Divided into three main parts: Part I provides a detailed exposure of OFDM designed for employment in various applications Part II is another design alternative applicable in the context of OFDM systems where the channel quality fluctuations observed are averaged out with the aid of frequency-domain spreading codes, which leads to the concept of MC-CDMA Part III discusses how to employ multiple antennas at the base station for the sake of supporting multiple users in the uplink By providing an all-encompassing self-contained treatment this volume will appeal to a wide readership, as it is both an easy-reading textbook and a high-level research monograph. New Developments in High-Pressure Mineral Physics and Applications to the Earth's Interior John Wiley & Sons

5G NR: The Next Generation Wireless Access Technology follows the authors' highly celebrated books on 3G and 4G by providing a new level of insight into 5G NR. After an initial discussion of the background to 5G, including requirements, spectrum aspects and the standardization timeline, all technology features of the first phase of NR are described in detail. Included is a detailed description of the NR physical-layer structure and higher-layer protocols, RF and spectrum aspects and co-existence and interworking with LTE. The book provides a good understanding of NR and the different NR technology components, giving insight into why a certain solution was selected. Content includes: Key radio-related requirements of NR, design principles, technical features Details of basic NR transmission structure, showing where it has been inherited from LTE and where it deviates from it, and the reasons why NR Multi-antenna transmission functionality Detailed description of the signals and functionality of the initial NR access, including signals for synchronization and system information, random access and paging LTE/NR co-existence in the same spectrum, the benefits of their interworking as one system The different aspects of mobility in NR RF requirements for NR will be described both for BS and UE, both for the legacy bands and for the new mm-wave bands

Gives a concise and accessible explanation of the underlying technology and standards for 5G NR radio-access technology Provides detailed description of the NR physical-layer structure and higher-layer protocols, RF and spectrum aspects and co-existence and interworking with LTE Gives insight not only into the details of the NR specification but also an understanding of why certain solutions look like they do

LTE Advanced Pro CRC Press

This book presents LTE evolution towards 5G mobile communication and the emergence of new requirements for MBB, MTC and LLC services. As LTE technologies evolve, LTE Advanced Pro dramatically increases cell capacity and user data rates for the MBB unicast service. Such requirements are obtained using full-dimension MIMO, carrier aggregation (on either licensed or unlicensed frequency bands) and dual connectivity. To improve the efficiency of same-content delivery to multiple users, 3GPP proposes a group communications service over LTE and defines mission critical push-to-talk (MCPTT) for dedicated public safety services. Complementary low-cost and low-power modems with enhanced coverage and massive connectivity are emerging. Thus, this book also discusses the need for LTE to support low-rate transmission and high-latency communication for MTC

services. *Multicarrier Techniques for 4G Mobile Communications* John Wiley & Sons Geophysical measurements, such as the lateral variations in seismic wave velocities that are imaged by seismic tomography, provide the strongest constraints on the structure of the Earth's deep interior. In order to interpret such measurements in terms of mineralogical/compositional models of the Earth's interior, data on the physical and chemical properties of minerals at high pressures and temperatures are essential. Knowledge of thermodynamics, phase equilibria, crystal chemistry, crystallography, rheology, diffusion and heat transport are required to characterize the structure and dynamics of the Earth's deep interior as well as the processes by which the Earth originally differentiated. Many experimental studies have been made possible only by a range of technical developments in the quest to achieve high pressures and temperatures in the laboratory. At the same time, analytical methods, including X-ray diffraction, a variety of spectroscopic techniques, electron microscopy, ultrasonic interferometry, and methods for rheological investigations have been developed and greatly improved. In recent years, major progress has been made also in the field of computational mineralogy whereby ab initio simulations are used to

investigate the structural and dynamical properties of condensed matter at an atomistic level. This volume contains a broad range of contributions that typify and summarize recent progress in the areas of high-pressure mineral physics as well as associated technical developments.

Digital Audio Broadcasting Artech House

Thorough description of the theory, applications and design methods of wavelets in communications systems.

LTE and the Evolution to 4G Wireless John Wiley & Sons

Although the information and communication technology (ICT) industry accounted for only 2 percent of global greenhouse gas emissions in 2007, the explosive increase in data traffic brought about by a rapidly growing user base of more than a billion wireless subscribers is expected to nearly double that number by 2020. It is clear that now is the time to rethink how we design and build our networks. Green Networking and Communications: ICT for Sustainability brings together leading academic and industrial researchers from around the world to discuss emerging developments in energy-efficient networking and communications. It covers the spectrum of research subjects, including methodologies and architectures for energy efficiency, energy-efficient protocols and networks, energy management, smart grid communications, and communication

technologies for green solutions. Examines foraging-inspired radio-communication energy management for green multi-radio networks Considers a cross-layer approach to the design of energy-efficient wireless access networks Investigates the interplay between cooperative device-to-device communications and green LTE cellular networks Considers smart grid energy procurement for green LTE cellular networks Details smart grid networking protocols and standards Considering the spectrum of energy-efficient network components and approaches for reducing power consumption, the book is organized into three sections: Energy Efficiency and Management in Wireless Networks, Cellular Networks, and Smart Grids. It addresses many open research challenges regarding energy efficiency for IT and for wireless sensor networks, including mobile and wireless access networks, broadband access networks, home networks, vehicular networks, intelligent future wireless networks, and smart grids. It also examines emerging standards for energy-efficient protocols. Since ICT technologies touch on nearly all sectors of the economy, the concepts presented in this text offer you the opportunity to make a substantial contribution to the reduction of global greenhouse gas emissions.
Green Networking and Communications John Wiley & Sons

5G is the fifth generation of wireless technology and NR stands for a new radio interface and radio access technology for cellular networks i.e. a physical connection method for radio-based communication. It is a powerful platform that supports a wide range of services that includes enhanced mobile broadband, massive machine-type communication and ultra-reliability, and low latency covering several vertical industries such as e-health, transportation, energy, media and factories automation. This book provides a detailed description of the fundamental aspects of 5G. It gives an in-depth coverage of the network architecture of 5G by considering both the network reference point architecture and the service-based architecture. It also describes all the user and control plane protocols including the standalone and non-standalone architecture options. The radio access technologies such as the waveforms used in 5G, the multi-access and duplexing techniques as well as the resource allocation schemes are treated in details. Additionally, the physical layer signal processing blocks of 5G-NR are covered in depth with elaborate numerical examples to illustrate the functioning of each block in the 5G downlink transmitter and receiver chain. The main originality of this book is the detailed illustration of the 5G NR pre-processing steps as well as Matlab simulation models with explanation

on the codes to allow for a seamless understanding of the principles. In general this book is meant for anyone with a basic engineering background who would be interested to acquire a solid foundation in the fundamental concepts of 5G NR.

Smart Intelligent Computing and Communication Technology Taylor & Francis

WIRELESS COMMUNICATION SIGNALS A practical guide to wireless communication systems and concepts Wireless technologies and services have evolved significantly over the last couple of decades, and Wireless Communication Signals offers an important guide to the most recent advances in wireless communication systems and concepts grounded in a practical and laboratory perspective. Written by a noted expert on the topic, the book provides the information needed to model, simulate, test, and analyze wireless system and wireless circuits using modern instrumentation and computer aided design software. Designed as a practical resource, the book provides a clear understanding of the basic theory, software simulation, hardware test, and modeling, system component testing, software and hardware interactions and co-simulations. This important book: Provides organic and harmonized coverage of wireless communication systems Covers a range of systems from radio hardware to digital baseband signal

processing Presents information on testing and measurement of wireless communication systems and subsystems Includes MATLAB file codes Written for professionals in the communications industry, technical managers, and researchers in both academia and industry. Wireless Communication Signals introduces wireless communication systems and concepts from both a practical and laboratory perspective.

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