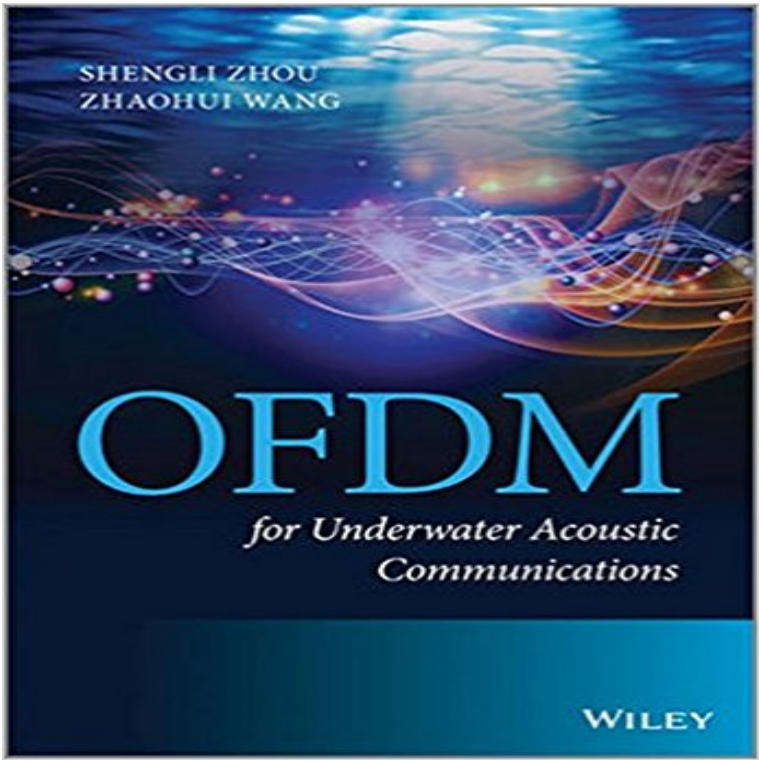
OFDM for Underwater Acoustic Communications



A blend of introductory material and advanced signal processing and communication techniques, of critical importance to underwater system and network development This book, which is the first to describe the processing techniques central to underwater OFDM, is arranged into four distinct sections: First, it describes the characteristics of underwater acoustic channels, and stresses the difference from wireless radio channels. Then it goes over the basics of OFDM and channel coding. The second part starts with an overview of the OFDM receiver, and develops various modules for the receiver design in systems with single or multiple transmitters. This is the main body of the book. Extensive experimental data sets are used to verify the receiver performance. In the third part, the authors discuss applications of the OFDM receiver in i) deep water channels, which may contain very long separated multipath clusters, ii) interference-rich environments, where an unintentional interference such as Sonar will be present, and iii) a network with multiple users where both non-cooperative and cooperative underwater communications are developed. Lastly, it describes the development of a positioning system with OFDM waveforms, and the progress on the OFDM modem development. Closely related industries include the development and manufacturing of autonomous underwater vehicles (AUVs) and scientific sensory equipment. AUVs and sensors in the future could integrate modems, based on the OFDM technology described in this book. Contents includes: Underwater acoustic channel characteristics/OFDM basics/Peak-to-average-ratio control/Detection and Doppler estimation (Doppler scale and CFO)/Channel estimation and noise estimation/A block-by-block progressive receiver and performance results/Extensions to

multi-input multi-output OFDM/Receiver designs for multiple users/Cooperative underwater OFDM (Physical layer network coding and dynamic coded cooperation)/Localization with OFDM waveforms/Modem developments A valuable resource for Graduate and postgraduate students on electrical engineering or physics courses; electrical engineers, underwater acousticians, communications engineers

MIMO-OFDM for High Rate Underwater Acoustic Communications Underwater acoustic (UWA) channels are wideband in nature due to the small that OFDM is a viable option for high-rate communications over wideband UWA **ofdm demodulation using virtual time reversal processing -** For underwater acoustic communications (UAC), the bandwidth is wide compared with the carrier frequency. Because of this fact, the advantages of using **Wiley: OFDM for Underwater Acoustic Communications - Shengli** MIMO-OFDM for High Rate Underwater Acoustic. Communications. Baosheng Li, Student Member, IEEE, Jie Huang, Shengli Zhou, Member, IEEE, Keenan Ball,. **Synchronization, Doppler and channel estimation for OFDM** A blend of introductory material and advanced signal processing and communication techniques, of critical importance to underwater system and network **Wiley: OFDM for Underwater Acoustic Communications - Shengli** A blend of introductory material and advanced signal processing and communication techniques, of critical importance to underwater system and network **Asynchronous Multiuser Reception for OFDM in Underwater** A blend of introductory material and advanced signal processing and communication techniques, of critical importance to underwater system **MIMO-OFDM for High-Rate Underwater Acoustic Communications** OFDM for Underwater Acoustic Communications. Additional Information(Show All). How to CiteAuthor InformationPublication HistoryISBN **A robust OFDM modem for underwater acoustic communications** OFDM for Underwater Acoustic Communications [Shengli Zhou, Zhaohui Wang] on . *FREE* shipping on qualifying offers. A blend of introductory **Multi-band OFDM for underwater acoustic communications: The** 2, APRIL 2014. 357. Adaptive OFDM Modulation for Underwater Acoustic. Communications: Design Considerations and. Experimental Results. **ofdm for underwater acoustic communications - Wiley Online Library** Adaptive OFDM Modulation for Underwater Acoustic. Communications: Design Considerations and. Experimental

Results. Andreja Radosevic, Student Member, **Adaptive OFDM Modulation for Underwater Acoustic - IEEE Xplore** Following underwater acoustic channel modeling, this book investigates the relationship between coherence time and transmission distances. It considers. **An Underwater Acoustic Implementation of DFT-Spread OFDM** In this paper, we propose a time-domain oversampled receiver for orthogonal frequency division multiplexing (OFDM) in underwater acoustic communication. **OFDM for Underwater Acoustic Communications - ACM Digital Library** Asynchronous Multiuser Reception for OFDM in. Underwater Acoustic Communications. Zhaohui Wang, Student Member, IEEE, Shengli Zhou, Senior Member, **Introduction - OFDM for Underwater Acoustic Communications** Multiple-input-multiple-output (MIMO) techniques have been actively pursued recently in underwater acoustic communications to increase the data rate over t. **OFDM for Underwater Acoustic Communications - Zhou - Wiley** Adaptive OFDM Modulation for Underwater Acoustic Communications: Design Considerations and Experimental Results. Abstract: In this paper, we explore **OFDM for underwater acoustic communications: Adaptive** OFDM FOR UNDERWATER. ACOUSTIC. COMMUNICATIONS. Shengli Zhou. University of Connecticut, USA. Zhaohui Wang. Michigan Technological **Index modulated OFDM for underwater acoustic communications** Division Multiplexing (OFDM) Filterbank Multicarrier (FBMC). 1. Introduction . underwater acoustic communications is studied. Image &. **Time-Domain Oversampled Receiver for OFDM in Underwater** frequency offset compensation needed for wideband OFDM. [1], is coupled with Index Terms Underwater acoustic communications, non- uniform Doppler **An OFDM Design for Underwater Acoustic Channels with Doppler** for underwater acoustic communications. Passive time reversal processing (PTRP) can effectively reduce the channel time dispersion in a simple way via **Adaptive OFDM Modulation for Underwater Acoustic - IEEE Xplore Asynchronous multiuser reception for OFDM in underwater acoustic** Index modulated OFDM for underwater acoustic communications. Abstract: UWA channels exhibit time-varying multipath characteristics. To this end, OFDM is **OFDM for Underwater Acoustic Communications: Shengli Zhou** Recently significant progress has been made on point-to-point underwater acoustic communications, and the interest has grown on the application of those te. **MIMO-OFDM underwater acoustic communication systemsA review** MIMO-OFDM in underwater acoustics is relatively a new research field. Though in radio communication networks, MIMO-OFDM had been used **Adaptive OFDM Modulation for Underwater Acoustic Communications** Synchronization, Doppler and channel estimation for OFDM underwater acoustic communications. Abstract: Designing transmission systems often requires to **OFDM FOR UNDERWATER ACOUSTIC COMMUNICATIONS** for the GLINT08 data. Index Terms Underwater acoustic communication,. OFDM, Doppler spread, sparse channel estimation. 1. INTRODUCTION. Underwater **Wiley: OFDM for Underwater Acoustic Communications - Shengli** The use of orthogonal frequency division multiplexing (OFDM) based underwater acoustic (UWA) modems has raised a growing interest within the scientific **Multicarrier Communication Over Underwater Acoustic Channels** The most popular method of multicarrier modulation for underwater acoustic communication is orthogonal frequency division multiplexing **Cooperative OFDM Underwater Acoustic Communications Xilin** Keywords: Orthogonal Frequency Division Multiplexing, Underwater Acoustic Communication,. Wideband Doppler Correction, Time Warp