

<<无线通信>>

图书基本信息

书名：<<无线通信>>

13位ISBN编号：9787115170491

10位ISBN编号：7115170495

出版时间：2007-12

出版时间：人民邮电

作者：歌德史密斯

页数：644

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

## <<无线通信>>

### 内容概要

本书重点论述当前各种无线通信系统中具有普遍性和代表性的基本知识，包括基本的理论、技术问题、设计思路和分析方法。

全书内容包括无线信道模型、无线信道容量、无线通信中的调制编码技术及均衡处理技术、扩频通信，还包括多天线系统、多用户系统、多载波调制、自适应调制与编码、蜂窝系统及无线自组织网络等。

书中每部分内容的讲述都有全新的视角和独特的处理方法，并配有丰富的图示、例题和习题。

本书适合作为通信工程和电子信息类相关专业高年级本科生和研究生的教材，同时也可供工程技术人员参考。

本书为英文版。

## 书籍目录

- 1 Overview of Wireless Communications1.1 History of Wireless Communications1.2 Wireless Vision1.3 Technical Issues1.4 Current Wireless Systems1.5 The Wireless Spectrum1.6 StandardsProblemsReferences2 Path Loss and Shadowing2.1 Radio Wave Propagation2.2 Transmit and Receive Signal Models2.3 Free-space Path Loss2.4 Ray Tracing2.5 Empirical Path-Loss Models2.6 Simplified Path-Loss Model2.7 Shadow Fading2.8 Combined Path Loss and Shadowing2.9 Outage Probability under Path Loss and Shadowing2.10 Cell Coverage AreaProblemsReferences3 Statistical Multipath Channel Models3.1 Time-Varying Channel Impulse Response3.2 Narrowband Fading Models3.3 Wideband Fading Models3.4 Discrete-Time Model3.5 Space-Time Channel ModelsProblemsReferences4 Capacity of Wireless Channels4.1 Capacity in AWGN4.2 Capacity of Flat Fading Channels4.3 Capacity of Frequency-Selective Fading ChannelsProblemsReferences5 Digital Modulation and Detection5.1 Signal Space Analysis5.2 Passband Modulation Principles5.3 Amplitude and Phase Modulation5.4 Frequency Modulation5.5 Pulse Shaping5.6 Symbol Synchronization and Carrier Phase RecoveryProblemsReferences6 Performance of Digital Modulation over Wireless Channels6.1 AWGN Channels6.2 Alternate Q-Function Representation6.3 Fading6.4 Doppler Spread6.5 Intersymbol InterferenceProblemsReferences7 Diversity7.1 Realization of Independent Fading Paths7.2 Receiver Diversity7.3 Transmitter Diversity7.4 Moment Generating Functions in Diversity AnalysisProblemsReferences8 Coding for Wireless Channels8.1 Overview of Code Design8.2 Linear Block Codes8.3 Convolutional Codes8.4 Concatenated Codes8.5 Turbo Codes8.6 Low-Density Parity-Check Codes8.7 Coded Modulation8.8 Coding with Interleaving for Fading Channels8.9 Unequal Error Protection Codes8.10 Joint Source and Channel CodingProblemsReferences9 Adaptive Modulation and Coding9.1 Adaptive Transmission System9.2 Adaptive Techniques9.3 Variable-Rate Variable-Power MQAM9.4 General M-ary Modulations9.5 Adaptive Techniques in Combined Fast and Slow FadingProblemsReferences10 Multiple Antennas and Space-Time Communications10.1 Narrowband MIMO Model10.2 Parallel Decomposition of the MIMO Channel10.3 MIMO Channel Capacity10.3.1 Static Channels10.3.2 Fading Channels10.4 MIMO Diversity Gain : Beamforming10.5 Diversity-Multiplexing Trade-offs10.6 Space-Time Modulation and Coding10.6.1 ML Detection and Pairwise Error Probability10.6.2 Rank and Determinant Criteria10.6.3 Space-Time Trellis and Block Codes10.6.4 Spatial Multiplexing and BLAST Architectures10.7 Frequency-Selective MIMO Channels10.8 Smart AntennasProblemsReferences11 Equalization11.1 Equalizer Noise Enhancement11.2 Equalizer Types11.3 Folded Spectrum and ISI-Free Transmission11.4 Linear Equalizers11.4.1 Zero-Forcing (ZF) Equalizers11.4.2 Minimum Mean-square Error (MMSE) Equalizers11.5 Maximum Likelihood Sequence Estimation11.6 Decision-Feedback Equalization11.7 Other Equalization Methods11.8 Adaptive Equalizers : Training and TrackingProblemsReferences12 Multicarrier Modulation12.1 Data Transmission Using Multiple Carriers12.2 Multicarrier Modulation with Overlapping Subchannels12.3 Mitigation of Subcarrier Fading12.3.1 Coding with Interleaving over Time and Frequency12.3.2 Frequency Equalization12.3.3 Precoding12.3.4 Adaptive Loading12.4 Discrete Implementation of Multicarrier Modulation12.4.1 The DFT and Its Properties12.4.2 The Cyclic Prefix12.4.3 Orthogonal Frequency-Division Multiplexing (OFDM)12.4.4 Matrix Representation of OFDM12.4.5 Vector Coding12.5 Challenges in Multicarrier Systems12.5.1 Peak-to-Average Power Ratio12.5.2 Frequency and Timing Offset12.6 Case Study : The IEEE 802.11 a Wireless LAN StandardProblemsReferences13 Spread Spectrum13.1 Spread-Spectrum Principles13.2 Direct-Sequence Spread Spectrum (DSSS)13.2.1 DSSS System Model13.2.2 Spreading Codes for ISI Rejection : Random , Pseudorandom , and m-Sequences13.2.3 Synchronization13.2.4 RAKE Receivers13.3 Frequency-Hopping Spread Spectrum (FHSS)13.4 Multiuser DSSS Systems13.4.1 Spreading Codes for Multiuser DSSS13.4.2 Downlink Channels13.4.3 Uplink Channels13.4.4 Multiuser Detection13.4.5 Multicarrier CDMA13.5 Multiuser FHSS SystemsProblemsReferences14 Multiuser Systems14.1 Multiuser Channels : The Uplink and Downlink14.2

## &lt;&lt;无线通信&gt;&gt;

Multiple Access14.2.1 Frequency-Division Multiple Access (FDMA)14.2.2 Time-Division Multiple Access (TDMA)14.2.3 Code-Division Multiple Access (CDMA)14.2.4 Space-Division Multiple Access (SDMA)14.2.5 Hybrid Techniques14.3 Random Access14.3.1 Pure ALOHA14.3.2 Slotted ALOHA14.3.3 Carrier-Sense Multiple Access (CSMA)14.3.4 Scheduling14.4 Power Control14.5 Downlink (Broadcast) Channel Capacity14.5.1 Channel Model14.5.2 Capacity in AWGN14.5.3 Common Data14.5.4 Capacity in Fading14.5.5 Capacity with Multiple Antennas14.6 Uplink (Multiple Access) Channel Capacity14.6.1 Capacity in AWGN14.6.2 Capacity in Fading14.6.3 Capacity with Multiple Antennas14.7 Uplink-Downlink Duality14.8 Multiuser Diversity14.9 MIMO Multiuser SystemsProblemsReferences15 Cellular Systems and Infrastructure-Based Wireless Networks15.1 Cellular System Fundamentals15.2 Channel Reuse15.3 SIR and User Capacity15.3.1 Orthogonal Systems (TDMA/FDMA)15.3.2 Nonorthogonal Systems (CDMA)15.4 Interference Reduction Techniques15.5 Dynamic Resource Allocation15.5.1 Scheduling15.5.2 Dynamic Channel Assignment15.5.3 Power Control15.6 Fundamental Rate Limits15.6.1 Shannon Capacity of Cellular Systems15.6.2 Area Spectral EfficiencyProblemsReferences16 Ad Hoc Wireless Networks16.1 Applications16.1.1 Data Networks16.1.2 Home Networks16.1.3 Device Networks16.1.4 Sensor Networks16.1.5 Distributed Control Systems16.2 Design Principles and Challenges16.3 Protocol Layers16.3.1 Physical Layer Design16.3.2 Access Layer Design16.3.3 Network Layer Design16.3.4 Transport Layer Design16.3.5 Application Layer Design16.4 Cross-Layer Design16.5 Network Capacity Limits16.6 Energy-Constrained Networks16.6.1 Modulation and Coding16.6.2 MIMO and Cooperative MIMO16.6.3 Access, Routing, and Sleeping16.6.4 Cross-Layer Design under Energy Constraints16.6.5 Capacity per Unit EnergyProblemsReferencesAppendix A Representation of Bandpass Signals and ChannelsAppendix B Probability Theory, Random Variables, and Random ProcessesB.1 Probability TheoryB.2 Random VariablesB.3 Random ProcessesB.4 Gaussian ProcessesAppendix C Matrix Definitions, Operations, and PropertiesC.1 Matrices and VectorsC.2 Matrix and Vector OperationsC.3 Matrix DecompositionsAppendix D Summary of Wireless StandardsD.1 Cellular Phone StandardsD.1.1 First-Generation Analog SystemsD.1.2 Second-Generation Digital SystemsD.1.3 Evolution of Second-Generation SystemsD.1.4 Third-Generation SystemsD.2 Wireless Local Area NetworksD.3 Wireless Short-Distance Networking StandardsBibliographyIndex

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>