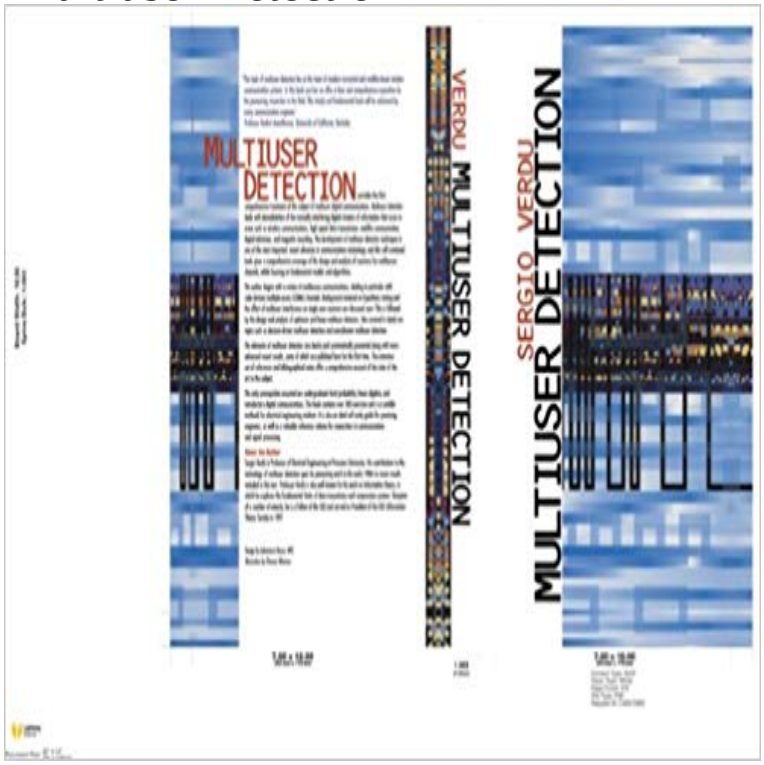
Multiuser Detection



Multiuser Detection provides the first comprehensive treatment of the subject of multiuser digital communications. Multiuser detection deals with demodulation of the mutually interfering digital streams of information that occur in areas such as wireless communications, high-speed data transmission, satellite communication, digital television, and magnetic recording. The development of multiuser detection techniques is one of the most important recent advances in communications technology, and this self-contained book gives a comprehensive coverage of the design and analysis of receivers for multiaccess channels, while focusing on fundamental models and algorithms. The author begins with a review of multiaccess communications, dealing in particular with code division multiple access (CDMA) channels. Background material on hypothesis testing and the effect of multiuser interference on single-user receivers are discussed next. This is followed by the design and analysis of optimum and linear multiuser detectors. Also covered in detail are topics such as decision-driven multiuser detection and noncoherent multiuser detection. The elements of multiuser detection are clearly and systematically presented along with more advanced recent results, some of which are published here for the first time. The extensive set of references and bibliographical notes offer a comprehensive account of the state of the art in the subject. The only prerequisites assumed are undergraduate-level probability, linear algebra, and introductory digital communications. The book contains over 300 exercises and is a suitable textbook for practicing engineers, as well as a valuable reference volume for researchers in communications and signal processing.

Blind Adaptive Multiuser Detection. Michael Honig, Senior Member, IEEE, Upamanyu Madhow, Member, IEEE, and Sergio Verdti, Fellow, IEEE. Abstract-TheMultiuser detection techniques using maximum likelihood sphere decoding in multicarrier CDMA systems. Abstract: When performed using an exhaustive searchBlind adaptive multiuser detection. Abstract: The decorrelating detector and the linear minimum mean-square error (MMSE) detector are known to be effective In this letter, we focuss on solving the multiuser detection (MUD) problem supported by Low-Activity Code Division Multiple Access (LA-CDMA)Multiuser Detection of Sparsely Spread CDMA. Abstract: Code-division multiple access (CDMA) is the basis of a family of advanced air interfaces in current andAbstractIn this paper, we consider a multiuser detection technique when the signal sparsity is changing over time. The key ingredient of our method is a cleverNPTEL Electronics & Communication Engineering NOC:Spread Spectrum Communications and Jamming (Video) Lecture 57 : Multiuser Detection andThe complexity of the optimal detector motivates the work on a near-far resistant, low complexity decorrelating multiuser detector, which exploits multipathFor that reason, Multiuser detection (MUD) and channel estimation play a significant function for overcoming the interference and characterizing the channel.Multiuser Detection provides the first comprehensive treatment of the subject of multiuser digital communications. Multiuser detection deals with demodulation ofMultiuser Detection. We have discussed a simple method of MAI suppression in Chapter 6. The idea of MAI suppres- sion stems form the single-user detectionAbstract: Previously developed blind techniques for multiuser detection in code division multiple access (CDMA) systems lead to several near-far resistantAbstract: An important thrust in research in multiuser detection is the design of adaptive detectors, which self-tune the detector parameters from the observationMultiuser detection for CDMA systems. Abstract: Spread spectrum-based code division multiple access (CDMA), has taken on a significant role in cellular andThe development of multiuser detection techniques is one of the most important recent advances in communications technology. This self-contained andCDMA multiuser detection: a nonlinear programming approach. Abstract: The optimum receiver to detect the bits of multiple code-division multiple accessMultiuser Detection [Sergio Verdu] on . *FREE* shipping on qualifying offers. Multiuser Detection provides the first comprehensive treatment of theMultiuser detection (MUD) is a broad field which includes all theory pertaining to the detection of multiple users whose received signals are not orthogonal to