

15. PERFORMANCE ANALYSIS OF MC-CDMA WITH BLIND EQUALIZATION FOR WIRELESS COMMUNICATION SYSTEM

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The increasing demand for wireless services has created the need for cost effective transmission techniques that can exploit scarce spectral resources efficiently. In order to achieve the high bit rates needed to meet the quality of service requirements of future multimedia applications, MC-CDMA has been considered as good air-interface candidate, especially for the downlink. However, the user capacity of MC-CDMA system is essentially limited by interference. This interference can be mitigated by employing precoding techniques, IB-DFE based receivers and other efficient interference suppression techniques. In the proposed system, combined Iterative IA precoding at the transmitter with IB-DFE based processing at the receiver is suggested for MC-CDMA systems. The matrices for this nonlinear space-frequency equalizer are obtained by minimizing the overall MSE of all data streams at each subcarrier. An accurate analytical approach for obtaining the performance of the proposed receiver structure is explained.

Keywords: MC-CDMA, IA Precoding, IB DFE, MSE, SNR, BER.

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