PERFORMANCE ANALYSIS ON HIGH DATA RATES MODULATION TECHNIQUES OF WIDEBAND CODE DIVISION MULTIPLE ACCESS (W-CDMA) IN MULTIPATH RAYLEIGH FADING CHANNEL

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ABSTRACT

This paper presents the study of the performance quality of high data rate modulation schemes of Wideband Code Division Multiple Access (W-CDMA) system. Quadrature phase shift keying (QPSK) and 16 Quadrature Amplitude Modulations (16QAM) modulation technique are considered. This system is assign to Additive White Gaussian Noise (AWGN) and Multipath Rayleigh Fading channel. The simulation and evaluation of Bit Error Rate (BER) and Signal to Noise Ratio (SNR) are using MATLAB 6.5. The project will analysis of Quadrature phase shift keying (QPSK) and 16 Quadrature Amplitude Modulations (16QAM) which are being used in Wideband Code Division Multiple Access (W-CDMA) system, so that the system can go more suitable modulation technique to suit the channel quality and can deliver the optimum and efficient data rate to mobile terminal. From this project it is found the suitable high data rate modulation scheme in the Additive White Gaussian Noise (AWGN) and Multipath Rayleigh Fading channel of Wideband Code Division Multiple Access (W-CDMA) is the Quadrature phase shift keying (QPSK). When the channel is subjected to Multipath Rayleigh Fading with Doppler shift, the performance of Quadrature phase shift keying (QPSK) and 16 Quadrature Amplitude Modulations (16QAM) in Wideband Code Division Multiple Access (W-CDMA) system degrade when the mobility is increased from 60km/hr to 120km/hr. From the simulation results, it can be concluded Quadrature phase shift keying (QPSK) is suitable modulation techniques compared to 16QAM in Multipath Rayleigh Fading with Doppler shift.

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