BER PERFORMANCE ANALYSIS OF M-ARY DPSK TECHNIQUES USING SIMULATION MODELLING

HARJOTKAUR[1] & AMIT VERMA[2]

[1]KIIT College of Engineering, Gurgaon, Haryana, India

[2]Chandigarh University, Gharuan, Mohali, Punjab, India

ABSTRACT

As the digital communications industry continues to grow and evolve, the applications of various digital modulation techniques continue to grow as well. This growth in turn has spawned an increasing need to seek automated methods of designing digital modulation Models using the latest softwares including Simulink in Matlab. Such classification tools play an important role in electronic surveillance systems, communications, signal verification and interference identification. The classification scheme differentiates between Bit error rates of 2, 4 and 8 differential phase shift keying modulation techniques. The goal of the analysis is to compare the performance of various differential modulation techniques in terms of their error probability using Simulink tool by designing their simulation models. The Simulink-based simulation models are designed for M-ary differential phase shift key for M=2, 4 and 8 over Additive White Gaussian Noise channel using communication toolbox in Simulink. Error rates of M-ary differential phase shift key system versus the signal-to-noise ratio are used to evaluate the performance of various M-ary differential phase shift key based systems. The Bit Error Rate curves obtained using coding in Matlab are compared with the curves obtained by using the Simulation Models over additive white Gaussian noise Channel.

KEYWORDS: Additive White Gaussian Noise (AWGN), Bit Error Rate (BER), Differential Phase Shift Keying (DPSK), Differential Quadrature Phase Shift Keying (DQPSK), Signal-to-Noise Ratio (SNR)