Abstract

Fading is a ubiquitous problem in wireless communication. In digital systems, fading results in bit errors, and evaluating the average error rate under fairly general fading models and multichannel reception is often required. In this paper we presented a unified analytical framework to obtain the closed-form solutions for the average symbol error rates (ASER) of MDPSK and coherent MPSK, including with or without diversity reception over slow, flat Rician. But in this thesis, equations are analytical; simple for the exact average symbol error rates (ASER) for M-QAM transmitted over slow, flat, identically independently distributed (i. i. d) fading channels using MRC. The dependence of error rate on the channel specular-to-scatter ratio (k), are plotted and examined. Performance comparisons for a range of values of the Rician parameter K, corresponding with the measured statistics of mobile and indoor wireless channels, are made for the different digital modulation schemes. Again, the obtained expressions for M-QAM are in the form of sum of exponentials where the number of terms can be determined according to the required accuracy. The analytical results presented in this paper are expected to provide information that is important for radio systems design and the evaluation of performance over a fading channel.
The Performance Analysis of Different Modulation Techniques over Mobile Fading Channels for MRC Diversity

References

- J. Sun and I. Reed, "Linear diversity analyses for M-PSK in Rician fading channels".

Index Terms

Computer Science  Networks

Keywords

ASER IID AWGN PSK DPSK QAM MPC