Abstract

The paper concerns with the study of the modulation diversity in PSK scheme due to rotation of the signal constellation along with bit interleaving. We derive here the expressions for the Symbol Error Probability (SEP) of rotated BPSK and QPSK modulations over frequency non-selective slowly fading Nakagami-q channels. Numerical results based on moment generating function (MGF) are obtained and comparison of error performance are made for conventional and rotated modulation schemes. We investigate also the dependence of symbol errors on signal-to-noise ratio, Nakagami-q factor and the angle of rotation. The results show significant improvement in the performance of rotated scheme over conventional method. The optimum rotation angle is also calculated and a symmetrical nature of SEP with rotation angle is observed.

References

Study of Error Performance of Rotated PSK modulation in Nakagami-q (Hoyt) Fading Channel

Siena, Italy, September pp. 7-10.


Index Terms

Computer Science

Signal Processing

Keywords

Symbol Error Rate  Bit Interleaving  Diversity  Moment Generating Function  Nakagami-q Fading Channel