Abstract

To overcome a multipath fading environment with low complexity and to achieve wireless broadband multimedia communication systems, orthogonal frequency division multiplexing (OFDM) transmission scheme is used. OFDM is one of the applications of a parallel data transmission scheme, which reduces the influence of multipath fading. The performance of OFDM can be improved further using concept of spatial diversity Multiple Input Multiple Output. The paper explains the performance of MIMO OFDM under the Rayleigh channel, also it uses different guard interval with modulation schemes as 4-QAM. It shows that by using OFDM with SISO and MIMO, remarkable performance is shown in terms of Bit Error Rate (BER).

References

- Mrs. M Vijaya Laxmi, Dr. S. Narayana Reddy, Performance Analysis of ST, SF and STF in MIMO-OFDM Technique, JICSI, Issues Vol 10, ISS2 NO2, March 2013
- Pvan Wyk, J. L. Linde, Bit Error Probability for a M-ary QAM OFDM based
BER Performance of OFDM with GI in SISO and MIMO System

- J. J. Vande Beek, P. Odling, S. K. Wilson, P. O Borjesson, "Orthogonal Frequency Division Multiplexing," URSI
- Mitalee Agrawal, Shijan Shingh, "BER Analysis of MIMO OFDM System for AWGN and Rayleigh Fading Channel," IJCA, Nov 2011
- J. Simon Hykin and Michael Moher, "Modern Wireless Communication"
- E. Mitalee Agrawal, Yudishthir Raut, "Effect of Guard Period Insertion in MIMO OFDM System," IJCTEE, Volume 1, Issue 2
- J. K. Mitalee Agrawal, Yudishthir Raut, "Evaluating The Impact Of Guard on Period On The Performance of MIMO OFDM System," IJERA
- P. Sunil Kumar, Dr. M. G Sumithra and M. Sarumathi, "Performance Analysis of Rayleigh Fading Channels in MIMO-OFDM Systems Using BPSK and QPSK Modulation Schemes," CNCE 2013
- Yoon Hyun Kim, Bong Youl Cho and Jin Young Kim, "Wireless Communication: Trend and Technology Issues," Kwangwoun University

**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Enter Multiple Input Multiple Output (MIMO)  
Orthogonal frequency division  
Multiplexing (OFDM)  
(BER)  
Prefix (CP)  
Bit Error Rate  
Cyclic  
Guard Period
4-QAM

Rayleigh channel.