Selection of Appropriate Detection Scheme for Optimum Performance-Complexity Trade-Off in 3GPP Suburban Macrocell Wireless MIMO Environments

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Abstract

This paper presents an analytical solution to the problem of selecting an optimum symbol detector for wireless MIMO communications in the LTE/4G suburban macrocell environments. Since, the use of a symbol detector in MIMO systems is often limited by the complexity it offers, it is of vital importance to use a detector which offers reliable performance but does not offer high complexity. This paper analyses the error rate performance and computational complexity of Zero Forcing (ZF), Minimum Mean Square Error (MMSE) and Maximum Likelihood (ML) and suggests the optimum detectors with reasonable complexity-performance trade-off.

References

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Index Terms

Computer Science Wireless

Keywords

MIMO, Symbol detector.