Abstract

The Performance comparison of Minimum Mean Square Error-based Adaptive Multi-User Detection (MUD) of Direct Sequence-Code Division Multiple Access (DS-CDMA) signals is considered. DS-CDMA is a popular multiple-access technology for wireless communication. But its performance is limited by multiple-access interference (MAI) and multipath distortion. Adaptive techniques, such as least mean squares (LMS) algorithm is employed for detection of DS-CDMA signals which improves the performance of the CDMA system by reducing interference among users. In this paper the diversity scheme called maximum ratio combining (MRC) as preprocessor to the adaptive MMSE detector of DS-CDMA system in
frequency-selective multipath channel is introduced and compare the complexities of adaptive techniques. The performance of the proposed detector for frequency-selective multipath channel is simulated. Simulations in frequency-selective multipath channels have proved its better performance compared with the conventional Match Filter detector, and it is performing nearly as well as single user case.

References

- R. Lupas, S. Verdu, "Linear multiuser detectors for synchronous code-division

Index Terms
Computer Science
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Keywords
Direct-sequence Code-division Multiple Access (ds-cdma)  Multipath Channel  Minimum Mean Square Error (mmse)

Lms (least Mean Square) Algorithms