Abstract

The goal of this paper is to introduce a simple detection method that gives a better performance with minimum computational complexity for the long term evolution (LTE) mobile communication system. The LTE communication system has been simulated using MATLAB®7 programming language. An approximated linear baseband model for the two modulation techniques used by the LTE system (which is the Quadrature Phase Shift Keying (QPSK) and sixteen-level Amplitude Modulation (16-QAM)) have been simulated. Three receivers have been tested. All these receivers used Least Square (LS) channel estimator. These receivers uses channel compensator, subjected to the accurate equation of the channel equalizer, and perturbation algorithm. The results of the computer simulation shows that the perturbation algorithm gives an enhancement in the receiver performance of about 2 dB in different mobile channels than subjected to the accurate equation of the channel equalizer and about 4 dB than channel compensator.

References

- 4G Americas. "4G Mobile Broadband Evolution: 3GPP Release 10 and
Fast Detection Process for Downlink in LTE Networks


Index Terms

Computer Science

Signal Processing
Keywords

LTE  OFDM  perturbation process  16QAM