



Research Article



Adaptive Channel Estimation for SCFDMA System

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ABSTRACT

Third generation partnership project (3GPP) long term evolution (LTE) uses single carrier frequency division multiple access (SC-FDMA) in uplink transmission and orthogonal frequency division multiple access (OFDMA) scheme for the downlink. A variable step size based least mean squares (LMS) algorithm is formulated for a single carrier frequency division multiple access (SC-FDMA) system channel estimation (CE). The weighting coefficients on the channel condition can be updated using this unbiased CE method. Channel and noise statistics information are not essential. Rather, it uses a phase weighting scheme to eliminate the signal fluctuations due to noise and decision errors. The convergence towards the true channel coefficient is guaranteed.

Keywords: Channel estimation, SC-FDMA, LMS

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