Abstract

Next generation mobile systems will use multiple antennas at the transmitter and receiver to achieve higher capacity and diversity gain at high speeds. By transmitting through multiple transmitting and receiving antennas, multiple wireless data pipes are created. A transmitted signal while propagating through the wireless channel undergoes multipath fading effect accompanied by noise and interference. Mitigation of these effects and increase in throughput is only possible if the channel is accurately estimated at the receiver in order to perform channel estimation.

Depending on slow/fast channel fading conditions, several authors suggested adaptive LMS, RLS, and NLMS based channel estimators, which either require statistical information of the channel or are not efficient enough in terms of performance or computations.

In order to overcome the above effects, the work focuses on the QR-RLS based channel estimation method for MIMO-OFDM systems. The proposed algorithm based on QR-RLS
channel estimation technique provide reduce mean square error (MSE) and bit error rate (BER) compared to previous channel estimation technique.

References


Index Terms

Computer Science    Power Systems
Keywords

MIMO-OFDM System, Bit Error Rate (BER), Mean Square Error (MSE), Square Root-Recursive Least Square (QR-RLS)