Channel estimation in OFDM multipath fading channel systems according to modulation schemes

ABSTRACT

Orthogonal Frequency Division Multiplexing system (OFDM) is a very popular communication technique. It is applied nowadays in several wireless network modern systems. Wireless communication system has some limitations; one of them is Multi Path Fading Channel. This issue leads to impact and deteriorate data signal severely which causes the inter channel interferences (ICI). Therefore, our paper is specifically focused on study of the importance of applying channel estimation in OFDM system which leads to be close to an accurate data. Basically, there are many types of channel estimation techniques, e.g., Least Square Error Estimation (LSE) and Minimum Mean-Square (MMSE). In our study, we utilised LSE and proved the necessity of applying channel estimation in multi path fading channel based on QPSK modulation scheme. We verify that by applying simulation codes in Matlab. Moreover, we make a comparison by sending data, e.g., Baboon image with and without channel estimation technique. Our study is to proof the importance of channel estimation with multi path fading channel in OFDM technique.