

CHANNEL ESTIMATION USING MIMO-OFDM

Channel estimation is a challenging problem in wireless communications. Transmitted signals are typically reflected and scattered, arriving at the receiver along multiple paths. When these paths have similar delays, they add either constructively or destructively, giving rise to fading. When these paths have very different delays, they appear as signal echoes. Due to the mobility of the transmitter, the receiver, or the scattering objects, the channel changes over time.

Channel estimation plays an important part in an OFDM system. It is used for increasing the capacity of orthogonal frequency division multiple access (OFDMA) systems by improving the system performance in terms of bit error rate. As symbols travel, they will be attenuated, usually by different amounts throughout their spectrum, due to range and to multipath effects. So, channel estimation is required to compensate for the distortion introduced in the symbols, as they travel through the channel, and to take into account SNR(Signal to Noise Ratio).

Recent mobile telecommunication systems used MIMO collective with OFDM which is well known as MIMO-OFDM, to offer robustness and higher spectrum efficiency. The important challenge in the scenario is to achieve accurate channel estimation to identify the symbols, once the receiver must have the channel state info to balance and process the received signal. In this paper, we are going to propose a new algorithm in order to achieve the channel estimation with minimum error bit rate. The performance evolution is carried out with MATLAB simulation.

PROJECT GUIDE

(Mr. K. Suresh Babu)

BATCH NUMBER:C11

Reshma Kuchipudi – 17BQ1A05C1

Bhargavi Mokharala – 17BQ1A05E6

Harika Manduva – 17BQ1A05D7

Sai Krishna Motupalli -17BQ1A05E7