ABSTRACT

Performance system to detect received signal in DS-CDMA is limited by Multiple access Interference (MAI).To reduce of this interference can use one of kind multiuser detection (MUD), that is Decorrelator detector.

Performance of Detector is influence from appropriate to estimate MAI which cause from other user. To solve this problem can be used by looking for the crosscorelation value between Pseudo-noise code user. The purposes of my final task are compare between MUD decorrelator with conventional receiver at synchronous and asynchronous condition, and also to explain how the decorrelator performance system if there is error synchronization in AWGN channel and Multipath Reyleigh fading.

In receive synchronous system, performance of decorrelator system better than conventional receiver not only increasing SNR value but also increasing speed of user, for example to get BER10^{-3} on 6 interference user with V = 120 km/jam, performance decorrelator detector better 17 dB than performance conventional receiver. In receive asynchronous system as long as error synchronization below the saturation value, performance of decorrelator system still better than conventional receiver. But, when error synchronization is increased, performance of decorrelator system maybe is same with conventional receiver or worse than conventional receiver.