ABSTRACT

In wireless communication system, fading which caused by multi-path propagation has became a serious problem. To mitigate this problem, cooperative communication with space diversity technique is employed. Cooperative communication is used for minimizing the fading effects and also for improving the system performance. The communication development give facility to user for communicating comfortably.

Wideband channel propose big amount of data transmission. The performance of cooperative communication system in wideband channel will be compared with the performance of cooperative communication system in narrowband channel. In narrowband channel, there is only channel fading that interfere signal. That fading can be mitigated by using diversity technique. While in wideband channel there is channel fading and Inter Symbol Interference (ISI), too. Those disturbances cannot be mitigated by using cooperative communication only. It is caused by ISI effect that makes system performance bad. That is why equalizer is needed to cancel ISI effect. From the simulation result, we know that cooperative communication system in wideband channel has a better performance than cooperative communication system in narrow-band channel, about 9 dB. In wideband channel there is LOS and NLOS signal. While in narrowband channel there is only NLOS signal. Because of that LOS signal, system performance in wideband is better.

Keywords: cooperative communication system, wideband channel, narrowband channel, geometric elliptical scattering model
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