ABSTRACT

In the cooperative communication, differential modulation is implemented to avoid the fast fading due to the carrier offset on a random channel. Where the carrier offset related to the differences of the oscillator between the sending and receiving, or relative movement of the sender and recipient, so the channel can be changed in order for a period of time.

This Final Project are discusses and examining the methods of a double differential Modulation with protocol decode-and-forward (DDDAF) in cooperative communication. Analysis of the performance of this method as a parameter value Symbol Error Rate (SER) and Bit Error Rate (BER) obtained from the method DDDAF compared with other methods, the differential with the decode-and-forward (DDAF) with the allocation of resources and power relay is considered permanent.

The results of the simulation, that the performance of double differential modulation better than the differential modulation to avoid the carrier offset on the channel. The value of carrier offset that can be handling by both of methods are -0.1 \( \pi \) rad to 0.1 \( \pi \) rad, above this value both of methods can not be handling. With the high value of the SNR, the values of SER and BER of double differential modulation has a better performance than the differential modulation, and with assumed the allocation of resources on the source and the relay is still considered 1 watt and energi bit (Eb) is considered 1, so double differential modulation can overcome the carrier offset from - 0.1 \( \pi \) rad up to 0.1 \( \pi \) rad.

Keywords : Cooperative Communications, Double Differential (DD), Decode and Forward (DF), Carrier Offset.
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