Ph: 9585554590, 9585554599
Email: support@salemsmartreach.com
URL: www.salemsmartreach.com

Performance of Complex Field Network Coding in Multi-Way Relay Channels

Abstract:

Complex field network coding (CFNC) has been shown to achieve a throughput of 1/2 symbol per user per channel use in a multi-way relay channel (MWRC). To achieve this throughput, a superimposed combination of user symbols must be distinguishable at the relay. In this paper, full data exchange in a MWRC network with fading is considered. The pairwise error probability (PEP) of a MWRC with Rayleigh fading is presented, and a closed form approximation of the minimum Euclidean distance distribution for the relay constellation is given. Tight upper bounds on the symbol error rate (SER) are obtained using a nearest neighbours approximation and the effect of a precoding vector on system performance is investigated.