Abstract

In this paper, two systems will be introduced to improve the performance of Cooperative Cognitive Relay Network (CCRN). The first is Compress-and-Forward (CF) relay scheme based on joint source-channel coding for three-terminal classical relay network. Simulation results show that CF relay scheme gives remarkable performance gains over other cooperation strategies such as decode-and-forward and amplify-and-forward in this scenario where both source-relay and relay destination links have low signal-to-noise ratios. The second system is multi-hopping cooperative relaying with multi-antennas using decode and forward scheme. Using multi-hopping with multi-antennas techniques in CCRN gives a remarkable enhancement in the performance than using only one hop with single antenna system.


Index Terms
Keywords

Compress and forward relay, decode and forward relay, multi-antennas, multi-hopping and cognitive radio network.