

ESTABLISHING SECURED COMMUNICATION IN COGNITIVE RADIO NETWORKS

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In this paper, we propose a cooperative secure communications scheme for cognitive radio networks (CRNs) where a base station (BS) wants to transmit information to the primary users (PUs) which are far away from the BS in the presence of a collection of passive eavesdroppers. In our project, the transmission is performed in two consecutive time slots; in the first slot of time, BS transmits the information during that time the secondary users (SUs) and the eavesdroppers listen to it. In the second slot of time, the information is transmitted by SUs while PUs and the eavesdroppers listen to it. In this we consider that eavesdropping takes place in two schemes; in the first scheme, the transmission between the BS and the SUs is listening by the eavesdroppers and in the second scheme, we assume that the maximal ratio combining approach is applied by the eavesdroppers on the received signals in the first and the second time slots of the transmission. Our proposed model, as long as SUs help PUs to maintain their secrecy rate SUs are permitted to use the PUs spectrum. We assume a transmission is frame based one where each frame is divided into two consecutive time slots of equal duration. In our paper we use Filter and Forward relay to improvise the secrecy rate instead of the Decode and Forward relay. We check our proposed scheme in various situations using simulations and it shows that the proposed scheme have higher efficiency.