Channel Assignment for Cooperative Spectrum Sensing in Multi-channel Cognitive Radio Networks

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In this work, the channel assignment in cooperative spectrum sensing is studied for multi-channel cognitive radio networks. First, based on the information from each secondary user, e.g. primary signal-to-noise ratios over all channels, a heuristic centralized scheme is proposed to assign channels to different secondary users for sensing so that the number of available channels, which meet the sensing performance requirements in terms of miss detection and false alarm probabilities, can be greatly increased. Then, by taking the communication overhead into account, a greedy centralized scheme is proposed to reduce the reporting information from the secondary users to the base station. The simulation results demonstrate that both schemes can significantly increase the number of available channels, and the latter can further reduce the signaling overhead.

REFERENCES


