Performance Analysis of Decode–Amplify-and-Forward Scheme used in Relay-based Cooperative Spectrum Sensing in Cognitive Radio Network

**Abstract**

In this paper we have analyzed performance of relay based Cognitive Radio (CR) networks. Later on we present a scheme for cooperative spectrum sensing known as Detect-Amplify-and-Forward (DAF). This technique is having the capacity of sensing over non-identical Nakagami-m fading channels. We have also introduced an advanced statistical approach to derive a new relation in order to calculate the average false alarm probability and average detection probability.

In subsequent section it is also proved that a small number of reliable cognitive radios are enough to achieve practical detection level in cooperative spectrum sensing instead of incorporating all CRs. The simulation results shows improvement in detection accuracy and reduction in bandwidth requirement of the relaying links by abstaining from the heavily faded relays in the DAF scheme.

**References**
15. P. Wynn, “Acceleration techniques in numerical analysis, with particular reference to problems in one independent variable”, in Proc. IFIPS, Munich, 1962, pp. 149–156.

Index Terms

Computer Science

Wireless
Keywords