

## An Energy Detection-Based Algorithm for Cooperative Spectrum Sensing in Rayleigh Fading Channel

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**Abstract :** Cognitive radios have been recognized as one of the most promising technologies dealing with the scarcity of the radio spectrum. In cognitive radio systems, secondary users are allowed to utilize the frequency bands of primary users when the bands are idle. Hence, how to accurately detect the idle frequency bands has attracted many researchers' interest. Detection performance is sensitive toward noise power and gain fluctuation. Since signal to noise ratio (SNR) between primary user and secondary users are not the same and change over the time, SNR and noise power estimation is essential. In this paper, we present a cooperative spectrum sensing algorithm using SNR estimation to improve detection performance in the real situation.

**Keywords :** cognitive radio, cooperative spectrum sensing, energy detection, SNR estimation, spectrum sensing, rayleigh fading channel

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