

عنوان مقاله:

Maximizing throughput by multiple antenna spectrum sensing in cognitive radio networks

محل انتشار:

اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مهندسی برق و کامپیوتر (سال: 1395)

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خلاصه مقاله:

Today, most spectrum is used ineffectively, and their utilization varies by time and location. To increase spectrum utilization, cognitive radios (CRs) are employed to detect and share the unused spectrum. A key function of cognitive radios is spectrum sensing, which enables secondary users to identify vacant spectrum not used by primary users. Cooperative spectrum sensing has been shown to be an effective approach to enhance the detection performance by exploiting spatial diversity. We propose a new cooperative MISO CR system that overcomes the sensing-throughput tradeoff in opportunistic spectrum access cognitive radio networks by performing spectrum sensing and data transmission simultaneously. We consider the multiple antennas at each CR to achieve space diversity gain and multiple mini-slots which achieves time diversity for sensing. Analysis and simulation results show that the proposed CR system can achieve higher throughput and lower average probability of false alarm compared to the previous CR system.

کلمات کلیدی:

cognitive radio; spectrum sensing; cooperative MISO; energy detection; sensing-throughput tradeoff

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