
Electrical & Computer Engineering

S E M I N A R

Louisiana State University

Blind Spectrum Sensing Using Antenna Arrays and Path Correlation

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Abstract—We consider the problem of spectrum sensing in cognitive radios when the receiver of the secondary user (SU) is equipped with a multi-antenna system. Using an estimate of the cross-correlation among the signals received at different antenna elements, we propose a blind detection method which assumes no prior knowledge of the signaling scheme used by the primary user (PU), the noise power, or the channel path coefficients. The cross-correlation among the received signals is a result of the correlation among the channel path coefficients from the PU transmitter to different antenna elements of the secondary receiver. The detection and false alarm probabilities of the proposed algorithms are evaluated using an asymptotic analysis and the results are compared to simulation results. It is shown that the proposed methods outperform several recently-proposed blind sensing techniques for cognitive radios using multiple antennas.

When: Tuesday, **8 November 2011**, 14:00 - 15:00

Where: Room 117 EE Building

Info: <http://www.ece.lsu.edu/seminar>

