Spectrum sensing using multiple dual polarization antennas for cognitive radio systems in microcell environments

JZUS C (Comput & Electron)

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- The use of multiple antenna techniques in CR is one approach for spectrum sensing by exploiting the available spatial domain observations

- Spectrum sensing with multiple antennas for cognitive radio systems is affected by the spatial correlation among multiple antennas

- To reduce the adverse effects of the spatial correlation on spectrum sensing performance, we employ multiple dual polarization antennas at the sensing node of secondary users

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Sensing performance for spectrum sensing with multiple dual polarization antennas

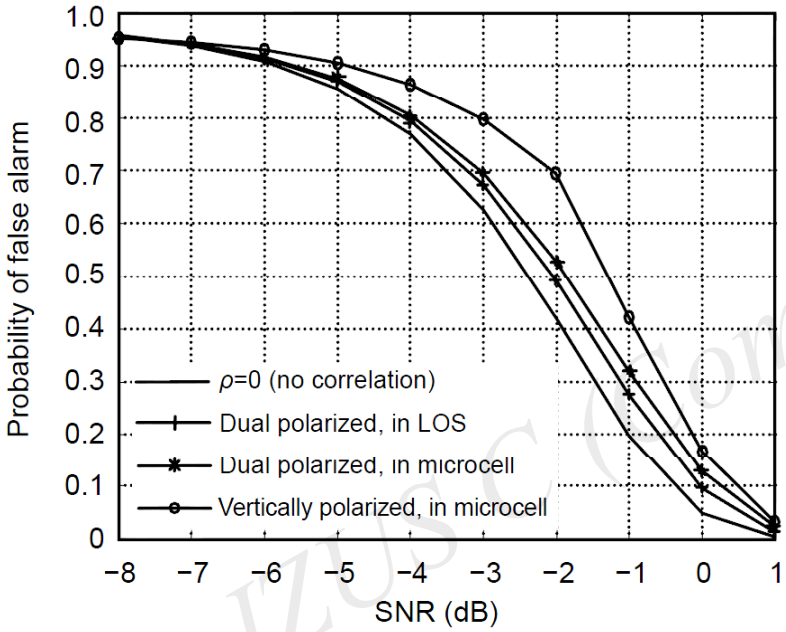

Fig. 4 Sensing performance comparison between spectrum sensing with multiple dual polarized antennas and conventional multiple antennas spectrum sensing

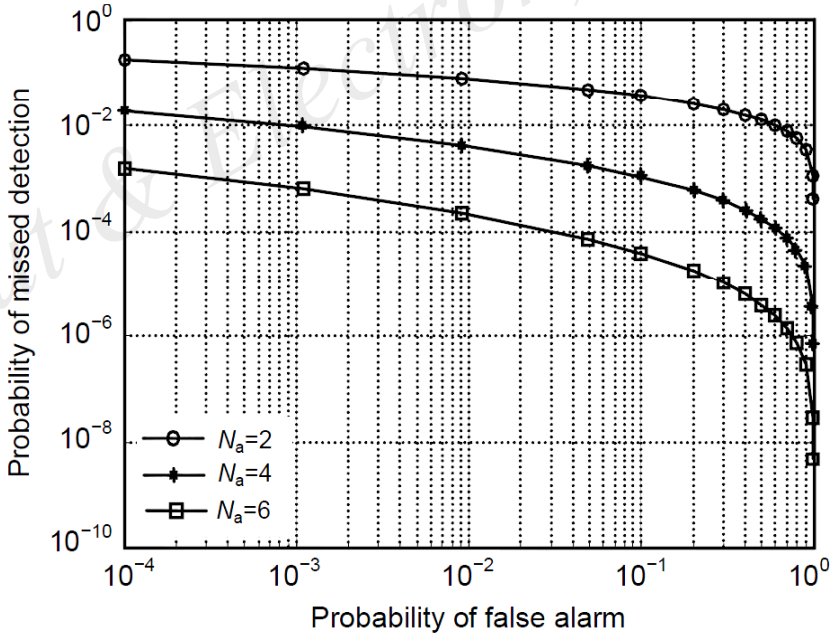

Fig. 6 The receiver operating characteristic (ROC) curves for spectrum sensing with two, four, and six dual polarized multiple antennas