Abstract

We derive probability of detection $P_d$ and false alarm $P_f$ for spectrum sensing cognitive devices, employing correlated multiple antenna elements using linear test statistic. Detection performance of such sensors is severely degraded due to the correlation among antennas, in addition to that fading channel conditions may further deteriorate the performance. We propose a simple hard decision fusion strategy at the secondary Base Station to improve the performance by exploiting collaborative gain. Region of Convergence (ROC) is also evaluated under OR based fusion strategy. Numerical results certify the proposed proposal.

References

Performance Analysis of Correlated Multiple Antenna Spectrum Sensing Cognitive Radio


Index Terms

Computer Science Wireless Communications

Keywords

correlated multiple antenna energy detector linear statistic cognitive radio cooperation
collaboration gain

hard decision strategy