Journal Watch
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Chandrasekhar J

Signal Processing for Communications Lab,
Dept. of ECE, IISc.

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- **Cognitive Spectrum Sharing With Two-Way Relaying System**
    - Authors: Qiang Li, See Ho Ting, Ashish Pandharipande, Yang Han
    - Affiliations: Nanyang Technological University, Singapore and Philips Research, Netherlands

- A spectrum sharing protocol using two-way relaying is proposed.
- Two primary user communicate with each other using assistance from a secondary user acting as a relay.
- The outage probabilities for both secondary and primary systems in the two-way relaying framework are derived.
- It is shown that, a spectrum sharing region exists such that the outage performance of the primary user is improved using the proposed protocol and in addition secondary spectrum sharing is also achieved.

- **Blind Spectrum Sensing for OFDM-Based Cognitive Radio Systems**
  - Authors: Simin Bokharaiee, Ha H. Nguyen, Ed Shwedyk
  - Affiliations: University of Manitoba, Canada and University of Saskatchewan, Canada

- ► The paper focuses on spectrum sensing in OFDM -based cognitive radio networks in low-signal-to-noise-ratio conditions.

- ► The Cyclic Prefix based Correlation co-efficient (CPCC) technique is shown to be a special case of the constrained GLRT (C-GLRT).

- ► In addition, multi-path based constrained GLRT (MP-based C-GLRT) is obtained and is shown to outperform CPCC based algorithm in rich multi-path environment.

- ► Further, a combination of MP-based C-GLRT and CPCC algorithm is shown to give significant performance improvements.

- **Enhanced Spectrum Sensing Scheme in Cognitive Radio Systems With MIMO Antennae**
  - Authors: Woongsup Lee, Dong-Ho Cho
  - Affiliations: Korea Advanced Institute of Science and Technology, Korea

- The paper proposes a co-operative spectrum sensing technique, wherein the difference among the cognitive terminals w.r.t P_{fa} and P_d is taken into account.
- In addition, simultaneous sensing and data-transmission strategy based on zero forcing is proposed.
- This results in increasing the throughput and in turn the degradation of quality of service (QoS) due to spectrum sensing is minimized.
- The proposed technique is analyzed and it is shown that the desired system level performance is achieved (P_{fa}, P_d) along with improvements in system throughput.

- **On the Performance of Eigenvalue-Based Cooperative Spectrum Sensing for Cognitive Radio**
  - Authors: Ayse Kortun, Tharmalingam Ratnarajah, Mathini Sellathurai, Caijun Zhong, Constantinos B. Papadias
  - Affiliations: Queens University, U.K.

- The distribution of the ratio of extreme eigen-values of a complex Wishart matric is analyzed in order to compute the decision threshold.
- The test statistic used for detection is the ratio of extreme eigen-values (maximum-minimum) of the complex wishart matrix.
- In the literature, only asymptotic analysis exists. Whereas, in this work, authors consider finite number of users/samples and derive an exact expression.
- It is also shown that there is a significant improvement in detection performance as compared to the asymptotic detection threshold.

- **Distributed Compressive Spectrum Sensing in Cooperative Multihop Cognitive Networks**
  - Authors: F. Zeng, C. Li, and Z. Tian
- **Cooperative Spectrum Sensing Strategies for Cognitive Radio Mesh Networks**
  - Authors: Q. Chen, M. Motani, W.-C. Wong, and A. Nallanathan
- **Optimally Sensing a Single Channel Without Prior Information: The Tiling Algorithm and Regret Bounds**
  - Authors: S.Filippi, O. Cappé, and A. Garivier

- **Optimization of Linear Cooperative Spectrum Sensing for Cognitive Radio Networks**
  - Authors: G. Taricco
- **Optimization of Non-Convex Multiband Cooperative Sensing With Genetic Algorithms**
  - Authors: M. Sanna and M. Murroni
- **CREAM-MAC: Cognitive Radio-EnAbled Multi-Channel MAC Protocol Over Dynamic Spectrum Access Networks**
  - Authors: X. Zhang and H. Su

Thank You