

# **CALL FOR PAPERS**

## **IEEE SIGNAL PROCESSING MAGAZINE Special Issue on Waveform-Agile Sensing and Processing**

Recent and continuing advances in sensor technology are yielding active sensors that are increasingly agile both in their waveform transmission capabilities and receiver response characteristics. New signal processing approaches are emerging to capitalize on this agility in several active sensing modalities, including radar, optical sensing, and sonar. Waveform-agile sensing, underpinned by advances in signal processing, offers potential for substantial performance gains spanning numerous applications and scenarios, such as: navigation; target detection, classification, and tracking; remote analysis of chemistry and mechanical structure; and biomedical imaging. Waveform agility also couples with other recent developments in sensing, such as the emergence of wireless sensor networks, to open new regimes of operational concepts, each entailing new signal processing challenges.

This Call for Papers invites tutorial articles on the application of signal processing techniques for waveform design and management in waveform-agile sensing. These articles may focus on state-of-the-art methodologies, exploration of key technical issues and challenges, or review of waveform-agile sensing in various application areas. Authors with accepted proposals will be invited to write a full manuscript.

### **Scope of topics:**

- Waveform design and scheduling for adaptive radar, sonar, or ladar/lidar.
- Waveform design and scheduling in highly cluttered sensing environments.
- Waveform scheduling for target detection, classification, or tracking.
- Waveform design in space-time adaptive processing.
- Signal processing perspectives on waveform design for wireless sensor networks.
- New mathematical insights into waveform design and performance measures for dynamic adaptation.
- New technologies for agile waveform generation in RF, optics, or acoustics.

### **Submission Procedure:**

Prospective authors should submit white papers to the web submission system at <http://www.ee.columbia.edu/spm/> according to the following timetable. White papers, limited to 3 single-column double-spaced pages, should summarize the motivation, the significance of the topic, a brief history, and an outline of the content. In all cases, prospective contributors should make sure to emphasize the signal processing in their submission.

### **Schedule (all deadlines are firm no exceptions)**

White paper due:	December 1, 2007
Invitation notification:	January 1, 2008
Manuscript due:	May 1, 2008
Acceptance Notification:	August 1, 2008
Final Manuscript due:	September 15, 2008
Publication date:	January, 2009

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