

# **CALL FOR PAPERS**

## **IEEE SIGNAL PROCESSING MAGAZINE Special Issue on Convex Optimization for Signal Processing**

In recent years, we have witnessed technical breakthroughs in a wide variety of topics where the key to success is the use of convex optimization. In fact, convex optimization has now emerged as a major signal processing technique and has made significant impact on numerous problems previously considered intractable. Today, innovative applications of convex optimization in signal processing range from those in adaptive filtering, detection and estimation, sensor array processing, MIMO communications, sensor networks, sampling theory, and more recently, image processing, speech processing and cognitive radios - and the scope of its applications is still expanding. Considering the foundational nature and potential impact of convex optimization in signal processing, there appears to be a clear need for a special issue that introduces convex optimization to the broad signal processing community, gives insights into how convex optimization can make a difference, and showcases some notable successes. This special issue aims to solicit papers that provide tutorials of convex optimization techniques (including available software) and various successful signal processing applications. Also welcome are tutorial papers that deal with emerging, meaningful applications; or that give friendly overviews of certain theoretically advanced convex optimization techniques relevant to signal processing.

To enhance readability and appeal for a broad signal processing audience, prospective authors are encouraged to use an intuitive approach in their presentation; e.g., by using simple instructive examples, considering special cases that show insights into the ideas, and using illustrations to the extent possible.

Examples of topics that will be addressed in this special issue include, but are not limited to:

- Adaptive filtering
- Beamforming
- Convex optimization fundamentals including relaxation techniques and software toolboxes
- Image processing applications, including denoising, MRI image processing, phase unwrapping
- Compressed sensing
- Detection and estimation
- MIMO communications
- Sensor networks
- Cognitive radios
- Speech applications

### **Submission Procedure:**

Prospective authors should submit their white papers through the web submission system at [www.ee.columbia.edu/spm](http://www.ee.columbia.edu/spm). The white paper should be no more than 6 pages in the IEEE double-space one-column 11-point format.

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

White paper due:	May 5, 2009
Invitation notification:	June 1, 2009
Manuscript submission:	September 1, 2009
Notification of acceptance:	December 1, 2009
Final manuscript decision:	January 15, 2010
Publication date:	May, 2010

### **Guest Editors:**

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