

# **HSCMA** 4th Joint Workshop on Hands-free Speech Communication and Microphone Arrays May 12-14, 2014, Nancy, France



## **Call for Papers**

### **Special Session of HSCMA 2014**

#### **Advances in sparse modeling and low-rank modeling for speech processing**

Sparse and low-rank modeling aim to incorporate the low-dimensional structures pertained to the geometry of the underlying problems to achieve the optimal solution. These concepts have been proven to be very effective for a wide range of applications at the intersection of multiple fields, including machine learning, signal processing and statistics.

In the context of audio and speech processing, and more particularly multiparty communications in reverberant and overlapping conditions, the integration of sparse and low-rank modeling concepts has led to several interesting new directions and promising results in speech communication problems, ranging from denoising to deconvolution and from separation to recognition. Several other exciting developments include sparse linear prediction, missing data recovery, audio content analysis and inpainting. Addressing such real applications is particularly challenging due to the complex acoustic and speech characteristics, and the need to develop new modeling strategies that meet the foundational theoretical hypotheses.

The goal of the proposed special session is to bring together researchers of these diverse fields to overview the recent advances and trends where sparse and low-rank modeling and applications are converging to new fundamental and practical paradigms that could also lead to the emergence of new speech technologies.

An indicative non-exhaustive list of pertinent topics include:

- Sparse modeling and low-rank modeling for separation and denoising
- Sparse regression and classification
- Sparse dimensionality reduction for feature extraction
- Structured sparsity models underlying audio and speech representation
- Auditory-inspired sparse modeling
- Sparse modeling and low-rank modeling for source localization
- Sparse representation and low-rank representation for reverberant acoustic modeling
- Applications in speech recognition, privacy-preserving speech processing, speaker recognition and authentication, speaker diarization, microphone array calibration, audio information retrieval, speech synthesis and coding

#### **Important Deadlines**

Submission of full papers:	February 2*, 2014
Notification of acceptance:	March 12, 2014
Submission of camera-ready papers:	April 4, 2014
Submission of 2-page abstract/short paper**:	April 4, 2014

\* Updating the manuscripts is possible until February 9.

\*\* Full papers will be included in the proceeding and the alternative short papers will be published on the website and presented as poster.

#### **Session Co-Chairs**

Prof. Hervé Boudlard and Dr. Afsaneh Asaei  
Idiap Research Institute, Martigny, Switzerland, [herve.boudlard@idiap.ch](mailto:herve.boudlard@idiap.ch), [afsaneh.asaei@idiap.ch](mailto:afsaneh.asaei@idiap.ch)