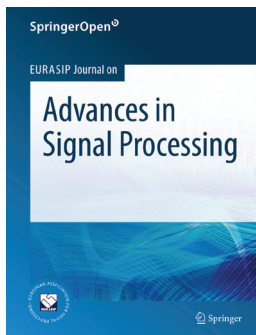


# EURASIP Journal on Advances in Signal Processing

**Special Issue on  
Recent Advances in Tensor Based  
Signal and Image Processing**

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Decompositions of high-order tensors can be viewed as generalizations of matrix decompositions. Tensor decompositions belong to a branch of linear algebra, called multilinear algebra. They fall within an interdisciplinary research field, with first applications in physics, and then in data analysis, psychometrics and chemometrics. During the last decade, tensors have drawn an increasing attention from the signal processing community. More specifically, tensors have been successfully applied, for instance, to wireless communication systems, biomedical and audio/speech signals. In image processing and computer vision, applications such as compression, noise reduction and object/face recognition have shown the usefulness of tensor based methods. Although important progress has been made in both fundamental and application aspects, “tensor research” has many challenges and open theoretical issues, with very attractive perspectives for solving new applications.

The goal of this special issue is to gather contributions that bring advances on tensor decompositions with applications to signal and image processing. Articles are invited which focus on either fundamental aspects of tensor decompositions or on application-oriented problems, or both. Fundamental issues include uniqueness, degeneracy, rank definitions and determination, low-rank approximation, structured tensors, constrained tensor models/decompositions, and algorithms. Application fields include (but are not limited to): modeling/ estimation of wireless communication channels, blind equalization and source separation, transceiver design for MIMO and cooperative communication systems, modeling and identification of non-linear systems, biomedical and genomic signal processing, image processing, and audio/ speech processing.

Potential topics include, but are not limited to:

**Applications:**

- ▶ Modeling and estimation of wireless channels
- ▶ Blind equalization and source separation
- ▶ MIMO and cooperative communication systems
- ▶ Non-linear system modeling and identification
- ▶ Biomedical and genomic signal processing
- ▶ Image processing
- ▶ Audio and speech processing
- ▶ Pattern (object /face) recognition
- ▶ Other signal processing applications

**Fundamental aspects:**

- ▶ New tensor models (constrained models structured and block-structured models sparse models)
- ▶ Rank approximations and uniqueness issues of tensor models
- ▶ Efficient algorithms for fitting tensor models
- ▶ Optimization problems involving tensors
- ▶ Multidimensional filtering techniques

## Submission Schedule

► Manuscript due:  
January 1, 2014

## Submission Instructions

Before submission, authors should carefully read over the Instructions for Authors, which are located at [asp.eurasipjournals.com/authors/instructions](http://asp.eurasipjournals.com/authors/instructions). Prospective authors should submit an electronic copy of their complete manuscript through the SpringerOpen submission system at [asp.eurasipjournals.com/manuscript](http://asp.eurasipjournals.com/manuscript) according to the submission schedule. They should choose the correct Special Issue in the “sections” box upon submitting. In addition, they should specify the manuscript as a submission to the “Special Issue on Recent Advances in Tensor Based Signal and Image Processing” in the cover letter. All submissions will undergo initial screening by the Guest Editors for fit to the theme of the Special Issue and prospects for successfully negotiating the review process.

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