

Conference planning

TUESDAY 21st

8:00 - 9:20
Registration / Coffee

9:20 - 9:30 : Opening

9:30 - 10:30
Keynote 1 : S. Gannot

10:30 - 11:00 : Coffee Break

11:00 - 12:40 : Oral 1
Tensor Approaches

12:40 - 14:10
Lunch

14:10 - 15:50 : Special Session 1
From Source Positions to Room Properties : Learning Methods for Audio Scene Geometry Estimation

15:50 - 16:10 : Coffee Break

16:10 - 17:50 : Poster 1
Tensors and Audio

17:50 - 19:10 : Oral 2
Audio Signal Processing

WEDNESDAY 22nd

8:00 - 9:00
Keynote 2 : O. Francois

9:00 - 9:30 : Coffee Break

9:30 - 11:10 : Oral 3
Theoretical Developments

11:20 - 12:20 : Oral 4
Physics and Bio Signal Processing

12:20 - 14:00
Lunch

14:00 - 16:00 : Visit Grenoble

20:00 - 23:00

Banquet

THURSDAY 23rd

9:00 - 10:00
Keynote 3 : J. Bioucas Dias

10:00 - 10:30 : Coffee Break

10:30 - 12:10 : Special Session 2
Latent Variable Analysis in Observation Sciences

12:10 - 13:30
Lunch

13:30 - 15:00 : Poster 2
ICA Theory and Applications

15:00 - 16:20 : Oral 5
Sparsity Aware Signal Processing

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Tuesday 21st, 11:00 - 12:40 : Oral 1 Session Chair : Pierre Comon

Tensor Approaches

Higher-Order Block Term Decomposition for Spatially Folded fMRI Data

- Christos Chatzichristos, *Computer Technology Institute & Press «Diophantus» (CTI), Greece
Dept. of Informatics and Telecommunications, National and Kapodistrian University of Athens, Greece*
- Eleftherios Kofidis, *Dept. of Statistics and Insurance Science, University of Piraeus, Greece
Computer Technology Institute & Press «Diophantus» (CTI), Greece*
- Yiannis Kopsinis, *LIBRA MLI Ltd, Edinburgh, UK
Computer Technology Institute & Press «Diophantus» (CTI), Greece*
- Manuel Morante Moreno, *Computer Technology Institute & Press «Diophantus» (CTI), Greece
Dept. of Informatics and Telecommunications, National and Kapodistrian University of Athens, Greece*
- Sergios Theodoridis, *Computer Technology Institute & Press «Diophantus» (CTI), Greece
Dept. of Informatics and Telecommunications, National and Kapodistrian University of Athens, Greece
IAASARS, National Observatory of Athens, GR-15236, Penteli Greece*

Modeling Parallel Wiener-Hammerstein Systems Using Tensor Decomposition of Volterra Kernels

- Philippe Dreesen, *Vrije Universiteit Brussel (VUB), Dept VUB-ELEC, Brussels, Belgium*
- David T. Westwick, *University of Calgary, Dept Electrical and Computer Engineering, Calgary, Canada*
- Johan Schoukens, *Vrije Universiteit Brussel (VUB), Dept VUB-ELEC, Brussels, Belgium*
- Mariya Ishteva, *Vrije Universiteit Brussel (VUB), Dept VUB-ELEC, Brussels, Belgium*

Fast Nonnegative Matrix Factorization and Completion using Nesterov Iterations

- Clement Dorer, Matthieu Puigt, Gilles Delmaire, and Gilles Roussel,
Univ. Littoral Côte d'Opale, LISIC - EA 4491, F-62228 Calais, France

Blind Source Separation of Single Channel Mixture Using Tensorization and Tensor Diagonalization

- Anh-Huy Phan, *Lab for Advanced Brain Signal Processing, Brain Science Institute - RIKEN, Japan*
- Petr Tichavský, *Institute of Information Theory and Automation, Prague, Czech Republic*
- Andrzej Cichocki, *Lab for Advanced Brain Signal Processing, Brain Science Institute - RIKEN, Japan*

High-Resolution Subspace-Based Methods: Eigenvalue- or Eigenvector-Based Estimation ?

- Konstantin Usevich, Souleyman Sahnoun, and Pierre Comon,
GIPSA-lab, CNRS and Univ. Grenoble Alpes, F-38000 Grenoble, France

Tuesday 21st, 14:10 - 15:50 : Special Session 1 Session Chairs : Nancy Bertin, Antoine Deleforge
From Source Positions to Room Properties : Learning Methods for Audio Scene Geometry Estimation

Speaker Tracking on Multiple-Manifolds with Distributed Microphones

- Bracha Laufer-Goldshtein, *Bar-Ilan University, Ramat-Gan, 5290002, Israel*
- Ronen Talmon, *Technion - Israel Institute of Technology, Technion City, Haifa 3200003, Israel*
- Sharon Gannot, *Bar-Ilan University, Ramat-Gan, 5290002, Israel*

VAST : The Virtual Acoustic Space Traveler Dataset

- Clement Gaultier, *Inria Rennes - Bretagne Atlantique, France*
- Saurabh Kataria, *Indian Institute of Technology Kanpur, India*
- Antoine Deleforge, *Inria Rennes - Bretagne Atlantique, France*

Tuesday 21st, 14:10 - 15:50 : Special Session 1 Session Chairs : Nancy Bertin, Antoine Deleforge (cont'd)
From Source Positions to Room Properties : Learning Methods for Audio Scene Geometry Estimation

Sketching for Nearfield Acoustic Imaging Of Heavy-Tailed Sources

Mathieu Fontaine, *Inria, speech processing team, Nancy Grand-Est, France*
Charles Vanwysberghe, *Institut Jean le Rond d'Alembert, Saint-Cyr l'Ecole, France*
Antoine Liutkus, *Inria, speech processing team, Nancy Grand-Est, France*
Roland Badeau, *LTCI, CNRS, Telecom ParisTech, Universite Paris-Saclay, Paris, France*

Acoustic DoA Estimation by One Unsophisticated Sensor

Dalia El Badawy, *Ecole Polytechnique Federale de Lausanne, Suisse*
Ivan Dokmanić, *University of Illinois at Urbana-Champaign, USA*
Martin Vetterli, *Ecole Polytechnique Federale de Lausanne, Suisse*

Acoustic Source Localization by Combination of Supervised Direction-Of-Arrival Estimation with Disjoint Component Analysis

Jörn Anemüller and Hendrik Kayser,
*Computational Audition Group, Medical Physics Unit and Cluster of Excellence Hearing4all,
Carl von Ossietzky Universität Oldenburg, 26111 Oldenburg, Germany*

Tuesday 21st, 16:10 - 17:50 : Poster 1 Session Chair : Ronald Phlypo
Tensors and Audio

An Initialization Method for Nonlinear Model Reduction Using the CP Decomposition

Gabriel Hollander, Philippe Dreesen, Mariya Ishteva, Johan Schoukens,
Vrije Universiteit Brussel

Audio Zoom For Smartphones Based on Multiple Adaptive Beamformers

Ngoc Q. K. Duong, *Technicolor, 975 avenue des Champs Blancs, 35576 Cesson Sévigné, France*
Pierre Berthet, *3D Sound Labs, 22 rue de la Rigourdi`ere, 35510 Cesson Sévigné, France*
Sidkièta Zabre, *Altran Technologies, 3 Rue Louis Braille, 35136 Saint-Jacques-de-la-Lande, France*
Michel Kerdranvat, Alexey Ozerov, Louis Chevallier,
Technicolor, 975 avenue des Champs Blancs, 35576 Cesson Sévigné, France

Complex-Valued Robust Multidimensional SOBI

Niko Lietzen, *Aalto University School of Science, Department of Mathematics and Systems Analysis,
P.O. Box 11100, 00076 Aalto, Finland*
Klaus Nordhausen, *University of Turku, Department of Mathematics and Statistics, 20014 Turku, Finland*
University of Tampere, School of Health Sciences, 33014 Tampere, Finland
Pauliina Ilmonen, *Aalto University School of Science, Department of Mathematics and Systems Analysis,
P.O. Box 11100, 00076 Aalto, Finland*

Ego Noise Reduction for Hose-Shaped Rescue Robot Combining Independent Low-Rank Matrix Analysis and Multichannel Noise Cancellation

Narumi Mae, Masaru Ishimura, Shoji Makino,
University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki, 305-8573 Japan
Daichi Kitamura, *SOKENDAI (The Graduate University for Advanced Studies), Shonan Village, Hayama, Kanagawa, 240-0193 Japan*
Nobutaka Ono, *SOKENDAI (The Graduate University for Advanced Studies), Shonan Village, Hayama, Kanagawa, 240-0193 Japan*
National Institute of Informatics (NII) 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo, 101-8430 Japan
Takeshi Yamada, *Aalto University School of Science, Department of Mathematics and Systems Analysis,*
Hiroshi Saruwatari, *The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8654 Japan*

Some Theory on Non-Negative Tucker Decomposition

Jeremy E. Cohen, *Departement of Mathematics and Operational Research, Rue de Houdain 9, Faculte polytechnique, Universite de Mons, Belgique*

Pierre Comon, Nicolas Gillis, *Gipsa-lab, 11 rue des mathematiques, 38210 St Martin D'Herès, France*

A New Algorithm for Multimodal Soft Coupling

Farnaz Sedighin, Massoud Babaie Zadeh, *Department of Electrical engineering, Sharif University of technology, Tehran, Iran*

Bertrand Rivet, Christian Jutten, *GIPSA-lab, CNRS, Univ. Grenoble Alpes, Grenoble INP, Grenoble, France*

Adaptive Blind Separation of Instantaneous Linear Mixtures of Independent Sources

Ondřej Šembera, Petr Tichavský, *Institute of Information Theory and Automation of the CAS, Prague, Czech Republic*

Zbyněk Koldovský, *Technical University Liberec, Faculty of Mechatronics, Informatics and Interdisciplinary studies, Liberec, Czech Republic*

Source Separation, Dereverberation and Noise Reduction Using LCMV Beamformer and Postfilter

Ofer Schwartz, *Faculty of Engineering, Bar-Ilan University, Ramat-Gan, Israel*

Sebastian Braun, *International Audio Laboratories Erlangen, Germany*

Sharon Gannot, *Faculty of Engineering, Bar-Ilan University, Ramat-Gan, Israel*

Emanüel A.P. Habets, *International Audio Laboratories Erlangen, Germany*

Toward Rank Disaggregation: an Approach Based on Linear Programming and Latent Variable Analysis

Vincent Vigneron, *IBISC, Universite d'Evry, 40 rue du Pelvoux, 91020 Courcouronnes, France*

Leonardo Tomazeli Duarte, *School of Applied Sciences (FCA), University of Campinas (UNICAMP), Rua Pedro Zaccaria, 1300, Limeira, Brazil*

A Proximal Approach for Nonnegative Tensor Decomposition

Xuan Vu, *Aix-Marseille Universite, CNRS, ENSAM, LSIS, UMR 7296, F-13397 Marseille*

Caroline Chau, *Aix Marseille Univ, CNRS, Centrale Marseille, I2M, Marseille, France*

Nadege Thirion-Moreau, Sylvain Maire, *Aix-Marseille Universite, CNRS, ENSAM, LSIS, UMR 7296, F-13397 Marseille*

Psychophysical Evaluation of Audio Source Separation Methods

Andrew J.R. Simpson, Gerard Roma, Emad M. Grais, *Centre for Vision, Speech and Signal Processing / University of Surrey, Guildford, UK*

Russell D. Mason, Christopher Hummersone, *Institute of Sound Recording / University of Surrey, Guildford, UK*

Mark D. Plumbley, *Centre for Vision, Speech and Signal Processing / University of Surrey, Guildford, UK*

Tuesday 21st, 17:50 - 19:10 : Oral 2 Session Chair : Sharon Gannot
Audio Signal Processing

On the Use of Latent Mixing Filters in Audio Source Separation

Laurent Girin, *GIPSA-lab, Grenoble Alpes Univ., INRIA Rhône-Alpes, France*
Roland Badeau, *LTCI, CNRS, Telecom ParisTech, Université Paris-Saclay, France*

Discriminative Enhancement for Single Channel Audio Source Separation using Deep Neural Networks

Emad M. Grais, Gerard Roma, Andrew J.R. Simpson, Mark D. Plumbley,
Centre for Vision, Speech and Signal Processing, University of Surrey, Guildford, UK

Audiovisual Speech Separation based on Independent Vector Analysis using a Visual Voice Activity Detector

Pierre Narvor, Bertrand Rivet, Christian Jutten,
Univ. Grenoble Alpes, Gipsa-Lab, F-38000 Grenoble, France

Monoaural Audio Source Separation Using Deep Convolutional Neural Networks

Prithish Chandna, Marius Miron, Jordi Janer, Emilia Gómez,
Music Technology Group, Universitat Pompeu Fabra, Barcelona

Wednesday 22nd, 9:30 - 11:10 : Oral 3 Session Chair : Christian Jutten, Dana Lahat
Theoretical Developments

On the behaviour of the estimated fourth-order cumulants matrix of a high-dimensional Gaussian white noise

Pierre Gouedard, Philippe Loubaton,
*Université Paris-Est Marne la Vallée, Laboratoire d'Informatique Gaspard Monge, UMR CNRS 8049
5 Bd. Descartes, Cite Descartes, 77454 Marne la Vallée Cedex 2, France.*

Caveats with stochastic gradient and maximum likelihood based ICA for EEG

Jair Montoya-Martínez, Jean-François Cardoso, Alexandre Gramfort,
LTCI, CNRS, Télécom ParisTech, Université Paris-Saclay, 75013, Paris, France

Approximate Joint Diagonalization According to the Natural Riemannian Distance

Florent Bouchard, *GIPSA-lab, CNRS, Univ. Grenoble Alpes, Grenoble Institute of Technology, Grenoble France*
Jérôme Malick, *LJK, CNRS, Univ. Grenoble Alpes, Grenoble France*
Marco Congedo, *GIPSA-lab, CNRS, Univ. Grenoble Alpes, Grenoble Institute of Technology, Grenoble France*

Gaussian Processes for Source Separation in Overdetermined Bilinear Mixtures

Denis G. Fantinato, *School of Electrical and Computer Engineering - University of Campinas, Campinas/SP, Brazil*
Leonardo T. Duarte, *School of Applied Sciences - University of Campinas, Limeira/SP, Brazil*
Bertrand Rivet, Bahram Ehsandoust,
GIPSA-Lab, Grenoble INP, CNRS, Grenoble, France
Romis Attux, *School of Electrical and Computer Engineering - University of Campinas, Campinas/SP, Brazil*
Christian Jutten, *GIPSA-Lab, Grenoble INP, CNRS, Grenoble, France*

Model-Independent Method of Nonlinear Blind Source Separation

David N. Levin, *Dept. of Radiology, University of Chicago, 1310 N. Ritchie Ct., Unit 26 AD, Chicago, IL 60610, USA*

Wednesday 22nd, 11:20 - 12:20 : Oral 4 Session Chair : Emmanuel Vincent
Physics and Bio Signal Processing

Multimodality for Rainfall Measurement

Hagit Messer, *School of Electrical Engineering, Tel Aviv University, Israel*

Particle Flow SMC-PHD Filter for Audio-Visual Multi-Speaker Tracking

Yang Liu, Wenwu Wang, *Department of Electrical and Electronic Engineering, University of Surrey, Guildford, GU2 7XH, U.K.*
Jonathon Chambers, *School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, U.K.*
Volkan Kilic, *Department of Electrical and Electronics Engineering, Izmir Katip Celebi University, 35620 Cigli-Izmir, Turkey*
Adrian Hilton, *Department of Electrical and Electronic Engineering, University of Surrey, Guildford, GU2 7XH, U.K.*

The 2016 Signal Separation Evaluation Campaign

Antoine Liutkus, *Inria, speech processing team, Villers-les-Nancy, France*
Fabian-Robert Stöter, *International Audio Laboratories Erlangen, Germany*
Zafar Rai, *Gracenote, Applied Research, Emeryville, USA*
Daichi Kitamura, *SOKENDAI (The Graduate University for Advanced Studies), Japan*
Bertrand Rivet, *GIPSA-lab, CNRS, Univ. Grenoble Alpes, Grenoble INP, Grenoble, France*
Nobutaka Ito, *NTT Communication Science Laboratories, NTT Corporation, Japan*
Nobutaka Ono, *National Institute of Informatics, Japan*
Julie Fontecave, *UJF-Grenoble 1 / CNRS / TIMC-IMAG UMR 5525, France*

Thursday 23rd, 10:30 - 12:10 : Special Session 2 Session Chair : Yannick Deville
Latent Variable Analysis in Observation Sciences

Estimation of the Intrinsic Dimensionality in Hyperspectral Imagery via the Hubness Phenomenon

Rob Heylen, *Visionlab, University of Antwerp, Belgium*
Mario Parente, *Electrical and computer engineering, University of Massachusetts, USA*
Paul Scheunders, *Visionlab, University of Antwerp, Belgium*

A Blind Identification and Source Separation Method Based on Subspace Intersections for Hyperspectral Astrophysical Data

Axel Boulais, Yannick Deville, and Olivier Berné,
Institut de Recherche en Astrophysique et Planetologie (IRAP) Toulouse University, UPS-OMP, CNRS Toulouse, France

Estimating the Number of Endmembers to use in Spectral Unmixing of Hyperspectral Data with Collaborative Sparsity

Lucas Drumetz, *Univ. Grenoble Alpes, CNRS, GIPSA-lab, F-38000 Grenoble, France*
Guillaume Tochon, *School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, U.K.*
Jocelyn Chanussot, Christian Jutten,
Univ. Grenoble Alpes, CNRS, GIPSA-lab, F-38000 Grenoble, France

Sharpening Hyperspectral Images using Plug-and-Play Priors

Afonso Teodoro, José Bioucas-Dias, and Mário Figueiredo,
Instituto de Telecomunicações, and Instituto Superior Tecnico, Universidade de Lisboa, Portugal

On Extracting the Cosmic Microwave Background from Multi-Channel Measurements

Jean-François Cardoso, *Institut d'Astrophysique de Paris (UMR 7095) C.N.R.S.*

Kernel-Based NPLS for Continuous Trajectory Decoding from ECoG Data for BCI Applications

Sarah Engel, Tetiana Aksenova, Andrey Eliseyev,

*Université Grenoble Alpes, F-38000 Grenoble, France
CEA, LETI, CLIMATEC, MINATEC Campus, F-38000 Grenoble, France*

On the Optimal Non-Linearities for Gaussian Mixtures in FastICA

Joni Virta,

University of Turku, Department of Mathematics and Statistics, Turku, Finland

Klaus Nordhausen,

University of Turku, Department of Mathematics and Statistics, Turku, Finland

University of Tampere, School of Health Sciences, Tampere, Finland

**Fast Disentanglement-Based Blind Quantum Source Separation and Process Tomography:
a Closed-form Solution Using a Feedback Classical Adapting Structure**

Yannick Deville,

*Université de Toulouse, UPS-CNRS-OMP, IRAP (Institut de Recherche en Astrophysique et Planétologie),
14 avenue Edouard Belin, F-31400 Toulouse, France*

Alain Deville,

Aix-Marseille Université, CNRS, IM2NP UMR 7334, 13397, Marseille, France

Blind separation of cyclostationary sources with common cyclic frequencies

Amine Brahmi,

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François Guillet,

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Adaptation of a Gaussian Mixture Regressor to a New Input Distribution: Extending the C-GMR Framework

Laurent Girin,

CNRS / Grenoble Alpes Univ. / GIPSA-lab, Grenoble, France

INRIA Rhône-Alpes, France

Thomas Hueber,

CNRS / Grenoble Alpes Univ. / GIPSA-lab, Grenoble, France

Xavier Alameda-Pineda,

INRIA Rhône-Alpes, France

University of Trento, Italy

Efficient Optimization of the Adaptive ICA Function with Estimating the Number of Non-Gaussian Sources

Yoshitatsu Matsuda and Kazunori Yamaguchi,

*Department of General Systems Studies, Graduate School of Arts and Sciences, The University of Tokyo,
3-8-1, Komaba, Meguro-ku, Tokyo, 153-8902, Japan*

Feasibility of WiFi Site-Surveying using Crowdsourced Data

Sylvain Leirens, Christophe Villien,

Commissariat à l'Énergie Atomique et aux Énergies Alternatives 17 rue des Martyrs F-38054 Grenoble Cedex, France

Bruno Flament,

InvenSense France, 22 avenue Doyen Louis Weil, Le Doyen, F-38000 Grenoble, France

On Minimum Entropy Deconvolution of Bi-Level Images

K. Nose-Filho,

School of Electrical and Computer Engineering, University of Campinas (UNICAMP)

A. K. Takahata, R. Suyama,

Engineering, Modeling and Applied Social Sciences Center, Federal University of ABC (UFABC)

R. Lopes, J. M. T. Romano,

School of Electrical and Computer Engineering, University of Campinas (UNICAMP)

Thursday 23rd, 13:30 - 15:00 : Poster 2 Session Chair : Bertrand Rivet (cont'd)

ICA Theory and Applications

A Joint Second-Order Statistics and Density Matching-Based Approach for Separation of Post-Nonlinear Mixtures

Denis G. Fantinato, *School of Electrical and Computer Engineering - University of Campinas, Campinas/SP, Brazil*
Leonardo T. Duarte, *School of Applied Sciences - University of Campinas, Campinas/SP, Brazil*
Paolo Zanini, Bertrand Rivet, *GIPSA-Lab, Grenoble INP, CNRS, Grenoble, France*
Romis Attux, *School of Electrical and Computer Engineering - University of Campinas, Campinas/SP, Brazil*
Christian Jutten, *GIPSA-Lab, Grenoble INP, CNRS, Grenoble, France*

Optimal Measurement Times for Observing a Brownian Motion Over a Finite Period Using a Kalman filter

Alexandre Aksenov, Pierre-Olivier Amblard, Olivier Michel, Christian Jutten,
GIPSA-lab, 11, rue des Mathématiques, 38240, Saint-Martin d'Herès, France

On Disjoint Component Analysis

K. Nose-Filho, *School of Electrical and Computer Engineering, University of Campinas (UNICAMP)*
L. T. Duarte, *School of Applied Sciences, University of Campinas (UNICAMP)*
J. M. T. Romano, *School of Electrical and Computer Engineering, University of Campinas (UNICAMP)*

Thursday 23rd, 15:00 - 16:20 : Oral 5 Session Chair : Antoine Deleforge

Sparsity-Aware Signal Processing

Accelerated Dictionary Learning for Sparse Signal Representation

Fateme Ghayem, Mostafa Sadeghi, Massoud Babaie-Zadeh,
Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran
Christian Jutten, *GIPSA-Lab, Institut Universitaire de France, Grenoble, France*

BSS with Corrupted Data in Transformed Domains

Cécile Chenot and Jérôme Bobin,
CEA, IRFU, Service d'Astrophysique - SEDI, 91191 Gif-sur-Yvette Cedex, France

Singing Voice Separation using RPCA with Weighted l_1 -norm

Il-Young Jeong, Kyogu Lee, *Music and Audio Research Group, Seoul National University, 1 Gwanak-ro, Gwanak-gu, 08826 Seoul, Korea*

Multimodal Approach to Remove Ocular Artifacts from EEG Signals Using Multiple Measurement Vectors

Victor Maurandi, Bertrand Rivet, Ronald Phlypo, Anne Guérin-Dugué,
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Christian Jutten, *Univ. Grenoble Alpes, GIPSA-Lab, F-38000 Grenoble France.*
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