2019

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- • A. El Aouni, V. Garçon, J. Sudre, H. Yahia, K. Daoudi, K. Minaoui
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  IEEE Transactions on Geoscience and Remote Sensing.  [IEEE Xplore]  [HAL]

- • A. El Aouni, H. Yahia, K. Daoudi, K. Minaoui
  A Fourier approach to Lagrangian vortex detection
  Chaos, American Institute of Physics, 29, 093106.  [Link to Chaos]  [HAL]

- • S. Maji, H. Yahia
  A Feature based Reconstruction Model for Fluorescence Microscopy Image Denoising
  Scientific Reports, Nature Publishing Group, 2019, 9 (1).  [Link to Nature Scientific Reports]  [HAL]

- • G. Attuel, E. Gerasimova, F. Argoul, H. Yahia and A. Arnéodo
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- • A. El Aouni, K. Daoudi, H. Yahia, K. Minaoui, A. Benazzouz
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- • A. El Aouni et. al.
  The contribution and influence of coherent mesoscale eddies off the North-West African Upwelling on the open ocean
  SIAM Conference on Mathematics of Planet Earth (MPE18).  [HAL]
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- G. Attuel, H. Yahia
  The fall of the reentry paradigm of cardiac fibrillation
  Second international Summer Institute on Network Physiology. [Link to ISINP](#) [HAL](#)

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- H. Yahia, V. Garçon, J. Sudre, C. Maes
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  Frontiers of Information Technology & Electronic Engineering, 2018. [HAL](#)

- A. Tamim et al.
  Automatic Detection of Moroccan Coastal Upwelling Zones using Sea Surface Temperature Images

- I. Hernandez-Carrasco, V. Garçon, J. Sudre, C. Garbe, H. Yahia
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  Merging Multifractal Satellite-Derived Ocean Variables

International peer-reviewed conferences

- N. Brodu
  Low-rankness transfer for denoising Sentinel-1 SAR images
  ISIVC’2018 - 9th International Symposium on Signal, Image, Video and Communications, Nov 2018. [HAL](#)

- L. Bonne, S. Bontemps, N. Schneider, T. Csengeri, H. Yahia, R. Günsten, G. Attuel, A.
Roy, R. Simon
Search for filamentary accretion through low velocity shocks
2018 Science for the Atacama Pathfinder Experiment (APEX). HAL.

Coherent Vortex Detection from Particles Trajectories Analysis
2018 SIAM Conference on Nonlinear Waves and Coherent Structures. HAL.

Surface Mixing and Biological Activity in The North African Upwelling
AGU Ocean Sciences Meeting 2018. HAL.

- G. S. Phartiyal, N. Brodu, D. Singh, H. Yahia
A mixed spectral and spatial Convolutional Neural Network for Land Cover
Classification using SAR and Optical data
EGU General Assembly, Vienna, 2018. HAL.

- G. Li, K. Daoudi, J. Klempir, J. Rusz
Linear classification in speech-based objective differential diagnosis of Parkinsonism
ICASSP’2018. HAL.

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- J. A. Dijksman, N. Brodu, R. Behringer
Refractive index matched scanning and detection of soft particles
Review of Scientific Instruments, American Institute of Physics. HAL.

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- N. Brodu
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- F. Frappart, L. Bourrel, N. Brodu, X. Salazar, F. Baup, J. Darrozes, R. Pombosa
Monitoring of the Spatio-Temporal Dynamics of the Floods in the Guayas Watershed
(Ecuadorian Pacific Coast) Using Global Monitoring ENVISAT ASAR Images and Rainfall Data

- O. Yelekçi et al.
   Spatial and Seasonal Distributions of Frontal Activity over the French Continental Shelf in the Bay of Biscay
   Continental Shelf Research, Elsevier, 2017. HAL.

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- V. J.-L. Ralaiarisoa, A. Valance, N. Brodu, R. Delannay
   High speed confined granular flows down inclined: numerical simulations
   EPJ Web of Conferences, 2017. HAL.

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- J. Sudre, H. Yahia, C. Maes, V. Garçon,
   Effect of wind stress forcing on ocean dynamics at Air-Sea Interface
   SOLAS Conference, 15-18 May 2017, Cargese. HAL.

2016

Book chapter

- G. Attuel, O. Pont, B. Xu, H. Yahia
   Sudden Cardiac Death and Turbulence
Articles in international peer-reviewed journals

- H. Badri, H. Yahia  
  A Non-Local Low-Rank Approach to Enforce Integrability  

- H. Badri, H. Yahia, D. Aboutajdine  
  Low-Rankness Transfer for Realistic Denoising  

- S. Kumar Maji, H. Yahia, T. Fusco  
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- A. Garg et al.  
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- O. Pont et al.  
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- N. Brodu, D. Singh, A. Garg  
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- •L. Bourrel, N. Brodu, F. Frapart
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  IEEE 39th International Conference on Telecommunications and Signal Processing, Jun 2016, Vienna, Austria . HAL .

- •K. Daoudi, N. Brodu, J. Rusz, J. Klempir
  Objective discrimination between Progressive Supranuclear Palsy and Multiple System Atrophy using speech analysis

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  General methodology for the derivation of high resolution oceanic data through information fusion at different scales
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- •G. Attuel, H. Yahia
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  Physical Principles of Biological and Active Systems, IOP Institute of Physics, Topical Meeting Edinburgh, United Kingdom , January 2016. HAL .

- •O. Yelekçi et al.
  Wintertime Submesoscale River Plumes in the Bay of Biscay

- J. Sudre, H. Yahia, O. Pont and V. Garçon
  How to obtain ocean turbulent dynamics at super resolution from optimal multiresolution analysis and multiplicative cascade?

- O. Yelekçi et al.
  Spatial and Seasonal Distributions of Frontal Activity over the Continental Shelf in the Bay of Biscay, Focus on Density Fronts in Winter
  AGU Ocean Science Meeting, New Orleans, 21-26 February 2016. [HAL].

Invited sessions

- H. Badri, H. Yahia
  Non-convex sparsity. Applications in Image processing.
  IEEE ICCS 2016, Roorkee, India.

- N. Brodu
  Super-resolving multiresolution images with band-independent geometry of multispectral pixels.
  IEEE ICCS 2016, Roorkee, India. [HAL].

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  Nonlinear trend removal should be carefully performed in heart rate variability analysis
  Arxiv, 2016. [HAL].

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- H. Badri
  Sparse and Scale-Invariant Methods in Image Processing
defended December 1st, 2015. HAL.

- A. Tamim
  Segmentation et classification des images satellitaires : application à la détection
des zones d’upwelling côtier marocain et mise en place d’un applicatif de suivi
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  information fusion at different scales
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- • G. Attuel, O. Pont, B. Xu, H. Yahia
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- • B. Xu, S. Jaquir, S. Binczak, H. Yahia, R. Dubois
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  Physiological Measurement, 2014. [HAL](#).

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  Digital Signal Processing, Elsevier, 2014. [HAL](#).

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  Approaches for automated feature detection
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  Fast and Accurate Texture Recognition with Multilayer Convolution and Multifractal Analysis
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- S. Kumar Maji, T. Fusco, H. Yahia
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  Surface Temperature Images
  SITA’14 - 9th International Conference on Intelligent Systems: Theories and
  Applications 2014. [HAL](#).

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  Chlorophyll concentration
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Inference of super-resolution ocean pCO2 and air-sea CO2 fluxes from non-linear and multiscale processing methods

- • B. Xu, S. Jacquir, S. Binczak, J.-M. Bilbault
Phase Space Reconstruction of an Experimental Cardiac Electrical Signal
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Invited sessions papers

- • H. Yahia
Edges, transitions, criticality: novel nonlinear characterizations of low-level transition features in signal processing and applications to cross-scale inference in complex signals
ISIVC 2014.

National peer-reviewed conferences

- • J.-M. Bilbault, S. Jacquier, B. Xu, G. Laurent, S. Binczak
Dynamical analysis for an in vitro model signal
34ème Séminaire de la Société Francophone de Biologie Théorique 2013, HAL
Web site

- • N. Brodu, J. Dijksman, R. Behringer
Structure and forces in stressed 3D packings
Présentation au GDR Phenix: Driven disordered systems, Laboratoire interdisciplinaire de physique 2014, HAL, GDR Phenix web site, Conference web site
2013

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- • S. K. Maji, H. Yahia
  Edges, Transitions and Criticality

- • S. K. Maji, H. Yahia, H. Badri
  Reconstructing an image from its edge representation

- • V. Khanagha, K. Daoudi, O. Pont, H. Yahia, A. Turiel
  Non-linear speech representation based on local predictability exponents

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- • R. Jourani, K. Daoudi, R. André-Obrecht and D. Aboutajdine
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- • M. Al Mashrgy, N. Bouguila and K. Daoudi
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- • A. Tamim, K. Minaoui, K. Daoudi, H. Yahia, A. Atillah, M. F. Smiej, D. Aboutajdine
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  Experimental study of arrhythmia due to mild therapeutic hypothermia after resuscitation of cardiac arrest
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- B. Xu, S. Jacquir, G. Laurent, J.-M. Bilbault, S. Binczak
  Phase space reconstruction of an experimental model of cardiac field potential in normal and arrhythmic conditions

- J. Sudre, H. Yahia, O. Pont, C. Pottier, C. Maes, V. Garçon
  Validation of high and super resolution ocean dynamics products

- V. Khanagha, K. Daoudi
  Efficient GCI detection for efficient sparse linear prediction
  Non-Linear Speech Processing (NOLISP 2013), June 19-21, Mons, Belgium, 2013. HAL.

- B. Xu, S. Jacquir, O. Pont, H. Yahia
  Cardiac arrhythmia induced by hypothermia in a cardiac model in vitro
  40th International Congress on Electrocardiology (ICE 2013), Glasgow, UK, 2013. HAL.

Direct access
Invited sessions papers

- O. Pont, H. Yahia, B. Xu
  Arrhythmic dynamics from singularity analysis of electrocardiographic maps

- H. Yahia, D. Singh
  Advanced nonlinear approaches for handling complex datasets and acquisitions in Earth Observations and Universe Sciences
  India-CEFIPRA workshop in ICST "Challenges in overcoming complexity, from big data to cyberphysical systems", April 4 - 5, 2013, New Delhi- India, Bhagirathi Building - IIT Delhi. [HAL](#).

National peer-reviewed conferences

- B. Xu, O. Pont, G. Laurent, S. Jacquir, S. Binczak, H. Yahia
  Arrhythmia due to mild therapeutic hypothermia - a study in vitro
  LIRYC Workshop, 2013. [HAL](#).

- O. Pont, B. Xu, H. Yahia
  Complexity in cardiodynamics - where arrhythmias emerge and measures of organization
  LIRYC Workshop, 2013. [HAL](#).

Doctoral thesis (PhDs)

- V. Khanagha
  Novel Multiscale Methods for Nonlinear Speech Analysis
  Bordeaux 1 University, 2013. [pdf](#) [Archive ouverte TEL](#).

- S. Kumar Maji
  Multiscale Methods in Signal Processing for Adaptive Optics
Bordeaux 1 University, 2013. [pdf](#)  [Archive ouverte TEL](#).

- J. Sudre
  Circulation submésoéchelle et comportements des prédateurs marins supérieurs : Apport de l'analyse multi-échelles et multi-capteurs
  Toulouse, Université de Toulouse III Paul Sabatier, 2013. [Archive ouverte TEL](#).

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- N. Vinuesa
  [Internship report](#) [HAL](#).

- B. Bertrac
  [Internship report](#) [HAL](#).

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- O. Pont, A. Turiel, H. Yahia
  Singularity analysis of digital signals through the evaluation of their Unpredictable Point Manifold

- R. Jourani, K. Daoudi, R. André-Obrecht, D. Aboutajdine
  Discriminative speaker recognition using Large Margin GMM

- V. Khanagha, K. Daoudi
  An Efficient Solution to Sparse Linear Prediction Analysis of Speech
- O. Pont, M. Haissaguerre, H. Yahia, N. Derval, M. Hocini
  Microcanonical processing methodology for ECG and intracardial potential:
  application to atrial fibrillation
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- S. K. Maji, O. Pont, H. Yahia, J. Sudre
  Inferring Information across Scales in Acquired Complex Signals
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  Efficient multipulse approximation of speech excitation using the most singular manifold
  Interspeech 2012, Portland, USA. HAL

- S. K. Maji, H. Yahia, O. Pont, J. Sudre, T. Fusco, V. Michau
  Towards Multiscale Reconstruction of Perturbated Phase from Hartmann-Shack Acquisitions
  IEEE NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2012) HAL pdf

- C. Garbe et al.
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  Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International. HAL

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- J. Sudre, H. Yahia, O. Pont, C. Pottier, C. Maes, V. Garçon
  Towards high-resolution mapping of ocean dynamics: multiscale fusion between low-resolution altimetry and high resolution sst
  Globcurrents, Needs for Ocean Surface Current Data from Space, ESA DUE GlobCurrent User Consultation meeting Agenda, ESA Ifremer, March 7-9 2012, Brest, France. [pdf](#) [HAL](#)

- O. Pont, H. Yahia, R. Dubois
  Microcanonical multifractal analysis of electric potential maps on the heart surface
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- O. Pont
  Analyse multiéchelles du potentiel électrique épicardique
  Biologie, Médecine et Systèmes Complexes, Rencontres du GdR "Dynamique et Contrôle des Systèmes Complexes" (DYCOEC) en partenariat avec le GdR "STIC-Santé", Rouen, 26-28 Novembre 2012. [HAL](#)

Invited speaker sessions

- H. Yahia, J. Sudre, V. Garçon, C. Pottier
  High-Resolution Ocean Dynamics from Microcanonical Formulations in Nonlinear Complex Signal Analysis
  European Geosciences Union General Assembly (EGU), Vienna, Austria, April 22-27, 2012. Session NP3.1 "Nonlinear, scaling and Complex Physical and Biogeophysical Processes in the Atmosphere and Ocean".
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Report

- H. Badri
  Informatique graphique dans le domaine du gradient et formalisme des systèmes reconstructibles
  Internship report. [HAL](#).

Doctoral thesis (PhD)

- R. Jourani
  Reconnaissance automatique du locuteur par des GMM à grande marge
  Université de Rabat, 2012. [Archive ouverte TEL](#).

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- O. Pont, A. Turiel, C. Perez-Vicente
  On Optimal Wavelet Bases for the Realization of Microcanonical Cascade Processes

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- V. Khanagha, H. Yahia, K. Daoudi, O. Pont, A. Turiel
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  Signals (ECMS 2011), June 1-3, 2011, Liberec, Czech Republic.  HAL, IEEEExplore.
- J. Winebarger, K. Daoudi, H. Yahia
  Improving SVF with DISTBIC for phoneme segmentation

- O. Pont, M. Haissaguerre, H. Yahia, N. Derval, M. Hocini
  Heartbeat dynamics from a microcanonical multiscale approach

- H. Kumar, H. Yahia, D. Singh
  A detailed analysis of multi-sensor fusion of moderate resolution imaging spectroradiometer with advanced spaceborne thermal emission and reflection radiometer on classification accuracy for improved land cover classification

- O. Pont, M. Haissaguerre, H. Yahia, N. Derval and M. Hocini
  A novel analysis method to characterize heartbeat dynamics through the Microcanonical Multiscale Formalism
  6th International Conference on Mass Data Analysis of Images and Signals in Medicine, Biotechnology and Chemistry, August 30 - September 3, 2011, New York, USA  . HAL  .

- O. Pont, A. Turiel, H. Yahia
  An optimized algorithm for the evaluation of local singularity exponents in digital signals

- V. Khanagha, K. Daoudi, O. Pont, H. Yahia
  Improving text-independant phonetic segmentation based on the microcanonical multiscale formalism
  2011 International Conference on Acoustics, Speech and Signal Processing (ICASSP 2011), May 22-27, Prague, Czech Republic  . HAL  .

- J. Sudre, H. Yahia, O. Pont, C. Pottier, V. Garçon
  Inferring fluid motion at submesoscale from high resolution remotely sensed data
2011 Ocean Surface Topography Science Team Meeting, October 17-21, San Diego, USA. [Conference web site](#) [HAL](#).

Invited conferences

- • H. Yahia, J. Sudre, V. Garçon, C. Pottier
  High-resolution ocean dynamics from microcanonical formulations in non linear complex signal analysis
  AGU Fall Meeting, December 5-9, San Francisco, USA. [HAL](#).

- • H. Yahia
  Local Predictability Exponents and universality classes in the framework of reconstructible complex systems
  Assyst Workshop on: Mathematics in Network Science: Implications to Socially Coupled Systems, Torino, Italy, November 21-23, Italy. [HAL](#).

National conferences

- • V. Khanagha, O. Pont, K. Daoudi, H. Yahia
  Une nouvelle approche non-linéaire pour la segmentation phonétique
  XXIIIe Colloque Gretsi, Bordeaux, 5-8 Septembre 2011. [HAL](#).

- • R. Jourani, K. Daoudi, R. André-Obrecht, D. Aboutajdine
  Apprentissage discriminant des GMM à grande marge pour la vérification automatique du locuteur
  XXIIIe Colloque Gretsi, Bordeaux, 5-8 Septembre 2011. [HAL](#).

- • J. Sudre, H. Yahia, V. Garçon, C. Pottier
  Evaluation de la dynamique océanique à haute résolution satellitaire SST par fusion de données à différentes échelles spatiales
  Atelier sur la fusion de données, Météo France, 18 Octobre 2011, Toulouse. [Workshop web site](#) [HAL](#).
Reports

- • J. Winebarger
  Phoneme segmentation and Voice activity detection
  Internship report, [HAL](#).

2010

Article in international peer-reviewed journal

- • H. Yahia, J. Sudre, C. Pottier, V. Garçon
  Motion analysis in oceanographic satellite images using multiscale methods and the energy cascade
  Pattern Recognition, 2010 [direct access](#), [HAL](#), [pdf](#).

International peer-reviewed conference/proceedings

- • O. Pont
  Universality in multiscale, turbulent-like self-organization: from algal blooms to heartbeat to stock market dynamics
  Emergence & Design of Robustness, General principles and Application to Biological, Social and Industrial Networks, IFISC, Palma de Mallorca, september 21-25, 2010, Spain [Link to conference page](#), [HAL](#).

- • J. Sudre, O. Pont, H. Yahia, C. Pottier, V. Garçon
  Optimal decomposition for the evaluation of ocean dynamics
  OST-ST Meeting, Altimetry for Oceans and Hydrology, 18 - 22 October 2010, Lisbon - Portugal [HAL](#).

- • J. Sudre, O. Pont, H. Yahia, C. Pottier, V. Garçon
  Evidencing of multiplicative cascading and intermittency in real/synthetic oceanographic signals: application to the evaluation of ocean dynamics
  OST-ST Meeting, Altimetry for Oceans and Hydrology, 18 - 22 October 2010, Lisbon - Portugal [HAL](#).
- V. Khanagha, K. Daoudi, O. Pont, H. Yahia
  A novel text-independent phonetic segmentation algorithm based on the microcanonical multiscale formalism
  Interspeech 2010, Makuhari, Japan, September 26-30. [HAL](#).

- R. Jourani, K. Daoudi, R. André-Obrecht, K. Aboutajdine
  Large Margin Gaussian mixture models for speaker identification
  Interspeech 2010, Makuhari, Japan, September 26-30. [HAL](#).

- J. Sudre, H. Yahia, C. Pottier, V. Garçon
  Inferring fluid motion at submesoscale from high resolution remotely sensed data
  Orflow10, Trends in Complex Systems, International Workshop on Living Organisms in Flows: From Small-scale Turbulence to Geophysical Flow, Palma de Majorca, Spain, [direct access](#).

- V. Khanagha, K. Daoudi, O. Pont, H. Yahia
  Application of the microcanonical multiscale formalism to segmentation of speech signals
  European Signal Processing Conference (EUSIPCO 2010), August 23-27, 2010, Aalborg, Denmark, [direct access](#).

National conferences

- V. Khanagha, K. Daoudi, O. Pont, H. Yahia
  Segmentation indépendante du texte par le formalisme multiéchelles microcanonique
  MajecSTIC 2010, Bordeaux, France. [HAL](#).

- V. Khanagha, K. Daoudi, O. Pont, H. Yahia
  Application du formalisme multiéchelles microcanonique pour la segmentation des signaux de parole
  Coresa 2010, Lyon, France. [HAL](#).
Reports

- • J. Winebarger
  Internship report  pdf  •  HAL

2009

Articles in International peer-reviewed journals

- • A. Turiel, H. Yahia, C. Pérez-Vicente
  Microcanonical multifractal formalism—a geometrical approach to multifractal systems: Part I. Singularity analysis
  Journal of Physics A: Mathematical and Theoretical, 2008.  HAL

- • O. Pont, A. Turiel, C. J. Pérez-Vicente
  Description, modeling and forecasting of data with optimal wavelets
  in: Journal of Economic Interaction and Coordination, June 2009, vol. 4, no 1, p. 39–54.  HAL

- • O. Pont, A. Turiel, C. Perez-Vicente
  Empirical evidences of a common multifractal signature in economic, biological and physical systems

- • E. Sanchez-Soto, A. Potamianos, K. Daoudi
  Unsupervised Stream-Weights Computation in Classification and Recognition Tasks

International peer-reviewed conference/proceedings

- • V. Khanagha, A. Khanagha, M. H. Kahaei
  Selective Tap Training of FIR filters for Blind Source Separation of Convulsive Speech Mixtures

- • V. Khanagha, A. Khanagha
Solving global permutation ambiguity of time domain BSS using speaker specific features of speech signals

- H. Yahia, J. Sudre, C. Pottier, V. Garçon
Determination of geostrophic vector field on high resolution SST images from the energy cascade

- M. Bouali, H. Yahia, A. Turiel, P. Henry
A Multifractal approach for sun glint in medium resolution satellite imagery

- N. Bouguila, K. Daoudi
A Statistical Approach for Binary Vectors Modeling and Clustering
in: 13th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2009  . HAL  .

- N. Bouguila, K. Daoudi
Learning concepts from visual scenes using a binary probabilistic model
in: IEEE International Workshop on Multimedia Signal Processing (MMSP), 2009. HAL

- K. Daoudi, J. Louradour
A comparison between sequence kernels for SVM speaker verification

Book chapter

- K. Daoudi
Iterated function systems and some generalizations: local regularity analysis and multifractal modeling of signals
in: Scaling, Fractals and Wavelets, 2009. HAL