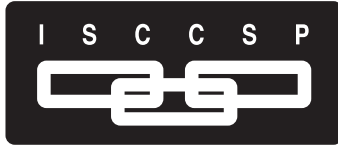


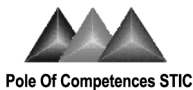
PROGRAM BOOK



# ISCCSP 2006

Second International Symposium on  
Communications, Control, and Signal Processing

13-15 March  
Marrakech, Morocco



**IEEE**  
IEEE CAS (DSP TC)

Edited by

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# Table of Contents

Welcome Message.....	5
Organizing Committee.....	7
Technical Program Committee.....	9
Sponsors.....	11
About Morocco.....	13
Symposium Venue.....	15
 <b>Technical Program</b>	
Monday, March 13th, 2006.....	17
Tuesday, March 14th, 2006.....	41
Wednesday, March 15th, 2006.....	65
 Author Index.....	 89



## Welcome Message

On behalf of the Organizing Committee, it is our great pleasure to invite you to attend the 2006, Second International Symposium on Control, Communications, and Signal Processing (ISCCSP 2006) to be held in Marrakech, Morocco on March 13-15, 2006. One of the goals of this symposium is to provide a forum where researchers from three above fields in electrical and computer engineering can interact and hopefully benefit from these interactions. The symposium is sponsored by the IEEE and the European Society for Signal Processing (EURASIP) and various governmental and public bodies.

The technical program includes 6 plenary lectures being given by world-renowned scholars. In addition, 16 special sessions are organized including 73 invited papers and 27 sessions composed of 217 contributed papers. The social program includes a welcome cocktail to be held in the evening of March 13th, and a banquet to be held on March 15th 2006.

We would like to thank all members of the Organizing Committee of ISCCSP 2006 for their extraordinary efforts which we are sure will make the symposium one of the greatest technical meetings. We are looking forward to meeting you at the symposium next March 2008.

Driss Aboutajdine  
Sanjit K. Mitra  
Mohamed Najim  
**General Co-Chairs, ISCCSP 2006**



# Organizing Committee

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Omar Fassi Fehri,

*Secrétaire perpétuel de l'académie Hassan II des Sciences et des techniques*

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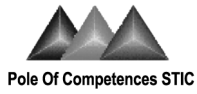


## Technical Program Committee

- H. Abdel Nour, *Palestine*  
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## Sponsors





## About Morocco

Morocco is a state in the North of Africa surrounded by the Atlantic and the Mediterranean sea respectively in the West and the North sides and by Algeria and Mauritania countries respectively in the East and the South. Though it is rooted in Africa, it is watered by Islam and rustled by the winds of Europe.

Because its strategic geographical position, its history has been impregnated with several civilizations, such as the Phoenicians, Romans, Vandals, Byzantines, Arabs and European (French, Spanish and Portugal).

In Morocco country, there are many wonderful historic and touristic sites recommended to be visited (the capital Rabat, Casablanca, Fès, Marrakech, ...). Marrakech (red pearl of the South) where the symposium will be held, is the second imperial city. The sunbaked walls, gardens, covered markets and magical open square of Marrakech have become a worldwide icon of exotic elegance. The city, fringed with palm, orange and olive groves, sits beneath the snow-capped peaks of the High Atlas. At its heart lies a complex spider's web of narrow alleys, through which can be tracked down hidden markets, museums and palatial restaurants. Immediately South of the city half a dozen valleys allow access into the mountains, either for a cool lunch or a visit to an ancient mosque or kasbah.

The Place Djemaa El Fna, the traditional meeting place, has become the heart of Marrakech. In the mornings this wide square, located on the edge of the souk district and bordered by shops and workshops, is crowded with fruit and spice sellers, guerrab with their leather water bottles and metal drinking cups, basket sellers, ironmongers and barbers. In the afternoons come the Gnaoua dancers descended from former Guinean slaves, musicians, story-tellers, snake charmers and entertainers with performing monkeys.

The Gueliz, the new town, built during the time of the French protectorate, is the urban, boulevarded side of Marrakech. Here and in L'Hivernage are the large hotels and all the modern entertainment which has made Marrakech Morocco's own holiday town. The restaurants and cafes are friendly and inviting, the food is fine.

Marrakech is full of monuments (Koutoubia mosque, Menara building, Tombs of the Saadiens...), ancient palaces (Bahia, ElBadii, ..) and gardens ('Majorelle' is the exotic one) don't forget to visit them.

## Symposium Venue

The Second International Symposium on Control, Communications and Signal Processing, ISCCSP 2006, will be held at

**Kenzi Farah Hotel,**

Avenue du Président Kennedy - Marrakech  
Marrakech, Morocco

Tel: +212 44 44 74 00

Fax: +212 44 44 87 30 / 44 43 82 16

Url: <http://www.kenzi-hotels.com/anglais/hotels/marrakech/marrakech.html>

Email: [info@kenzi-hotels.com](mailto:info@kenzi-hotels.com)





**PLEN1: High fidelity telepresence and teleaction - Integrating audio, visual, haptic signal**

**Location:** S1

**Time:** 09:00 - 09:45

**Chair:** Dr. Mitra S., *UCSB, USA*

**HIGH-FIDELITY TELEPRESENCE AND TELEACTION - INTEGRATING AUDIO-VISUAL-HAPTIC SIGNAL PROCESSING AND CONTROL**

K. Diepold, *Technische Universität München, Germany*

**CONT1: Observer design in communication system**

**Location:** S1

**Time:** 10:15 - 12:15

**Chair:** Prof. M'Saad Mohamed, *University Caen, France*

10:15 **POLYTOPIC OBSERVERS AND CHAOS-BASED CRYPTOGRAPHY**

Jamal Daafouz, *INPL - CRAN, France*; Gilles Millerioux, *UHP Nancy 1 - CRAN, France*

10:35 **NONLINEAR OBSERVER FOR SYNCHRONISATION AND INFORMATION RECOVERY IN COMMUNICATION SYSTEMS**

Mohamed Boutayeb, *ENSPS, France*; Ali Zemouche, *ENSPS, FRANCE*

10:55 **GENERALIZED OBSERVERS FOR A CLASS OF NONLINEAR SYSTEMS**

F.L. Liu, Boubekour Targui, M. Farza, Mohammed M'Saad, *GREYC, France*

11:15 **SUPER TWISTING ALGORITHM OBSERVER FOR A CLASS OF SWITCHED CHAOTIC SYSTEMS**

Hassan Saadaoui, *ECS-ENSEA, France*; Mohammed Djemai, *ENSEA, France*; Noureddine Manamanni, *Crestic, France*; Khelifa Benmansour, *ECS-ENSEA, France*

11:35 **ADAPTIVE OBSERVER FOR MULTI-CELL CHOPPER**

Khelifa Benmansour, *ECS-ENSEA, France*; J. De Leon, Mohammed Djemai, *ENSEA, France*

11:55 **A CHAOTIC SYSTEMS SYNCHRONIZATION METHOD APPLIED TO SECURE COMMUNICATIONS**

M.N. Maghraoui, S. Belghith, Mohammed Djemai, *ENSEA, France*

## **SIG7: Content based access and retrieval from visual digital libraries**

**Location:** S3

**Time:** 10:15 - 12:15

**Chair:** Prof. Delbimbo Alberto, *University of Firenze, Italy*

10:15    **BROWSING FOR THE NATIONAL DUTCH VIDEO ARCHIVE**

Arnold W.M. Smeulders, Jan van Gemert, Jan-Mark Geusebroek, Cees Snoek, Marcel Worring, *Intelligent Systems Lab Amsterdam, The Netherlands*

10:35    **VIDEO CLIP CLUSTERING FOR ASSISTED CREATION OF MPEG-7 PICTORIALLY ENRICHED ONTOLOGIES**

Costantino Grana, Daniele Bulgarelli, Rita Cucchiara, *University of Modena and Reggio Emilia, Italy*

10:55    **A BAYESIAN 3D SEARCH ENGINE USING ADAPTIVE VIEWS CLUSTERING**

Tarik Filali Ansary, Mohamed Daoudi, Jean-Philippe Vandeborre, *GET/INT - ENIC Telecom Lille 1, France*

11:15    **QUERY BASED SAMPLING OF IMAGE LIBRARIES**

Jurgen Assfalg, Gianpaolo D'Amico, Alberto Del Bimbo, Pietro Pala, *Dipartimento Sistemi e Informatica, Università Degli Studi di Firenze, Italy*

11:35    **MIMA: MULTIMEDIA INTERFACES FOR MOBILE APPLICATIONS**

Enrico Bertini, Giuseppe Santucci, Tiziana Catarci, *University of Rome, Italy*

11:55    **CONTENT-BASED IMAGE RETRIEVAL FOR CONNECTED MOBILE DEVICES**

Moncef Gabbouj, *Tampere University of Technology, Finland*; Iftikhar Ahmad, *Nokia, Finland*; Malik Yasir Amin, *University of Tampere, Finland*; Serkan Kiranyaz, *Tampere University of Technology, Finland*

## COM1: Mobile and wireless communications

**Location:** S2

**Time:** 10:15 - 12:15

**Chair:** Ghogho M., *LEEDS University, UK*

- 10:15    **DESIGN OF WIDEBAND MATCHING NETWORKS FOR WIRELESS COMMUNICATION SYSTEMS (INVITED)**  
B. Siddik Yarman, *Istanbul University, Istanbul, Turkey*; Metin Sengul, *Kadir Has University, Istanbul, Turkey*; Johannes Trabert, Kurt Blau, Matthias Hein, *Ilmenau Tech. University, Germany*
- 10:35    **ON REDUCED-COMPLEXITY VARIANTS TO THE DOUBLE SPACE-TIME TRANSMIT DIVERSITY PROPOSAL FOR UMTS**  
Christian Mehlführer, Christoph Mecklenbräuker, Markus Rupp, *Vienna University of Technology, Austria*
- 10:55    **WIRELESS LOCAL LOOP(WLL) MICROSTRIP ANTENNA RURAL APPLICATION**  
Sofia Lebbar, Zouhair Guennoun, *EMI, Morocco*; Mhamed Drissi, *IETR, France*; Fatima Riouch, *INPT, Morocco*
- 11:15    **A SIMPLE ADAPTIVE THROUGHPUT MAXIMIZATION ALGORITHM FOR ADAPTIVE MODULATION AND CODING SYSTEMS WITH HYBRID ARQ**  
Hsuan-Jung Su, Li-Wei Fang, *National Taiwan University, Taiwan*
- 11:35    **ADAPTIVE PREDICTION FOR CLOSED LOOP MULTI-LEVEL POWER CONTROL IN UMTS SYSTEM**  
Emna Bensalem, Sofiane Cherif, *Ecole Sup'erieure des Communications de Tunis, Tunisia*

11:55 **COMBINED ADAPTIVE MODULATION  
AND CHANNEL OPTIMIZED**

Hatem Elmeddeb, *ENIT, Tunisia*; Nouredine Hamdi,  
*EPT, Tunisia*; Ammar Bouallegue, *ENIT, Tunisia*

**POSA1: Filtering and signal processing applications (part I)**

**Location:** S4

**Time:** 10:15 - 12:15

**Chair:** Grivel Eric, *ENSEIRB, University Bordeaux I, France*

**ROBUST ADAPTIVE INFINITE IMPULSE RESPONSE NOTCH FILTERS: AN ADAPTIVE KALMAN ALGORITHM**

Junli Liang, Shijun Wang, Shuyuan Yang, Xiao Wang, *Chinese Academy of Sciences, China*

**AN EQUIVALENT FIR FILTER FOR AN IIR FILTER WITH DOUBLE FREQUENCY INITIALIZATION**

Jeedella Jeedella, Hussain Al-Ahmad, Mohammed Al-Mualla, *Etisalat University College, United Arab Emirates*; Jim Noras, *Bradford University, United Kingdom*

**A NEW CONSTRAINED COMPLEX LEAST-SQUARE DESIGN OF FINITE-IMPULSE RESPONSE FILTERS**

Junli Liang, Shijun Wang, *Department of Integrated Digital System, Institute of Acoustics, the Chinese Academy of Science, China*; Shuyuan Yang, *Department of Integrated Digital System, Institute of Acoustics, the Chinese Academy of Science, China*

**BLIND ESTIMATION OF NON-GAUSSIAN FINITE IMPULSE RESPONSE (FIR) SYSTEMS USING HIGHER ORDER STATISTICS**

Jilali Antari, Abdelouhab Zeroual, *Faculty of Sciences Semlalia-Marrakesh, Morocco*; Said Safi, *National School of Applied Sciences- Tangier, Morocco*

**A TWO-STAGE APPROACH TO BAYESIAN ADAPTIVE FILTERING**

Tayeb Sadiki, Dirk Slock, *EURECOM, France*

**STEADY-STATE PERFORMANCE ANALYSIS OF  
BAYESIAN ADAPTIVE FILTERING**

Tayeb Sadiki, Dirk Slock, *Eurecom Institute, France*

**A STATISTICALLY MATCHED PERFECT RECON-  
STRUCTION FILTER BANK FOR STATIONARY  
PROCESSES**

Nitin Nayar, Trishabh Chadda, Shiv Dutt Joshi, *Indian Institute  
of Technology, Delhi, India*

**ESTIMATION OF THE ARMA MODEL PARAM-  
ETERS BASED ON THE EQUIVALENT MA AP-  
PROACH**

Aydin Kizilkaya, Ahmet H. Kayran, *Istanbul Technical Univer-  
sity, Electrical and Electronics Engineering Department, Turkey*

**A NEW ALGORITHM FOR BLIND IDENTIFICA-  
TION OF MA MODELS USING CUMULANTS**

Mohamed Boulouird, Moha M'Rabet Hassani, *LEI Laboratory,  
Morocco*

**POSB1: Image processing part I  
(diffusion/detection/textures)**

**Location:** S5

**Time:** 10:15 - 12:15

**Chair:** Hammouch A., *ENSET-Rabat, Morocco*

**EVOLUTIONARY STRATEGIES AND ENTROPY  
APPROACH FOR THE OPTIMIZATION OF A  
FUZZY CLASSIFICATION**

M'barek Nasri, M. El Hitmy, *ESTO, Morocco*

**GENETIC APPROACH AND HOTELLING CRI-  
TERION FOR SELECTING THE OPTIMAL AT-  
TRIBUTE VECTOR: APPLICATION TO A SUPER-  
VISED CLASSIFICATION OF TEXTURE IMAGES**

M'barek Nasri, M. El Hitmy, *ESTO, Morocco*

**FACE AND EYES DETECTION TO IMPROVE NAT-  
URAL HUMAN-COMPUTER DIALOGUE**

Joseph Machrouh, Franck Panaget, Philippe Bretier, Christophe Garcia, *France Télécom, France*

**COLOUR-TEXTURE IMAGE ANALYSIS FOR IN-  
FIELD WHEAT HEAD COUNTING**

Frédéric Cointault, Bernard Chopinet, *ENESAD, France*

**AN EYE DETECTION ALGORITHM USING PIXEL  
TO EDGE INFORMATION**

Stylios Asteriadis, Nikos Nikolaidis, Andras Hajdu, Ioannis Pitas, *Aristotle University of Thessaloniki, Greece*

**FAST STEREO MATCHING USING RECTIFICA-  
TION AND CORRELATION TECHNIQUES**

A Saaidi, Hamid Tairi, K. Satori, *Department of Mathematics and Informatic, Morocco*



**TEXTURAL FEATURE SELECTION BASED MUTUAL INFORMATION**

Mounir Ait Kerroum, Ahmed Hammouche, Driss Aboutajdine,  
*Faculté des Sciences de Rabat, Morocco*

**SKIN-COLOR DETECTION USING FUZZY CLUSTERING**

Youssef Chahir, *GREYC, France*; Abderrahim Elmoataz,  
*LUSAC, France*

**A TREE DISTRIBUTION FOR SKIN DETECTION**

Sanaa El Fkihi, *GSCM Faculty of Sciences Rabat University MohammedV, Morocco*; Mohamed Daoudi, *ENIC Telecom Lille 1-LIFL, France*; Driss Aboutajdine, *GSCM Faculty of Sciences Rabat University MohammedV, Morocco*

**DEBLURRING AND DENOISING WITH EDGE ENHANCEMENT OF SATELLITE IMAGES USING SUPER RESOLUTION TECHNIQUES**

Amina Cheref, Chahira Serief, *National Centre of Space Techniques, Algeria*

**FACE DETECTION IN STILL COLOR IMAGES USING SKIN COLOR INFORMATION**

Aouatif Amine, Sanaa Ghouzali, Mohammed Rziza,  
*GSCM,FSR, Morocco*

## **PLEN2: Statistical MIMO processing**

**Location:** S1

**Time:** 13:30 - 14:15

**Chair:** Aboutajdine D., *University Mohammed V-Agdal, Morocco*

### **STATISTICAL MIMO PROCESSING**

M. A. Lagunas, *Centre Tecnològic de Telecomunicacions de Catalunya, Spain*

## CONT2: Observer theory and applications

**Location:** S1

**Time:** 14:15 - 16:00

**Chair:** Prof. Hammouri H., *France*

14:15    **REMARKS ON EVENT-BASED STABILIZATION OF PERIODIC ORBITS IN SYSTEMS WITH IMPULSE EFFECTS**

Jessy W. Grizzle, *University of Michigan, USA*

14:36    **UNKNOWN INPUTS ESTIMATION FOR A CLASS OF NONLINEAR SYSTEMS**

F.L. Liu, *Université de Caen, ENSICAEN, France*;  
M. Farza, Mohammed M'Saad, *GREYC, UMR 6072 CNRS, Université de Caen, France*

14:57    **MATHEMATICAL MODEL AND OBSERVER FOR RECOMBINANT ESCHERICHIA COLI STRAIN WITH BIOLUMINESCENCE INDICATOR GENES**

Madiha Nadri, *LAGEP UMR-CNRS, Université Claude Bernard Lyon 1, France*; I. Trezzani, *LAGEP UMR-CNRS, Université Claude Bernard Lyon 1, France*;  
Hassan Hammouri, *LAGEP UMR-CNRS, Université Claude Bernard Lyon 1, France*; P. Dhurjati, *University of Delaware, Newark, USA*

15:18    **A KALMAN OBSERVER FOR INFINITE DIMENSIONAL SKEW-SYMMETRIC SYSTEMS WITH APPLICATION TO AN ELASTIC BEAM**

Judicaell Deguenon, *LAGEP UMR-CNRS, France*;  
Gauthier Sallet, *Université de Metz, France*; Cheng-Zhong Xu, *LAGEP, Université de Claude Bernard, France*

15:39    **SIMPLE INTERVAL OBSERVERS FOR BIOTECHNOLOGICAL PROCESSES**

Jean-Luc Gouzé, Marcelo Moisan, Olivier Bernard, *INRIA, Sophia-Antipolis, France*

## COM2: Recent developments in discrete multitone methods for xDSL applications

**Location:** S2

**Time:** 14:15 - 16:00

**Chair:** Prof. Fliege Norbert J., *University Mannheim, Germany*

14:15    **CONCEPTS OF DYNAMIC ADAPTIVE DMT MODULATION**

Stefan Edinger, *University of Mannheim, Germany*;  
Carsten Bauer, *John Deere Werke Mannheim, Germany*

14:36    **COMPACT REPRESENTATION OF BIT AND POWER ALLOCATION TABLE INFORMATION FOR DMT SYSTEMS**

Stefan Edinger, Markus Gaida, *University of Mannheim, Germany*

14:57    **ADAPTIVE BER ENHANCEMENT USING FREQUENCY SELECTIVE POWER DISTRIBUTION IN DMT SYSTEMS**

Ilias Trachanas, Markus Gaida, *University of Mannheim, Germany*

15:18    **TIME-SELECTIVE ERROR PROTECTION CODING OF ADAPTATION PHASES IN DYNAMIC ADAPTIVE DMT**

Stefan Edinger, Markus Gaida, *University of Mannheim, Germany*

15:39    **COMPENSATING THE LEAKAGE EFFECT FROM BAND-LIMITED NOISE IN DFT-BASED MULTI-CARRIER MODULATION**

Johannes Schwarz, Norbert J. Fliege, *University of Mannheim, Germany*

## **SIG2: Signal processing in audio and acoustics**

**Location:** S3

**Time:** 14:15 - 16:00

**Chair:** Prof. Rabenstein R., *Germany*

14:15    **DIGITAL SOUND SYNTHESIS BY BLOCK-BASED PHYSICAL MODELING**

Rudolf Rabenstein, S. Petrausch, *University Erlangen-Nuremberg, Germany*

14:36    **SPATIAL ALIASING ARTIFACTS PRODUCED BY LINEAR LOUDSPEAKER ARRAYS USED FOR WAVE FIELD SYNTHESIS**

Sascha Spors, *Deutsche Telekom Laboratories, Germany*

14:57    **MULTICHANNEL ADAPTIVE AFFINE PROJECTION ALGORITHMS FOR LOCAL SOUND CONTROL**

Alberto Gonzalez, Maria De Diego, Miguel Ferrer, Gema Pinyero, *Universidad Politécnic de Valencia, Spain*

15:18    **MPEG-4 SLS LOSSLESS AND NEAR-LOSSLESS AUDIO CODING BASED ON MPEG-4 AAC**

Ralf Geiger, Markus Schmidt, Jürgen Herre, *Fraunhofer Institute for Integrated Circuits, Germany*; Rongshan Yu, *Institute for Infocomm Research, Singapore*

15:39    **WAVE FIELD SYNTHESIS AND ANALYSIS USING ARRAY TECHNOLOGY: A SURVEY**

Diemer De Vries, Marinus Boone, *Delft University of Technology, Netherlands*

## **POSA2: Video processing**

**Location:** S4

**Time:** 14:15 - 16:00

**Chair:** Tamtaoui A., *INPT, Rabat, Morocco*

### **USING EXTENDED INTRA PREDICTION FOR RESILIENT VIDEO CODING**

Said Benierbah, Mohammed Khamadja, *SP-Lab, Department of electronics, Mentouri University of Constantine, Algeria*

### **A METHOD FOR CHOOSING REFERENCE IMAGES BASED ON EDGE DETECTION FOR VIDEO COMPRESSION**

Mohammed Benabdellah, Mourad Gharbi, Najib Lamouri, Fakhita Regragui, *GRIARF, Fac. des Sc. Rabat-Agdal, Morocco*; El Houssine Bouyakhf, *Faculty of Sciences, Morocco*

### **NEW VARIABLE BLOCK-SIZE MOTION ESTIMATION ALGORITHM FOR H.264/AVC**

Mohamed Ali Ben Ayed, Amine Samet, *LETI, Tunisia*; Samir Marzouk, Nabil Souissi, Maher Ben Djmaa, *ENIS, Tunisia*; Nouri Masmoudi, *LETI, Tunisia*

### **A BACKGROUND MODELLING ALGORITHM FOR MOTION DETECTION**

Paolo Spagnolo, Marco Leo, Tiziana D'Orazio, Nicola Mosca, Massimiliano Nitti, *National Research Council, Italy*

### **UNSUPERVISED CLUSTERING BY K-MEDOIDS FOR VIDEO SUMMARIZATION**

Youssef Hadi, Fedwa Essannouni, *FSR, Morocco*; Rachid Oulad Haj Thami, *ENSIAS, Morocco*

### **DISTRIBUTED VIDEO CODING BASED ON LATTICE VECTOR QUANTIZATION**

Anhong Wang, Yao Zhao, Huihui Bai, Hao Wang, *Beijing Jiaotong University, China*

**IN-LOOP DEBLOCKING FILTER FOR H.264/AVC VIDEO**

Gulistan Raja, *University of Engineering & Technology, Taxila., Pakistan*; Muhammad Javed Mirza, *Advanced Engineering Research Organization, Wah Cantt., Pakistan*

**A NEW OPTIMAL FREQUENCY MOTION ESTIMATION ALGORITHM**

Fedwa Essannouni, Youssef Hadi, *GSCM, Morocco*; Rachid Oulad Haj Thami, *ENSIAS, Morocco*; Driss Aboutajdine, *GSCM, Morocco*; Ahmed Salam, *LMPA, France*

## **POSB2: Communication receiver, OFDM and CDMA**

**Location:** S5

**Time:** 14:15 - 16:00

**Chair:** Ait Ouhmane A., *University Cadi Ayyad, Marrakech, Morocco*

### **A SIMPLIFIED SIMULATOR OF THE RAKE RECEIVER IN THE HSDPA SYSTEM**

Mohamed Et-Tolba, *ENST Bretagne, France*; Mahmoud Ammar, *Syscom Laboratory, ENIT, Tunisia*; Samir Saoudi, *ENST Bretagne, France*; Raphael Visoz, *France Telecom R&D DMR/IIM, France*

### **A BLIND ADAPTIVE SUBSPACE ALGORITHM FOR CHANNEL ESTIMATION OF OFDM SYSTEMS**

Yong Fang, Jian Zhang, *Shanghai University, China*

### **THROUGHPUT EVALUATION OF THE RAKE RECEIVER AND THE LINEAR CHIP EQUALIZER IN THE PRESENCE OF MULTI-CODE INTERFERENCE**

Hatem Boujemâa, Mohamed Jerad, Mohamed Siala, *SUPCOM, Tunisia*

### **PERFORMANCE ANALYSIS OF OFDM AND CDMA USING PHASE NOISE AND FREQUENCY ERROR**

Abderrahmane Anou, Messaoud Bensebti, M. Djebari, M. Mehdi, M. Bersali, *University of Blida, Algeria*

### **ANTI-ALIASING FILTER IN HYBRID FILTER BANKS**

Daniel Poulton, *Ecole Supérieure d'Electricité, France*

### **RELEVANCE OF THE ASYMPTOTIC REDUCED-RANK MMSE DETECTOR IN MC-DS-CDMA SYSTEM**

Julie Grolleau, Eric Grivel, Mohamed Najim, *Equipe Signal et Image, UMR 5131 LAPS, ENSEIRB, France*



**PARALLEL INTERFERENCE CANCELLATION  
SCHEMAS FOR DS-CDMA IN TIME VARYING  
ENVIRONMENT**

Rim Elasmî-Ksibi, *Iset-Nabeul, Tunisia*; Sofiane Cherif, *Ecole Supérieure des Communications de Tunis, Tunisia*

**CHANNEL PARAMETERS ESTIMATION FOR  
OFDM SYSTEMS**

El Kefi Hlel, *Ecole supérieure des communications de Tunis, Tunisia*; Fethi Tlili, Sofiane Cherif, Mohamed Siala, *Ecole Supérieure des Communications de Tunis, Tunisia*

**TOWARDS AN AUTOMATIC EXTRACTION OF  
DATA FROM HALF-STRUCTURED DOCUMENTS**

Habib Ben Lahmer, Abd Alaziz Sdigui Doukkali, Mohammed Oumsis, *ENSIAS, Morocco*

**OPTIMAL INTRA-SYMBOL TRANSMIT WIN-  
DOWING FOR MULTICARRIER MODULATION**

Thomas Magesacher, *Lund University, Sweden*

**ON OPTIMUM PILOT DESIGN FOR OFDM SYS-  
TEMS WITH VIRTUAL CARRIERS**

Mounir Ghogho, *University of Leeds, United Kingdom*

**ZIV-ZAKAI LOWER BOUND ON THE TIME DELAY  
ESTIMATION OF UWB SIGNALS**

Hicham Anouar, Aawatif Menouni Hayar, Raymond Knopp, Christian Bonnet, *EURECOM, France*

### SIG3: Geophysical signal processing

**Location:** S3

**Time:** 16:30 - 18:30

**Chair:** Prof. Chassery Jean-Marc, *Grenoble, France*;  
Berthoumieu Yannick, *Bordeaux, France*

- 16:30 **MULTICOMPONENT SEISMIC DATA FILTERING BY MULTILINEAR METHODS**  
J erome Mars, Nicolas Le Bihan, *LIS, France*; Valeriu Vrabie, *Centre de Recherche en STIC, University of Reims, France*; Caroline Paulus, *LIS, France*
- 16:54 **A TENSOR BASED DIFFUSION PROCESS TO ENHANCE FAULTS IN SEISMIC BLOCKS**  
Olivier Laviaille, Sorin Pop, Regis Dargent, *LAPS UMR 5131 - LASIS, France*; Sebastien Guillon, Naamen Keskes, *SISMAGE team, TOTAL, France*
- 17:18 **EIGEN FILTER FOR ATTENUATION COHERENT NOISE IN 2-D SEISMIC DATA**  
Brahim Aksasse, *ASIA FSTE Errachidia, Morocco*; Youssef Stitou, Yannick Berthoumieu, Mohamed Najim, *ENSEIRB - LAPS UMR 5131 LASIS, France*
- 17:42 **GEOMETRICAL MODEL BASED METHOD FOR FAULT DETECTION**  
Yannick Berthoumieu, *ENSEIRB - LAPS UMR 5131 LASIS, France*; Marc Donias, *ENSEIRB, France*; C. David, *ENSEIRB - LAPS UMR 5131 LASIS, France*; Sebastien Guillon, Naamen Keskes, *SISMAGE Team, TOTAL, France*
- 18:06 **SEISMIC WAVE SEPARATION BY SVD AND (F-K) COMBINED FILTERS**  
Jean Luc Mari, *Institut Francais du P etrole, France*

### COM3: Network and QOS

**Location:** S2

**Time:** 16:30 - 18:30

**Chair:** Mouaddib N., *University de Nantes, France*

- 16:30    **MAPPING DIFFSERV TO MAC DIFFERENTIATION FOR IEEE 802.11E**  
Mounir Frikha, Najet Tibi, *SUPCOM, Tunisia*; Faiza Tabbana, *Académie Militaire (Foundk Eljadid), Tunisia*
- 16:54    **A SIMPLE PERFORMANCE ANALYSIS OF MULTIPLE ACCESS RFID NETWORKS BASED ON THE BINARY TREE PROTOCOL**  
Fabio Cappelletti, Gianluigi Ferrari, Riccardo Raheli, *University of Parma, Italy*
- 17:18    **CLUSTERED DECENTRALIZED BINARY DETECTION: AN INFORMATION-THEORETIC APPROACH**  
Gianluigi Ferrari, Marco Martalò, Roberto Pagliari, *University of Parma, Italy*
- 17:42    **A FUZZY LOGIC APPROACH FOR ADJUSTING THE CONTENTION WINDOW SIZE IN IEEE 802.11E WIRELESS AD HOC NETWORKS**  
Joe Naoum-Sawaya, Bissan Ghaddar, *University of Waterloo, Canada*
- 18:06    **ACTIVE QUEUE MANAGEMENT IN TCP NETWORKS BASED ON MINIMUM VARIANCE ADAPTIVE CONTROL**  
Mohammad Shakiba Herfeh, Mohammad Haeri, *EE Dept., Sharif Univ. of Tech., Iran*

## **POSA3: 3-D signal processing**

**Location:** S1

**Time:** 16:30 - 18:30

**Chair:** Bakrim M., *University Cadi Ayyad, Morocco*

### **REPRESENTATION, DESCRIPTION AND SEGMENTATION INTO FACETS OF 3D OBJECTS**

E. Ait Lmaati, Ahmed El Oirrak, *FSS, Morocco*; Driss Aboutajdine, *FS, Morocco*; Mohamed Daoudi, *ENIC-INT, France*; M. N. Kaddioui, *FSS, Morocco*

### **CONTRIBUTION TO THE LOCALIZATION OF FREE 3D SURFACES BY THE MEAN OF PHOTO-METRIC STEREOVISION**

E. Mile-Ciobanu, A. Benslimane, Majdi Koudeir, J. Brochard, *University of Poitiers, France*

### **A BAYESIAN DECISION FOR 3D OBJECT RETRIEVAL AND CLASSIFICATION**

Abdelalim Sadiq, Rachid Oulad Haj Thami, *ENSIAS, Morocco*; Mohamed Daoudi, Jean-Philippe Vandeborre, *ENIC, France*

### **THREE-DIMENSIONAL BUILDINGS RECONSTRUCTION FROM IKONOS STEREO IMAGES**

Riadh Tebourbi, Ziad Belhadj, *SUPCOM, Tunisia*

### **MODEL-BASED QUALITY CONTROL FOR THE COMPRESSION OF 3D MESH SEQUENCES WITH FIXED CONNECTIVITY**

Yasmine Boulfani, Frédéric Payan, Marc Antonini, *I3S, France*

### **CUMULANT MATRIX PENCIL METHOD FOR THREE-DIMENSIONAL FREQUENCY ESTIMATION IN COLORED GAUSSIAN NOISE**

Youssef Stitou, *Université Bordeaux 1, France*; Brahim Aksasse, *FST- Errachidia, Morocco*; Mohamed Najim, *ENSEIRB, France*

## **POSB3: Biomedical signal and image processing**

**Location:** S5

**Time:** 16:30 - 18:30

**Chair:** Sbihi A., *University IBN TOFAIL Kenitra, Morocco*

### **PEDIAG II: A NEW TOOL TO IMPROVE VISUAL EVOKED POTENTIALS EXTRACTION AND INTERPRETATION**

El-Mehdi Hamzaoui, Fakhita Regragui, M.M. Himmi, *Laboratoire GRIIARF, Morocco*; El Houssine Bouyakhf, *Faculty of Sciences, Morocco*; K. Laraki, *Laboratoire GRIIARF, Morocco*

### **IDENTIFICATION OF CONGESTIVE HEART FAILURE USING SOFT DECISION SUBBAND DECOMPOSITION AND ARTIFICIAL NEURAL NETWORKS**

Abdulnasir Hossen, Bader Al-Ghunami, *Sultan Qaboos University, Oman*

### **ITERATIVE RESTORATION OF X-RAY IMAGES TAKEN IN X-PINCH RAYS**

Alexander Konovalov, Vitaly Vlasov, Alexander Uglov, *Russian Federal Nuclear Centre - Institute of Technical Physics, Russian Federation*; Tatiana Shelkovenko, Sergey Pikuz, *Cornell University, USA*

### **THE PROJECTION THEOREM FOR MULTI-DIMENSIONAL FRACTALS**

Gérald Lemineur, Rachid Harba, Rachid Jennane, Thierry Devers, *Laboratory of Electronics Signals Images, France*; Anne Estrade, *MAP 5 Laboratory, France*; Claude Laurent Benhamou, *INSERM U658, France*

### **CHARACTERIZATION OF THE NORMAL MAMMOGRAMS BASED ON STATISTICAL FEATURES**

Fatima Eddaoudi, *Nuclear Studies Center of Maâmora, Morocco*; Fakhita Regragui, *University Mohammed V-Agdal, Morocco*; K. Laraki, *Nuclear Studies Center of Maâmora, Morocco*

**CLUSTER ANALYSIS WITH CONTEXTUAL INFORMATION. APPLICATION TO TEXTURED MEDICAL IMAGE CLASSIFICATION**

Ahmed Moussa, *ENSAT Tanger, Morocco*; Abderrahmane Sbihi, *Université Ibn Tofail Kénitra, Morocco*; Jack-Gérard Postaire, *USTL Lille1, France*

**RIGID REGISTRATION, DETECTION OF EVOLVING PROCESSES IN MEDICAL**

Aicha Djerouni, Hocine Hamada, Amine Bouriah, Mustapha Slimani, L. Bouhlal, *USTOMB, Algeria*

**ANALYSIS OF NUCLEAR TIME ACTIVITY CURVES BY CROSS- $\Psi_B$ -ENERGY OPERATOR**

Abdel-Ouahab Boudraa, Jean-Christophe Cexus, *IRENav, Ecole navale, France*; Fabien Salzenstein, *InESS, Université de Strasbourg, France*; Azeddine Beghdadi, *L2TI, Université Paris 13, France*

**AN IMPROVED EMBEDDED ZEROTREE WAVELET ALGORITHM FOR ECG DATA COMPRESSION**

Abdenour Boukaache, *Laboratoire d'Automatique et Informatique de Guelma, Algeria*

**GENOMIC SIGNAL ANALYSIS OF AVIAN INFLUENZA VIRUS VARIABILITY (INVITED)**

Paul Dan Cristea, Rodica Tuduce, *Biomedical Engineering Center, Politehnica of Bucharest, Romania*

## **POSC3: Control design methods**

**Location:** S4

**Time:** 16:30 - 18:30

**Chair:** Dahhou B., *INSA, University P. Sabatier Toulouse, France*

### **ROBUST OBSERVER BASED H-INFINITE CONTROLLER DESIGN FOR UNCERTAIN LINEAR SYSTEMS WITH NON COMMENSURATE TIME VARYING STATE AND CONTROL DELAYS**

El Houssaine Tissir, *University Sidi Mohamed Ben Abdellah, Morocco*

### **CUTTING PLANE METHODS FOR PROBABILISTICALLY-ROBUST FEASIBILITY PROBLEMS**

Giuseppe Calafiore, *Politecnico di Torino, Italy*

### **FUZZY CONTROL SYSTEM WITH IMPLEMENTATION ON AN EMBEDDED MICROCONTROLLER**

Yordan Chervenkov, Ovid Farhi, *Technical University of Varna, Bulgaria*

### **DECENTRALIZED ADAPTIVE FUZZY CONTROL FOR A LARGE-SCALE INTERCONNECTED SYSTEMS**

Majid Benyakhlef, Larbi Radouane, *Faculté des Sciences Dhar el Mahraz Fès, Morocco*

### **DECENTRALIZED ADAPTIVE CONTROL OF A CLASS OF NONLINEAR DISCRETE TIME SYSTEMS USING NEURAL NETWORKS.**

Salwa Baqqali, Meriem Makoudi, *LESSI, Morocco*

### **DECENTRALIZED CONTROL OF A CLASS OF NONLINEAR INTERCONNECTED SYSTEMS USING FUZZY SYSTEMS**

Majid Benyakhlef, Larbi Radouane, *Faculté des Sciences Dhar el Mahraz Fès, Morocco*

**AN ARCHITECTURE FOR ACTIVE FAULT TOLERANT CONTROL SYSTEMS**

Jérôme Cieslak, David Henry, Ali Zolghadri, *LAPS, France*

**A NON CONSERVATIVE PERFORMANCES MEASURE FOR FDI SCHEMES**

David Henry, *LAPS, France*

**A NEW FUZZY SLIDING MODE CONTROLLER FOR INDUCTION MOTOR SPEED CONTROL**

Abdeldjebar Hazzab, Ismaïl Khalil Bousserhane, *University Center of Bechar, Algeria*; M. Kamli, Mostefa Rahli, *University of Sciences and Technology of Oran, Algeria*

**VARIABLE STRUCTURE CONTROL DESIGN OF PROCESS PLANT BASED ON SLIDING MODE APPROACH**

Hazim Tahir, A. A. A. Al-Rawi, *MOST, Iraq*



**PLEN3: CDMA in retrospect**

**Location: S1**

**Time: 09:00 - 09:45**

**Chair:** Prof. Lagunas M.A., *CTTC-UPC, Barcelone, Spain*

**CDMA IN RETROSPECT**

Robert Scholtz, *University of Southern California, USA*

## COM4: Advanced techniques for mobile radio-communications

**Location:** S2

**Time:** 10:15 - 12:15

**Chair:** Prof. Saoudi Samir, *ENST-Bretagne, France*

10:15    **A POWER ALLOCATION SCHEME FOR MIMO OFDM SYSTEMS**

Wladimir Bocquet, *FTR&D, Japan*; Kazunori Hayashi, Hideaki Sakai, *Kyoto University, Japan*

10:35    **NEW CONSTRUCTION RULES FOR SPACE-TIME TRELLIS CODES BY SET PARTITIONING : (TURBO) SUPER ORTHOGONAL SPACE TIME TRELLIS CODES**

G. Ferré, J.P. Cances, V. Meghdadi, J.M. Dumas, *ENSIL-Limoges, France*

10:55    **TURBO-EQUALIZATION FOR SINGLE-CARRIER TRANSMISSION OVER MIMO BROADBAND WIRELESS CHANNEL: PERFORMANCE/COMPLEXITY TRADE-OFFS**

Raphael Visoz, Sami Chtourou, *FTR&D, France*; Antoine Berthet, *SupElec, France*

11:15    **A COMPARATIVE STUDY OF CODED OFDM SYSTEMS**

Syed Faisal Shah, Ahmed Tewfik, *University of Minnesota, USA*

11:35    **A FAST AND ROBUST BLIND DETECTION SCHEME FOR DOWNLINK UMTS TDD COMPONENT**

Mahmoud Hadeif, Samir Bendoukha, Stephan Weiss, *University of Southampton, United Kingdom*

11:55 **SUCCESSIVE INTERFERENCE CANCEL-  
LATION TURBO RECEIVERS FOR FRE-  
QUENCY SELECTIVE FADING MIMO SYS-  
TEMS**

Tarik Ait-Idir, *INPT-Rabat, Morocco*; Samir Saoudi,  
*ENST-Bretagne, France*

## **SIG4: Blind source separation and its applications**

**Location:** S3

**Time:** 10:15 - 12:15

**Chair:** Prof. Belouchrani Adel, *ENP, Algiers*

- 10:15    **A COMPARISON OF TWO DISTINCT APPROACHES TO THE BLIND IDENTIFICATION PROBLEM OF UNDER-DETERMINED MIXTURES OF CYCLO-STATIONARY SIGNALS WITH UNKNOWN CYCLIC FREQUENCIES**  
Saloua Rhioui, Nadège Thirion-Moreau, Eric Moreau, *ISITV, France*
- 10:35    **ON THE USE OF NON-ORTHOGONAL APPROXIMATE JOINT DIAGONALIZATION ALGORITHMS FOR BLIND SOURCE SEPARATION IN PRESENCE OF ADDITIVE NOISE**  
Serge Dégerine, Elimane Kane, *LMC-IMAG, France*
- 10:55    **BLIND SOURCE SEPARATION CAN RECOVER SYSTEMATICALLY DISTRIBUTED NEURONAL SOURCES FROM "RESTING" EEG**  
Matthew T. Sutherland, Akaysha C. Tang, *University of New Mexico, USA*
- 11:15    **A MULTI-TAG RADIO-FREQUENCY IDENTIFICATION SYSTEM USING A NEW BLIND SOURCE SEPARATION METHOD BASED ON SPECTRAL DECORRELATION**  
Hicham Saylani, Yannick Deville, Shahram Hosseini, Mohamed Habibi, *University of Toulouse, France*
- 11:35    **FAST MCMC SPECTRAL MATCHING SEPARATION IN NOISY GAUSSIAN MIXTURES. APPLICATION TO ASTROPHYSICS**  
Hichem Snoussi, *University of Technology of Troyes, France*

- 11:55    **ROBUST APPROACH FOR BLIND SOURCE SEPARATION IN NON-GAUSSIAN NOISE**  
Mohamed Sahnoudi, *Villanova University, France*;  
Hichem Snoussi, *Universit´e de Technologie de Troyes, France*;  
Moeness G. Amin, *Villanova University, France*

## **CONT4: Control system modeling and identification**

**Location:** S1

**Time:** 10:15 - 12:15

**Chair:** Prof. Saadi J., *University Hassan II Ain Chock, Casablanca, Morocco*

10:15 **A BAYESIAN MULTISENSOR COMBINATION APPROACH TO RAINFALL ESTIMATE (INVITED)**

Ezio Todini, *University of Bologna, Italy*; Cinzia Mazzetti, *PROGEA srl, Bologna, Italy*

10:35 **NONLINEAR OPTIMAL CONTROLLER OF THREE-PHASE INDUCTION MOTOR USING QUASILINEARIZATION**

Jasem Tamimi, Hussein Jaddu, *Alquds University, Palestine*

10:55 **L<sub>2</sub>-SENSITIVITY MINIMIZATION FOR MIMO LINEAR DISCRETE-TIME SYSTEMS SUBJECT TO L<sub>2</sub>-SCALING CONSTRAINTS**

Osemekhian Omoifo, Takao Hinamoto, *Hiroshima University, Japan*; Wu-Sheng Lu, *University of Victoria, Canada*

11:15 **SENSOR/DATA FUSION DESIGN PATTERN AND IMPLEMENTATION AS A TOOLBOX IN MATLAB/SIMULINK (SDFTOOL)**

Majid Kazemian, Behzad Moshiri, Amir Hossein Keyhanipoor, Mohammad Jamali, Caro Lucas, *University of Tehran, Iran*

11:35 **AN EVENT-BASED APPROACH TO MODEL DIRECT TORQUE CONTROL (DTC) APPROACH.**

Hamid Yantour, Janah Saadi, Hicham Medromi, *EN-SEM, Morocco*; Ahmed Khoumsi, *Université de Sherbrooke, Canada*

11:55 **FURTHER STABILITY AND CONVERGENCE ANALYSIS OF A SET MEMBERSHIP IDENTIFICATION**

Mathieu Pouliquen, *GREYC, France*; Mohammed M'Saad, *ENSICAen, France*

## **POSA4: Image processing part II**

**Location:** S4

**Time:** 10:15 - 12:15

**Chair:** Mammass D., *University Ibnu Zohr, Agadir, Morocco*

### **INTEGRATION OF THE CONTRAST SENSITIVITY FUNCTION INTO WAVELET CODEC**

Noureddine Moumkine, Ahmed Tamtaoui, Abdellah Ait Ouahman, *INPT, Morocco*

### **EDGES DETECTION USING A NEW APPROACH OF ANISOTROPIC DIFFUSION**

K. Bouzouba, Youssef Zaz, *University of Fez, Morocco*; Y. I. Khamlichi, *Ibn Zohr University, Morocco*

### **IMAGE RECONSTRUCTION BY LAGUERRE MOMENTS**

Hassan Qjidaa, *LESSI, Morocco*

### **APPLICATION OF THE DISCRETE WAVELET TRANSFORM TO DENOISE GPR SIGNALS**

Jamel Baili, Samer Lahouar, Mounir Hergli, Adel Amimi, Kamel Besbes, *Micro-electronic and Instrumentation Laboratory, Tunisia*

### **IMPROVING CONCAVITY PERFORMANCE OF SNAKE ALGORITHMS**

Athanasios Roubies, Andras Hajdu, Ioannis Pitas, *Aristotle University of Thessaloniki, Greece*

### **NONLINEAR IMAGE DENOISING BY FRACTIONAL LOWER ORDER STATISTICS**

Mohammed El Hassouni, Hocine Cherifi, *University of Dijon, France*

### **A FUZZY ALGORITHM APPLIED TO COLOUR IMAGE SEGMENTATION**

Abdelhadi Radouane, Abdelazziz Bouroumi, *Faculté des Sciences, Université Mohamed V, Morocco*



**ANALYTICAL DESIGN OF BANDSTOP FIR FILTERS FOR IMAGE PROCESSING**

Boris Simak, Miroslav Vlcek, Pavel Zahradnik, *University Prague, Czech Republic*

**TWO OR MORE MIRRORS FOR THE OMNIDIRECTIONAL STEREOVISION?**

El Mustapha Mouaddib, *Université de Picardie Jules Verne (UPJV), France*; Ryusuke Sagawa, Tomio Echigo, Yasushi Yagi, *Osaka University, Japan*

**ADAPTIVE-HIERARCHICAL FILTERING APPROACH FOR NOISE REMOVAL**

Tsung-Nan Lin, Kai-Jie Chan, *National Taiwan University, Taiwan*

**NONLINEAR ITERATED FUNCTION SYSTEM CODING USING NEURAL NETWORKS**

Rashad Al-Jawfi, *Ibb University, Yemen*

**K-WAY HYPERGRAPH PARTITIONING AND COLOR IMAGE SEGMENTATION**

Soufiane Rital, Hocine Cherifi, *Université de Bourgogne, France*; Serge Miguet, *LIRIS CNRS, France*

**EMD-BASED MULTIBEAM ECHOSOUNDER IMAGES SEGMENTATION**

Abdel-Ouahab Boudraa, Jean-Christophe Cexus, *IRENav, Ecole Navale, France*; Fabien Salzenstein, *InESS, Université de Strasbourg, France*; Azeddine Beghdadi, *L2TI, Université Paris 13, France*

**RELEVANCE FEEDBACK BASED ON QUERY REFINING AND FEATURE DATABASE UPDATING IN CBIR SYSTEM**

Yufeng Zhao, Yao Zhao, Zhenfeng Zhu, *Beijing Jiaotong University, China*

**PLEN4: Ontology based annotation tools for multimedia linguistic documents**

**Location:** S1

**Time:** 13:30 - 14:15

**Chair:** Gabbouj M., *Signal Processing Institute, TUT, Finland*

**ONTOLOGY-BASED ANNOTATION TOOLS FOR MULTIMEDIA LINGUISTIC DOCUMENTS**

F. Fotouhi, *Wayne State University, USA*

## CONT5: Hybrid systems

**Location:** S1

**Time:** 14:15 - 15:40

**Chair:** Prof. Prandini M., *Politecnico di Milano, Italy*;  
Prof. Campi Marco C., *University Brescia, Italy*

14:15    **COOPERATIVE MULTI-VEHICLE MISSIONS: A CASE STUDY IN CONFIGURATION CONTROL FOR SYSTEMS WITH EVOLVING STRUCTURE**

João Borges de Sousa, *DEEC - Faculdade de Engenharia, Universidade do Porto, Portugal*; Jorge Estrela da Silva, *Departamento de Engenharia Electrotecnica, Instituto Superior de Engenharia do Porto, Portugal*

14:36    **HYBRID MODELLING OF ULTRA WIDE BAND SELF-ORGANIZING NETWORKS**

Maria-Gabriella Di Benedetto, Guerino Giancola, *University of Rome La Sapienza, Italy*; Elena De Santis, Maria Domenica Di Benedetto, *University of l'Aquila, Italy*

14:57    **A CONTROL FRAMEWORK FOR ONLINE ERROR CONTROL ADAPTATION IN NETWORKED APPLICATIONS**

Oscar Flårdh, Carlo Fischione, Karl H. Johansson, Mikael Johansson, *Automatic Control, KTH, Sweden*

15:18    **SEQUENTIAL MONTE CARLO SIMULATION FOR THE ESTIMATION OF SMALL REACHABILITY PROBABILITIES FOR STOCHASTIC HYBRID SYSTEMS**

Jaroslav Krystul, *University of Twente, Netherlands*; Henk Blom, *National Aerospace Laboratory NLR, Netherlands*

**COM5: Large scale, large band and asymptotic systems (part I)**

**Location:** S2

**Time:** 14:15 - 15:40

**Chair:** Prof. Debbah Mérouane, *Eurocom, Sophia Antipolis, France*

14:15    **ESTIMATING THE EIGENVALUES AND ASSOCIATED SUBSPACES OF CORRELATION MATRICES FROM A SMALL NUMBER OF OBSERVATIONS**

Xavier Mestre, *CTTC, Spain*

14:36    **TIME REVERSAL SIGNALING FOR ULTRA WIDEBAND COMMUNICATIONS**

Erdal Arikan, *Bilkent University, Turkey*

14:57    **CAPACITY ANALYSIS OF THE MIMO RICEAN CHANNEL USING REPLICAS**

Aris L. Moustakas, *University of Athens, Greece*; Steven H. Simon, *Lucent Technologies, USA*

15:18    **CAPACITY APPROXIMATIONS FOR UNCORRELATED MIMO CHANNELS USING RANDOM MATRIX METHODS**

Ingmar Groh, Simon Plass, Stephan Sand, *German Aerospace Center (DLR), Germany*

## **SIG5: Multichannel image processing**

**Location: S3**

**Time: 14:15 - 15:40**

**Chair:** Prof. Beghdadi Azeddine, *L2TI, Institut Galilée, University Paris 13, France*

14:15 **BLIND MULTICHANNEL IMAGE DECONVOLUTION AND DENOISING**

Wided Sojudene, *Université Paris 13 & ENST Paris, France*; Azeddine Beghdadi, *L2TI, Université Paris 13, France*; Karim Abed-Meraim, *ENST, Paris, France*

14:43 **SUPER-RESOLUTION USING IMAGE SEQUENCE IN RAW SENSOR DOMAIN**

Mejdi Trimeche, Markku Vehvilainen, *NOKIA, Tampere, Finland*

15:11 **USING STEIN'S PRINCIPLE FOR MULTICHANNEL IMAGE DENOISING**

Caroline Chaux, *Universite de Marne-la-Vallée, France*; Amel Benazza - Benyahia, *SUPCOM, Tunisia*; Jean-Christophe Pesquet, *Universite de Marne-la-Vallée, France*

## POSA5: Speech and audio processing

**Location:** S4

**Time:** 14:15 - 15:40

**Chair:** Ellouze N., *ENIT, Tunisia*

### **APPLICATION OF THE RECURSIVE EXTENDED LEAST SQUARES METHOD FOR MODELLING A SPEECH SIGNAL**

Abdelkader Maddi, Abderrezak Guessoum, *University of Blida, Algeria*; Daoued Berkani, *Polytechnic School of El Harrach, Algeria*

### **APPLICATION OF NON-NEGATIVE MATRIX FACTORIZATION TO MUSICAL INSTRUMENT CLASSIFICATION**

Emmanouil Benetos, Margarita Kotti, Constantine Kotropoulos, *Artificial Intelligence and Information Analysis Lab, CS Dept, Aristotle Univ. Thessaloniki, Greece*

### **SPEAKER CHANGE DETECTION USING BIC: A COMPARISON ON TWO DATASETS**

Margarita Kotti, *Aristotle University of Thessaloniki, Greece*; Emmanouil Benetos, Constantine Kotropoulos, *Aristotle University of Thessaloniki, Greece*; Luis Gustavo P.M. Martins, *INESC Porto, Portugal*

### **MUSIC SOURCE SEPARATION VIA SPARSIFIED DICTIONARIES VS. PARAMETRIC MODELS**

Mahdi Triki, *CNRS, Communication Systems Laboratory, France*; Dirk Slock, *EURECOM, France*

### **SPEAKER CHANGE DETECTION METHOD EVALUATED ON ARABIC SPEECH CORPUS**

Hachem Kadri, *ENIT, Tunisia*; Zied Lachiri, *INSAT, Tunisia*; Nouredine Ellouze, *ENIT, Tunisia*

**ON THE APPLICATION OF RECENT RESULTS  
IN STATISTICAL DECISION AND ESTIMATION  
THEORY TO PERCEPTUAL FILTERING OF NOISY  
SPEECH SIGNALS**

Asmaa Amehraye, *GSCM-LEESA and ENST Bretagne, Morocco*; Dominique Pastor, *ENST Bretagne, France*; Sofia Ben Jebara, *Ecole Supérieure des Communications de Tunis, Tunisia*

**A BS.1387 BASED PSYCHOACOUSTIC MODEL  
FOR PERCEPTUAL AUDIO CODER**

Xiaopeng Hu, Guiming He, Xiaoping Zhou, *Wuhan University, China*

**FAST FORMANT FINDING THROUGH CON-  
TOUR INTEGRATION FOR AUTOMATIC SPEECH  
RECOGNITION**

Juan-Luis García Zapata, Juan Carlos Díaz-Martín, Juan Antonio Rico-Gallego, *Universidad de Extremadura, Spain*

## **POSB5: Communications**

**Location:** S5

**Time:** 14:15 - 15:40

**Chair:** Pastor D., *ENST-Bretagne, France*

### **AN IMPROVED DESIGN OF DFT BANK TRANSCIVERS FOR UNKNOWN CHANNELS**

Han-Ting Chiang, See-May Phoong, *National Taiwan University, Taiwan*; Yuan-Pei Lin, *National Chiao-Tung University, Taiwan*

### **FRACTAL CONSTRUCTION OF PLANAR HEXAG- ONAL ARRAY AND CALCULATION THE ELE- MENTS MISSING**

Ahcene Boualleg, *Université de Guelma, Algeria*; N. Merabtine, M. Benslama, *University of Constantine, Algeria*

### **SEQUENTIAL INTRUSION DETECTION AND RE- SPONSE SYSTEM**

Bel G Raggad, *Pace University, USA*

### **EXPLOITING LINEAR PREDICTION COEFFI- CIENTS REDUNDANCY IN VOIP DATA RATE RE- DUCTION**

Islam Amro, *Al-Quds Open University, Palestine*; Hanna Abdel Nour, *Al-Quds University, Palestine*

### **ROBUSTNESS OF AUDIO FINGERPRINTING SYS- TEMS FOR CONNECTED AUDIO APPLICATIONS**

Imen Marrakchi Mezghani, Meriem Jaidane, Monia Turki-Hadj Alouane, *ENIT, Tunisia*

### **IMPROVEMENT IN ERROR PERFORMANCE BY COOPERATION**

Kamel Tourki, Luc Deneire, *University of Nice Sophia Antipolis, France*



**DESIGN OF A COMPACT APRS PAYLOAD USING DSP FOR LOW COST NANOSATELLITE**

Adnane Addaim, Abdelhaq Kherras, *EMI, Morocco*; El Bachir Zantou, *CRERS, Morocco*

**THE PORTABLE COMMUNICATION DIPOLE ANTENNA AND HUMAN HEAD INTERACTION: EVALUATION OF THE SAR DISTRIBUTION**

Mohammed Bouhorma, M. Benahmed, F. Elouaai, H. Drissi, *FSTT, Morocco*; A. Mamouni, *CNRS, France*

**JOINT OPTIMIZATION OF VQ CODEBOOK AND QAM SIGNAL CONSTELLATION AS TIME-VARYING CHANNEL CONDITION**

Hatem Elmeddeb, *ENIT, Tunisia*; Noureddine Hamdi, *EPT, Tunisia*; Ammar Bouallegue, *ENIT, Tunisia*

**A COMMUNICATION PROTOCOL FOR HOLDING GLOBAL CONSISTENCY IN A MULTI-AGENT BASED MULTIPLE REPRESENTATION SYSTEM**

Abdelouahed Zakari, *LITA, Metz, France*; Janah Saadi, Marouane Chriss, *ENSEM, University Hassan II, Morocco*

**COM6: Large scale, large band and asymptotic systems (part II)**

**Location:** S2

**Time:** 16:10 - 17:30

**Chair:** Prof. Debbah Mérouane, *Eurocom, Sophia Antipolis, France*

- 16:10    **COMPLEXITY CONSTRAINED NOISE-FREE CDMA: OPTIMAL POWER DISTRIBUTION AND SPECTRAL EFFICIENCY**  
Rodrigo De Miguel, Ralf R. Müller, *Institute for Electronics and Telecommunications, Norwegian University of Science and Technology, Norway*
- 16:30    **ON THE ASYMPTOTIC ANALYSIS OF MUTUAL INFORMATION OF MIMO RICIAN CORRELATED CHANNELS**  
Julien Dumont, *UMLV, France*; Walid Hachem, *SUP-ELEC, France*; Philippe Loubaton, *UMLV, France*; Jamal Najim, *CNRS, France*
- 16:50    **THE MUTUAL INFORMATION OF A MIMO CHANNEL: A SURVEY**  
Walid Hachem, *Supélec, France*; Philippe Loubaton, *Université Marne La Vallée, France*; Jamal Najim, *CNRS and Ecole Nationale Sup. Telecom., France*
- 17:10    **LINEAR MULTIUSER DETECTION FOR CDMA SYSTEMS WITH CORRELATED SPATIAL DIVERSITY**  
Laura Cottatellucci, *INRIA, France*; Merouane Debbah, *EURECOM, France*; Ralf R. Muller, *Norwegian Univ. of Science and Technology, Norway*

## SIG6: Speech recognition

**Location:** S3

**Time:** 16:10 - 17:30

**Chair:** Abdel Nour H., *Palestine*

- 16:10 **ROBUST SPEECH RECOGNITION WITH MSC/DRA FEATURE EXTRACTION ON MODULATION SPECTRUM DOMAIN**  
Naoya Wada, Yoshikazu Miyanaga, *Hokkaido University, Japan*
- 16:10 **DYNAMIC ROBUST SPEECH RECOGNITION**  
Yubo Ge, *Tsinghua University, China*; Lingnan Ge, Katsuhiko Shirai, *Waseda University, Japan*
- 16:10 **NON-LINEAR TECHNIQUES FOR DYNAMIC SPEECH RECOGNITION WITH DOUBLY RANDOM TIME SERIES MODELS**  
Lingnan Ge, Katsuhiko Shirai, Akira Kurematsu, Masaaki Honda, *Waseda University, Japan*
- 16:10 **HIDDEN MARKOV MODEL ENVIRONMENT ADAPTATION FOR NOISY SOUNDS IN A SUPERVISED RECOGNITION SYSTEM**  
Asma Rabaoui, Zied Lachiri, Nouredine Ellouze, *ENIT, Tunisia*
- 16:10 **AN IMPROVED VERSION OF THE SPACE ALGORITHM FOR NOISE ROBUST SPEECH RECOGNITION**  
Khalid Daoudi, *IRIT-CNRS, France*; Christophe Cerisara, *INRIA-LORIA, France*

## **POSA6: Image processing (compression)**

**Location:** S1

**Time:** 16:10 - 17:30

**Chair:** Oulad Haj Thami R., *ENSIAS-Rabat, Morocco*

### **OPTIMIZATION OF FRACTAL IMAGE COMPRESSION BASED ON KOHONEN NEURAL NETWORKS**

Mohamed Mokhtari, *Universiry of SBA, Algeria*; Aoued Boukelif, *University of SBA, Algeria*

### **COMPRESSING SETS OF SIMILAR IMAGES**

Samy Ait-Aoudia, Abdelhalim Gabis, *INI - Institut Nationa d'Informatique, Algeria*; Amina Naimi, *INRIA Rocquencourt Institut National de Recherche en Informatique et Automatique, France*

### **OPTIMIZATION OF FRACTAL IMAGE COMPRESSION BASED ON GENETIC ALGORITHMS**

Faraoun Kamel Mohamed, *University of Sidi Bel, Algeria*; Aoued Boukelif, *University of SBA, Algeria*

### **OPTIMIZATION OF FRACTAL IMAGE COMPRESSION WITH GENETIC ALGORITHMS**

Ahmed Ben Jmaa, Maher Ben Jmaa, Yousra Ben Jmaa, *National School of Engineering of Sfax, Tunisia*

### **ADAPTIVE STILL IMAGE COMPRESSION USING SEMI-AUTOMATIC REGION OF INTEREST EXTRACTION**

Najib Lamouri, Mourad Gharbi, Mohammed Benabdellah, Fakhita Regragui, El Houssine Bouyakhf, *Faculty of Sciences, Morocco*

## **POSB6: Network and QOS**

**Location:** S5

**Time:** 16:10 - 17:30

**Chair:** El Koutbi M., *ENSIAS-Rabat, Morocco*

### **CAPACITY ADDITION METHODS IN OPEN BCMP QUEUEING NETWORK**

Mohamed El Kamili, *Faculty of Sciences Rabat, Morocco*;  
Rachid El Azouzi, *LIA-Avignon University, France*; Mohammed  
Abbad, *Faculty Of Sciences Rabat, Morocco*

### **USING RT-CORBA SCHEDULING SERVICE AND PRIORITIZED NETWORK TRAFFIC TO ACHIEVE END-TO-END PREDICTABILITY**

Tarek Guesmi, Salem Hasnaoui, Houria Rezig, *ENIT, Tunisia*

### **ENHANCING IEEE 802.11E STANDARD IN CONGESTED ENVIRONMENTS**

Mounir Frikha, Fatma Ben Said, Faiza Tabbana, *SUPCOM, Tunisia*

### **IMPLEMENTATION AND SIMULATION OF OLSR PROTOCOL WITH QOS IN AD HOC NETWORKS**

Mounir Frikha, Manel Maamer, *SUPCOM, Tunisia*

### **AN EFFICIENCY BASED GENETIC APPROACH FOR MULTICAST BEST EFFORT ROUTING**

Noureddine Idboufker, Hicham Juidette, Abdelghafour Berraisoul, *Faculty of Sciences El Jadida, Morocco*

### **SIGNATURE WITH CHAINED BCH-CODES**

Omessaad Hamdi, Ammar Bouallegue, *ENIT, Tunisia*; Sami Harari, *USTV, Tunisia*

### **AN EFFICIENT APPROACH FOR CONSTRUCTING DYNAMIC MULTICAST TREES**

Giovanni Aiello, Salvatore Gaglio, *University of Palermo, Italy*;  
Pietro Storniolo, Alfonso Urso, *ICAR-CNR, Italy*

## **POSC6: Control system modeling and identification**

**Location:** S4

**Time:** 16:10 - 17:30

**Chair:** Hmamed A., *University Sidi Med BEN ABDELLAH, Fes*

### **TWO NEW MODELS FOR DESCRIPTOR SYSTEMS: TIME AND FREQUENCY BEHAVIOR**

Amel Baha Houda Adamou-Mitiche, Lahcene Mitiche, *University of Djelfa, Algeria*

### **STABILITY OF POSITIVE 2-D SYSTEM DESCRIBED BY THE FORNASINI-MARCHESINI SECOND MODEL**

Abdelaziz Hmamed, Mohammed Alfid, *Faculté des Sciences Dhar El Mehraz-Fes, Morocco*

### **A PROJECTION APPROACH TO THE DELAY-DEPENDANT STABILITY FOR NEUTRAL DELAY-DIFFERENTIAL SYSTEMS**

Abdelaziz Hmamed, *Faculté des Sciences Dhar El Mehraz Fes, Morocco*

### **FDI FILTER DESIGN FOR LPV SYSTEMS**

Sylvain Grenaille, David Henry, Ali Zolghadri, *LAPS - Université Bordeaux 1, France*

### **A DESCRIPTOR SYSTEM APPROACH TO ROBUST STABILITY ANALYSIS BY MEANS OF PARAMETER-DEPENDENT LYAPUNOV FUNCTIONS**

Abdelaziz Hmamed, El Hafid Chelliq, *LESSI, Faculté des Sciences Dhar El Mehraz Fès, Morocco*

### **JOINT ZERO-DIAGONALIZATION FOR BLIND SEPARATION OF INSTANTANEOUS AND CONVOLUTIVE MIXTURES OF WHITE CORRELATED SOURCES**

El Mostafa Fadaili, Nadège Thirion-Moreau, Eric Moreau, *ISITV/USTV, France*

**MANAGEMENT OF UNCERTAINTY WITHIN ESTIMATION IN DYNAMICAL CONTEXT APPLICATION TO MEMS**

Hana Baili, *SUPELEC, France*

**IDENTIFICATION OF UNCERTAIN SVD-PARAFAC BASED VOLTERRA MODELS USING AN ALTERNATING BOUNDED ERROR ALGORITHM**

Anis Khouaja, *ISSAT - Sousse, Tunisia*; Gérard Favier, *Laboratoire I3S - Sophia Antipolis, France*; Hassani Messaoud, *ENIM - Monastir, Tunisia*

**AN OBSERVERS BASED FAULT ISOLATION APPROACH FOR NONLINEAR DYNAMIC SYSTEMS**

Li Zetao, *Electrical Engineering College, Guizhou University, Caijaguan, Guiyang, Guizhou, China, China*; Boutayeb Dahhou, *UPST, France*

**MODELING OF A RAT MUSCLE USING FRACTIONAL MULTIMODELS**

Laurent Sommacal, Pierre Melchior, Mohamed Aoun, *LAPS UMR 5131 CNRS, France*; Jean-Marie Cabelguyen, *INSERM E 0358, France*; Julien Petit, *Laboratoire de Neurophysiologie UMR 5543, France*; Alain Oustaloup, *LAPS, France*; Auke Jan Ijspeert, *EPFL - Swiss Federal Institute of Technology, Switzerland*

**PLEN7: The interaction between information and control**

**Location:** S1

**Time:** 17:30 - 18:15

**Chair:** Amro Islam, *Al-Quds Open University, Palestine*

**THE INTERACTION BETWEEN INFORMATION & CONTROL**

Sanjoy Mitter, *MIT, USA*



**PLEN6: Distributed signal processing for sensor networks**

**Location:** S1

**Time:** 09:00 - 09:45

**Chair:** Najim M., *ENSIERB, University Bordeaux I, France*

**DISTRIBUTED SIGNAL PROCESSING FOR SENSOR NETWORKS**

Martin Vetterli, *University of California, Berkeley, USA*

## **CONT8: Navigation and control of underwater vehicles**

**Location:** S1

**Time:** 10:15 - 12:15

**Chair:** Aguiar Pedro, *UTL, Portugal*;  
Pascoal Antonio, *UTL, Portugal*

- 10:15    **ON THRUSTER ALLOCATION, FAULT DETECTION AND ACCOMMODATION ISSUES FOR UNDERWATER ROBOTIC VEHICLES.**  
Giovanni Indiveri, Gianfranco Parlangeli, *University of Lecce, Italy*
- 10:45    **COORDINATED PATH-FOLLOWING OF MULTIPLE UNDERACTUATED AUTONOMOUS VEHICLES WITH BIDIRECTIONAL COMMUNICATION CONSTRAINTS**  
A. Pedro Aguiar, Reza Ghabcheloo, Antonio Pascoal, Carlos Silvestre, *ISR/IST, Portugal*; Joao Hespanha, *UCSB, USA*; Isaac Kaminer, *NPS, USA*
- 11:15    **ON THE PROBLEM OF UNDERWATER SIMULTANEOUS LOCALIZATION AND MAPPING USING MECHANICAL SCANNING SONAR**  
Giuseppe Conte, Silavia Maria Zanolli, Luca Gambella, *Università Politecnica delle Marche, Italy*
- 11:45    **AGILE MANEUVERING FOR FIN-ACTUATED UNDERWATER VEHICLES**  
Kristi Morgansen, Timothy M. La Fond, Jennifer X. Zhang, *University of Washington, USA*

## SIG1: Video processing

**Location:** S3

**Time:** 10:15 - 12:15

**Chair:** Dr. Mitra S., *UCSB, USA*

- 10:15    **MOTION-COMPENSATED FRAME RATE UP-CONVERSION BASED ON BLOCK MATCHING ALGORITHM**  
Shinya Fujiwara, Akira Taguchi, *Musashi Institute of Technology, Japan*
- 10:30    **DEVELOPMENT OF AN ACTIVE VISUAL SYSTEM TO TRACK MOVING OBJECTS**  
Yau-Zen Chang, *Chang Gung University, Taiwan*; Gau-Tin Hung, *Chang Gung University, Taiwan*; Shih-Tseng Lee, *Chang Gung University, Taiwan*
- 10:45    **NEW HORIZONTAL DIAMOND SEARCH MOTION ESTIMATION ALGORITHM FOR H.264/AVC**  
Amine Samet, *LETI, Tunisia*; Nabil Souissi, Wassim Zouch, Mohamed Ali Ben Ayed, Nouri Masmoudi, *ENIS, Tunisia*
- 11:00    **HEAD TRACKING USING SPATIAL HISTOGRAM AND SHAPE CONSTRAINTS**  
Huimin Guo, *Beijing Normal University, China*; Ping Guo, *BNU, China*; Qingshan Liu, *NLPR, China*
- 11:15    **AN INNOVATIVE APPROACH FOR ABANDONED OR REMOVED OBJECTS DETECTION**  
Tommaso Martiriggiano, Andrea Caroppo, *I.S.S.I.A.-C.N.R., Italy*; Marco Leo, *I.S.S.I.A - C.N.R., Italy*; Paolo Spagnolo, Tiziana D'Orazio, *I.S.S.I.A. - C.N.R., Italy*

11:30 **MULTI-SCALE HISTOGRAMS FOR  
KERNEL-BASED OBJECT TRACKING**

Mounia Mikram, Remi Megret, Marc Donias, Yannick Berthoumieu, *ENSEIRB, France*

12:00 **FACE IDENTIFICATION OF VIDEO SE-  
QUENCES**

Leila Essannouni, *FSR, Morocco*; El Hassane Ibn-Elhaj, *INPT, Morocco*

## CONT7: Control design and non linear methods

**Location:** S1

**Time:** 10:15 - 12:15

**Chair:** Prof. Daafouz Jamal, *ENSEM-Nancy, France*

10:15    **POSITIVE CONTROLLABILITY OF POSITIVE DYNAMICAL SYSTEMS**

Klamka Jerzy, *Silesian University of Technology, Poland*

10:35    **CONSTRAINED CONTROLLABILITY OF DISTRIBUTED PARAMETER SYSTEMS**

Klamka Jerzy, *Silesian University of Technology, Poland*

10:55    **ON ENLARGING THE SET OF ATTRACTION FOR DISCRETE-TIME LINEAR SYSTEMS WITH CONSTRAINED STATE AND CONTROL**

Musthapa Ait Rami, *Faculty of Sciences of Techniques Marrakech, Morocco*; Hassan Ayad, *faculty of sciences of Techniques Marrakech, Morocco*; Fouad Mesquine, *Faculty of Sciences of Techniques Marrakech, Morocco*

11:15    **NONLINEAR OBSERVERS DESIGN FOR SYNCHRONIZATION AND INFORMATION RECOVERY IN COMMUNICATION SYSTEMS**

Ali Zemouche, Mohamed Boutayeb, *University of Louis-Pasteur, France*

11:35    **PREDICTIVE CONTROL OF A DRYING BLOWER USING NON LINEAR LAGUERRE-VOLTERRA MODEL**

Tarek Garna, Hassani Messaoud, *Ecole Nationale d'Ingénieurs de Monastir, Tunisia*

11:55    **ADAPTIVE CONTROL OF AXIAL DISPERSION NON ISOTHERMAL TUBULAR REACTOR: A NONLINEAR MODEL**

Nadia Beniich, Abdlmoula El Bouhtouri, *LINMA, Morocco*; Denis Douchain, *INMA, Belgium*

## COM7: Communications

**Location:** S2

**Time:** 10:15 - 12:15

**Chair:** Slock Dirk, *EUROCOM, France*

- 10:15    **NEW RESULTS FOR CHANNEL ESTIMATION VIA SUPERIMPOSED TRAINING**  
Des McLernon, *Leeds University, United Kingdom*;  
Aldo Orozco-Lugo, Mauricio Lara, *Cinvestav, Mexico*;  
Enrique Alameda-Hernández, *Leeds University, United Kingdom*
- 10:35    **INTEGER-TO-INTEGGER FILTERS IN IMAGE TRANSMULTIPLEXERS**  
Przemyslaw Sypka, *Department of Electronics AGH, Poland*;  
Bartosz Ziolkó, *Faculty of Electrical Engineering, Automatics, Computer Science and Electronics, Poland*;  
Mariusz Ziolkó, *Department of Electronics AGH, Poland*
- 10:55    **A ROBUST MOBILE POSITIONING ALGORITHM**  
Miloud Frikel, Boubekeur Targui, Mohammed M'Saad, *GREYC CNRS UMR 6072, France*
- 11:15    **NEW METHOD TO IDENTIFY TELEPHONE STANDARDS IN SOFTWARE RADIO**  
Modamed Farah, A. Kachouri, M. Samet, L. Kamoun, *ENIS, Tunisia*
- 11:35    **THE ZIGBEE EXPERIENCE**  
Ondrej Hyncica, Peter Kacz, Petr Fiedler, *Brno University of Technology, Czech Republic*;  
Zdenek Bradac, *Brno University of Technology, Czech Republic*;  
Pavel Kucera, Radimir Vrba, *Brno University of Technology, Czech Republic*

11:55    **HSDPA SYSTEM SIMULATION**  
Sohaib Khan, Kim Cuong Nguyen, Jörgen Nordberg,  
*Blekinge Institute of Technology, Sweden*



## **POSA7: Signal processing and applications (part II)**

**Location:** S4

**Time:** 10:15 - 12:15

**Chair:** Hassani El, *University Cadi Ayyad, Marrakech, Morocco*

### **COMBINED SPECTRAL SUBTRACTION AND WIENER FILTER METHODS IN WAVELET DOMAIN FOR NOISE REDUCTION**

Farid Ykhlef, *Univesity of Blida, Algeria*; Abderrezak Guessoum, *Univerity of Blida, Algeria*; Daoued Berkani, *ENP Algeries, Algeria*

### **GEOELECTRIC FIELD SIGNAL INVESTIGATION USING MULTIDIMENSIONAL TECHNIQUES AND ITS POSSIBLE RELATION TO EARTHQUAKES IN WESTERN GREECE**

Apostolos Ifantis, *Technical Institute of Patras, Greece*; George Economou, Christos Theoharatos, Dimitris Petropoulos, Gerasimos-Akis Tselentis, *University of Patras, Greece*

### **IMPROVEMENT OF ACOUSTIC ECHO CANCELLATION BY GRADIENT AND NEWTON ADAPTIVE FILTERING ALGORITHMS**

Djamila Boucherf, *Blida University, Algeria*; Mohamed Djendi, *University of Rennes-ENSSAT, France*; Abderrezak Guessoum, Djamila Ait Kaci, *Blida University, Algeria*

### **FALSE ALARM ANALYSIS OF THE GO-CFAR DETECTOR IN NONHOMOGENEOUS PEARSON DISTRIBUTED CLUTTER**

H. A. Meziani, *University of Skikda, Algeria*; F. Soltani, *University of Constantine, Algeria*

**RECONSTRUCTION OF MULTI-COMPONENT SIGNALS BASED ON QUASI FOURIER TRANSFORM**

Gang Bi, *Department of Information Science and Electronic Engineering, Zhejiang University City College, China*; Yu Zeng, *Department of Information Science and Electronic Engineering, Zhejiang University, China*

**A SQUARE ROOT NLMS ALGORITHM FOR ADAPTIVE IDENTIFICATION WITH SPEECH INPUT**

Fatma Aounallah, Monia Turki-Hadj Alouane, *USS/ENIT, Tunisia*

**SPEECH DENOISING IMPROVEMENT BY MUSICAL TONES SHAPE MODIFICATION**

Anis Ben Aicha, Sofia Ben Jebara, *Ecole Supérieure des Communications de Tunis, Tunisia*; Dominique Pastor, *Ecole Nationale Supérieure des Télécommunications de Bretagne, France*

**A NEW OPTIMAL SMOOTHING APPROACH FOR AR+NOISE MODELS AND APPLICATION TO SINGLE-MICROPHONE SPEECH ENHANCEMENT**

Roberto Diversi, Roberto Guidorzi, Umberto Soverini, *University of Bologna, Italy*; William Bobillet, Eric Grivel, Mohamed Najim, *University of Bordeaux, France*

**ERRORS-IN-VARIABLES BASED IDENTIFICATION OF AUTOREGRESSIVE PARAMETERS FOR SPEECH ENHANCEMENT USING ONE MICROPHONE**

William Bobillet, Eric Grivel, Mohamed Najim, *UMR 5131 LAPS, Bordeaux, France*; Roberto Diversi, Roberto Guidorzi, Umberto Soverini, *Dipartimento di Elettronica, Informatica e Sistemistica, University of Bologna, Italy*

**DENOISING VIA EMPIRICAL MODE DECOMPOSITION**

Abdel-Ouahab Boudraa, *IRENav, Ecole Navale, France*; Jean-Christophe Cexus, *IREANav, Ecole Navale, France*

## **POSB7: Signal processing**

**Location:** S5

**Time:** 10:15 - 12:15

**Chair:** Adib A., *IS-Rabat, Morocco*

### **AUTOMATIC SIGNAL SEGMENTATION BASED ON ABRUPT CHANGE DETECTION FOR POWER SYSTEMS APPLICATIONS**

Abhisek Ukil, Rastko Zivanovic, *Tshwane University of Technology, South Africa*

### **A METHOD FOR CLASSIFYING EMOTION OF TEXT BASED ON EMOTIONAL DICTIONARIES FOR EMOTIONAL READING**

Futoshi Sugimoto, Masahide Yoneyama, *Toyo University, Japan*

### **BLIND IDENTIFICATION OF NOISY UNDER-DETERMINED MIXTURES BASED ON MULTIPLE ORDER DERIVATIVES OF THE CHARACTERISTIC FUNCTION**

Myriam Rajih, *I3S - University of Nice Sophia-Antipolis, France*; Pierre Comon, *I3S - CNRS, France*

### **DATA-AIDED JOINT ESTIMATION OF PHASE OFFSET AND DOPPLER PARAMETERS USING AN EXTENDED KALMAN FILTER**

Pakorn Ubolkosold, Franck Tchere, Stefan Knedlik, Otmar Loffeld, *Center for Sensorsystem, Germany*

### **THE MLP NEURAL NETWORKS FOR PREDICTING WIND SPEED**

Radouane Iqdour, Abdelouhab Zeroual, *Faculty of Sciences Cadi Ayyad University, Morocco*

### **PARAMETRIC IDENTIFICATION OF NON LINEAR SYSTEMS USING HIGHER ORDER STATISTICS AND COMMUNICATION SIGNALS**

Said Safi, *National School of Applied Sciences, Tangier, Morocco*; Jilali Antari, Abdelouhab Zeroual, *Faculty of Sciences, Cadi Ayyad University, Marrakesh, Morocco*

**AN IMPROVED PRUNING CONDITION FOR TREE MACHINES AND APPLICATIONS TO RANDOM-ACCESS CODING**

Gergely Korodi, Ioan Tabus, *Tampere University of Technology, Finland*

**BLIND SOURCE SEPARATION USING PENALIZED MUTUAL INFORMATION CRITERION AND MINIMAL DISTORTION PRINCIPLE**

Mohammed El Rhabi, *CERMICS-ENPC, France*; Hassan Feniri, Georges Delaunay, *DéCom-CReSTIC Laboratory, University of Reims, France*

**ADC LINEARITY TESTING USING LOW LINEARITY SIGNALS**

Ondrej Sajdl, Radimir Vrba, *BUT Brno, Czech Republic*

**USING IMPACT ACOUSTIC TIME-FREQUENCY PATTERNS FOR DAMAGED WHEAT KERNEL SEPARATION**

Nuri Firat Ince, *University of Minnesota, USA*; Ibrahim Onaran, *Bilkent University, Turkey*; Ahmed Tewfik, *University of Minnesota, USA*; Tom Pearson, *Department of Agriculture - Agricultural Research Service, USA*; A. Enis Cetin, *Bilkent University, Turkey*

**BLIND SEPARATION OF UNDERWATER ACOUSTIC SIGNALS**

Nabih Benchekroun, Ali Mansour, *ENSIETA, France*

**PLEN5: Polynomial control: past, present and future**

**Location:** S1

**Time:** 13:30 - 14:15

**Chair:** Pedro Aguiar, *UTL, Portugal*

**POLYNOMIAL CONTROL: PAST, PRESENT AND FUTURE**

Vladimir Kucera, *Czech Technical University in Prague, Czech Republic*

## COM8: Data converters for communications

**Location:** S2

**Time:** 14:15 - 15:40

**Chair:** Prof. Maloberti Franco, *University of Pavia, Italy*

14:15 **VERY LOW-POWER SAMPLED-DATA  $\Sigma\Delta$  ARCHITECTURES FOR WIRELINE AND WIRELESS APPLICATIONS**

Franco Maloberti, *University of Pavia, Italy*

14:43 **FLEXIBLE ADCS FOR FUTURE WIRELESS RECEIVERS**

Athon Zanikopoulos, Hans Hegt, Arthur Van Roermond, *Eindhoven University of Technology, Netherlands*

15:11 **DESIGN OF A LOW-POWER DAC SYSTEM FOR WLAN 802.11 WIRELESS TRANSMITTERS**

Nicola Ghittori, Andrea Vigna, Vincenzo Ferragina, Piero Malcovati, *University of Pavia, Italy*; Stefano D'Amico, Andrea Baschiroto, *University of Lecce, Italy*

**SIG8: Iterative techniques for signal processing**

**Location:** S3

**Time:** 14:15 - 15:40

**Chair:** Benedetto S., *Polytechnic, Torino, Italy*

- 14:15    **CODED DECISION FEEDBACK SIGNAL PROCESSING: AN ALTERNATIVE TO ITERATIVE (TURBO) SIGNAL PROCESSING**  
Krishna Narayanan, Nitin Nangare, *Department of Elect. and Comp. Engg, Texas A&M University, USA*
- 14:36    **DESIGN OF LDPC-CODED MODULATIONS FOR FAST ITERATIVE DECODING**  
Michele Franceschini, Gianluigi Ferrari, Riccardo Raheli, *University of Parma, Italy*
- 14:57    **ENHANCED CHANNEL DECODING VIA EM SOURCE-CHANNEL ESTIMATION**  
Joseph J. Boutros, *ENST, France*; Amira Alloum, *FT R&D Division, France*; Gil I. Shamir, *University of Utah, USA*
- 15:18    **SEQUENTIAL EQUALIZATION AND DECODING**  
Arul D. Murugan, Hesham El Gamal, *Ohio State University, USA*; M. Oussama Damen, *University of Waterloo, Canada*; Giuseppe Caire, *EURECOM, France*

## **POSA8: Watermarking, indexing and steganography**

**Location:** S4

**Time:** 14:15 - 15:40

**Chair:** Afdel K., *University Ibnou Zohr, Agadir, Rabat*

### **A NOVEL CORRELATION DETECTION SYSTEM FOR MULTIPLICATIVE ROBUST WATERMARKING**

Jinwei Wang, *Nangjin University of Sci & Tech, China*; Shiguo Lian, Zhen Ren, *France telecom R&D Beijing, China*; Yuewei Dai, *Nanjing University of Sci & Tech, China*; Haila Wang, *France Telecom R&D Beijing, China*

### **STEGANOGRAPHY IN GRAY IMAGES USING WAVELET**

Bo Yang, Beixing Deng, *Tsinghua University, China*

### **QUANTIZATION WATERMARKING INTEGRATED IN A WAVELET COMPRESSION SYSTEM**

Achraf Makhloufi, Azza Ouled Zaid, Ammar Bouallegue, Ridha Bouallegue, *El Manar University, Tunisia*

### **AUTHENTICATION SYSTEM FOR MEDICAL WATERMARKED CONTENT BASED IMAGE**

Youness Idrissi Khamlichi, *Ibn Zohr University, Morocco*; Youssef Zaz, *Laboratory of Electronic, Signals-Systems, and Informatics (L.E.S.S.I.), Department of Physic, Morocco*; Karim Afdel, *Ibn Zohr University, Morocco*

### **DISTORTION CONTROL REVERSIBLE WATERMARKING**

Dinu Coltuc, *University Valahia Targoviste, Romania*; Jean-Marc Chassery, *LIS-INP Grenoble, France*



**A COUNTER-GEOMETRIC ATTACK WATER-MARKING SCHEME BASED ON MATCHING OF CORNER POINTS**

Jinwei Wang, *Automation Department, Nanjing University of Science and Technology, China*; Shiguo Lian, Zhen Ren, *France telecom R&D Beijing, China*; Yuewei Dai, *Nanjing University of Science & Technology, China*

**A BLIND IMAGE WATERMARKING ALGORITHM BASED ON DUAL TREE COMPLEX WAVELET TRANSFORM**

S. Mabtoul, *University Mohamed V, Morocco*; El Hassane Ibn-Elhaj, *INPT, Morocco*; Driss Aboutajdine, *University Mohamed V, Morocco*

**A NEW QUADTREE-BASED SYMMETRY TRANSFORM (QST) WITH APPLICATION TO ARAB-ANDALUSIAN IMAGES INDEXING**

Mohamed Ould Djibril, Rachid Oulad Haj Thami, *Université Mohamed V, Morocco*

**MULTI-LEVEL DIGITAL WATERMARKING IN DIVERSE TRANSFORM DOMAINS**

Eeva Lähetkangas, *University of Oulu, Finland*; Nedeljko Cvejic, *University of Bristol, United Kingdom*; Tapio Seppänen, Jaakko Sauvola, *University of Oulu, Finland*

**AN INDEXING METHOD FOR SIMILARITY SEARCH IN HIGH-DIMENSIONAL IMAGE DATABASES**

Imane Daoudi, *UFR Syscom, Morocco*; Said El Alaoui Ouatik, *Fac. des Sciences Dhar Mahraz, Fès, Morocco*; Abdelilah Elkharraz, *National School of Management, Morocco*

## **POSB8: Implementations and other**

**Location:** S5

**Time:** 14:15 - 15:40

**Chair:** Ouadou M., *University Mohammed V-Agdal, Rabat, Morocco*

### **A SWP COMPILER DESIGN APPROACH FOR MULTIMEDIA PROCESSING**

Dan Wu, Zhiying Wang, Kui Dai, Li Shen, *National University of Defense Technology, China*

### **DIGITAL SPELLCHECKING PEN: A NOVEL DIGITAL PEN**

Marwa AbdelBaki, Mansour Mansour, Rosalie Saba, *American University of Beirut, Lebanon*

### **IMPLEMENTATION OF LOEFFLER ALGORITHM ON STRATIX DSP COMPARED TO CLASSICAL FPGA SOLUTIONS**

Ahmed Ben Atitallah, Patrice Kadionik, *IXL-ENSEIRB, France*; Fahmi Ghazzi, *LETI-ENIS, Tunisia*; Patrice Nouel, *IXL-ENSEIRB, France*; Nouri Masmoudi, *LETI-ENIS, Tunisia*; Philippe Marchegay, *IXL-ENSEIRB, France*

### **PROCESSING OF OUTPUT SIGNAL OF CCD SENSOR EXPOSED BY IONIZING RADIATION**

Zdenek Barton, *CEDO, Ltd., Czech Republic*; Radimir Vrba, *Brno Universtiy of Technology, Czech Republic*

### **HARDWARE MASK FOR CLOUD DETECTION APPROACH**

Ayhane Benbouzid, K. Laidi, A. Rachedi, *Centre National des Techniques Spatiales, Algeria*

### **A NOVEL 10-BIT, 40 MHz, 54 mW PIPELINED ADC**

Jiri Haze, Radimir Vrba, *Dept. of Microelectronics, FEEC, BUT Brno, Czech Republic*

**MATLAB MODEL OF 16-BIT SWITCHED-CAPACITOR SIGMA-DELTA MODULATOR WITH TWO-STEP QUANTIZATION PROCESS**

Lukas Fucik, Radimir Vrba, *Dept. of Microelectronics, BUT, FEEC, Czech Republic*

**EFFICIENT MPI IMPLEMENTATION UPON DSP/BIOS/(TM) ON SUNDANCE(TM) MULTI-COMPUTERS**

Juan Carlos Díaz-Martín, Juan Antonio Rico-Gallego, Jesús María Álvarez-Llorente, *Universidad de Extremadura, Spain*

**DIGITAL SIGNAL PROCESSING ALGORITHM OPTIMIZATION FOR VLIW DIGITAL SIGNAL PROCESSORS (INVITED)**

Zdenek Smekal, Petr Sysel, *Department of Telecommunications, Brno University, Czech Republic*

## COM9: Wireless networks and services

**Location:** S2

**Time:** 16:10 - 17:30

**Chair:** Dr. Almutairi Ali F., *Kuwait University, Kuwait*

- 16:10    **A NEW VISION USING SENSOR TECHNOLOGY FOR ENVIRONMENTAL MONITORING SYSTEM IN THE STATE OF KUWAIT**  
A. Buo-Shehri, Qutaiba A. Razouqi, *Electrical Engineering Department, Kuwait University, Kuwait*; S. Habib, *Computer Engineering Department, Kuwait University, Kuwait*; N. Zaeri, *Electrical Engineering Department, Kuwait University, Kuwait*
- 16:36    **MEP-AODV: AODV-BASED MAXIMUM ENERGY PATH ROUTING IN AD HOC NETWORKS**  
Qutaiba A. Razouqi, Ali H. Afsari, *Electrical Engineering Department, Kuwait University, Kuwait*
- 17:02    **GPRS/EDGE SERVICES PERFORMANCE MEASUREMENTS IN THE STATE OF KUWAIT**  
Ali F. Almutairi, Fahad Al-Jame, Lijy K. Jose, *Electrical Engineering Department, Kuwait University, Kuwait*

**SIG9: Image processing (recognition/detection)**

**Location:** S3

**Time:** 16:10 - 17:30

**Chair:** Daoudi M., *Enic, Telecom Lille I, France*

16:10 **DYNAMIC SYSTEM DESIGN FOR AMERICAN SIGN LANGUAGE RECOGNITION**

Joe Naoum-Sawaya, Mazen Slim, Sami Khawam, Mohamad Adnan Al-Alaoui, *American University of Beirut, Lebanon*

16:30 **A COMPARATIVE STUDY OF NMF, DNMF, AND LNMF ALGORITHMS APPLIED FOR FACE RECOGNITION**

Ioan Buciu, Nikos Nikolaidis, Ioannis Pitas, *Aristotle University of Thessaloniki, Greece*

16:50 **A PRETOPOLOGICAL APPROACH FOR HANDWRITTEN ISOLATED ARABIC CHARACTERS RECOGNITION**

Ali Rachidi, *ENCG, Agadir, Morocco*; Mostafa El Yassa, Driss Mammass, *Faculté des Sciences, Agadir, Morocco*

17:10 **ARTIFICIAL NEURAL NETWORK-BASED FACE RECOGNITION**

Réda Adjoudj, Aoued Boukelif, *University of Sidi Bel-Abbès, Algeria*

## **POSA9: Filtering**

**Location:** S1

**Time:** 16:10 - 17:30

**Chair:** Berthoumieu Yannick, *Bordeaux, France*

### **PERFORMANCE ANALYSIS OF BAYESIAN ADAPTIVE FILTERING**

Tayeb Sadiki, Dirk Slock, *EURECOM, France*

### **MODELLING THE IMPERFECTIONS OF ANALOG CIRCUITS USING SECOND-ORDER STATISTICS**

Davud Asemani, Jacques Oksman, Daniel Poulton, *SUPELEC, France*

### **CONSTRAINED COMPLEX CHEBYSHEV AND LEAST-SQUARE DESIGN OF FINITE-IMPULSE RESPONSE FILTERS**

Junli Liang, Shijun Wang, *Institute of Acoustics, Chinese Academy of Sciences, China*; Shuyuan Yang, Xiao Wang, *Institute of Acoustics, Chinese Academy of Science, China*

### **A DUAL FILTERING APPROACH IN MEMS BASED DYNAMIC ATTITUDE ESTIMATION**

Roberto Guidorzi, Roberto Diversi, Umberto Soverini, *University of Bologna, Italy*

## **POSC9: Non linear control and hybrid systems**

**Location:** S4

**Time:** 16:10 - 17:30

**Chair:** Hajjaji , *University Bordeaux I, France*

### **STABILIZATION AND TRAJECTORY TRACKING IN DISCRETE-TIME OF AN AUTONOMOUS FOUR ROTOR MINI-ROTORCRAFT**

M. Guisser, Hicham Medromi, Janah Saadi, H. Ifassiouen, *ENSEM, Morocco*

### **MODELING AND SIMULATING RAILWAY TRAC- TION WITH COMPONENT HYBRID DYNAMIC NETS**

Mouhcine Chami, *UTBM, France*; Janah Saadi, Hicham Medromi, *ENSEM, Morocco*

### **FLATNESS AND COLLOCATION BASED METHODOLOGY FOR SATELLITE TRAJEC- TORY PLANNING**

Christophe Louembet, Franck Cazaurang, Ali Zolghadri, *LAPS, France*

### **CULTURAL ALGORITHMS FOR AIR TRAFFIC CONFLICT RESOLUTION PROBLEM**

Jihane Alami, Abdelhakim El Imrani, *FSR, Morocco*

### **TIME OPTIMAL CONTROL DETERMINATION BY TIME INTERVAL ADJUSTMENT FOR A NON- ISOTHERMAL PLUG-FLOW REACTOR MODEL**

Nadia Barje, Mohammed Elarbi Achhab, *LINMA, Morocco*

### **THERMAL ADVANCED HYBRID DYNAMIC NET**

Janah Saadi, Siham Krabatou, *ENSEM, Morocco*; Abdelouahed Zakari, *Universite de Metz, France*

**A NEW IDENTIFICATION ALGORITHM OF VOLTAGE PERTURBATIONS FOR A THREE PHASE SERIES ACTIVE POWER FILTER**

L'Houssine Abaali, Moulay Tahar Lamchich, Mustapha Raoufi,  
*Faculty of Sciences Semlalia, Morocco*

**A MODELING AND EXPERIMENTAL FRAMEWORK FOR CONTROLS FOR FUEL CELLS (INVITED)**

N. Lu, X. Sun, M. A. Khaleel, *Energy Science & Technology Division, Pacific Northwest National Laboratory, USA*



## Author Index

- Abaali, L'Houssine, 88  
Abbad, Mohammed, 61  
Abdel Nour, Hanna, 56  
AbdelBaki, Marwa, 82  
Abed-Meraim, Karim, 53  
Aboutajdine, Driss, 25, 31,  
36, 81  
Adamou-Mitiche, Amel Baha  
Houda, 62  
Addaim, Adnane, 57  
Adjoudj, Réda, 85  
Afdel, Karim, 80  
Afsari, Ali H., 84  
Aguiar, A. Pedro, 66  
Ahmad, Iftikhar, 19  
Aiello, Giovanni, 61  
Ait Kaci, Djamila, 73  
Ait Kerroum, Mounir, 25  
Ait Lmaati, E., 36  
Ait Ouahman, Abdellah, 48  
Ait-Aoudia, Samy, 60  
Ait-Idir, Tarik, 43  
Aksasse, Brahim, 34, 36  
Al-Ahmad, Hussain, 22  
Al-Alaoui, Mohamad Adnan,  
85  
Al-Ghunami, Bader, 37  
Al-Jame, Fahad, 84  
Al-Jawfi, Rashad, 49  
Al-Mualla, Mohammed, 22  
Al-Rawi, A. A. A., 40  
Alameda-Hernández, Enrique,  
71  
Alami, Jihane, 87  
Alfidi, Mohammed, 62  
Alloum, Amira, 79  
Almutairi, Ali F., 84  
Alvarez-Llorente, Jesús María,  
83  
Amehraye, Asmaa, 55  
Amimi, Adel, 48  
Amin, Malik Yasir, 19  
Amin, Moeness G., 45  
Amine, Aouatif, 25  
Ammar, Mahmoud, 32  
Amro, Islam, 56  
Anou, Abderrahmane, 32  
Anouar, Hicham, 33  
Ansary, Tarik Filali, 19  
Antari, Jilali, 22, 75  
Antonini, Marc, 36  
Aoun, Mohamed, 63  
Aounallah, Fatma, 74  
Arikan, Erdal, 52  
Asemani, Davud, 86  
Assfalg, Jurgen, 19  
Asteriadis, Stylianos, 24  
Ayad, Hassan, 69  
Bai, Huihui, 30  
Baili, Hana, 63  
Baili, Jamel, 48  
Baqqali, Salwa, 39  
Barje, Nadia, 87  
Barton, Zdenek, 82  
Baschiroto, Andrea, 78  
Bauer, Carsten, 28  
Beghdadi, Azeddine, 38, 49,  
53  
Belghith, S., 18  
Belhadj, Ziad, 36  
Ben Aicha, Anis, 74  
Ben Atitallah, Ahmed, 82  
Ben Ayed, Mohamed Ali, 30,  
67  
Ben Djmaa, Maher, 30  
Ben Jebara, Sofia, 55, 74  
Ben Jemaa, Maher, 60  
Ben Jemaa, Yousra, 60  
Ben Jmaa, Ahmed, 60  
Ben Lahmer, Habib, 33  
Ben Said, Fatma, 61  
Benabdellah, Mohammed, 30,  
60

- Benahmed, M., 57  
 Benazza - Benyahia, Amel, 53  
 Benbouzid, Ayhane, 82  
 Benchekroun, Nabih, 76  
 Bendoukha, Samir, 42  
 Benetos, Emmanouil, 54  
 Benhamou, Claude Laurent, 37  
 Benierbah, Said, 30  
 Beniich, Nadia, 70  
 Benmansour, Khelifa, 18  
 Bensalem, Emna, 20  
 Bensebti, Messaoud, 32  
 Benslama, M., 56  
 Benslimane, A., 36  
 Benyakhlef, Majid, 39  
 Berkani, Daoued, 54, 73  
 Bernard, Olivier, 27  
 Berraissoul, Abdelghafour, 61  
 Bersali, M., 32  
 Berthet, Antoine, 42  
 Berthoumieu, Yannick, 34, 68  
 Bertini, Enrico, 19  
 Besbes, Kamel, 48  
 Bi, Gang, 74  
 Blau, Kurt, 20  
 Blom, Henk, 51  
 Bobillet, William, 74  
 Bocquet, Wladimir, 42  
 Bonnet, Christian, 33  
 Boone, Marinus, 29  
 Borges de Sousa, João, 51  
 Boualleg, Ahcene, 56  
 Bouallegue, Ammar, 21, 57, 61, 80  
 Bouallegue, Ridha, 80  
 Boucherf, Djamila, 73  
 Boudraa, Abdel-Ouahab, 38, 49, 74  
 Bouhlal, L., 38  
 Bouhorma, Mohammed, 57  
 Boujemâa, Hatem, 32  
 Boukaache, Abdenour, 38  
 Boukelif, Aoued, 60, 85  
 Boulfani, Yasmine, 36  
 Boulouird, Mohamed, 23  
 Bouriah, Amine, 38  
 Bouroumi, Abdelazziz, 48  
 Bousserhane, Ismaïl Khalil, 40  
 Boutayeb, Mohamed, 18, 69  
 Boutros, Joseph J., 79  
 Bouyakhf, El Houssine, 30, 37, 60  
 Bouzouba, K., 48  
 Bradac, Zdenek, 71  
 Bretier, Philippe, 24  
 Brochard, J., 36  
 Buciu, Ioan, 85  
 Bulgarelli, Daniele, 19  
 Buo-Shehri, A., 84  
 Cabelguen, Jean-Marie, 63  
 Caire, Giuseppe, 79  
 Calafiore, Giuseppe, 39  
 Cances, J.P., 42  
 Cappelletti, Fabio, 35  
 Caroppo, Andrea, 67  
 Catarci, Tiziana, 19  
 Cazaurang, Franck, 87  
 Cerisara, Christophe, 59  
 Cetin, A. Enis, 76  
 Cexus, Jean-Christophe, 38, 49, 74  
 Chadda, Trishabh, 23  
 Chahir, Youssef, 25  
 Chami, Mouhcine, 87  
 Chan, Kai-Jie, 49  
 Chang, Yau-Zen, 67  
 Chassery, Jean-Marc, 80  
 Chaux, Caroline, 53  
 Chelliq, El Hafid, 62  
 Cheref, Amina, 25  
 Cherif, Sofiane, 20, 33  
 Cherifi, Hocine, 48, 49  
 Chervenkov, Yordan, 39  
 Chiang, Han-Ting, 56

- Chopinet, Bernard, 24  
 Chriss, Marouane, 57  
 Chtourou, Sami, 42  
 Cieslak, Jérôme, 40  
 Cointault, Frédéric, 24  
 Coltuc, Dinu, 80  
 Comon, Pierre, 75  
 Conte, Giuseppe, 66  
 Cottatellucci, Laura, 58  
 Cristea, Paul Dan, 38  
 Cucchiara, Rita, 19  
 Cvejic, Nedeljko, 81
- D'Amico, Gianpaolo, 19  
 D'Amico, Stefano, 78  
 D'Orazio, Tiziana, 30, 67  
 Dégerine, Serge, 44  
 Díaz-Martín, Juan Carlos,  
 55, 83  
 Daafouz, Jamal, 18  
 Dahhou, Boutayeb, 63  
 Dai, Kui, 82  
 Dai, Yuewei, 80, 81  
 Damen, M. Oussama, 79  
 Daoudi, Imane, 81  
 Daoudi, Khalid, 59  
 Daoudi, Mohamed, 19, 25,  
 36  
 Dargent, Regis, 34  
 David, C., 34  
 De Diego, Maria, 29  
 De Leon, J., 18  
 De Miguel, Rodrigo, 58  
 De Santis, Elena, 51  
 De Vries, Diemer, 29  
 Debbah, Merouane, 58  
 Deguenon, Judicaell, 27  
 Del Bimbo, Alberto, 19  
 Delaunay, Georges, 76  
 Deneire, Luc, 56  
 Deng, Beixing, 80  
 Devers, Thierry, 37  
 Deville, Yannick, 44  
 Dhurjati, P., 27
- Di Benedetto, Maria Domenica,  
 51  
 Di Benedetto, Maria-Gabriella,  
 51  
 Diepold, K., 17  
 Diversi, Roberto, 74, 86  
 Djebari, M., 32  
 Djemai, Mohammed, 18  
 Djendi, Mohamed, 73  
 Djerouni, Aicha, 38  
 Donias, Marc, 34, 68  
 Douchain, Denis, 70  
 Drissi, H., 57  
 Drissi, Mhamed, 20  
 Dumas, J.M., 42  
 Dumont, Julien, 58
- Echigo, Tomio, 49  
 Economou, George, 73  
 Eddaoudi, Fatima, 37  
 Edinger, Stefan, 28  
 El Alaoui Ouatik, Said, 81  
 El Azouzi, Rachid, 61  
 El Bouhtouri, Abdlmoula, 70  
 El Fkihi, Sanaa, 25  
 El Hassouni, Mohammed, 48  
 El Hitmy, M., 24  
 El Imrani, Abdelhakim, 87  
 El Kamili, Mohamed, 61  
 El Oirrak, Ahmed, 36  
 El Rhabi, Mohammed, 76  
 El Yassa, Mostafa, 85  
 Elarbi Achhab, Mohammed,  
 87  
 Elasmi-Ksibi, Rim, 33  
 Elkharraz, Abdelilah, 81  
 Ellouze, Nouredine, 54, 59  
 Elmeddeb, Hatem, 21, 57  
 Elmoataz, Abderrahim, 25  
 Elouaai, F., 57  
 Essannouni, Fedwa, 30, 31  
 Essannouni, Leila, 68  
 Estrade, Anne, 37  
 Estrela da Silva, Jorge, 51  
 Et-Tolba, Mohamed, 32

Fadaili, El Mostafa, 62  
 Fang, Li-Wei, 20  
 Fang, Yong, 32  
 Farah, Modamed, 71  
 Farhi, Ovid, 39  
 Farza, M., 18, 27  
 Favier, Gérard, 63  
 Fenniri, Hassan, 76  
 Ferré, G., 42  
 Ferragina, Vincenzo, 78  
 Ferrari, Gianluigi, 35, 79  
 Ferrer, Miguel, 29  
 Fiedler, Petr, 71  
 Fischione, Carlo, 51  
 Flärdh, Oscar, 51  
 Fliege, Norbert J., 28  
 Fotouhi, F., 50  
 Franceschini, Michele, 79  
 Frikel, Miloud, 71  
 Frikha, Mounir, 35, 61  
 Fujcik, Lukas, 83  
 Fujiwara, Shinya, 67  
  
 Gabbouj, Moncef, 19  
 Gabis, Abdelhalim, 60  
 Gaglio, Salvatore, 61  
 Gaida, Markus, 28  
 Gamal, Hesham El, 79  
 Gambella, Luca, 66  
 García Zapata, Juan-Luis,  
     55  
 Garcia, Christophe, 24  
 Garna, Tarek, 69  
 Ge, Lingnan, 59  
 Ge, Yubo, 59  
 Geiger, Ralf, 29  
 Gemert, Jan van, 19  
 Geusebroek, Jan-Mark, 19  
 Ghabcheloo, Reza, 66  
 Ghaddar, Bissan, 35  
 Gharbi, Mourad, 30, 60  
 Ghittori, Nicola, 78  
 Ghogho, Mounir, 33  
 Ghouzali, Sanaa, 25  
 Ghozzi, Fahmi, 82  
  
 Giancola, Guerino, 51  
 Gonzalez, Alberto, 29  
 Gouzé, Jean-Luc, 27  
 Grana, Costantino, 19  
 Grenaille, Sylvain, 62  
 Grivel, Eric, 32, 74  
 Grizille, Jessy W., 27  
 Groh, Ingmar, 52  
 Grolleau, Julie, 32  
 Guennoun, Zouhair, 20  
 Guesmi, Tarek, 61  
 Guessoum, Abderrezak, 54,  
     73  
 Guidorzi, Roberto, 74, 86  
 Guillon, Sebastien, 34  
 Guisser, M., 87  
 Guo, Huimin, 67  
 Guo, Ping, 67  
  
 Habib, S., 84  
 Habibi, Mohamed, 44  
 Hachem, Walid, 58  
 Hadeif, Mahmoud, 42  
 Hadi, Youssef, 30, 31  
 Haeri, Mohammad, 35  
 Hajdu, Andras, 24, 48  
 Hamada, Hocine, 38  
 Hamdi, Noureddine, 21, 57  
 Hamdi, Omessaad, 61  
 Hammouche, Ahmed, 25  
 Hammouri, Hassan, 27  
 Hamzaoui, El-Mehdi, 37  
 Harari, Sami, 61  
 Harba, Rachid, 37  
 Hasnaoui, Salem, 61  
 Hassani, Moha M'Rabet, 23  
 Hayashi, Kazunori, 42  
 Haze, Jiri, 82  
 Hazzab, Abdeldjebar, 40  
 He, Guiming, 55  
 Hegt, Hans, 78  
 Hein, Matthias, 20  
 Henry, David, 40, 62  
 Hergli, Mounir, 48  
 Herre, Jürgen, 29

- Hespanha, Joao, 66  
 Himmi, M.M., 37  
 Hinamoto, Takao, 46  
 Hlel, El Kefi, 33  
 Hmamed, Abdelaziz, 62  
 Honda, Masaaki, 59  
 Hosseini, Shahram, 44  
 Hossen, Abdulnasir, 37  
 Hu, Xiaopeng, 55  
 Hung, Gau-Tin, 67  
 Hyncica, Ondrej, 71  
  
 Ibn-Elhaj, El Hassane, 68,  
     81  
 Idboufker, Noureddine, 61  
 Idrissi Khamlichi, Youness,  
     80  
 Ifantis, Apostolos, 73  
 Ifassiouen, H., 87  
 Ijspeert, Auke Jan, 63  
 Ince, Nuri Firat, 76  
 Indiveri, Giovanni, 66  
 Iqdour, Radouane, 75  
  
 Jaddu, Hussein, 46  
 Jaidane, Meriem, 56  
 Jamali, Mohammad, 46  
 Javed Mirza, Muhammad,  
     31  
 Jeedella, Jeedella, 22  
 Jennane, Rachid, 37  
 Jerad, Mohamed, 32  
 Jerzy, Klamka, 69  
 Johansson, Karl H., 51  
 Johansson, Mikael, 51  
 Jose, Lijy K., 84  
 Joshi, Shiv Dutt, 23  
 Juidette, Hicham, 61  
  
 Kachouri, A., 71  
 Kacz, Peter, 71  
 Kaddioui, M. N., 36  
 Kadionik, Patrice, 82  
 Kadri, Hachem, 54  
  
 Kamel Mohamed, Faraoun,  
     60  
 Kaminer, Isaac, 66  
 Kamli, M., 40  
 Kamoun, L., 71  
 Kane, Elimane, 44  
 Kayran, Ahmet H., 23  
 Kazemian, Majid, 46  
 Keskes, Naamen, 34  
 Keyhanipoor, Amir Hossein,  
     46  
 Khaleel, M. A., 88  
 Khamadja, Mohammed, 30  
 Khamlichi, Y. I., 48  
 Khan, Sohaib, 72  
 Khawam, Sami, 85  
 Kherras, Abdelhaq, 57  
 Khouaja, Anis, 63  
 Khoudeir, Majdi, 36  
 Khoumsi, Ahmed, 46  
 Kiranyaz, Serkan, 19  
 Kizilkaya, Aydin, 23  
 Knedlik, Stefan, 75  
 Knopp, Raymond, 33  
 Konovalov, Alexander, 37  
 Korodi, Gergely, 76  
 Kotropoulos, Constantine, 54  
 Kotti, Margarita, 54  
 Krabatou, Siham, 87  
 Krystul, Jaroslav, 51  
 Kucera, Pavel, 71  
 Kucera, Vladimir, 77  
 Kurematsu, Akira, 59  
  
 Lähetkangas, Eeva, 81  
 La Fond, Timothy M., 66  
 Lachiri, Zied, 54, 59  
 Lagunas, M. A., 26  
 Lahouar, Samer, 48  
 Laidi, K., 82  
 Lamchich, Moulay Tahar, 88  
 Lamouri, Najib, 30, 60  
 Lara, Mauricio, 71  
 Laraki, K., 37  
 Lavialle, Olivier, 34

Le Bihan, Nicolas, 34  
 Lebbar, Sofia, 20  
 Lee, Shih-Tseng, 67  
 Lemineur, Gérald, 37  
 Leo, Marco, 30, 67  
 Lian, Shiguo, 80, 81  
 Liang, Junli, 22, 86  
 Lin, Tsung-Nan, 49  
 Lin, Yuan-Pei, 56  
 Liu, F.L., 18, 27  
 Liu, Qingshan, 67  
 Loffeld, Otmar, 75  
 Loubaton, Philippe, 58  
 Louembet, Christophe, 87  
 Lu, N., 88  
 Lu, Wu-Sheng, 46  
 Lucas, Caro, 46  
  
 M'Saad, Mohammed, 18, 27,  
     47, 71  
 Müller, Ralf R., 58  
 Maamer, Manel, 61  
 Mabtoul, S., 81  
 Machrouh, Joseph, 24  
 Maddi, Abdelkader, 54  
 Magesacher, Thomas, 33  
 Maghraoui, M.N., 18  
 Makhloufi, Achraf, 80  
 Makoudi, Meriem, 39  
 Malcovati, Piero, 78  
 Maloberti, Franco, 78  
 Mammass, Driss, 85  
 Mamouni, A., 57  
 Manamanni, Nouredine, 18  
 Mansour, Ali, 76  
 Mansour, Mansour, 82  
 Marchegay, Philippe, 82  
 Mari, Jean Luc, 34  
 Marrakchi Mezghani, Imen,  
     56  
 Mars, Jérôme, 34  
 Martalò, Marco, 35  
 Martins, Luis Gustavo P.M.,  
     54  
 Martiriggiano, Tommaso, 67  
  
 Marzouk, Samir, 30  
 Masmoudi, Nouri, 30, 67, 82  
 Mazzetti, Cinzia, 46  
 McLernon, Des, 71  
 Mecklenbräuker, Christoph,  
     20  
 Medromi, Hicham, 46, 87  
 Meghdadi, V., 42  
 Megret, Remi, 68  
 Mehdi, M., 32  
 Mehlführer, Christian, 20  
 Melchior, Pierre, 63  
 Menouni Hayar, Aawatif, 33  
 Merabtine, N., 56  
 Mesquine, Fouad, 69  
 Messaoud, Hassani, 63, 69  
 Mestre, Xavier, 52  
 Meziani, H. A., 73  
 Miguët, Serge, 49  
 Mikram, Mounia, 68  
 Mile-Ciobanu, E., 36  
 Millerioux, Gilles, 18  
 Mitiche, Lahcene, 62  
 Mitter, Sanjoy, 64  
 Miyanaga, Yoshikazu, 59  
 Moisan, Marcelo, 27  
 Mokhtari, Mohamed, 60  
 Moreau, Eric, 44, 62  
 Morgansen, Kristi, 66  
 Mosca, Nicola, 30  
 Moshiri, Behzad, 46  
 Mouaddib, El Mustapha, 49  
 Moumkine, Nouredine, 48  
 Moussa, Ahmed, 38  
 Moustakas, Aris L., 52  
 Muller, Ralf R., 58  
 Murugan, Arul D., 79  
  
 Nadri, Madiha, 27  
 Naimi, Amina, 60  
 Najim, Jamal, 58  
 Najim, Mohamed, 32, 34, 36,  
     74  
 Nangare, Nitin, 79  
 Naoum-Sawaya, Joe, 35, 85

Narayanan, Krishna, 79  
 Nasri, M'barek, 24  
 Nayar, Nitin, 23  
 Nguyen, Kim Cuong, 72  
 Nikolaidis, Nikos, 24, 85  
 Nitti, Massimiliano, 30  
 Noras, Jim, 22  
 Nordberg, Jörgen, 72  
 Nouel, Patrice, 82  
  
 Oksman, Jacques, 86  
 Omoifo, Osemekhian, 46  
 Onaran, Ibrahim, 76  
 Orozco-Lugo, Aldo, 71  
 Oulad Haj Thami, Rachid,  
 30, 31, 36, 81  
 Ould Djibril, Mohamed, 81  
 Ouled Zaid, Azza, 80  
 Oumsis, Mohammed, 33  
 Oustaloup, Alain, 63  
  
 Pagliari, Roberto, 35  
 Pala, Pietro, 19  
 Panaget, Franck, 24  
 Parlangei, Gianfranco, 66  
 Pascoal, Antonio, 66  
 Pastor, Dominique, 55, 74  
 Paulus, Caroline, 34  
 Payan, Frédéric, 36  
 Pearson, Tom, 76  
 Pesquet, Jean-Christophe, 53  
 Petit, Julien, 63  
 Petrusch, S., 29  
 Petropoulos, Dimitris, 73  
 Phoong, See-May, 56  
 Pikuz, Sergey, 37  
 Pinyero, Gema, 29  
 Pitas, Ioannis, 24, 48, 85  
 Plass, Simon, 52  
 Pop, Sorin, 34  
 Postaire, Jack-Gérard, 38  
 Pouliquen, Mathieu, 47  
 Poulton, Daniel, 32, 86  
  
 Qjidaa, Hassan, 48  
  
 Rabaoui, Asma, 59  
 Rabenstein, Rudolf, 29  
 Rachedi, A., 82  
 Rachidi, Ali, 85  
 Radouane, Abdelhadi, 48  
 Radouane, Larbi, 39  
 Raggad, Bel G, 56  
 Raheli, Riccardo, 35, 79  
 Rahli, Mostefa, 40  
 Raja, Gulistan, 31  
 Rajih, Myriam, 75  
 Rami, Musthapa Ait, 69  
 Raoufi, Mustapha, 88  
 Razouqi, Qutaiba A., 84  
 Regragui, Fakhita, 30, 37,  
 60  
 Ren, Zhen, 80, 81  
 Rezig, Houria, 61  
 Rhioui, Saloua, 44  
 Rico-Gallego, Juan Antonio,  
 55, 83  
 Riouch, Fatima, 20  
 Rital, Soufiane, 49  
 Roubies, Athanasios, 48  
 Rupp, Markus, 20  
 Rziza, Mohammed, 25  
  
 Saadaoui, Hassan, 18  
 Saadi, Janah, 46, 57, 87  
 Saaidi, A, 24  
 Saba, Rosalie, 82  
 Sadiki, Tayeb, 22, 23, 86  
 Sadiq, Abdelalim, 36  
 Safi, Said, 22, 75  
 Sagawa, Ryusuke, 49  
 Sahnoudi, Mohamed, 45  
 Sajdl, Ondrej, 76  
 Sakai, Hideaki, 42  
 Salam, Ahmed, 31  
 Sallet, Gauthier, 27  
 Salzenstein, Fabien, 38, 49  
 Samet, Amine, 30, 67  
 Samet, M., 71  
 Sand, Stephan, 52  
 Santucci, Giuseppe, 19

- Saoudi, Samir, 32, 43  
 Satori, K., 24  
 Sauvola, Jaakko, 81  
 Saylani, Hicham, 44  
 Sbihi, Abderrahmane, 38  
 Schmidt, Markus, 29  
 Scholtz, Robert, 41  
 Schwarz, Johannes, 28  
 Sdigui Doukkali, Abd Alaziz,  
     33  
 Sengul, Metin, 20  
 Seppänen, Tapio, 81  
 Serief, Chahira, 25  
 Shah, Syed Faisal, 42  
 Shakiba Herfeh, Mohammad,  
     35  
 Shamir, Gil I., 79  
 Shelkovenko, Tatiana, 37  
 Shen, Li, 82  
 Shirai, Katsuhiko, 59  
 Siala, Mohamed, 32, 33  
 Silvestre, Carlos, 66  
 Simak, Boris, 49  
 Simon, Steven H., 52  
 Slim, Mazen, 85  
 Slimani, Mustapha, 38  
 Slock, Dirk, 22, 23, 54, 86  
 Smekal, Zdenek, 83  
 Smeulders, Arnold W.M., 19  
 Snoek, Cees, 19  
 Snoussi, Hichem, 44, 45  
 Soiudene, Wided, 53  
 Soltani, F., 73  
 Sommacal, Laurent, 63  
 Souissi, Nabil, 30, 67  
 Soverini, Umberto, 74, 86  
 Spagnolo, Paolo, 30, 67  
 Spors, Sascha, 29  
 Stitou, Youssef, 34, 36  
 Storniolo, Pietro, 61  
 Su, Hsuan-Jung, 20  
 Sugimoto, Futoshi, 75  
 Sun, X., 88  
 Sutherland, Matthew T., 44  
 Sypka, Przemyslaw, 71  
 Sysel, Petr, 83  
 Tabbana, Faiza, 35, 61  
 Tabus, Ioan, 76  
 Taguchi, Akira, 67  
 Tahir, Hazim, 40  
 Tairi, Hamid, 24  
 Tamimi, Jasem, 46  
 Tamtaoui, Ahmed, 48  
 Tang, Akaysha C., 44  
 Targui, Boubekeur, 18, 71  
 Tchere, Franck, 75  
 Tebourbi, Riadh, 36  
 Tewfik, Ahmed, 42, 76  
 Theoharatos, Christos, 73  
 Thirion-Moreau, Nadège, 44,  
     62  
 Tibi, Najet, 35  
 Tissir, El Houssaine, 39  
 Tlili, Fethi, 33  
 Todini, Ezio, 46  
 Tourki, Kamel, 56  
 Trabert, Johannes, 20  
 Trachanas, Ilias, 28  
 Trezzani, I., 27  
 Triki, Mahdi, 54  
 Trimeche, Mejdji, 53  
 Tselentis, Gerasimos-Akis, 73  
 Tudeau, Rodica, 38  
 Turki-Hadj Alouane, Monia,  
     56, 74  
 Ubolkosold, Pakorn, 75  
 Uglov, Alexander, 37  
 Ukil, Abhisek, 75  
 Urso, Alfonso, 61  
 Van Roermund, Arthur, 78  
 Vandeborre, Jean-Philippe,  
     19, 36  
 Vehvilainen, Markku, 53  
 Vetterli, Martin, 65  
 Vigna, Andrea, 78  
 Visoz, Raphael, 32, 42



Vlasov, Vitaly, 37  
 Vlcek, Miroslav, 49  
 Vrabie, Valeriu, 34  
 Vrba, Radimir, 71, 76, 82,  
     83  
 Wada, Naoya, 59  
 Wang, Anhong, 30  
 Wang, Haila, 80  
 Wang, Hao, 30  
 Wang, Jinwei, 80, 81  
 Wang, Shijun, 22, 86  
 Wang, Xiao, 22, 86  
 Wang, Zhiying, 82  
 Weiss, Stephan, 42  
 Worrying, Marcel, 19  
 Wu, Dan, 82  
  
 Xu, Cheng-Zhong, 27  
  
 Yagi, Yasushi, 49  
 Yang, Bo, 80  
 Yang, Shuyuan, 22, 86  
 Yantour, Hamid, 46  
 Yarman, B. Siddik, 20  
 Ykhlef, Farid, 73  
 Yoneyama, Masahide, 75  
 Yu, Rongshan, 29  
  
 Zaeri, N., 84  
 Zahradnik, Pavel, 49  
 Zakari, Abdelouahed, 57, 87  
 Zanicopoulos, Athon, 78  
 Zanolli, Silavia Maria, 66  
 Zantou, El Bachir, 57  
 Zaz, Youssef, 48, 80  
 Zemouche, Ali, 18, 69  
 Zeng, Yu, 74  
 Zeroual, Abdelouhab, 22, 75  
 Zetao, Li, 63  
 Zhang, Jennifer X., 66  
 Zhang, Jian, 32  
 Zhao, Yao, 30, 49  
 Zhao, Yufeng, 49  
 Zhou, Xiaoping, 55  
  
 Zhu, Zhenfeng, 49  
 Ziolkowski, Bartosz, 71  
 Ziolkowski, Mariusz, 71  
 Zivanovic, Rastko, 75  
 Zolghadri, Ali, 40, 62, 87  
 Zouch, Wassim, 67