ICASSP/2006 Toulouse

Conference Guide

May 14 - 19, 2006
Toulouse, France

IEEE
Signal Processing Society

CONFERENCE AT A GLANCE

Sunday, May 14, 2006

10:00 – 18:30	Workshop: A Control-oriented DSP Workshop using the F2808 DSP-controller platform
14:00 – 17:00	Tutorials 1-4
14:00 – 17:00	Workshop: Developing Fixed-Point Multimedia Applications with MATLAB and Simulink
15:30 – 15:45	Coffee Break

Monday, May 15, 2006

09:00 – 12:00	Tutorials 5-9
09:00 – 17:30	Workshop: A practical introduction to the TMS320C6000 DSP
10:30 – 10:45	Coffee Break
14:00 – 17:00	Tutorials 10-14
15:30 – 15:45	Coffee Break
19:00 – 21:00	Ice Breaker (Welcome Reception)

Tuesday, May 16, 2006

08:00 – 09:00	Opening and Awards Ceremony
09:00 – 10:00	Plenary: Cooperative Wireless Communication
10:00 – 10:30	Coffee Break
10:30 – 12:30	Technical Sessions
14:00 – 16:00	Technical Sessions
16:00 – 16:30	Coffee Break
16:30 – 18:30	Technical Sessions

Wednesday, May 17, 2006

08:30 – 09:30	Plenary: Discreet Signaling: An Information-Theoretic Perspective
09:30 – 10:00	Coffee Break
10:00 – 12:00	Technical Sessions
14:00 – 16:00	Technical Sessions
16:00 – 16:30	Coffee Break
16:30 – 18:30	Technical Sessions
20:00	Banquet — Mediathèque

Thursday, May 18, 2006

08:30 – 09:30	Plenary: Signal Processing Challenges in Automotive Engineering
09:30 – 10:00	Coffee Break
10:00 – 12:00	Technical Sessions
14:00 – 16:00	Technical Sessions
16:00 – 16:30	Coffee Break
16:30 – 18:30	Technical Sessions

Friday, May 19, 2006

08:30 – 09:30	Plenary: On board data processing in space missions
09:30 – 10:00	Coffee Break
10:00 – 12:00	Technical Sessions
14:00 – 16:00	Technical Sessions
16:00 – 16:30	Coffee Break
16:30 – 18:30	Technical Sessions

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GENERAL CHAIR'S WELCOME

On behalf of the ICASSP 2006 Organizing Committee, I extend to you a hearty welcome to Toulouse, the so-called 'pink' city of the south of France (Midi-Pyrenees Region), European Capital for Space and Aeronautics. Toulouse was founded 24 centuries ago, and became the berth of French aeronautics as early as the very beginning of the 20th century. Later, in the 60s it becomes the French center for Space activities. With its long tradition of hi-tech activities, the Midi-Pyrenees Region has now around 20,000 people working in research and development, almost equally shared among public research laboratories and the private sector. The Midi-Pyrenees is also the leading region in Europe for space telecommunication, meteorology and climatology, with Toulouse contributing a key production and development site to the Galileo program and its applications. Ten establishments are working directly in spacecraft construction, in addition to 7,500 employees working for over 200 establishments serving spacecraft construction, and another 15,000 employees working in private companies and public bodies.

The ICASSP meeting is the world's largest and most comprehensive technical conference focused on signal processing and its applications. The 31st version of our International Conference on Acoustics, Speech, and Signal Processing, for its first return to France since 1982 in Paris, will be held at the Centre des Congrès Pierre Baudis in downtown Toulouse, from May 14th to 19th, 2006. ICASSP 2006 will offer IEEE members several different passport registration packages, including conference registration and combinations of tutorials.

The Conference received more than 3000 submissions, and the number of student papers has grown significantly, with an increase of more than 50% of those competing in the Student Contest, which reflects positively on the level of interest of young researchers in this domain. ICASSP'06 has devoted a special effort to motivate future researcher and engineering careers in the fields of Signal and Image Processing: as part of promoting science-based engineering education, we will present an adaptation of the "Infinity Project" to the French/European context.

Toulouse and its surrounding region offer numerous attractions and contrasts to entertain its visitors. In addition to its rank as one of the major cities in the world for aircraft construction, it counts one of the highest percentages of students among its half million inhabitants. Attendees can visit the Airbus facility where the largest commercial jetliner in the world—the A380—is being assembled, and a number of hotspots for Space activities like French Space Agency (CNES), Alcatel Alenia Space, and others. It is also a place where the quality of life has been elevated to an art form over the centuries, due to complex interactions between the inhabitants and the place itself, making names like Cro-magnon, Lascaux or Tautavel famous. For those not interested in prehistory,

the region also offers middle age fortresses in Carcassonne and twentieth century paintings accessible in Albi, the hometown of painter Toulouse-Lautrec. For those amongst the attendees who are flesh and blood, France is world renown for its exquisite cuisine and fine wines, and the Sud-Ouest Region is particularly proud of its traditional specific gastronomy; Toulouse lies at the doorstep of some of the world's most prestigious vineyards. The organizing committee has assembled a splendid social program to showcase the many attributes of Toulouse and its surrounding areas.

Finally, I wish to recognize the superb work of the Organizing Committee, with special thanks to the two management companies Conference Management Services and Carte Blanche Organisation.

We look forward to welcoming you to Toulouse, and offering you a memorable scientific and cultural experience!

Francis Castanié
ICASSP 2006 General Chair

TECHNICAL PROGRAM OVERVIEW

Welcome to Toulouse, for the 31st edition of ICASSP, the premier conference in Signal Processing. Our field is constantly evolving. The «Speech Processing Technical Committee» is now the «Speech and Spoken Language Processing» TC. The «Bio Imaging and Signal Processing» TC was reviewing papers for the first time for this ICASSP. One new TC will meet for the first time at ICASSP: the Information Forensics and Security TC.

This year, excluding special sessions, we received a record-breaking 3040 submissions. The submissions figures are ranked below according to the various Signal Processing Society Technical Committees:

Speech and Spoken Language Processing .....(SLP).....668
Image & Multidimensional Signal Processing .....(IMDSP) ...539
Signal Processing Theory and Methods.....(SPTM) 454
Signal Processing for Communications.....(SPCOM) ..414
Sensor Array & Multi-channel Signal Processing ....(SAM) 207
Machine Learning for Signal Processing.....(MLSP) 201
Audio & Electroacoustics .....(AE) 179
Bio Imaging and signal processing.....(BIO).....103
Design & Implementation of SP Systems.....(DISPS).....99
Multimedia Signal Processing .....(MSP).....91
Industry Technology Track.....(ITT).....74
Signal Processing Education.....(SPED).....11

Compared with 2005, three of these TC's show an increase in the number of submissions by more than 20% : SPTM, DISPS, and ITT. The SLP TC (the largest one in terms of submissions) also

had an increase above the global increase percentage. The AE TC also has an above average increase in the number of submissions.

In order to ensure high conference quality, the acceptance rate for submitted papers was set to 48 %. This is slightly lower than last year and continues the trend observed in the last several years. This year, out of 3040 submissions, 1460 were accepted.

The challenging task of reviewing so many papers was efficiently handled by the TC's under the supervision of Mazin Gilbert, Antonio Ortega and Sheila Hemami, G. Tong Zhou and Petar M. Djuric, Ananthram Swami and Nicholas Sidiropoulos, Alex Gershman, Tulay Adali and Jan Larsen, Michael Goodwin, Michael Unser, Chaitali Chakrabarti and Wayne Burleson, Yu Hen Hu, Eli Saber, and Huseyin Abut. All TC chairs and members worked very hard, with the help of external reviewers, to provide accurate and timely evaluations of the submissions.
For most papers, they managed to obtain three reviews. Most of the success of this conference should be credited to them. They also selected the student contest finalists, under the coordination of Inbar Fijalkow and Philippe Salembier. Awards will be decided by the TC's after the presentations given at ICASSP, thus providing a well-deserved recognition to very bright young researchers.

The special sessions were handled by Josiane Zerubia and Patrick Flandrin, who selected 13 sessions out of the 18 that were submitted. The technical committees were also involved in the selection process. Josiane and Patrick did an excellent job of coordinating the selection of leading edge topics of interest to the signal processing community. Altogether, these sessions constitute a very good sample of emerging areas which nicely complement the regular sessions. The first slot of each session will feature an overview of the topic.

All these tasks were facilitated by the excellent infrastructure and support provided by Conference Management Services, and especially Lance Cotton and Billene Mercer. Their efficient work allowed the review process to run painlessly, and the technical program to be put together very smoothly. This year, the technical program is organized into 6 parallel oral sessions, plus 8 parallel poster sessions. The choice between acceptance as a poster or an oral presentation was made by the TC chairs based on subject grouping, and not on paper quality.

The overview of the technical program would not be complete without a word about the plenary speaker program, put together by Benoit Macq and Yves Tourneret. Four plenary talks are planned on «Cooperative Wireless Communication» by David Tse, «Discreet Signaling: An Information Theoretic Perspective» by Pierre Moulin, «Signal Processing Challenges in Automotive Engineering» by Mats Viberg, and «On Board Data Processing in Space Missions» by Jacques-Emile Blamont. Undoubtedly, these

talks will maintain the tradition of very high quality overviews of key issues in Signal Processing established over the years.

Tutorials, given this year on Sunday afternoon and Monday, before the conference, are attracting more and more attendees each year. The program was selected by Phil Regalia and Dirk Slock from proposals received after a call during the summer, and covers a nice mixture of presentations on new, open subjects, and of in depth presentations of new results.

Finally, everybody knows that conferences are also regular opportunities to exchange point of views and informations with good friends. Two such opportunities will be offered by interactive panel sessions on «Women in SP», and «Patentability of algorithms and software for signal processing».

In addition to the regular ICASSP conference, and in order to promote Signal Processing and scientific work at early levels of education, Inbar Fijalkow has organized a presentation of the "infinity project" on Monday 15th. Target audience is made of professors of College and of "preparatory schools" (special training to the best students to enter the top schools of engineering in France), as well as people involved in the definition of programs (inspecteurs d'académie). Even if this event is not full part of the conference, we think that such events truly deserve support by the Signal Processing community (Presentation will be in English, and the debate in French).

We look forward to working with you all in a friendly atmosphere, from Sunday, 14th to Friday 19th of May, 2006.

See you in Toulouse !

Pierre Duhamel and Luc Vandendorpe
Technical program co-chairs, ICASSP 2006

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Signal Processing Education
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Ganesh Ramaswamy
Kannan Ramchandran
Sean Ramprashad
Muralidhar Rangaswamy
Bhaskar D. Rao
Raghuveer Rao
Raj Rao
Yadunandana N. Rao
Todd Reed
Phillip Regalia
Carlo Regazzoni
Amy Reibman
Julien Reichel
James Reilly
Steve Renals
Douglas Reynolds
Harvey Rhody
Guiseppe Riccardi
Giuseppe Ricci
Bart Rice
Cédric Richard
Christ D. Richmond
Luca Rigazio
Gerhard Rigoll
Michael Riley
Brian Roark
Alexis Roche
Jeffrey Rodriguez
Hu Rong
Hector Rosario
Kenneth Rose
C. Roux
Amit Roy-Chowdhury
Diego Pablo Ruiz
Hu Rusheng
Guenther Ruske
Eli Saber
Brian Sadler
Sankalita Saha
Ferat Sahin
Amir Said
Roxana Saint-Nom
Paul Salama
Redwan Salami
Diego Salas
Philippe Salembier
Varsha Sampath
Vijaya Samudra
Manuel Samuelides
Mark Sandler
Ananth Sankar
Ignacio Santamaria
George Saon
Murat Saraclar
Ruhi Sarikaya
Hiroshi Saruwatari
Ali H. Sayed
Akbar Sayeed
Anna Scaglione

Johan Schalkwyk
Louis Scharf
Phil Schniter
Dan Schonfeld
Gerald Schuller
Tanja Schultz
Mike Schuster
Chong Meng Samson See
Chandra Sekhar C.
Michael Seltzer
Yegnaswamy Sermadevi
Erchin Serpedin
Turaj Zakizadeh Shabestary
Izhak Shafran
Shahram Shahbazpanahi
Naresh Shanbhag
Gaurav Sharma
Chung-Ching Shen
Hao Shen
Zukang Shen
Yun Q. Shi
Koichi Shinoda
Shahram Shirani
Yu Shiu
Giovanni Sicuranza
Nikos Sidiropoulos
Vikas Sindhwani
Andrew C. Singer
Olivier Siohan
Sandeep Sira
Manhung Siu
Wan-Chi Siu
Malcolm Slaney
Clint Slatton
Dirk Slock
John R. Smith
Mark J. T. Smith
Steven Thomas Smith
Hichem Snoussi
Hing Cheung So
Hagen Soltau
Kemal Sonmez
Frank Soong
Andreas Spanias
Naveen Srinivasamurthy
Sundararajan Sriram
Ljubisa Stankovic
Eckehard Steinbach
Allan Steinhardt
Fred Stentiford
Thomas Stockhammer
Helmer Strik
Brian Strope
Doug Sturim
Yannis Stylianou
Nagesh Subbanna
Amarnag Subramanya
P. Suetens
Akihiko Sugiyama
Gary Sullivan
Qibin Sun
Wonyong Sung
Myung Sunwoo
Arun Surendran
Ananthram Swami
A. Lee Swindlehurst
Ann Syrdal
Tamás Szirányi
Ali Tabatabai
I. Tabus
Herve Taddei
John Tague
Francesc Tarres
Paul Taylor
Keith A. Teague
Antonio Teixeira
A. Murat Tekalp
Cihan Tepedelenlioglu
Jared Tessier
Jean-Philippe Thiran
Bertrand Thirion
Jon Thorn
Keiichi Tokuda
Lang Tong
Luis Torres
Pedro A. Torres-Carrasquillo
Alexis Michael Tourapis
J.-Y. Tourneret
Trac D. Tran
Isabel Trancoso
Caroline Traube
Dr. John Treichler
Jennifer Trelewicz
Timothy Trenary
Joel Trussell
Stavros Tsakalidis
Stefano Tubaro
Frank Tuffner
Jitendra Tugnait
Gokhan Tur
George Tzanetakis
Onome Ugbeme
Michael Unser
Richard Vaccaro

Palghat P. Vaidyanathan
Jean-Marc Valin
Dirk Van Compernolle
Mihaela van der Schaar
Alle-Jan van der Veen
Hugo Van hamme
Marc M. Van Hulle
Luc Vandendorpe
Nuno Vasconcelos
Gregori Vazquez
Mahesh Vemula
Ingrid Verbauwhede
Olivier Verscheure
Jean-Marc Vesin
Anthony Vetro
Mats Viberg
Josep Vidal
M. A. Viergever
Vishu Viswanathan
Karthik Visweswariah
Fernando J. Von Zuben
Sergiy Vorobyov
Michael Vrhel
Kuansan Wang
Shaojun Wang
Shihua Wang
Wen Wang
Xiaodong Wang
Yao Wang
Ye-yi Wang
Yue Wang
Zhengdao Wang
Ron J. Weiss
Thad B. Welch
Christian Wellekens
Peter Westerink
Frederick Wheeler
Thomas Wiegand
Douglas B. Williams
Hau-San Wong
Ian Wong
Kainam Thomas Wong
Kon Max Wong
Woontack Woo
John Woods
Roger Woods
Mark Woolrich
Charles Wooters
Johan Wouters
Cameron H.G. Wright
An-Yeu (Andy) Wu
Min Wu
Joao Xavier
Xiang-Gen Xia
Zixiang Xiong
Peng Xu
Zhengyuan Xu
Yoichi Yamashita
Takao Yamazaki
Dai Yang
Liuqing Yang
Robert Yantorno
Kaisheng Yao
Jong Chul Ye
Bayya Yegnanarayana
Kuan-Chieh Yen
Arie Yeredor
Xiaoquan Yi
Mark Yoder
Nestor Becerra Yoma
Takayoshi Yoshimura
Dong Yu
Hua Yu
Habib Zaidi
Yehoshua Zeevi
Josiane Zerubia
Jun Zhang
Tong Zhang
Yimin Zhang
Yunxin Zhao
Bowen Zhou
G. Tong Zhou
Shengli Zhou
Bin Zhu
Qifeng Zhu
Imed Zitouni
Parham Zolfaghari
Michael Zoltowski
Abdelhak M. Zoubir
Geoffrey Zweig

CONFERENCE VENUE

Centre de Congrès Pierre Baudis

11, esplanade Compans Caffarelli
31000 Toulouse
FRANCE
http://www.centre-congres-toulouse.fr/english/english.html

The Convention Center is located in the center of the cultural and commercial activity of Toulouse.

TUTORIALS AND WORKSHOPS

Tutorials

Sunday Afternoon, May 14, 14:00 - 17:00

TUT-1: Text-dependent speaker recognition: A survey and state of the art
Presented by: V. Ramasubramanian and Amitav Das
Location: Ariane 1

TUT-2: Steganography and steganalysis
Presented by: Yun Q. Shi
Location: Ariane 2

TUT-3: Ultra wide band radio in distributed wireless networks
Presented by: M.-G. di Benedetto and Guerino Giancola
Location: Guillaumet 1

TUT-4: Towards new estimation techniques: Reconciling signal processing and control
Presented by: Michel Fliess and Mamadou Mboup
Location: Guillaumet 2

Monday Morning, May 15, 09:00 - 12:00

TUT-5: Defeating ambient noise: Practical approaches for noise reduction and suppression
Presented by: Ivan Tashev
Location: Caravelle 2

TUT-6: Latent semantic mapping: Principles and applications
Presented by: Jerome R. Bellegarda
Location: Ariane 2

TUT-7: Multi-user MIMO networks
Presented by: David Gesbert
Location: Ariane 1

TUT-8: Audio-video based person tracking
Presented by: Roberto Brunelli and Maurizio Omologo
Location: Guillaumet 1

TUT-9: Machine learning approach to DNA microarray data mining
Presented by: S. Y. Kung
Location: Guillaumet 2

Monday Afternoon, May 15, 14:00 - 17:00

TUT-10: Recent progress in large vocabulary continuous speech recognition an HTK perspective
Presented by: M. J. F. Gales and P. C. Woodland
Location: Caravelle 2

TUT-11: Recent advances in room acoustic equalization with digital filtering
Presented by: Sunil Bharitkar
Location: Ariane 1

TUT-12: Dynamic resource allocation for wireless networks: A significant challenge for signal processing
Presented by: Holger Boche and Slawomir Stanczak
Location: Guillaumet 1

TUT-13: Multimedia retrieval: Audio, speech, images and video
Presented by: Malcolm Slaney and Dulce Ponceleon
Location: Guillaumet 2

TUT-14: Cognitive radio, software defined radio and adaptation of wireless mobile radio systems
Presented by: Huseyin Arslan
Location: Ariane 2

Workshops

Additionally, Texas Instruments is organizing two workshops and The Mathworks is organizing one workshop.

Developing Fixed-Point Multimedia Applications with MATLAB and Simulink
Sunday, May 14, 14:00 - 17:00
Organized by: The Mathworks
Location: Caravelle 2

A Control-oriented DSP Workshop using the F2808 DSP-controller platform
Sunday, May 14, 10:00 - 18:30
Presented by: Texas Instruments
Location: Spot

A practical introduction to the TMS320C6000 DSP
Monday, May 15, 09:00 - 17:30
Presented by: Texas Instruments
Location: Spot

Cooperative Wireless Communication

Date: Tuesday, May 16, 09:00 - 10:00
Location: Auditorium St Exupery

David Tse, University of California, Berkeley

Abstract

Diversity, degrees of freedom and energy are the three fundamental resources of a wireless channel. Much of the excitement in wireless communication research in the past two decades stems from the discovery that multiple antennas at the transmitter and/or the receiver can significantly increase the amount of these resources and boost capacity and reliability. For devices which have severe space or complexity limitation, however, it may not be feasible to co-locate too many antenna elements. Cooperative communication is a recently emerged subject which explores how the multiple antenna gain can be emulated by simple radios relaying information for each other. The key challenge is the distrubuted nature of the processing. We will discuss information theoretic limits on how much of the three resources cooperating radios can capture in a distributed way, both at a microscopic link level and at a macroscopic network level. We will also give examples of simple coding and signal processing schemes which approach those performance limits.

Speaker Biography

David Tse received the B.A.Sc. degree in systems design engineering from University of Waterloo, Canada in 1989, and the M.S. and Ph.D. degrees in electrical engineering from Massachusetts Institute of Technology in 1991 and 1994 respectively. From 1994 to 1995, he was a postdoctoral member of technical staff at AT&T Bell Laboratories. Since 1995, he has been at the Department of Electrical Engineering and Computer Sciences in the University of California at Berkeley, where he is currently a Professor. He received a 1967 NSERC 4-year graduate fellowship from the government of Canada in 1989, a NSF CAREER award in 1998, the Best Paper Awards at the Infocom 1998 and Infocom 2001 conferences, the Erlang Prize in 2000 from the INFORMS Applied Probability Society, the IEEE Communications and Information Theory Society Joint Paper Award in 2001, and the Information Theory Society Paper Award in 2003. He was the Technical Program co-chair of the International Symposium on Information Theory in 2004, and was an Associate Editor of the IEEE Transactions on Information Theory from 2001 to 2003. He is a coauthor, with Pramod Viswanath, of the text “Fundamentals of Wireless Communication”. His research interests are in information theory, wireless communications and networking.

Discreet Signaling: An Information-Theoretic Perspective

Date: Wednesday, May 17, 08:30 - 09:30
Location: Auditorium St Exupery

Pierre Moulin, University of Illinois at Urbana-Champaign

Abstract
For thousands of years, humans have sought means to secretly communicate. Today, ad hoc signaling methods are used in applications as varied as digital rights management for multimedia, content identification, authentication, steganography, transaction tracking, and networking. This talk will overview some of these applications as well as an information-theoretic framework for designing provably good signaling schemes. Key ingredients of this framework include models for the signals being communicated and the degradations, jammers and eavesdroppers that may be encountered during transmission.

Speaker Biography
Pierre Moulin received his D.Sc. from Washington University in St. Louis in 1990. After working for five years as a Research Scientist for Bell Communications Research in Morristown, New Jersey, he joined the University of Illinois, where he is currently Professor in the Department of Electrical and Computer Engineering, Research Professor in the Coordinated Science Laboratory, faculty member in the Beckman Institute's Image Formation and Processing Group, and affiliate professor in the department of Statistics. He is also a member of the Information Trust Institute. His fields of professional interest are information theory, image and video processing, statistical signal processing and modeling, decision theory, information hiding and authentication, and the application of multiresolution signal analysis, optimization theory, and fast algorithms to these areas.

In 1996-1998, he served as Associate Editor for the IEEE Transactions on Information Theory, and in 1999, he was co-chair of the IEEE Information Theory workshop on Detection, Estimation and Classification. He was a Guest Editor of the IEEE Transactions on Information Theory 2000 special issue on Information-Theoretic Imaging; Guest Editor of the IEEE Transactions on Signal Processing's 2003 special issue on Data Hiding; and member of the IEEE Image and Multidimensional Signal Processing (IMDSP) Society Technical Committee (1998-2003). He is currently Area Editor of the IEEE Transactions on Image Processing and Editor-in-Chief of the IEEE Transactions on Information Forensics and Security. He is a fellow of IEEE and member of the Board of Governors of the IEEE Signal Processing Society. He has received a 1997 Career award from the National

Science Foundation, and the IEEE Signal Processing Society 1997 Best Paper award in the IMDSP area. He is also co-author (with Juan Liu) of a paper that received the IEEE Signal Processing Society 2002 Young Author Best Paper award in the IMDSP area. He was selected as 2003 Beckman Associate of UIUC's Center for Advanced Study and was awarded the 2005 Sony Faculty Scholar Award. In 1996, 1999, 2000 and 2005, he was on the Dean's list of teachers rated excellent by their students.

Signal Processing Challenges in Automotive Engineering

Date: Thursday, May 18, 08:30 - 09:30
Location: Auditorium St Exupery

Mats Viberg, Chalmers University of Technology

Abstract
Engine designers are facing increased challenges due to demands for improved efficiency and reduced emission levels. Legislations and costumers environmental awareness work together to drive research and development. In a modern car, "Electronics" represents approximately 1/3 of the value, and the figure is steadily increasing. A great part of this will be due to active safety systems, using e.g. radar and visual sensing. The objective of this talk is to show how signal processing can be used to address critical issues in the diagnosis of combustion engines. Together with novel control strategies, this is an enabling technology for future combustion processes with significantly reduced emissions and higher efficiency. We believe that the signal processing community should play an active role in research and development in this area, which is traditionally populated by the mechanical engineering and control societies.

With the perhaps sole exception of air-fuel ratio control (via the lambda-sond), today's engines are essentially operating in open loop. The various actuators, such as injection and valve timing, spark timing etc., are chosen according to a look-up table. For every driving condition (e.g. engine speed and load), the optimal control is determined by a time-consuming experimental procedure. This is called engine calibration. In modern engines, the number of vaiables to calibrate approaches 10, implying that the cost for engine calibration becomes unacceptably high. Add to this the fact that components age, so that the control quickly becomes suboptimal. An alternative, or at least a complement, to a calibration table is closed-loop control. This requires that a suitable measure of engine performance can be defined, and estimated using some sensor measurement. In fact, it is generally believed that advanced engine concepts, such as Homogeneous Charge Compression Ignition (HCCI), cannot be realized without closed-loop control.

A number of sensors have been proposed to gain information regarding the combustion process. The most direct approach is a pressure sensor in each cylinder. Unfortunately, in-cylinder pressure measurement remains unreliable and expensive, mostly due to the hostile environment. Instead, other sensors must be used to estimate the sought information. The situation is indeed at the heart of signal processing: use clever signal processing to measure the unmeasurable! Among the available sensors, we mention crank-angle rotation, structure borne sound, ion current and crank-angle resolved torque. Various forms of in-direct pressure sensors have also been proposed. A survey of sensors will be given, with respect to their potential for engine diagnosis. Examples of combustion information of interest include misfire (a cylinder did not burn), combustion phasing and knocking. The latter refers to a spontaneous ignition, which can seriously damage the engine.

We will also present a strategy for closed-loop control of combustion phasing. This is central to engine efficiency; the energy from the combustion must be released when the lever is optimally placed, so that maximum torque is delivered to the crankshaft. Results from real-time control of a Volvo V70 engine will be presented. The engine is equipped with a torque sensor, mounted at the crankshaft near the flywheel. The phasing measure is based on a new concept, termed torque ratio. To determine the individual contributions of the various cylinders to the torque ratio is a challenging signal separation as well as inverse filtering problem. This is due to torsional vibrations, which makes the individual contributions overlap significantly in time. We will also discuss other diagnostic information of interest, including reconstructing the entire pressure signal in each cylinder. Finally, the possibilities to predict emissions, so called “virtual sensing” will be discussed.

Speaker Biography

Mats Viberg received the PhD degree in Automatic Control from Linköping University, Sweden in 1989. During 1989-1992 he was an Assistant Professor in Linköping University and 1992-1993 he held visiting Scholarships at the Information Systems Laboratory, Stanford University, and the Department of ECE, Brigham Young University, USA. Dr. Viberg was appointed full professor at Chalmers University of Technology, Sweden in 1993, and during 1999-2004 he served as the Head of the Department of Signals and Systems. Dr. Viberg’s research interests are in Statistical Signal Processing and its various applications, including Sensor Array Signal Processing, System Identification, Wireless Communications, Radar Systems, Automotive Signal Processing and Landmine Detection. He has received 2 Paper Awards from the IEEE Signal Processing Society (1993 and 1999 respectively), and was the Chair of the IEEE SP Society’s Technical Committee on Signal Processing Theory and Methods 2001-2003. He is since 2003 a Fellow of the IEEE and since 2004 an Associate Editor of the IEEE Transactions on Signal Processing.

On board data processing in space missions

Date: Friday, May 19, 08:30 - 09:30
Location: Auditorium St Exupery

Jacques Blamont, French Space Agency (CNES)

Abstract
On board data processing is nowadays fundamental to improve the mission performances and to optimize the on-board resources needed to store, manipulate, compress and transmit data to ground whatever the mission : earth observation, scientific, telecommunications mission, ...

The steady performance improvements of the data processing algorithms and the availability, for spaceborne applications, of highly integrated ASIC circuits allow the implementation of sophisticated real-time schemes.

This talk will outline some of the main on-board data processings in CNES missions with emphasis on architectures, and present the future prospects.

Speaker Biography
Jacques Blamont received the D.SC. from Paris University (1956) in Physics. From 1957 to 1996, he was Profesor (now emeritus) at University of Paris VI. After having been in charge of the first French sounding rockets, he became scientific and technical director of CNES, where he serves still as adviser to the President. He has participated to practically all planetary missions (both American and soviet) as a Prime Investigator for various experiments, culminating with the development during the 80's and early 90's of image compression devices, whose first flew in 1994 on the DOD Clementine mission.

PANEL SESSIONS

Women in Signal Processing
Tuesday 16th of May 18:45 - 20:00
Location: Caravelle 2
Panel Moderator: *Sheila S. Hemami (Cornell University)*

The Women in SP panel will be a dynamic and interactive forum whose goal will be to present and discuss a variety of career paths in signal processing and how they have worked for women.

Patentability of algorithms and software for signal processing
Thursday, 18th of May 18:45 - 20:00
Location: Caravelle 2
Panel Moderator: *Christian Nguyen (Marks and Clerk)*
Co-organizer : Maurice Bellanger (CNAM, Paris)

Marks & Clerk is a long-established firm of patent and trade mark attorneys with an associated law firm specialising in intellectual property (IP)

Patentability of algorithms and software is currently a hot topic in Europe (where a European "directive" has been rejected by the European parliament in July 2005), in the US (where patentability of algorithms and software is being redefined), and in Asia (due to research and manufacturing delocalization or outsourcing in India and China). A first talk will provide an overview of the situation. Then a forum will shed more light on these questions from various perspectives, supported by the panelists.

IEEE AND SOCIETY AWARDS

The IEEE Signal Processing Society congratulates the following SPS members who received the Society's prestigious awards during ICASSP 2006 in Toulouse, France.

The **Society Award** honors outstanding technical contributions in a field within the scope of the IEEE Signal Processing Society and outstanding leadership in that field. The Society Award comprises a plaque, a certificate, and a monetary award of $2500. It is the highest-level award bestowed by the IEEE Signal Processing Society. This year's recipient was **Sadaoki Furui**, "for outstanding research contributions and leadership in the speech processing area of the IEEE Signal Processing Society."

The **IEEE Signal Processing Magazine Best Paper Award** honors the author(s) of a paper of exceptional merit and broad interest on a subject related to the Society's technical scope and appearing in the Society's magazine. The prize comprises $500 per author (up to a maximum of $1500 per award) and a certificate. In the event that there are more than three authors, the maximum prize shall be divided equally among all authors and each shall receive a certificate. This year, the IEEE Signal Processing Magazine Best Paper Award recipients were **Olivier Cappé, Eric Moulines, Jean-Christophe Pesquet, Athina Petropulu,** and **Xueshi Yang,** for the paper entitled, "Long-Range Dependence and Heavy-Tail Modeling for Teletraffic Data," published in the *IEEE Signal Processing Magazine*, Volume 19, Number 3, May 2002.

Two **Technical Achievement Awards** were presented this year to **Alan Bovik**, "for broad and lasting contributions to the field of digital image processing" and to **Hermann Ney,** "for contributions to the advancement of the theory and performance of speech and language technology, including language modeling, search algorithms and machine translation." The Technical Achievement Award honors a person who, over a period of years, has made outstanding technical contributions to the theory and/or practice in technical areas within the scope of the Society, as demonstrated by publications, patents, or recognized impact on this field. The prize for each awardee is $1500, a plaque, and a certificate.

The **Meritorious Service Award** was presented this year to **Robert Gray**, "for outstanding service and dedication to the Signal Processing Society." The award comprises a plaque and a certificate; judging is based on dedication, effort, and contributions to the Society.

The **Signal Processing Society Education Award** honors educators who have made pioneering and significant contributions to signal processing education. Judging is based on a career of meritorious achievement in signal processing education as exemplified by writing of scholarly books and texts, course materials, and papers on education; inspirational and innovative teaching; creativity in the development of new curricula and methodology. The award comprises a plaque, a monetary award of $1500 and a certificate. The two recipients of the Signal Processing Society Education Award are **Alan Oppenheim** "for fundamental contributions to digital signal processing education and for defining the way signal processing is taught and practiced around the world" and to **Sanjit Mitra** "for outstanding contribution to education and to the writing of scholarly and influential books in the area of digital signal processing."

Four **Best Paper Awards** were awarded, honoring the author(s) of a paper of exceptional merit dealing with a subject related to the Society's technical scope, and appearing in one of the Society's *Transactions*, irrespective of the author's age. The prize is $500 per author (up to a maximum of $1500 per award), and a certificate. Eligibility is based on a five-year window preceding the year of election, and judging is based on general quality, originality, subject matter, and timeliness. Up to four Best Paper Awards may be presented each year. This year, the awardees were:

Shrikanth Narayanan and **Alexandros Potamianos**, for the paper entitled, "Creating Conversational Interfaces for Children," published in the *IEEE Transactions on Speech and Audio Processing*, Volume 10, Number 2, February 2002.

Wade Trappe, Min Wu, Z. Jane Wang and **K.J. Ray Liu,** for the paper entitled, "Anti-collusion Fingerprinting for Multimedia," published in the *IEEE Transactions on Signal Processing*, Special Issue on Signal Processing for Data Hiding in Digital Media and Secure Content Delivery, Volume 51, Number 4, April 2003.

A. Lee Swindlehurst and **Geert Leus,** for the paper entitled, "Blind and Semi-Blind Equalization for Generalized Space-Time Block Codes," published in the *IEEE Transactions on Signal Processing*, Volume 50, Number 10, October 2002.

Roberto López-Valcarce, for the paper entitled, "Realizable Linear and Decision Feedback Equalizers: Properties and Connections," published in the *IEEE Transactions on Signal Processing*, Volume 52, Number 3, March 2004.

The **Young Author Best Paper Award** honors the author(s) of an especially meritorious paper dealing with a subject related to

the Society's technical scope and appearing in one of the Society's *Transactions* and who, upon date of submission of the paper, is less than 30 years of age. Eligibility is based on a three-year window preceding the year of election, and judging is based on general quality, originality, subject matter, and timeliness. Four Young Author Best Paper Awards were presented this year. This year, the awardees were:

Tobias Dahl, for the paper co-authored with Nils Christophersen and David Gesbert entitled, "Blind MIMO Eigenmode Transmission Based on the Algebraic Power Method," published in the *IEEE Transactions on Signal Processing,* Volume 52, Number 9, September 2004.

Waleed M. Younis, for the paper co-authored with Ali H. Sayed and Naofal Al-Dhahir entitled, "Efficient Adaptive Receivers for Joint Equalization and Interference Cancellation in Multiuser Space-Time Block-Coded Systems," published in the *IEEE Transactions on Signal Processing*, Volume 51, Number 11, November 2003.

Anssi P. Klapuri, for the paper entitled, "Multiple Fundamental Frequency Estimation Based on Harmonicity and Spectral Smoothness," published in the *IEEE Transactions on Speech and Audio Processing*, Volume 11, Number 6, November 2003.

Marius Pesavento, for the paper co-authored with Alex B. Gershman and Kon Max Wong entitled, "Direction Finding in Partly Calibrated Sensor Arrays Composed of Multiple Subarrays," published in the *IEEE Transactions on Signal Processing*, Volume 50, Number 9, September 2002.

SIGNAL PROCESSING SOCIETY MEMBERS RECEIVE IEEE AWARDS.

Thomas Kailath will receive a special recognition plaque from the IEEE Signal Processing Society marking their selection as the **IEEE Jack S. Kilby Signal Processing Medal** recipient. The Medal itself will be presented to Dr. Kailath at the IEEE Honors Ceremonies. IEEE selected Dr. Kailath to receive the medal, "for seminal contributions to the theory and applications of statistical signal processing."

The **IEEE James L. Flanagan Speech and Audio Processing Technical Field Award** is being presented to **James D. Johnston**. IEEE selected Dr. Johnston to receive the award, "for pioneering research in perceptual audio coding and contributions to its standardization." This award was founded and is sponsored by the IEEE Signal Processing Society. Dr. Johnston requested that the award be presented at the IEEE Signal Processing Society's flagship conference, the International Conference on Acoustics, Speech, and Signal Processing (ICASSP), held in Toulouse, France, 14-19 May 2006.

STUDENT PAPER CONTEST FINALISTS

ICASSP 2006 is pleased to announce the following student authors as finalists in the Student Paper Contest. They are presented in no particular order, and grouped by topic.

The finalists will be presenting their papers at ICASSP 2006 and based on the quality of their presentations, winners of the contest will be announced after the conference.

Signal Processing Theory and Methods

Lei Zhang, Nanyang Technological University *with Anamitra Makur, Nanyang Technological University* for the paper titled "Enumeration And Parametrization Of Distinct Downsampling Patterns In Two-Dimensional Multirate Systems".

Patrick Vandewalle, Swiss Federal Institute of Technology Lausanne (EPFL) *with Luciano Sbaiz, Swiss Federal Institute of Technology Lausanne (EPFL); Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL)* for the paper titled "Signal Reconstruction From Multiple Unregistered Sets Of Samples Using Groebner Bases".

Parvathinathan Venkitasubramaniam, Cornell University *with Lang Tong, Cornell University; Ananthram Swami, Army Research Lab* for the paper titled "Minimax Quantization For Distributed Maximum Likelihood Estimation".

Christian Labat, IRCCYN (CNRS UMR 6597) *with Jérôme Idier, IRCCYN (CNRS UMR 6597)* for the paper titled "Sparse Blind Deconvolution Accounting For Time-Shift Ambiguity".

Michael Ting, University of Michigan *with Alfred Hero, University of Michigan* for the paper titled "Detection Of A Random Walk Signal In The Regime Of Low Signal To Noise Ratio And Long Observation Time".

Hao Chen, Syracuse University *with Pramod Varshney, Syracuse University; James Michels, JHM Technologies; Steven Kay, University of Rhode Island* for the paper titled "Approaching Near Optimal Detection Performance Via Stochastic Resonance".

Dmitry Malioutov, Massachusetts Institute of Technology *with Jason Johnson, Massachusetts Institute of Technology; Alan Willsky, Massachusetts Institute of Technology* for the paper titled "Low-Rank Variance Estimation In Large-Scale GMRF Models".

Audio and Electroacoustics

Mads G. Christensen, Aalborg University *with Søren Holdt Jensen, Aalborg University* for the paper titled "Computationally Efficient Amplitude Modulated Sinusoidal Audio Coding Using Frequency-Domain Linear Prediction".

Olivier Gillet, GET / Télécom Paris *with Gaël Richard, GET / Télécom Paris* for the paper titled "Comparing Audio And Video Segmentations For Music Videos Indexing".

Robert Aichner, University or Erlangen-Nuremberg *with Meray Zourub, University or Erlangen-Nuremberg; Herbert Buchner, University or Erlangen-Nuremberg; Walter Kellermann,*

University or Erlangen-Nuremberg for the paper titled "Post-Processing For Convolutive Blind Source Separation".

Speech and Spoken Language Processing

Chia-yu Wan, National Taiwan University *with Lin-shan Lee, National Taiwan University* for the paper titled "Joint Uncertainty Decoding (jud) With Histogram-Based Quantization (HQ) For Robust And/Or Distributed Speech Recognition".

David Suendermann, Siemens Corporate Technology *with Harald Hoege, Siemens Corporate Technology; Antonio Bonafonte, Technical University of Catalonia (UPC); Hermann Ney, University of Technology Aachen (RWTH); Alan Black, Carnegie Mellon University; Shri Narayanan, University of Southern California* for the paper titled "Text-Independent Voice Conversion Based On Unit Selection".

Charturong Tantibundhit, University of Pittsburgh *with J. Robert Boston, University of Pittsburgh; Ching-Chung Li, University of Pittsburgh; John D. Durrant, University of Pittsburgh; Susan Shaiman, University of Pittsburgh; Kristie Kovacyk, University of Pittsburgh; Amro A. El-Jaroudi, University of Pittsburgh* for the paper titled "Speech Enhancement Using Transient Speech Components".

Yi Chen, National Taiwan University *with Chia-yu Wan, National Taiwan University; Lin-shan Lee, National Taiwan University* for the paper titled "Entropy-Based Feature Parameter Weighting For Robust Speech Recognition".

Joanna Mrozinski, Tokyo Institute of Technology *with Edward W. D. Whittaker, Tokyo Institute of Technology; Pierre Chatain, Tokyo Institute of Technology; Sadaoki Furui, Tokyo Institute of Technology* for the paper titled "Automatic Sentence Segmentation Of Speech For Automatic Summarization".

Emilian Stoimenov, Institut fuer Theoretische Informatik *with John McDonough, Institut fuer Theoretische Informatik* for the paper titled "Modeling Polyphone Context With Weighted Finite-State Transducers".

Kai Yu, University of Cambridge *with Mark Gales, University of Cambridge* for the paper titled "Incremental Adaptation Using Bayesian Inference".

David Zhao, KTH (Royal Institute of Technology) *with Bastiaan Kleijn, KTH (Royal Institute of Technology)* for the paper titled "HMM-Based Speech Enhancement Using Explicit Gain Modeling".

Martin Layton, University of Cambridge *with Mark Gales, University of Cambridge* for the paper titled "Augmented Statistical Models For Speech Recognition".

Aren Jansen, University of Chicago *with Partha Niyogi, University of Chicago* for the paper titled "Intrinsic Fourier Analysis On The Manifold Of Speech Sounds".

Pavel Matejka, Brno University of Technology *with Petr Schwarz, Brno University of Technology; Lukas Burget, Brno University of Technology; Jan Cernocky, Brno University of Technology* for the paper titled "Use Of Anti-Models To Further

Improve State-of-the-Art PRLM Language Recognition System".

Mohamed Chibani, Université de Sherbrooke *with Roch Lefebvre, Université de Sherbrooke; Philippe Gournay, Université de Sherbrooke* for the paper titled "Resynchronization Of The Adaptive Codebook In A Constrained CELP Codec After A Frame Erasure".

Bing Zhang, Northeastern University *with Spyros Matsoukas, BBN Technologies; Richard Schwartz, BBN Technologies* for the paper titled "Discriminatively Trained Region Dependent Feature Transforms For Speech Recognition".

Ivy H. Tseng, University of Southern California *with Olivier Verscheure, IBM T. J. Watson Research Center; Deepak S. Turaga, IBM T. J. Watson Research Center; Upendra V. Chaudhari, IBM T. J. Watson Research Center* for the paper titled "Quantization For Adapted GMM-Based Speaker Verification".

Image and Multidimensional Signal Processing

Simone Balocco, CREATIS, Université Claude Bernard Lyon 1, CNRS UMR 5515, INSERM U630, Lyon *with Olivier Basset, CREATIS, INSA Lyon, CNRS UMR 5515 INSERM U630, Lyon; Francesco Guidi, Università di Firenze; Piero Tortoli, Università di Firenze; Christian Cachard, CREATIS, Université Claude Bernard Lyon 1, CNRS UMR 5515, INSERM U630, Lyon* for the paper titled "Detection Of Microbubble Trajectories On M-Mode Images Using Kalman Filtering".

Umut Ozertem, Oregon Health & Science University *with Deniz Erdogmus, Oregon Health & Science University; Tian Lan, Oregon Health & Science University* for the paper titled "Mean Shift Spectral Clustering For Perceptual Image Segmentation".

Sathish Ramani, Swiss Federal Institute of Technology Lausanne (EPFL) *with Dimitri Van de Ville, Swiss Federal Institute of Technology Lausanne (EPFL); Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL)* for the paper titled "Non-ideal Sampling And Adapted Reconstruction Using The Stochastic Matérn Model".

Bi Song, University of California, Riverside *with Ozgun Bursalioglu, University of California, Riverside; Amit Roy Chowdhury, University of California, Riverside; Ertem Tuncel, University of California, Riverside* for the paper titled "Towards A Multi-terminal Video Compression Algorithm Using Epipolar Geometry".

Jie Yu, University of Texas, San Antonio *with Qi Tian, University of Texas, San Antonio* for the paper titled "Constructing Descriptive And Discriminant Features For Face Classification".

Jiansheng Chen, Chinese University of Hong Kong *with Yiu Sang Moon, Chinese University of Hong Kong* for the paper titled "A Statistical Study On The Fingerprint Minutiae Distribution".

Vladimir Zlokolica, University of Ghent *with Aleksandra Pizurica, University of Ghent; Ewout Vansteenkiste, University of Ghent; Wilfried Philips, University of Ghent* for the paper titled "Spatio-Temporal Approach For Noise Estimation".

Vincent Garcia, Laboratoire I3S / CNRS / UNSA *with Eric*

Debreuve, Laboratoire I3S / CNRS / UNSA; Michel Barlaud, Laboratoire I3S / CNRS / UNSA for the paper titled "A Contour Tracking Algorithm For Rotoscopy".

Arnab Ghoshal, Johns Hopkins University *with Sanjeev Khudanpur, Johns Hopkins University* for the paper titled "Source Adaptation For Improved Content-Based Video Retrieval".

Yinpeng Chen, Arizona State University *with Hari Sundaram, Arizona State University* for the paper titled "Basis Projection For Linear Transform Approximation In Real-Time Applications".

Basak Oztan, University of Rochester *with Gaurav Sharma, University of Rochester* for the paper titled "Continuous Phase Modulated Halftones And Their Application To Halftone Data Embedding".

Multimedia Signal Processing

Sibel Yaman, Georgia Institute of Technology *with Chin-Hui Lee, Georgia Institute of Technology* for the paper titled "An Iterative Constrained Optimization Approach To Classifier Design".

Negar Kiyavash, University of Illinois at Urbana-Champaign *with Pierre Moulin, University of Illinois at Urbana-Champaign* for the paper titled "On Optimal Collusion Strategies For Fingerprinting".

Signal Processing for Communication

Matthew McKay, University of Sydney *with Alex Grant, University of South Australia; Iain Collings, CSIRO* for the paper titled "Largest Eigenvalue Statistics Of Double-correlated Complex Wishart Matrices And MIMO-MRC".

Alejandro Ribeiro, University of Minnesota *with Georgios Giannakis, University of Minnesota; Stergios Roumeliotis, University of Minnesota* for the paper titled "SOI-KF: Distributed Kalman Filtering With Low-cost Communications Using The Sign Of Innovations".

Chandra Murthy, University of California, San Diego *with Ethan Duni, University of California, San Diego; Bhaskar Rao, University of California, San Diego* for the paper titled "High-Rate Analysis Of Vector Quantization For Noisy Channels".

Yunxia Chen, University of California, Davis *with Qing Zhao, University of California, Davis; Vikram Krishnamurthy, University of British Columbia; Dejan Djonin, University of British Columbia* for the paper titled "Transmission Scheduling For Sensor Network Lifetime Maximization: A Shortest Path Bandit Formulation".

Keyvan Zarifi, Darmstadt University of Technology *with Alex B. Gershman, Darmstadt University of Technology* for the paper titled "Subspace-Based Blind Channel Estimation In DS-CDMA Systems With Unknown Wide-sense Stationary Interference".

Jun Zheng, University of California, San Diego *with Bhaskar Rao, University of California, San Diego* for the paper titled "Capacity Analysis Of Multiple Antenna Systems With Mismatched Channel Quantization Schemes".

Gesualdo Scutari, Universitá degli Studi di Roma "La

Sapienza" *with Sergio Barbarossa, Universitá degli Studi di Roma "La Sapienza"; Daniel P. Palomar, Princeton University* for the paper titled "Potential Games: A Framework For Vector Power Control Problems With Coupled Constraints".

Serdar Sezginer, Supélec *with Pascal Bianchi, Supélec* for the paper titled "Cramér-Rao Bound And Training Sequence Selection For MIMO-OFDMA Transmissions Impaired By Frequency Offsets".

Michael Botros Shenouda, McMaster University *with Timothy Davidson, McMaster University* for the paper titled "Robust Linear Precoding For Uncertain Miso Broadcast Channels".

Sensor Array and Multichannel Signal Processing

Animashree Anandkumar, Cornell University *with Lang Tong, Cornell University* for the paper titled "A Large Deviation Analysis Of Detection Over Multi-access Channels With Random Number Of Sensors".

Daniela Donno, Politecnico di Milano *with Arye Nehorai, University of Illinois at Chicago; Umberto Spagnolini, Politecnico di Milano* for the paper titled "Seismic Velocity/polarization Estimation And Polarized Wavefield Separation".

Rostom Aouada, Supélec *with Saïd Aouada, Darmstadt University of Technology; Guy d'URSO, Electricité de France; Abdelhak Zoubir, Darmstadt University of Technology* for the paper titled "Source Detection And Separation In Power Plant Process Monitoring: Application Of The Bootstrap".

Design and Implementation of Signal Processing Systems

Tung-Chien Chen, National Taiwan University *with Yu-Han Chen, National Taiwan University; Sung-Fang Tsai, National Taiwan University; Liang-Gee Chen, National Taiwan University* for the paper titled "Architecture Design Of Low Power Integer Motion Estimation For H.264/AVC".

Sungchung Park, Korea Advanced Institute of Science and Technology *with Kwyro Lee, Korea Advanced Institute of Science and Technology; Yuping Zhang, University of Minnesota; Keshab Parhi, University of Minnesota; Jin Lee, Information and Communications University; Sin-Chong Park, Information and Communications University* for the paper titled "Probabilistic List Sphere Decoding For LDPC-coded MIMO-OFDM Systems".

Machine Learning for Signal Processing

Daisuke Kurata, Nagoya Institute of Technology *with Yoshihiko Nankaku, Nagoya Institute of Technology; Keiichi Tokuda, Nagoya Institute of Technology; Tadashi Kitamura, Nagoya Institute of Technology; Zoubin Ghahramani, University College London* for the paper titled "Face Recognition Based On Separable Lattice HMMs".

Mike Novey, University of Maryland, Baltimore County *with Tulay Adali, University of Maryland, Baltimore County* for the paper titled "Stability Analysis Of Complex-Valued Nonlinearities For Maximization Of Nongaussianity".

Justin Dauwels, RIKEN Brain Science Institute *with Sascha Korl, Phonak AG* for the paper titled "A Numerical Method To Compute Cramér-Rao-Type Bounds For Challenging Estimation Problems".

Alexei Pozdnoukhov, IDIAP Research Institute *with Samy Bengio, IDIAP Research Institute* for the paper titled "Semi-supervised Kernel Methods For Regression Estimation".

Industry Technology Track

Madhusudana Shashanka, Boston University Hearing Research Center *with Paris Smaragdis, Mitsubishi Electric Research Laboratories* for the paper titled "Secure Sound Classification: Gaussian Mixture Models".

Gail Rosen, Georgia Institute of Technology *with Paul Hasler, Georgia Institute of Technology* for the paper titled "Chemical Source Localization In Unknown Turbulence Using The Cross-correlation Method".

Bio Imaging and Signal Processing

Max Little, Oxford University *with Patrick McSharry, Oxford University; Irene Moroz, Oxford University; Stephen Roberts, Oxford University* for the paper titled "Nonlinear, Biophysically-informed Speech Pathology Detection".

Varsha Sampath, Rochester Institute of Technology *with Vladimir Misic, University of Rochester; Eli Saber, Rochester Institute of Technology; Haisong Liu, University of Rochester; Yan Yu, University of Rochester* for the paper titled "Seed Localization Using TRUS And GRF Based Gaussian Filtering For Brachytherapy Applications".

Spoken Language Processing Student Travel Grant

Congratulations to the three winners of the Spoken Language Processing Student Travel Grant:

Martin Layton (University of Cambridge, UK)
"Augmented Statistical Models for Speech Recognition"

Yi Chen (National Taiwan University, Taiwan)
"Entropy-based Feature Parameter Weighting for Robust Speech Recognition"

Bing Zhang (Northeastern University, USA)
"Discriminatively Trained Region Dependent Feature Transforms for Speech Recognition"

SUPPORTERS

ICASSP 2006 would like to thank the following supporters.

SPECIAL EVENTS

Welcome Reception

Time : Monday 15 May - 19:30
Location : Concorde Room (Exhibition room)
Level -1 Convention Center
An opportunity to discover the gastronomy of the South of France.

Banquet

Time : Wednesday 17 May - 20:00
Location : Salons du Pavillon d'Oc de la Médiathèque José Cabanis de Toulouse
The "Pavillon d'Oc" Halls - José Cabanis Media Library
1 allées Jacques Chaban Delmas - 31500 Toulouse
The entertainment for the evening will be the jazz group "Les Evadés"

CONFERENCE REGISTRATION

On-site registration desks will be located in the principal hall of the Convention Center. The registration desks will be open during the following hours, for pick-up of registration packets by pre-registered attendees and for on-site registration.

Sunday, May 14 .....13:00 - 18:00
Monday, May 15.....08:00 - 20:00
Tuesday, May 16.....07:00 - 18:00
Wednesday, May 17.....07:00 - 19:00
Thursday, May 18 .....07:00 - 18:00
Friday, May 19.....07:00 - 18:00

PREVIEW ROOM

Facilities to check and download (via PC, USB, CD, DVD) presentation materials will be available in the Preview Room, Argos (level 1) for speakers, at least half a day prior to their presentation.

There will be 2 technicians in charge of the computer network that will download your presentation materials to the PC in the appropriate session room.

Please be aware that presenters neither can project their presentations from their own laptops, nor use their own USB, DVD, DVD directly on the PC of the session room.

Each presenter has to download his presentation in the preview room before the session.

Preview Room hours:

Monday, May 15.....14:00 - 20:00
Tuesday, May 16.....07:00 - 17:00
Wednesday, May 17.....07:00 - 17:00
Thursday, May 18 .....07:00 - 17:00
Friday, May 19.....07:00 - 17:00

SPEAKERS' BRIEFING

A breakfast will be served every morning in the Caravelle 1 Room on the ground floor of the Convention Center for session chairs and for those who are presenting on that day.

Note: Presenting authors and session chairs should only attend on the day that they are charing or presenting. You must wear your ICASSP name tag in order to gain access to the breakfast.

Tuesday, May 16.....07:00 - 08:00
Wednesday, May 17.....07:00 - 08:00
Thursday, May 18 .....07:00 - 08:00
Friday, May 19.....07:00 - 08:00

COMMITTEE MEETINGS

Tuesday, May 16

06:30 - 08:00

Signal Processing Magazine Editorial Board ..... Seria 1

12:00 - 14:00

Image & Multidimensional Signal Processing TC .... *Pierre Baudis:* Servanty

12:30 - 14:00

Multimedia Signal Processing TC ..... Seria 1
Transactions on Signal Processing Editorial Board ..... Oratorio
Transactions on Information Forensics & Security ..... Seria 2
Inside Signal Processing E-Newsletter ..... Salon Club

18:45 - 20:30

Publications Board ..... Salon Club

Wednesday, May 17

07:00 - 08:30

Signal Processing Education TC ..... Seria 2
Awards Board ..... Cantate
Signal Processing Letters Editorial Board ..... Seria 1

12:00 - 14:00

Audio and Electroacoustics TC ..... Seria 2
Information Forensics and Security TC ..... Cantate
Machine Learning for Signal Processing TC ..... Aria
Sensor Array and Multichannel TC ..... Seria 1
Signal Processing Theory and Methods TC ..... Oratorio
Standing Committee on Industry DSP Technology ..... Salon Club

Thursday, May 18

12:00 - 14:00

Design & Implementation of SP Systems TC ..... Seria 2
Executive Committee ..... Cantate
Speech Processing TC ..... Oratorio
Signal Processing for Communications TC ..... *Pierre Baudis:* Servanty
Bio Imaging and Signal Processing ..... Seria 1

20:00 - 23:30

Conference Board ..... Seria 1

Friday, May 19

07:00 - 08:30

Long-Range Planning & Implementation Committee ..... Cantate

12:00 - 14:00

ICASSP to ICASSP ..... Seria 1
Signal Processing Chapter Chairs Committee ..... Oratorio
Technical Directions Committee ..... Seria 2

Saturday, May 20

09:00 - 17:00

Board of Governors ..... Aria

Meetings are held in Atria Mercure unless otherwise noted.

ICASSP 2006
Technical Program

AE-L1 **Audio Structure, Similarity and Segmentation** (Lecture)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Spot
Chair: Dan Ellis, Columbia University

10:30
AE-L1.1 **GENERATIVE PROCESS TRACKING FOR AUDIO ANALYSIS**
Regunathan Radhakrishnan, Ajay Divakaran, Mitsubishi Electric Research Laboratories, United States

10:50
AE-L1.2 **THE IMPORTANCE OF SEQUENCES IN MUSICAL SIMILARITY**
Michael Casey, University of London, United Kingdom; Malcolm Slaney, Yahoo! Research, United States

11:10
AE-L1.3 **ENHANCING SIMILARITY MATRICES FOR MUSIC AUDIO ANALYSIS**
Meinard Mueller, Frank Kurth, University of Bonn, Germany

11:30
AE-L1.4 **EXTRACTION OF HIGH-LEVEL MUSICAL STRUCTURE FROM AUDIO DATA AND ITS APPLICATION TO THUMBNAIL GENERATION**
Mark Levy, Mark Sandler, Queen Mary, University of London, United Kingdom; Michael Casey, University of London, United Kingdom

11:50
AE-L1.5 **AUDIO ELEMENTS BASED AUDITORY SCENE SEGMENTATION**
Lie Lu, Microsoft Research Asia, China; Rui Cai, Tsinghua University, China; Alan Hanjalic, Technical University of Delft, Netherlands

12:10
AE-L1.6 **COMPARING AUDIO AND VIDEO SEGMENTATIONS FOR MUSIC VIDEOS INDEXING**
Olivier Gillet, Gaël Richard, GET / Télécom Paris, France

SLP-L1 **Speech Coding for Network Applications** (Lecture)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Auditorium St Exupery
Chair: Peter Kabal, McGill University

10:30
SLP-L1.1 **A 8-32 KBIT/S SCALABLE WIDEBAND SPEECH AND AUDIO CODING CANDIDATE FOR ITU-T G729EV STANDARDIZATION**
Stephane Ragot, Balazs Kovesi, David Virette, Romain Trilling, Dominique Massaloux, France Télécom R&D Division, France

10:50
SLP-L1.2 **AN EMBEDDED SCALABLE WIDEBAND CODEC BASED ON THE GSM EFR CODEC**
Peter Jax, Bernd Geiser, University of Technology Aachen (RWTH), Germany; Stefan Schandl, Hervé Taddei, Siemens AG, Austria; Peter Vary, University of Technology Aachen (RWTH), Germany

11:10
SLP-L1.3 **MULTIPLE DESCRIPTION CODING FOR VOICE OVER IP USING SINUSOIDAL SPEECH CODING**
Efrain Orozco, Stephane Villette, Ahmet Kondoz, University of Surrey, United Kingdom

11:30
SLP-L1.4 **RESYNCHRONIZATION OF THE ADAPTIVE CODEBOOK IN A CONSTRAINED CELP CODEC AFTER A FRAME ERASURE**
Mohamed Chibani, Roch Lefebvre, Philippe Gournay, Université de Sherbrooke, Canada

11:50
SLP-L1.5 **PERFORMANCE ANALYSIS OF A DECODER-BASED TIME SCALING ALGORITHM FOR VARIABLE JITTER BUFFERING OF SPEECH OVER PACKET NETWORKS**
Philippe Gournay, Kyle D. Anderson, VoiceAge Corp., Canada

12:10
SLP-L1.6 **PACKET LOSS CONCEALMENT WITH NATURAL VARIATIONS USING HMM**
Manohar N. Murthi, University of Miami, United States; Christoffer A. Rødbro, Søren Vang Andersen, Søren Holdt Jensen, Aalborg University, Denmark

SS-1 **Statistical Inferences on Nonlinear Manifolds with Applications in Signal and Image Processing** (Special Session)

Time: Tuesday, May 16, 10:30 - 12:30

Place: Guillaumet 1 & 2

Chair: Anuj Srivastava, Florida State University

10:30

SS-1.1 **DISTANCE-BASED SHAPE STATISTICS**

Guillaume Charpiat, Ecole Normale Supérieure, France; Olivier Faugeras, INRIA Sophia-Antipolis, France; Renaud Keriven, Ecole Nationale des Ponts et Chaussées, France; Pierre Maurel, Ecole Normale Supérieure, France

10:50

SS-1.2 **GENERATIVE MODEL AND CONSISTENT ESTIMATION ALGORITHMS FOR NON-RIGID DEFORMABLE MODELS**

Stephanie Allassonni`ere, E. Kuhn, LAGA - Université Paris, France; Alain Trouve, CMLA - ENS de Cachan, France; Yali Amit, University of Chicago, United States

11:10

SS-1.3 **3D FACE RECOGNITION USING SHAPES OF FACIAL CURVES**

Chafik Samir, ENIC Telecom-Lille1, France; Anuj Srivastava, Florida State University, United States; Mohamed Daoudi, ENIC Telecom-Lille1, France

11:30

SS-1.4 **DUAL ROOTED-DIFFUSIONS FOR CLUSTERING AND CLASSIFICATION ON MANIFOLDS**

Steve Grikschat, University of Michigan, United States; Jose Costa, California Institute of Technology, United States; Alfred O. Hero, III, University of Michigan, United States; Olivier J. J. Michel, Universite de Nice, France

11:50

SS-1.5 **RANDOM PROJECTIONS OF SIGNAL MANIFOLDS**

Michael Wakin, Richard Baraniuk, Rice University, United States

12:10

SS-1.6 **JOINT DIAGONALIZATION ON THE OBLIQUE MANIFOLD FOR INDEPENDENT COMPONENT ANALYSIS**

Pierre-Antoine Absil, University of Cambridge, United Kingdom; Kyle Gallivan, Florida State University, United States

IMDSP-L1 **Image Coding** (Lecture)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Caravelle 2
Chair: James E. Fowler, Mississippi State University

10:30
IMDSP-L1.1 **VISUALLY OPTIMIZED MULTIPLE DESCRIPTION IMAGE CODING**
Chao Tian, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Sheila Hemami, Cornell University, United States

10:50
IMDSP-L1.2 **RATE-DISTORTION OPTIMIZED IMAGE COMPRESSION USING GENERALIZED PRINCIPAL COMPONENT ANALYSIS**
Dohyun Ahn, Seoul National University, Republic of Korea; Chang-Su Kim, Korea University, Republic of Korea; Sang-Uk Lee, Seoul National University, Republic of Korea

11:10
IMDSP-L1.3 **FAST AND EFFICIENT NORMAL MAP COMPRESSION BASED ON VECTOR QUANTIZATION**
Toshihiko Yamasaki, Kiyoharu Aizawa, University of Tokyo, Japan

11:30
IMDSP-L1.4 **A COMMON FORMULATION FOR INTERPOLATION, PREDICTION AND UPDATE LIFTING DESIGN**
Joel Solé, Philippe Salembier, Technical University of Catalonia (UPC), Spain

11:50
IMDSP-L1.5 **BEST ANISOTROPIC 3-D WAVELET DECOMPOSITION IN A RATE-DISTORTION SENSE**
Emmanuel Christophe, Corinne Mailhes, TéSA, France; Pierre Duhamel, CNRS / LSS, France

12:10
IMDSP-L1.6 **TARP FILTERING OF BLOCK-TRANSFORM COEFFICIENTS FOR EMBEDDED IMAGE CODING**
Vijay Shah, James Fowler, Nicholas Younan, Mississippi State University, United States

SPCOM-L1 **MIMO Channel Modeling** (Lecture)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Ariane 1 & 2
Chair: Bhaskar Rao, University of California, San Diego

10:30
SPCOM-L1.1 **LARGEST EIGENVALUE STATISTICS OF DOUBLE-CORRELATED COMPLEX WISHART MATRICES AND MIMO-MRC**
Matthew McKay, University of Sydney, Australia; Alex Grant, University of South Australia, Australia; Iain Collings, CSIRO, Australia

10:50
SPCOM-L1.2 **SPATIAL CORRELATION FOR CORRELATED SCATTERERS**
Terence Betlehem, Australian National University, Australia; Thushara Abhayapala, National ICT Australia / Australian National University, Australia

11:10
SPCOM-L1.3 **MARKOV MODELS FOR LIMITED FEEDBACK MIMO SYSTEMS**
Kaibin Huang, Bishwarup Mondal, Robert Heath, Jeffrey Andrews, University of Texas, Austin, United States

11:30
SPCOM-L1.4 **COMBINING SHORT-TERM AND LONG-TERM CHANNEL STATE INFORMATION OVER CORRELATED MIMO CHANNELS**
Thanh Tùng Kim, Mats Bengtsson, Erik G. Larsson, Mikael Skoglund, Royal Institute of Technology (KTH), Sweden

11:50
SPCOM-L1.5 **INTRINSIC FINITE DIMENSIONALITY OF RANDOM MULTIPATH FIELDS**
Parastoo Sadeghi, Thushara Abhayapala, Rodney Kennedy, The Australian National University, Australia

12:10
SPCOM-L1.6 **SIGNAL DETECTION AND ABRUPT-CHANNEL TRACKING FOR MC-CDMA**
Huahui Wang, Tongtong Li, Michigan State University, United States

SPTM-L1 **Bayesian Approaches and Particle Filters** (Lecture)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Cassiopée
Co-Chairs: Jean-Yves Tourneret, ENSEEIHT/Tésa and Petar Djuric, Stony Brook University

10:30
SPTM-L1.1 **JOINT SEGMENTATION OF PIECEWISE CONSTANT AUTOREGRESSIVE PROCESSES BY USING A HIERARCHICAL MODEL AND A BAYESIAN SAMPLING APPROACH**
Nicolas Dobigeon, Jean-Yves Tourneret, IRIT / ENSEEIHT / TéSA, France; Manuel Davy, LAGIS, France

10:50
SPTM-L1.2 **ON TOTAL-VARIANCE REDUCTION VIA THRESHOLDING-BASED SPECTRAL ANALYSIS**
Petre Stoica, Niclas Sandgren, Uppsala University, Sweden

11:10
SPTM-L1.3 **THE BAYESIAN ABEL BOUND ON THE MEAN SQUARE ERROR**
Alexandre Renaux, Ecole Normale Superieure de Cachan, France; Philippe Forster, University Paris 10, France; Pascal Larzabal, Ecole Normale Superieure de Cachan, France; Christ Richmond, MIT Lincoln Laboratory, United States

11:30
SPTM-L1.4 **UNSUPERVISED SIGNAL RESTORATION IN PARTIALLY OBSERVED MARKOV CHAINS**
Boujemaa Ait-el-Fquih, François Desbouvries, INT, France

11:50
SPTM-L1.5 **MOBILE ROBOT LOCALIZATION USING IMPROVED SIR FILTERS AND PARAMETRIC MODELS OF THE ENVIRONMENT**
Paulo Roberto Silva, Marcelo Bruno, Instituto Tecnologico de Aeronautica, Brazil

12:10
SPTM-L1.6 **A MODIFIED RAO-BLACKWELLISED PARTICLE FILTER**
Frédéric Mustière, Miodrag Bolic, Martin Bouchard, University of Ottawa, Canada

IMDSP-P1 **Motion/Disparity Detection and Estimation** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 1
Chair: Stefano Tubaro, Politecnico di Milano

IMDSP-P1.1 **MOTION VECTOR SMOOTHING FOR TRUE MOTION ESTIMATION**
Hai Bing Yin, Xiang Zhong Fang, Hua Yang, Song Yu Yu, Xiao Kang Yang, Shanghai Jiao Tong University, China

IMDSP-P1.2 **A VLSI-IMPLEMENTATION-FRIENDLY EGO-MOTION DETECTION ALGORITHM BASED ON EDGE-HISTOGRAM MATCHING**
Jia Hao, Tadashi Shibata, University of Tokyo, Japan

IMDSP-P1.3 **A BISPECTRUM TECHNIQUE TO SUBPIXEL IMAGE REGISTRATION UNDER NOISY CONDITIONS**
Kim-Hui Yap, Li Chen, Nanyang Technological University, Singapore

IMDSP-P1.4 **LOW-PASS FILTER BASED VLSI ORIENTED VARIABLE BLOCK SIZE MOTION ESTIMATION ALGORITHM FOR H.264**
Zhenyu Liu, Kitakyushu Foundation for the Advancement of Industry Science and Technology, Japan; Yang Song, Takeshi Ikenaga, Satoshi Goto, Waseda University, Japan

IMDSP-P1.5 **AN EFFICIENT VIDEO ALIGNMENT APPROACH FOR NON-OVERLAPPING SEQUENCES WITH FREE CAMERA MOVEMENT**
Omer Shakil, University of Texas, Austin, United States

IMDSP-P1.6 **ROBUST 3-D CAMERA MOTION PARAMETER ESTIMATION WITH APPLICATIONS TO VIDEO CODING**
Eung-Tae Kim, Korea Polytechnic University, Republic of Korea

(Continued from previous page.)

IMDSP-P1.7 DATA ASSIMILATION OF SATELLITE IMAGES WITHIN AN OCEANOGRAPHIC CIRCULATION MODEL
Etienne Huot, UVSQ / CETP, France; Till Isambert, Isabelle Herlin, Jean-Paul Berroir, INRIA Rocquencourt, France; Gennady Korotaev, MHI / National Academy of Sciences of Ukraine, Ukraine

IMDSP-P1.8 DYNAMIC PROGRAMMING FOR MULTI-VIEW DISPARITY/DEPTH ESTIMATION
Nantheera Anantrasirichai, Nishan Canagarajah, David Redmill, David Bull, University of Bristol, United Kingdom

IMDSP-P1.9 SUB-PIXEL REGISTRATION OF NOISY IMAGES
Volodya Grancharov, W. Bastiaan Kleijn, Royal Institute of Technology (KTH), Sweden; Alexander Georgiev, Stockholm University, Sweden

IMDSP-P1.10 METHOD OF MOTION ESTIMATION FOR IMAGE STABILIZATION
Marius Tico, Sakari Alenius, Markku Vehvilainen, Nokia Research Center, Finland

IMDSP-P1.11 THE EFFECTS OF MOTION AND SPATIO-TEMPORAL NON-UNIFORM ILLUMINATION ON IMAGE-PAIR JOINT SCATTERGRAMS
Michael Farmer, Sushma Kittali, University of Michigan, Flint, United States

IMDSP-P1.12 ROBUST GLOBAL MOTION ESTIMATION FROM MPEG STREAMS WITH A GRADIENT BASED REFINEMENT
David Corrigan, Anil Kokaram, University of Dublin / Trinity College, Ireland; Renan Coudray, Bernard Besserer, University of La Rochelle, France

SAM-P1 **Source Localization and Tracking** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 2
Chair: Alex Gershman, Darmstadt University of Technology

SAM-P1.1 **A THEORETICAL ANALYSIS OF 2D SENSOR ARRAYS FOR TDOA BASED LOCALIZATION**
Bin Yang, Jan Scheuing, University of Stuttgart, Germany

SAM-P1.2 **A RANGE-ONLY MULTIPLE TARGET PARTICLE FILTER TRACKER**
Volkan Cevher, Rajbabu Velmurugan, James H. McClellan, Georgia Institute of Technology, United States

SAM-P1.3 **TRACKING WIDE-BAND RAPIDLY MOVING TARGETS**
Paul Teal, Industrial Research Ltd., New Zealand

SAM-P1.4 **A MONTE-CARLO METHOD FOR INITIALIZING DISTRIBUTED TRACKING ALGORITHMS**
Milind Borkar, Volkan Cevher, James H. McClellan, Georgia Institute of Technology, United States

SAM-P1.5 **LOCALIZATION OF BURIED SPHERICAL SHELLS BASED ON WIDEBAND SIGNALS**
Zineb Saidi, IRENav - Ecole Navale, France; Salah Bourennane, Institut Fresnel, France

SAM-P1.6 **DIVIDE-AND-CONQUER BASED CLOSED-FORM POSITION ESTIMATION FOR AOA AND TDOA MEASUREMENTS**
Andreu Urruela, Alba Pagès-Zamora, Jaume Riba, Technical University of Catalonia (UPC), Spain

(Continued from previous page.)

SAM-P1.7 **ANALYSIS OF THE DEGRADATION IN SOURCE LOCATION ACCURACY IN THE PRESENCE OF SENSOR LOCATION ERROR**
Xiaoning Lu, K. C. Ho, University of Missouri-Columbia, United States

SAM-P1.8 **ROBUST TRACKING OF MULTIPLE SOUND SOURCES BY SPATIAL INTEGRATION OF ROOM AND ROBOT MICROPHONE ARRAYS**
Kazuhiro Nakadai, Honda Research Institute Japan Co., Ltd., Japan; Hirofumi Nakajima, Nittobo Acoustic Engineering Co., Ltd., Japan; Masamitsu Murase, Satoshi Kaijiri, Kyoto University, Japan; Kentaro Yamada, Takahiro Nakamura, Yuji Hasagawa, Honda Research Institute Japan Co., Ltd., Japan; Hiroshi G. Okuno, Kyoto University, Japan; Hiroshi Tsujino, Honda Research Institute Japan Co., Ltd., Japan

SAM-P1.9 **SOURCE LOCALIZATION FROM QUANTIZED TIME OF ARRIVAL MEASUREMENTS**
Nadir Castañeda, Maurice Charbit, Eric Moulines, ENST / TSI, France

SAM-P1.10 **MANEUVERING TARGET TRACKING WITH SIMPLIFIED COST REFERENCE PARTICLE FILTERS**
Shanshan Xu, Monica Bugallo, Petar Djuric, Stony Brook University, United States

SAM-P1.11 **ADAPTIVE ESTIMATION OF THE STRONG UNCORRELATING TRANSFORM WITH APPLICATIONS TO SUBSPACE TRACKING**
Scott Douglas, Southern Methodist University, United States; Jan Eriksson, Visa Koivunen, Helsinki University of Technology, Finland

SAM-P1.12 **DETECTION AND LOCALIZATION OF MATERIAL RELEASES WITH SPARSE SENSOR CONFIGURATIONS**
Emily Fox, Jason Williams, John Fisher, Alan Willsky, Massachusetts Institute of Technology, United States

BIO-P1 **Biomedical Signal Processing I** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 3
Chair: Don Johnson, Rice University

BIO-P1.1 **BIOMETRICAL SPEAKER DESCRIPTION FROM VOCAL CORD PARAMETERIZATION**
Pedro Gómez-Vilda, Mª Victoria Rodellar-Biarge, Agustín Álvarez-Marquina, Carlos Lázaro-Carrascosa, Katherine Murphy, Francisco Díaz-Pérez, Roberto Fernández-Baillo, Universidad Politécnica de Madrid, Spain

BIO-P1.2 **DETECTION OF 3RD HEART SOUNDS USING RECURRENCE TIME STATISTICS**
Christer Ahlström, Peter Hult, Per Ask, Linköping University, Sweden

BIO-P1.3 **BIOMEDICAL SIGNAL COMPRESSION WITH OPTIMIZED WAVELETS**
Mogens Nielsen, Nlandu Kamavuako, Michael Midtgaard Andersen, Aalborg University, Denmark; Marie-Françoise Lucas, IRCCyN - Ecole Centrale de Nantes, France; Dario Farina, Aalborg University, Denmark

BIO-P1.4 **IMPROVING SEPARABILITY OF EEG SIGNALS DURING MOTOR IMAGERY WITH AN EFFICIENT CIRCULAR LAPLACIAN**
Le Song, Julien Epps, University of Sydney, Australia

BIO-P1.5 **DETERMINATION OF OPTIMAL BEAM POSITIONS FOR CONFORMAL RADIOTHERAPY**
Javier Lorente, Juan M. Artacho, Emiliano Bernues, Miguel A. Nasarre, University of Zaragoza, Spain

BIO-P1.6 **PATHOLOGICAL ASSESMENT OF VOCAL FOLD NODULES AND POLYP USING ACCOUSTIC PERTURBATION AND PHASE SPACE FEATURES**
Roozbeh Behroozmand, Farshad Almasganj, Mohammad Hassan Moradi, Amirkabir University of Technology, Iran

(Continued from previous page.)

BIO-P1.7 **VENTRICULAR AND ATRIAL ACTIVITY ESTIMATION THROUGH SPARSE ECG SIGNAL DECOMPOSITIONS**
Oscar Divorra Escoda, Lorenzo Granai, Mathieu Lemay, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Javier Molinero Hernandez, EPFL / UPC, Switzerland; Pierre Vandergheynst, Jean-Marc Vesin, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

BIO-P1.8 **FREQUENCY AND TIME-FREQUENCY BASED INDICES FOR SUCTION DETECTION IN ROTARY BLOOD PUMPS**
Antonio Ferreira, Marwan A. Simaan, J. Robert Boston, University of Pittsburgh, United States; James F. Antaki, Carnegie Mellon University, United States

BIO-P1.9 **ORDER STATISTIC CORRELATION COEFFICIENT AND ITS APPLICATION TO ASSOCIATION MEASUREMENT OF BIOSIGNALS**
Weichao Xu, Chunqi Chang, Y. S. Hung, S. K. Kwan, C. W. Fung, University of Hong Kong, Hong Kong SAR of China

BIO-P1.10 **SMOOTHNESS CONSTRAINT FOR THE ESTIMATION OF CURRENT DISTRIBUTION FROM EEG/MEG DATA**
Wakako Nakamura, Shimane University, Japan; Sachiko Koyama, Shinya Kuriki, Hokkaido University, Japan; Yujiro Inouye, Shimane University, Japan

BIO-P1.11 **SEPARATION OF CRACKLES FROM VESICULAR SOUNDS USING WAVELET PACKET TRANSFORM**
Mohammed Bahoura, Xiaoguang Lu, Université du Québec à Rimouski, Canada

BIO-P1.12 **NONLINEAR, BIOPHYSICALLY-INFORMED SPEECH PATHOLOGY DETECTION**
Max Little, Patrick McSharry, Irene Moroz, Stephen Roberts, Oxford University, United Kingdom

SPCOM-P1 **Coding and Compression** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 4
Chair: Nicholas Sidiropoulos, Technical University of Crete

SPCOM-P1.1 **HIGH-RATE ANALYSIS OF VECTOR QUANTIZATION FOR NOISY CHANNELS**
Chandra Murthy, Ethan Duni, Bhaskar Rao, University of California, San Diego, United States

SPCOM-P1.2 **MONOTONIC OPTIMIZATION BASED DECODING FOR LINEAR CODES**
Phan Khoa, University of New South Wales, Australia; Tran Son, Toyota Technological Institute, Japan; Hoang D. Tuan, University of New South Wales, Australia; Hoang Tuy, Institute of Mathematics, Viet Nam

SPCOM-P1.3 **JOINT SOURCE-CHANNEL DISTORTION MODELLING FOR MPEG-4 VIDEO**
Muhammad Sabir, Robert Heath, Alan Bovik, University of Texas, Austin, United States

SPCOM-P1.4 **DISTRIBUTED SOURCE CODING WITH CONTEXT MODELING**
Yong Sun, Texas A&M University, United States; Jin Li, Microsoft Research, United States

SPCOM-P1.5 **DESIGN OF MULTIPLE DESCRIPTION PREDICTIVE VECTOR QUANTIZERS**
Pradeepa Yahampath, Paul Rondeau, University of Manitoba, Canada

SPCOM-P1.6 **LOW-COMPLEXITY MULTIPLE DESCRIPTION VECTOR QUANTIZATION WITH CONSTRAINED CENTRAL CODEBOOK**
Yugang Zhou, Wai-Yip Chan, Queen's University, Canada

(Continued from previous page.)

SPCOM-P1.7 UNIFORM THRESHOLD SCALAR QUANTIZER PERFORMANCE IN WYNER-ZIV CODING WITH MEMORYLESS, ADDITIVE LAPLACIAN CORRELATION CHANNEL
Vadim Sheinin, Ashish Jagmohan, Dake He, IBM T. J. Watson Research Center, United States

SPCOM-P1.8 ITERATIVE SOURCE-CHANNEL DECODING USING SHORT BLOCK CODES
Thorsten Clevorn, Peter Vary, University of Technology Aachen (RWTH), Germany; Marc Adrat, FGAN e.V., Germany

SPCOM-P1.9 PIPELINED BLOCK-SERIAL DECODER ARCHITECTURE FOR STRUCTURED LDPC CODES.
Tejas Bhatt, Vishwas Sundaramurthy, Victor J. Stolpman, Dennis McCain, Nokia Research Center, United States

SPCOM-P1.10 AN EFFICIENT DECODER SCHEME FOR DOUBLE BINARY CIRCULAR TURBO CODES
Cheng Zhan, Tughrul Arslan, Ahmet T. Erdogan, University of Edinburgh, United Kingdom; S. MacDougal, Freescale Semiconductor, Ltd., United Kingdom

SPCOM-P1.11 ERASURE RESILIENT CODES IN PEER-TO-PEER STORAGE CLOUD
Jin Li, Microsoft Research, United States; Qiang Huang, Princeton University,

SPCOM-P1.12 LINEAR PRECODING AND DECODING FOR DISTRIBUTED DATA COMPRESSION
Azadeh Vosoughi, Anna Scaglione, Cornell University, United States

SPCOM-P2 **Resource Allocation (MAC and Scheduling)** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 5
Chair: Robert W. Heath, Jr., University of Texas, Austin

SPCOM-P2.1 **POTENTIAL GAMES: A FRAMEWORK FOR VECTOR POWER CONTROL PROBLEMS WITH COUPLED CONSTRAINTS**
Gesualdo Scutari, Sergio Barbarossa, Universitá degli Studi di Roma "La Sapienza", Italy; Daniel P. Palomar, Princeton University, United States

SPCOM-P2.2 **QUADRATICALLY CONVERGING DECENTRALIZED POWER ALLOCATION ALGORITHM FOR WIRELESS AD-HOC NETWORKS - THE MAX-MIN FRAMEWORK**
Marcin Wiczanowski, Berlin University of Technology, Germany; Slawomir Stanczak, Fraunhofer German-Sino Lab for Mobile Communications, Germany; Holger Boche, Berlin University of Technology, Germany

SPCOM-P2.3 **TRANSMIT CORRELATION-AIDED SCHEDULING IN MULTIUSER MIMO NETWORKS**
David Gesbert, Lars Pittman, Eurecom Institute, France; Marios Kountouris, France Télécom R&D Division, France

SPCOM-P2.4 **MOBILITY ENHANCED SMART ANTENNA ADAPTIVE SECTORING FOR UPLINK CAPACITY MAXIMIZATION IN CDMA CELLULAR NETWORK**
Alex Wang, Vikram Krishnamurthy, University of British Columbia, Canada

SPCOM-P2.5 **HYBRID ALOHA: A NOVEL MEDIUM ACCESS CONTROL PROTOCOL**
Tongtong Li, Huahui Wang, Michigan State University, United States; Lang Tong, Cornell University, United States

SPCOM-P2.6 **LOW COMPLEXITY ADMISSION IN DOWNLINK BEAMFORMING**
Matteo Butussi, Mats Bengtsson, Royal Institute of Technology (KTH), Sweden

(Continued from previous page.)

SPCOM-P2.7 IMPROVING MINIMUM RATE MAXIMIZATION LINK ADAPTATION STRATEGY USING CHANNEL PREDICTION
Ayman Alsawah, Inbar Fijalkow, ETIS Laboratory - ENSEA - University of Cergy - CNRS, France; C. Richard Johnson, Jr., Cornell University, United States

SPCOM-P2.8 QUALITY OF SERVICE ORIENTED SCHEDULING ALGORITHMS FOR A CROSS-LAYER DOWNLINK WIRELESS SYSTEM.
Deepali Arora, Panajotis Agathoklis, University of Victoria, Canada

SPCOM-P2.9 A BICM APPROACH TO TYPE-II HYBRID ARQ
Jeremy Roberson, Zhi Ding, University of California, Davis, United States

SPCOM-P2.10 POWER-DISTORTION PERFORMANCE OF SUCCESSIVE CODING STRATEGY IN GAUSSIAN CEO PROBLEM
Hamid Behroozi, M. Reza Soleymani, Concordia University, Canada

SPCOM-P2.11 ON THE PERFORMANCE OF CLUSTERED ENERGY-AWARE WIRELESS NETWORKS
Zhi Quan, University of California, Los Angeles, United States; Ananth Subramanian, A-STAR, Singapore; Ali H. Sayed, University of California, Los Angeles, United States

SPCOM-P2.12 AN OPPORTUNISTIC DOWNLINK MIMO-OFDM SCHEME
Li Guo, Yih-Fang Huang, University of Notre Dame, United States

SPTM-P1 **Multi-rate Signal Processing and Wavelets** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 6
Chair: Patrice Abry, Ecole Normale Supérieure de Lyon

SPTM-P1.1 **LEAST SQUARES DESIGN OF ORTHONORMAL WAVELETS VIA THE ZERO-PINNING TECHNIQUE**
David Tay, La Trobe University, Australia

SPTM-P1.2 **CONSTRUCTION OF TIGHT FILTER BANK FRAMES**
Li Chai, Hangzhou Dianzi University, China; Jingxin Zhang, Monash University, Australia; Cishen Zhang, Nanyang Technological University, Singapore; Edoardo Mosca, Universitya di Firenze, Italy

SPTM-P1.3 **SYMMETRIC ORTHOGONAL COMPLEX-VALUED FILTER BANK DESIGN BY SEMIDEFINITE PROGRAMMING**
Ha Kha, Hoang D. Tuan, University of New South Wales, Australia; Ba-Ngu Vo, University of Melbourne, Australia; Truong Q. Nguyen, University of California, San Diego, United States

SPTM-P1.4 **DESIGN OF CIC FILTERS FOR SOFTWARE RADIO SYSTEM**
Francisco Aquino, Carlos Rocha, Leonardo Resende, Federal University of Santa Catarina, Brazil

SPTM-P1.5 **NOISE REDUCTION DESIGN OF PERFECT RECONSTRUCTION OVERSAMPLED FILTER BANKS**
Li Chai, Hangzhou Dianzi University, China; Jingxin Zhang, Monash University, Australia; Cishen Zhang, Nanyang Technological University, Singapore; Edoardo Mosca, Universitya di Firenze, Italy

SPTM-P1.6 **ON PARAMETERIZATIONS OF FIRST-ORDER UNIMODULAR FILTER BANKS**
Lu Gan, University of Newcastle, Australia

(Continued from previous page.)

SPTM-P1.7 **ON SIMULATIONS ABOUT THE PRECISION OF NON UNIFORM HYBRID FILTER BANK ANALOG/ DIGITAL CONVERTERS**
Jean-Luc Collette, Michel Barret, Supélec, France

SPTM-P1.8 **TWO-DIMENSIONAL WIENER FILTERS FOR ERROR RESILIENT TIME DOMAIN LAPPED TRANSFORM**
Jie Liang, Simon Fraser University, Canada; Xin Li, West Virginia University, United States; Guoqian Sun, Simon Fraser University, Canada; Trac Tran, Johns Hopkins University, United States

SPTM-P1.9 **THEORY AND DESIGN OF TWO-CHANNEL COMPLEX LINEAR-PHASE PSEUDO-ORTHOGONAL FILTERBANKS**
Seisuke Kyochi, Yuichi Tanaka, Masaaki Ikehara, Keio University, Japan

SPTM-P1.10 **A NEW ESTIMATOR FOR IMAGE DENOISING USING A 2D DUAL-TREE M-BAND WAVELET DECOMPOSITION**
Caroline Chaux, Université de Marne-la-Vallée, France; Laurent Duval, Institut Français du Pétrole, France; Amel Benazza-Benyahia, URISA SUP'COM, Tunisia; Jean-Christophe Pesquet, Université de Marne-la-Vallée, France

SPTM-P1.11 **DIRECT DESIGN OF NEAR PERFECT RECONSTRUCTION LINEAR PHASE NONUNIFORM FILTER BANKS WITH RATIONAL SAMPLING FACTORS**
X. Y. Chen, X. M. Xie, G. M. Shi, Xidian University, China

SPTM-P1.12 **A NEW FRAMEWORK FOR DISTRIBUTED VIDEO CODING BASED ON JPEG 2000**
Yoshihide Tonomura, Takayuki Nakachi, NTT Corporation, Japan

SLP-P1 **Feature Extraction and Modeling** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 7
Chair: Tatsuya Kawahara, Kyoto University

SLP-P1.1 **DISCRIMINATIVELY TRAINED REGION DEPENDENT FEATURE TRANSFORMS FOR SPEECH RECOGNITION**
Bing Zhang, Northeastern University, United States; Spyros Matsoukas, Richard Schwartz, BBN Technologies, United States

SLP-P1.2 **FLEXIBLE FEATURE SPACES BASED ON GENERALIZED HETEROSCEDASTIC LINEAR DISCRIMINANT ANALYSIS**
Alessandro Duminuco, Institut Eurecom, France; Chaojun Liu, David Kryze, Luca Rigazio, Panasonic Digital Networking Laboratory, United States

SLP-P1.3 **CROSS-DOMAIN AND CROSS-LANGUAGE PORTABILITY OF ACOUSTIC FEATURES ESTIMATED BY MULTILAYER PERCEPTRONS**
Andreas Stolcke, SRI International / University of California, Berkeley, United States; Frantisek Grezl, University of California, Berkeley, United States; Mei-Yuh Hwang, Xin Lei, University of Washington, United States; Nelson Morgan, University of California, Berkeley, United States; Dimitra Vergyri, SRI International, United States

SLP-P1.4 **HIERARCHICAL STRUCTURES OF NEURAL NETWORKS FOR PHONEME RECOGNITION**
Petr Schwarz, Pavel Matejka, Jan Cernocky, Brno University of Technology, Czech Republic

SLP-P1.5 **ON THE USE OF PHONOLOGICAL FEATURES FOR PRONUNCIATION SCORING**
Frederik Stouten, Jean-Pierre Martens, University of Ghent, Belgium

SLP-P1.6 **AUTOMATIC SPEECH ATTRIBUTE TRANSCRIPTION (ASAT) – THE FRONT END PROCESSOR**
Jun Hou, Lawrence Rabiner, Sorin Dusan, Rutgers University, United States

(Continued from previous page.)

SLP-P1.7 **AUTOMATIC DERIVATION OF A PHONEME SET WITH TONE INFORMATION FOR CHINESE SPEECH RECOGNITION BASED ON MUTUAL INFORMATION CRITERION**
Jin-Song Zhang, Xin-Hui Hu, Satoshi Nakamura, ATR Spoken Language Communication Research Laboratories, Japan

SLP-P1.8 **SPEECH RECOGNITION USING SYLLABLE DURATION RATIO MODEL**
Masahide Ariu, Takashi Masuko, Shinichi Tanaka, Akinori Kawamura, Toshiba Corporation, Japan

SLP-P1.9 **FULLY AUTOMATED NON-NATIVE SPEECH RECOGNITION USING CONFUSION-BASED ACOUSTIC MODEL INTEGRATION AND GRAPHEMIC CONSTRAINTS**
Ghazi Bouselmi, Dominique Fohr, Irina Illina, Jean-Paul Haton, LORIA, France

SLP-P1.10 **MAXIMUM LIKELIHOOD BASED TEMPORAL FRAME SELECTION**
Tingyao Wu, Dirk Van Compernolle, Jacques Duchateau, Hugo Van hamme, Katholieke Universiteit Leuven, Belgium

SLP-P1.11 **STREM WEIGHT COMPUTATION FOR MULTI-STREAM CLASSIFIERS**
Alexandros Potamianos, Eduardo Sanchez-Soto, Technical University of Crete, Greece; Khalid Daoudi, IRIT / UPS, France

SLP-P1.12 **SPEAKER OVERLAPS AND ASR ERRORS IN MEETINGS EFFECTS BEFORE, DURING, AND AFTER THE OVERLAP**
Ozgur Cetin, University of California, Berkeley, United States; Elizabeth Shriberg, SRI International / University of California, Berkeley, United States

SLP-P2 **Speech Production, Analysis and Modeling** (Poster)
Time: Tuesday, May 16, 10:30 - 12:30
Place: Poster Area 8
Chair: Abeer Alwan, University of California, Los Angeles

SLP-P2.1 **LEARNING ELECTROPALATOGRAMS FROM ACOUSTICS**
Asterios Toutios, Konstantinos Margaritis, University of Macedonia, Greece

SLP-P2.2 **PROSPECTS FOR A SILENT SPEECH INTERFACE USING ULTRASOUND IMAGING**
Bruce Denby, Université Pierre et Marie Curie, France; Yacine Oussar, Gerard Dreyfus, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris (ESPCI-Paristech), France; Maureen Stone, University of Maryland Dental School, United States

SLP-P2.3 **A DATABASE OF VOCAL TRACT RESONANCE TRAJECTORIES FOR RESEARCH IN SPEECH PROCESSING**
Li Deng, Microsoft Research, United States; Xiaodong Cui, University of California, Los Angeles, United States; Robert Pruvenok, Georgia Institute of Technology, United States; Jonathan Huang, Safiyy Momen, Carnegie Mellon University, United States; Yanyi Chen, Cornell University, United States; Abeer Alwan, University of California, Los Angeles, United States

SLP-P2.4 **OBTAINING LIP AND GLOTTAL REFLECTION COEFFICIENTS FROM VOWEL SOUNDS**
Huiqun Deng, INRS-EMT, Canada; Rabab K. Ward, Michael Beddoes, University of British columbia, Canada; Douglas O'Shaughnessy, INRS-EMT, Canada

SLP-P2.5 **A PITCH DETECTION ALGORITHM BASED ON AMDF AND ACF**
Hui Li, Bei-qian Dai, Wei Lu, University of Science and Technology of China, China

SLP-P2.6 **GLOTTAL CLOSURE INSTANT ESTIMATION USING AN APPROPRIATENESS MEASURE OF THE SOURCE AND CONTINUITY CONSTRAINTS**
Damien Vincent, Olivier Rosec, France Télécom R&D Division, France; Thierry Chonavel, ENST Bretagne, France

(Continued from previous page.)

SLP-P2.7 **FRAME-BASED ACOUSTIC CUES OF VOCAL DYSPERIODICITY IN CONNECTED SPEECH**
Abdellah Kacha, Francis Grenez, Jean Schoentgen, Université Libre de Bruxelles, Belgium

SLP-P2.8 **AGE- AND GENDER-DEPENDENT ANALYSIS OF VOICE SOURCE CHARACTERISTICS**
Markus Iseli, Yen-Liang Shue, Abeer Alwan, University of California, Los Angeles, United States

SLP-P2.9 **ANALYZING CHILDREN'S SPEECH: AN ACOUSTIC STUDY OF CONSONANTS AND CONSONANT-VOWEL TRANSITION.**
Matteo Gerosa, University of Trento, Italy; Sungbok Lee, University of Southern California, United States; Diego Giuliani, Trentino Cultural Institute / Centro per la Ricerca Scientifica e Tecnologica, Italy; Shrikanth S. Narayanan, University of Southern California, United States

SLP-P2.10 **STUDY OF INTER-SPEAKER'S SPEECH VARIABILITY OVER LONG AND SHORT TIME PERIODS FOR SPEECH RECOGNITION**
Satoru Tsuge, Masami Shishibori, Kenji Kita, Fuji Ren, Shingo Kuroiwa, University of Tokushima, Japan

SLP-P2.11 **PERCEPTUAL RECOGNITION CUES IN NATIVE ENGLISH ACCENT VARIATION: "LISTENER ACCENT, PERCEIVED ACCENT, AND COMPREHENSION"**
Ayako Ikeno, John H. L. Hansen, University of Texas, Dallas, United States

IMDSP-L2 **Video Coding** (Lecture)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Caravelle 2
Chair: Janusz Konrad, Boston University

14:00
IMDSP-L2.1 **COMPLEXITY ADAPTIVE H.264 ENCODING FOR LIGHT WEIGHT STREAMS**
Yong Wang, Shih-Fu Chang, Columbia University, United States

14:20
IMDSP-L2.2 **MOTION MODELING FOR SPATIAL SCALABILITY**
Nikola Bozinovic, Janusz Konrad, Boston University, United States

14:40
IMDSP-L2.3 **GENERATING H.264/AVC COMPLIANT BITSTREAMS FOR LIGHTWEIGHT DECODING OPERATION SUITABLE FOR MOBILE MULTIMEDIA SYSTEMS**
Kemal Ugur, Jani Lainema, Antti Hallapuro, Nokia Research Center, Finland; Moncef Gabbouj, Tampere University of Technology, Finland

15:00
IMDSP-L2.4 **LMS BASED ADAPTIVE PREDICTION FOR SCALABLE VIDEO CODING**
Behcet Ugur Toreyin, Bilkent University, Turkey; Maria Trocan, Beatrice Pesquet-Popescu, ENST, France; A. Enis Cetin, Bilkent University, Turkey

15:20
IMDSP-L2.5 **RATE CONTROL FOR FLICKER ARTIFACT SUPPRESSION IN MOTION JPEG2000**
Athanasios Leontaris, University of California, San Diego, United States; Yoshihide Tonomura, Takayuki Nakachi, NTT Corporation, Japan

15:40
IMDSP-L2.6 **REAL-TIME REGION-OF-INTEREST VIDEO CODING USING CONTENT-ADAPTIVE BACKGROUND SKIPPING WITH DYNAMIC BIT REALLOCATION**
Haohong Wang, Yi Liang, Khaled El-Maleh, Qualcomm Inc., United States

MMSP-L1 **Multimedia Communications and Networking**
(Lecture)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Ariane 1 & 2
Chair: Pascal Frossard, Swiss Federal Institute of Technology (EPFL)

14:00
MMSP-L1.1 **SCALABLE RESOURCE MANAGEMENT FOR VIDEO STREAMING OVER IEEE802.11A/E**
Yiannis Andreopoulos, Mihaela van der Schaar, University of California, Los Angeles, United States; Zhiping Hu, University of California, Davis, United States; S. Heo, S. Suh, Samsung Electronics, Republic of Korea

14:20
MMSP-L1.2 **IMPROVING THE ROBUSTNESS OF THE G.722 WIDEBAND SPEECH CODEC TO PACKET LOSSES FOR VOICE OVER WLANS**
Niranjan Shetty, Jerry Gibson, University of California, Santa Barbara, United States

14:40
MMSP-L1.3 **LATENCY-MINIMIZED DELIVERY FOR MULTI-RESOLUTION MESH GEOMETRY**
Ghassan AlRegib, Dihong Tian, Georgia Institute of Technology, United States

15:00
MMSP-L1.4 **CONSTRUCTING DEPENDENCY TREES FOR RATE-DISTORTION OPTIMIZED MEDIA STREAMING**
Martin Röder, University of Konstanz, Germany; Jean Cardinal, Université Libre de Bruxelles, Belgium; Raouf Hamzaoui, University of Konstanz, Germany

15:20
MMSP-L1.5 **UNEQUAL ERROR PROTECTION FOR H.263+ BITSTREAMS OVER A WIRELESS IP NETWORK**
Catherine Lamy-Bergot, Nicolas Chautru, Cyril Bergeron, Thalès Communications, France

15:40
MMSP-L1.6 **PRICING BASED COLLABORATIVE MULTI-USER VIDEO STREAMMING OVER POWER CONSTRAINED WIRELESS DOWN LINK**
Zhu Li, Motorola Labs, United States; Jianwei Huang, Princeton University, United States; Aggelos Katsaggelos, Northwestern University, United States

SAM-L1 **MIMO and Multi-Antenna Communications** (Lecture)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Spot
Chair: A. Lee Swindlehurst, Brigham Young University

14:00
SAM-L1.1 **A SIMPLE AND EFFICIENT ANTENNA SUBSET SELECTION SCHEME FOR MIMO SYSTEMS**
Saurabh Kumar, Qualcomm Inc., United States; Dayalan Kasilingam, University of Massachusetts, Dartmouth, United States

14:20
SAM-L1.2 **ACCURATE APPROXIMATION OF ERROR PROBABILITY ON MIMO CHANNELS AND ITS APPLICATION TO ADAPTIVE MODULATION AND ANTENNA SELECTION**
Fatma Kharrat-Kammoun, Sandrine Fontenelle, Motorola, France; Joseph Boutros, ENST, France

14:40
SAM-L1.3 **MMSE CRITERIA FOR DOWNLINK BEAMFORMING IN CDMA WIRELESS SYSTEMS**
Peter Wrycza, Mats Bengtsson, Björn Ottersten, Royal Institute of Technology (KTH), Sweden

15:00
SAM-L1.4 **CHANNEL PHASE ESTIMATE IN TIME VARIANT SIMO SYSTEMS**
Andrea Monti Guarnieri, Stefano Tebaldini, Politecnico di Milano, Italy

15:20
SAM-L1.5 **COOPERATIVE SPATIAL MULTIPLEXING IN MULTI-HOP WIRELESS NETWORKS**
Yimin Zhang, Genyuan Wang, Moeness Amin, Villanova University, United States

15:40
SAM-L1.6 **ADAPTIVE SEMI-BLIND ICA-BASED SPATIAL EQUALIZATION FOR MIMO RAYLEIGH FADING CHANNELS WITH OPTIMAL STEP SIZE**
Zhiguo Ding, T. Ratnarajah, Colin Cowan, Queen's University, Belfast, United Kingdom

SPTM-L2 **Particle Filtering and Other Tracking Algorithms**
(Lecture)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Cassiopée
Chair: Fredrik Gustaffson, Linköping University

14:00
SPTM-L2.1 **TRACKING A FREQUENCY HOPPED SIGNAL USING PARTICLE FILTERING**
Nicholas Sidiropoulos, Technical University of Crete, Greece; Ananthram Swami, Army Research Lab, United States; Alexandros Valyrakis, Technical University of Crete, Greece

14:20
SPTM-L2.2 **PARTICLE FILTERS FOR INFINITE (OR LARGE) DIMENSIONAL STATE SPACES- PART 1**
Namrata Vaswani, Iowa State University, United States; Anthony Yezzi, Yogesh Rathi, Allen Tannenbaum, Georgia Institute of Technology, United States

14:40
SPTM-L2.3 **PARTICLE FILTERS FOR INFINITE (OR LARGE) DIMENSIONAL STATE SPACES- PART 2**
Namrata Vaswani, Iowa State University, United States

15:00
SPTM-L2.4 **REDUCED SIGMA POINT FILTERING FOR PARTIALLY LINEAR MODELS**
Mark Morelande, University of Melbourne, Australia; Branko Ristic, Defence Science and Technology Organisation (DSTO), Australia

15:20
SPTM-L2.5 **ADAPTIVE-GAIN TRACKING FILTERS BASED ON MINIMIZATION OF THE INNOVATION VARIANCE**
Naum Chernoguz, TAMAM, Israel Aircraft Industries, Israel

15:40
SPTM-L2.6 **HRHATRAC ALGORITHM FOR SPECTRAL LINE TRACKING OF MUSICAL SIGNALS**
Bertrand David, Roland Badeau, Gaël Richard, GET / Télécom Paris, France

SLP-L2 **Advances in Robust Speech Recognition** (Lecture)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Auditorium St Exupery
Chair: Michael Picheny, IBM T. J. Watson Research Center

14:00
SLP-L2.1 **DISCRIMINATIVELY TRAINED CONTEXT-DEPENDENT DURATION-BIGRAM MODELS FOR KOREAN DIGIT RECOGNITION**
Daniel Willett, Franz Gerl, Raymond Brueckner, Harman/Becker Automotive Systems, Germany

14:20
SLP-L2.2 **USING MORE INFORMATIVE POSTERIOR PROBABILITIES FOR SPEECH RECOGNITION**
Hamed Ketabdar, Jithendra Vepa, Samy Bengio, Hervé Bourlard, IDIAP Research Institute / Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland

14:40
SLP-L2.3 **HIDDEN SEMI-MARKOV MODEL BASED SPEECH RECOGNITION SYSTEM USING WEIGHTED FINITE-STATE TRANSDUCER**
Keiichiro Oura, Heiga Zen, Yoshihiko Nankaku, Akinobu Lee, Keiichi Tokuda, Nagoya Institute of Technology, Japan

15:00
SLP-L2.4 **WEIGHTED LIKELIHOOD RATIO (WLR) HIDDEN MARKOV MODEL FOR NOISY SPEECH RECOGNITION**
Chao Huang, Yingchun Huang, Frank K. Soong, Jian-Lai Zhou, Microsoft Research Asia, China

15:20
SLP-L2.5 **ENTROPY-BASED FEATURE PARAMETER WEIGHTING FOR ROBUST SPEECH RECOGNITION**
Yi Chen, Chia-yu Wan, Lin-shan Lee, National Taiwan University, Taiwan

15:40
SLP-L2.6 **TOWARDS OPTIMAL BAYES DECISION FOR SPEECH RECOGNITION**
Jen-Tzung Chien, Chih-Hsien Huang, National Cheng Kung University, Taiwan; Koichi Shinoda, Sadaoki Furui, Tokyo Institute of Technology, Japan

SS-2 **Audio Source Separation with CASA and ICA** (Special Session)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Guillaumet 1 & 2
Co-Chairs: Shoji Makino, NTT Communication Science Laboratories and Hiroshi Sawada, NTT Communication Science Laboratories

14:00
SS-2.1 **SPEECH SEPARATION BASED ON THE STATISTICS OF BINAURAL AUDITORY FEATURES**
Guy J. Brown, Sue Harding, Jon P. Barker, University of Sheffield, United Kingdom

14:20
SS-2.2 **UNVOICED SPEECH SEGREGATION**
DeLiang Wang, Guoning Hu, The Ohio State University, United States

14:40
SS-2.3 **MODEL-BASED MONAURAL SOURCE SEPARATION USING A VECTOR-QUANTIZED PHASE-VOCODER REPRESENTATION**
Daniel P. W. Ellis, Ron J. Weiss, Columbia University, United States

15:00
SS-2.4 **SEPARATING CONVOLUTIVE MIXTURES WITH TRINICON**
Walter Kellermann, Herbert Buchner, Robert Aichner, University or Erlangen-Nuremberg, Germany

15:20
SS-2.5 **SPEECH SIGNAL EXTRACTION UTILIZING PCA-ICA ALGORITHM WITH A NON-UNIFORM SPACING MICROPHONE ARRAY**
Sven Nordholm, Siow Yong Low, Western Australian Telecommunications Research Institute, Australia

15:40
SS-2.6 **BLIND SOURCE SEPARATION OF MANY SIGNALS IN THE FREQUENCY DOMAIN**
Ryo Mukai, Hiroshi Sawada, Shoko Araki, Shoji Makino, NTT Corporation, Japan

DISPS-P1 **VLSI Architectures and Algorithms for Image and Video Processing** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 1
Chair: Liang-Gee Chen, National Taiwan University

DISPS-P1.1 **LINE BUFFER WORDLENGTH ANALYSIS FOR LINE-BASED 2-D DWT**
Chih-Chi Cheng, Chao-Tsung Huang, Jing-Ying Chang, Liang-Gee Chen, National Taiwan University, Taiwan

DISPS-P1.2 **OPTIMIZATION AND IMPLEMENTATION ON FPGA OF THE DCT/IDCT ALGORITHM**
Ahmed Ben atitallah, Patrice Kadionik, IXL-ENSEIRB, France; Fahmi Ghozzi, LETI-ENIS, Tunisia; Patrice Nouel, IXL-ENSEIRB, France; Nouri Masmoudi, LETI-ENIS, Tunisia; Philippe Marchegay, IXL-ENSEIRB, France

DISPS-P1.3 **LOW COMPLEXITY ARCHITECTURE DESIGN OF H.264 PREDICTIVE PIXEL COMPENSATOR FOR HDTV APPLICATION**
Jia-Wei Chen, Chien-Chang Lin, Jiun-In Guo, Jinn-Shyan Wang, National Chung Cheng University, Taiwan

DISPS-P1.4 **STRUCTURALLY ORTHOGONAL FINITE PRECISION IMPLEMENTATION OF THE EIGHT POINT DCT**
Marek Parfieniuk, Alexander Petrovsky, Bialystok Technical University, Poland

DISPS-P1.5 **EFFICIENT VLSI ARCHITECTURE OF LIFTING-BASED WAVELET PACKET TRANSFORM FOR AUDIO AND SPEECH APPLICATIONS**
Chao Wang, Woon Seng Gan, Nanyang Technological University, Singapore

DISPS-P1.6 **AREA-EFFICIENT NEDA ARCHITECTURE FOR THE 1-D DCT/IDCT**
Archana Chidanandan, Rose-Hulman Institute of Technology, United States; Magdy Bayoumi, University of Louisiana at Lafayette, United States

(Continued from previous page.)

DISPS-P1.7 **MATRIX FACTORIZATION FOR FAST DCT ALGORITHMS**
Wenjia Yuan, Peking University, China; Pengwei Hao, Queen Mary, University of London, United Kingdom; Chao Xu, Peking University, China

DISPS-P1.8 **NEAR-OPTIMAL LOW-COST DISTORTION ESTIMATION TECHNIQUE FOR JPEG2000 ENCODER**
Amit Kumar Gupta, David Taubman, Saeid Nooshabadi, University of New South Wales, Australia

DISPS-P1.9 **LOW POWER CORDIC IP CORE IMPLEMENTATION**
Ruiqi Zhang, Institute for System Level Integration, United Kingdom; Jong Hun Han, Ahmet T. Erdogan, Tughrul Arslan, University of Edinburgh, United Kingdom

DISPS-P1.10 **ARCHITECTURE FOR HIERARCHICAL BLOCK MOTION ESTIMATION USING VARIABLE BLOCK SIZES**
Teahyung Lee, David V. Anderson, Georgia Institute of Technology, United States

DISPS-P1.11 **ANALYSIS AND ARCHITECTURE DESIGN FOR MEMORY EFFICIENT PARALLEL EMBEDDED BLOCK CODING ARCHITECTURE IN JPEG 2000**
Lien-Fei Chen, Tai-Lun Huang, Tzau-Min Chou, Yeong-Kang Lai, National Chung Hsing University, Taiwan

IMDSP-P3 **Biometrics** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 2
Chair: Ken Rose, University of California Santa Barbara

IMDSP-P3.1 **EFFECTS OF SAMPLING AND COMPRESSION ON HUMAN IRIS VERIFICATION**
Soumyadip Rakshit, Don Monro, University of Bath, United Kingdom

IMDSP-P3.2 **3D HUMAN FACE RECOGNITION USING SUMMATION INVARIANTS**
Wei-Yang Lin, Kin-Chung Wong, Nigel Boston, Yu Hen Hu, University of Wisconsin-Madison, United States

IMDSP-P3.3 **TWO-DIMENSIONAL LINEAR DISCRIMINANT ANALYSIS OF PRINCIPLE COMPONENT VECTORS FOR FACE RECOGNITION**
Parinya Sanguansat, Widhyakorn Asdornwised, Somchai Jitapunkul, Chulalongkorn University, Thailand; Sanparith Marukatat, National Electronics and Computer Technology Center, Thailand

IMDSP-P3.4 **IMPROVED HUMAN FACE IDENTIFICATION USING FREQUENCY DOMAIN REPRESENTATION OF FACIAL ASYMMETRY**
Sinjini Mitra, Marios Savvides, Carnegie Mellon University, United States

IMDSP-P3.5 **ADAPTIVE REGION-BASED IMAGE ENHANCEMENT METHOD FOR FACE RECOGNITION UNDER VARYING ILLUMINATION CONDITIONS**
Shan Du, Rabab K. Ward, University of British Columbia, Canada

IMDSP-P3.6 **ILLUMINATION TOLERANT FACE RECOGNITION USING A NOVEL FACE FROM SKETCH SYNTHESIS APPROACH AND ADVANCED CORRELATION FILTERS**
Yung-hui Li, Marios Savvides, Vijayakumar Bhagavatula, Carnegie Mellon University, United States

(Continued from previous page.)

IMDSP-P3.7 **MIXED 2D-3D INFORMATION FOR POSE ESTIMATION AND FACE RECOGNITION**
Antonio Rama, Francesc Tarres, Technical University of Catalonia (UPC), Spain; Davide Onofrio, Stefano Tubaro, Politecnico di Milano, Italy

IMDSP-P3.8 **A STUDY ON THE EFFECT OF ROI MASKS ON FACE RECOGNITION SYSTEM USING DIGITAL RECORDER**
Mitsuhiro Fujita, Takahiro Yoshida, Seiichiro Hangai, Tokyo University of Science, Japan

IMDSP-P3.9 **FACE RECOGNITION USING PSEUDO-2D ERGODIC HMM**
Santosh Kumar.S. Adarkatti, Deepti D. R., Prabhakar Ballapalle, Central Research Laboratory, India

IMDSP-P3.10 **BOOSTING GABOR FEATURE CLASSIFIER FOR FACE RECOGNITION USING RANDOM SUBSPACE**
Yong Gao, Yangsheng Wang, Xuetao Feng, Xiaoxu Zhou, Chinese Academy of Sciences, China

IMDSP-P2 **Authentication and Watermarking** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 3
Chair: Alex Kot, Nanyang Technological University

IMDSP-P2.1 **COSTA PROBLEM UNDER CHANNEL AMBIGUITY**
Jose-Emilio Vila-Forcen, Sviatoslav Voloshynovskiy, Oleksiy Koval, Thierry Pun, University of Geneva, Switzerland

IMDSP-P2.2 **AN OPTIMIZED CONTENT-AWARE AUTHENTICATION SCHEME FOR STREAMING JPEG-2000 IMAGES OVER LOSSY NETWORKS**
Zhishou Zhang, Qibin Sun, Institute for Infocomm Research, Singapore; Susie Wee, Hewlett-Packard Laboratories, United States; Wai-Choong Wong, Institute for Infocomm Research, Singapore

IMDSP-P2.3 **USING IMAGE FEATURES TO IDENTIFY CAMERA SOURCES**
Min-Jen Tsai, Guan-Hui Wu, National Chiao Tung University, Taiwan

IMDSP-P2.4 **MPEG2 WATERMARKING CHANNEL PROTECTION USING DUO-BINARY TURBO CODES**
Ivan Damnjanovic, Naeem Ramzan, Ebroul Izquierdo, Queen Mary, University of London, United Kingdom

IMDSP-P2.5 **COLOR IMAGE WATERMARKING USING THE SPATIO-CHROMATIC FOURIER TRANSFORM**
Tsz Kin Tsui, Xiao-Ping Zhang, Dimitri Androutsos, Ryerson University, Canada

IMDSP-P2.6 **TWO-LAYER BINARY IMAGE AUTHENTICATION WITH TAMPERING LOCALIZATION**
Huijuan Yang, Alex C. Kot, Nanyang Technological University, Singapore

(Continued from previous page.)

IMDSP-P2.7 **WAVELET DOMAIN SCRAMBLING FOR IMAGE-BASED AUTHENTICATION**
Giaime Ginesu, Daniele D. Giusto, Tatiana Onali, University of Cagliari, Italy

IMDSP-P2.8 **DOCUMENT WATERMARKING VIA CHARACTER LUMINANCE MODULATION**
Paulo Borges, Joceli Mayer, Federal University of Santa Catarina, Brazil

IMDSP-P2.9 **PLL-BASED SYNCHRONIZATION OF DITHER MODULATION DATA HIDING**
Kevin Whelan, Felix Balado, Guenole Silvestre, Neil Hurley, University College Dublin, Ireland

IMDSP-P2.10 **ANALYSIS-BY-SYNTHESIS ECHO HIDING SCHEME USING MIRRORED KERNELS**
Wen-Chih Wu, Wu-Feng Institute of Technology, Taiwan; Oscal T.-C. Chen, National Chung Cheng University, Taiwan

IMDSP-P2.11 **INDEXING LATTICE VECTORS IN A JOINT WATERMARKING AND COMPRESSION SCHEME**
Ludovic Guillemot, Jean-Marie Moureaux, CRAN-CNRS UMR 7039, France

IMDSP-P2.12 **CONTINUOUS PHASE MODULATED HALFTONES AND THEIR APPLICATION TO HALFTONE DATA EMBEDDING**
Basak Oztan, Gaurav Sharma, University of Rochester, United States

MLSP-P1 **Blind Source Separation II** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 4
Chair: Seungjin Choi, Pohang University of Science and Technology (POSTECH)

MLSP-P1.1 **A NORMALISED KURTOSIS BASED BLIND SOURCE EXTRACTION ALGORITHM FOR NOISY MIXTURES**
Wei Liu, University of Sheffield, United Kingdom; Danilo Mandic, Imperial College London, United Kingdom

MLSP-P1.2 **WAVELET BASED INDEPENDENT COMPONENT ANALYSIS FOR MULTI-CHANNEL SOURCE SEPARATION**
Rachid Moussaoui, Jean Rouat, Roch Lefebvre, Université de Sherbrooke, Canada

MLSP-P1.3 **A GIBBS SAMPLING APPROACH TO INDEPENDENT FACTOR ANALYSIS**
Omolabake A. Adenle, William J. Fitzgerald, University of Cambridge, United Kingdom

MLSP-P1.4 **SOUND SOURCE SEPARATION USING SHIFTED NON-NEGATIVE TENSOR FACTORISATION**
Derry FitzGerald, Matt Cranitch, Cork Institute of Technology, Ireland; Eugene Coyle, Dublin Institute of Technology, Ireland

MLSP-P1.5 **BLIND SEPARATION OF MORE SOURCES THAN SENSORS IN CONVOLUTIVE MIXTURES**
Rasmus Olsson, Lars Kai Hansen, Technical University of Denmark, Denmark

MLSP-P1.6 **ROBUST SUPER-EXPONENTIAL METHODS FOR BLIND EQUALIZATION OF MIMO-IIR SYSTEMS**
Kiyotaka Kohno, Yujiro Inouye, Shimane University, Japan; Mitsuru Kawamoto, National Institute of Advanced Industrial Science and Technology, Japan

(Continued from previous page.)

MLSP-P1.7 **A NEW DIAGONAL HESSIAN ALGORITHM FOR BLIND SIGNAL SEPARATION**
Maha Elsabrouty, Tyseer Aboulnasr, Martin Bouchard, University of Ottawa, Canada

MLSP-P1.8 **KERNEL PCA BASED ESTIMATION OF THE MIXING MATRIX IN LINEAR INSTANTANEOUS MIXTURES OF SPARSE SOURCES**
Frederic Desobry, Cédric Févotte, University of Cambridge, United Kingdom

MLSP-P1.9 **THE MAXIMUM LIKELIHOOD APPROACH TO COMPLEX ICA**
Jean-François Cardoso, ENST, France; Tulay Adali, University of Maryland, Baltimore County, United States

MLSP-P1.10 **FREQUENCY DOMAIN BLIND SOURCE SEPARATION EXPLOITING HIGHER-ORDER DEPENDENCIES**
Taesu Kim, Korea Advanced Institute of Science and Technology, Republic of Korea; Hagai Attias, Golden Metallic, Inc., United States; Soo-Young Lee, Korea Advanced Institute of Science and Technology, Republic of Korea; Te-Won Lee, University of California, San Diego, United States

MLSP-P1.11 **ON-LINE K-PLANE CLUSTERING LEARNING ALGORITHM FOR SPARSE COMPONENT ANALYSIS**
Yoshikazu Washizawa, Andrzej Cichocki, RIKEN Brain Science Institute, Japan

MLSP-P1.12 **A SIMPLE AND ROBUST FASTICA ALGORITHM USING THE HUBER M-ESTIMATOR COST FUNCTION**
Jih-Cheng Chao, Texas Instruments, Inc., United States; Scott Douglas, Southern Methodist University, United States

SPCOM-P3 **OFDM: PA & PAPR Issues** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 5
Chair: Ali Sayed, University of California, Los Angeles

SPCOM-P3.1 **PAPR REDUCTION FOR BEAMFORMING OFDM TRANSMITTERS**
Timothy Thomas, Motorola Labs, United States; Douglas Jones, University of Illinois at Urbana-Champaign, United States

SPCOM-P3.2 **PEAK-TO-AVERAGE POWER RATIO REDUCTION IN OFDM: BLIND SELECTED MAPPING FOR PSK INPUTS**
G. Tong Zhou, Georgia Institute of Technology, United States

SPCOM-P3.3 **PEAK TO AVERAGE POWER RATIO REDUCTION FOR MULTICARRIER SYSTEMS USING DIRTY PAPER CODING**
Pin-Hsun Lin, Shih-Chun Lin, Hsuan-Tien Liu, Hsuan-Jung Su, National Taiwan University, Taiwan

SPCOM-P3.4 **A LOW COMPLEXITY TREE ALGORITHM FOR PTS-BASED PAPR REDUCTION IN WIRELESS OFDM**
Byung Moo Lee, Rui de Figueiredo, University of California, Irvine, United States

SPCOM-P3.5 **PEAK-TO-AVERAGE POWER REDUCTION OF OFDM SIGNALS USING ADAPTIVE DIGITAL FILTER**
Aiping Yao, Yi Zheng, St. Cloud State University, United States

SPCOM-P3.6 **ANALYSIS OF THE PEAK-TO-AVERAGE POWER RATIO OF THE OVERSAMPLED OFDM**
Alexandre Skrzypczak, Pierre Siohan, Jean-Philippe Javaudin, France Télécom R&D Division, France

(Continued from previous page.)

SPCOM-P3.7 OPTIMIZATION OF WINDOWING AND PEAK-WINDOWING TECHNIQUES FOR WCDMA SYSTEMS
Hoi Kuo, S. W. Cheung, University of Hong Kong, Hong Kong SAR of China

SPCOM-P3.8 PEAK REDUCTION OF MULTI-CARRIER SYSTEMS BY CONTROLLED SPECTRAL OUTGROWTH
Marc Deumal, Joan Lluís Pijoan, Ismael Gutierrez, ETSEEI La Salle, Ramon Llull University, Spain; Ali Behravan, Chalmers University of Technology, Sweden

SPCOM-P3.9 EMBEDDED SYNCHRONIZATION/PILOT SEQUENCE CREATION USING POCS
Robert Baxley, Georgia Institute of Technology, United States; John Kleider, General Dynamics C4 Systems, United States

SPCOM-P3.10 RECEIVER CANCELLATION OF NONLINEAR POWER AMPLIFIER DISTORTION IN SDMA-OFDM SYSTEMS
Fernando H. Gregorio, Timo I. Laakso, Helsinki University of Technology, Finland; Juan E. Cousseau, Universidad Nacional del Sur, Argentina

SPCOM-P3.11 A LOW-COMPLEXITY COMPANDING TRANSFORM FOR PEAK-TO-AVARAGE POWER RATIO REDUCTION IN OFDM SYSTEMS
Chin-Liang Wang, Sheng-Ju Ku, National Tsing Hua University, Taiwan

SPCOM-P3.12 PAPR REDUCTION IN OFDM SYSTEMS USING POLYNOMIAL-BASED COMPRESSING AND ITERATIVE EXPANDING
Iraj Hosseini, Mohammad Javad Omidi, Keyvan Kasiri, Alireza Sadri, Isfahan University of Technology, Iran; P. Glenn Gulak, University of Toronto, Cambodia

SPTM-P2 **Detection** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 6
Chair: Abdelhak Zoubir , Darmstadt University of Technology

SPTM-P2.1 **ADAPTIVE RADAR DETECTION OF DISTRIBUTED TARGETS IN PARTIALLY-HOMOGENEOUS NOISE PLUS SUBSPACE INTERFERENCE**
Antonio Stefano Greco, Francesco Bandiera, Universitá degli Studi di Lecce, Italy; Antonio De Maio, Universitá degli Studi di Napoli, Italy; Giuseppe Ricci, Universitá degli Studi di Lecce, Italy

SPTM-P2.2 **ROBUST ADAPTIVE MATCHED SUBSPACE CFAR DETECTOR FOR GAUSSIAN SIGNALS.**
Arezki Younsi, Ecole Militaire Polytechnique, Algeria; A. M. Zoubir, Technische Universität Darmstadt, Germany; A. Ouldali, Ecole Militaire Polytechnique, Algeria

SPTM-P2.3 **MAXIMUM-LIKELIHOOD PARAMETER ESTIMATION FOR CURRENT-BASED MECHANICAL FAULT DETECTION IN INDUCTION MOTORS**
Martin Blödt, LEEI - INP Toulouse, France; Marie Chabert, IRIT / ENSEEIHT / INP Toulouse, France; Jérémi Regnier, Jean Faucher, LEEI - INP Toulouse, France

SPTM-P2.4 **GLRT-BASED DIRECTION DETECTORS IN NOISE AND SUBSPACE INTERFERENCE**
Francesco Bandiera, Universitá degli Studi di Lecce, Italy; Olivier Besson, ENSICA, France; Danilo Orlando, Giuseppe Ricci, Universitá degli Studi di Lecce, Italy; Louis L. Scharf, Colorado State University, United States

SPTM-P2.5 **EPSILON-OPTIMAL ANOMALY DETECTION IN PARAMETRIC TOMOGRAPHY**
Lionel Fillatre, ENST Bretagne, France; Igor Nikiforov, Florent Retraint, Université de technologie de Troyes, France

SPTM-P2.6 **APPROACHING NEAR OPTIMAL DETECTION PERFORMANCE VIA STOCHASTIC RESONANCE**
Hao Chen, Pramod Varshney, Syracuse University, United States; James H. Michels, JHM Technologies, United States; Steven Kay, University of Rhode Island, United States

(Continued from previous page.)

SPTM-P2.7 **THRESHOLD SELECTION FOR UNSUPERVISED DETECTION WITH AN APPLICATION TO MICROPHONE ARRAYS**
Guillaume Lathoud, Mathew Magimai.-Doss, Hervé Bourlard, IDIAP Research Institute, Switzerland

SPTM-P2.8 **UPPER AND LOWER BOUNDS FOR THE THRESHOLD OF THE FFT FILTER BANK-BASED SUMMATION CFAR DETECTOR**
Sichun Wang, François Patenaude, Communications Research Centre Canada, Canada; Robert Inkol, Defence Research and Development Canada, Canada

SPTM-P2.9 **DETECTION OF A RANDOM WALK SIGNAL IN THE REGIME OF LOW SIGNAL TO NOISE RATIO AND LONG OBSERVATION TIME**
Michael Ting, Alfred O. Hero, III, University of Michigan, United States

SPTM-P2.10 **A TURE SPATIOTEMPORAL APPROACH FOR ACTIVATION DETECTION IN FUNCTIONAL MRI**
Joonki Noh, Victor Solo, University of Michigan, United States

SPTM-P2.11 **ON THE COMPETITIVE NEYMAN-PEARSON APPROACH FOR COMPOSITE HYPOTHESIS TESTING AND ITS APPLICATION IN VOICE ACTIVITY DETECTION**
Abhijeet Sangwan, Wei-Ping Zhu, M. Omair Ahmad, Concordia University, Canada

SPTM-P2.12 **SPARSE SIGNAL DETECTION FROM INCOHERENT PROJECTIONS**
Marco Duarte, Mark Davenport, Michael Wakin, Richard Baraniuk, Rice University, United States

SLP-P3 **Novel LVCSR Algorithms** (Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 7
Chair: Michiel Bacciani, Google, Inc.

SLP-P3.1 **ISOLATED-WORD RECOGNITION WITH PENALIZED LOGISTIC REGRESSION MACHINES**
Birkenes Oystein, Norwegian University of Science and Technology, Norway; Tomoko Matsui, Institute of Statistical Mathematics, Japan; Kunio Tanabe, Waseda University, Japan

SLP-P3.2 **UNSUPERVISED WORD ACQUISITION FROM SPEECH USING PATTERN DISCOVERY**
Alex Park, James R. Glass, Massachusetts Institute of Technology, United States

SLP-P3.3 **N-BEST LIST RERANKING USING HIGHER LEVEL PHONETIC, LEXICAL, SYNTACTIC AND SEMANTIC KNOWLEDGE SOURCES**
Mithun Balakrishna, Dan Moldovan, University of Texas, Dallas, United States; Ellis Cave, Intervoice, Inc., United States

SLP-P3.4 **FLEXIBLE MULTI-STREAM FRAMEWORK FOR SPEECH RECOGNITION USING MULTI-TAPE FINITE-STATE TRANSDUCERS**
I. Lee Hetherington, Han Shu, James R. Glass, Massachusetts Institute of Technology, United States

SLP-P3.5 **A NEW DATA SELECTION APPROACH FOR SEMI-SUPERVISED ACOUSTIC MODELING**
Rong Zhang, Alexander Rudnicky, Carnegie Mellon University, United States

SLP-P3.6 **STRESS LEVEL CLASSIFICATION OF SPEECH USING EUCLIDEAN DISTANCE METRICS IN A NOVEL HYBRID MULTI-DIMENSIONAL FEATURE SPACE**
Evan Ruzanski, John H. L. Hansen, University of Colorado at Boulder, United States; James Meyerhoff, George Saviolakis, Walter Reed Army Institute of Research, United States; William Norris, Terry Wollert, Federal Law Enforcement Training Center, United States

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SLP-P3.7 **SENTENCE-ADAPTED FACTORED LANGUAGE MODEL FOR TRANSCRIBING ESTONIAN SPEECH**
Tanel Alumäe, Tallinn University of Technology, Estonia

SLP-P3.8 **TOWARDS ASR BASED ON HIERARCHICAL POSTERIOR-BASED KEYWORD RECOGNITION**
Petr Fousek, Hynek Hermansky, IDIAP Research Institute, Switzerland

SLP-P3.9 **ACOUSTIC SCORES AND SYMBOLIC MISMATCH PENALTIES IN PHONE LATTICES**
Louis ten Bosch, Radboud University Nijmegen, Netherlands; Annika Hämäläinen, Radboud University, Netherlands; Odette Scharenborg, Radboud University Nijmegen, Netherlands; Louis Boves, Radboud University, Netherlands

SLP-P3.10 **ONE-PASS COARSE-TO-FINE SEGMENTAL SPEECH DECODING ALGORITHM**
Yun Tang, Wen-Ju Liu, Hua Zhang, Bo Xu, Chinese Academy of Sciences, China; Guo-Hong Ding, Nokia Research Center, Beijing, China

SLP-P3.11 **USING PITCH AS PRIOR KNOWLEDGE IN TEMPLATE-BASED SPEECH RECOGNITION**
Guillermo Aradilla, Jithendra Vepa, Hervé Bourlard, IDIAP Research Institute, Switzerland

SLP-P3.12 **ROBUST LARGE VOCABULARY CONTINUOUS SPEECH RECOGNITION USING POLYNOMIAL SEGMENT MODEL WITH UNSUPERVISED ADAPTATION**
Man-Hung Siu, Siu-Kei Au yeung, Hong Kong University of Science and Technology, Hong Kong SAR of China

SLP-P4 **Speech Enhancement in Adverse Environments**
(Poster)
Time: Tuesday, May 16, 14:00 - 16:00
Place: Poster Area 8
Chair: Israel Cohen, Technion - Israel Institute of Technology

SLP-P4.1 **SPEECH ENHANCEMENT UNDER A COMBINED STOCHASTIC-DETERMINISTIC MODEL**
Richard Hendriks, Richard Heusdens, Jesper Jensen, Delft University of Technology, Netherlands

SLP-P4.2 **CROSSCORRELATION COMPENSATED WIENER FILTER FOR SPEECH ENHANCEMENT**
Lutfa Akter, Md. Kamrul Hasan, Bangladesh University of Engineering and Technology, Bangladesh

SLP-P4.3 **PERCEPTUAL KALMAN FILTERING SPEECH ENHANCEMENT**
Chang Huai You, Susanto Rahardja, Institute for Infocomm Research, Singapore; Soo Ngee Koh, Nanyang Technological University, Singapore

SLP-P4.4 **ITERATIVE SPEECH ENHANCEMENT USING A NON-LINEAR DYNAMIC STATE MODEL OF SPEECH AND ITS PARAMETERS**
Stefan Windmann, Reinhold Haeb-Umbach, Fachgebiet Nachrichtentechnik / Universität Paderborn, Germany

SLP-P4.5 **SPEECH ENHANCEMENT BY WAVELET PACKET TRANSFORM WITH BEST FITTING REGRESSION LINE IN VARIOUS NOISE ENVIRONMENTS**
Sung-il Jung, Younghun Kwon, Sung-il Yang, Hanyang University, Republic of Korea

SLP-P4.6 **A LOW-COMPLEXITY NOISE SUPPRESSOR WITH NONUNIFORM SUBBANDS AND A FREQUENCY-DOMAIN HIGHPASS FILTER**
Masanori Kato, Akihiko Sugiyama, NEC Corporation, Japan

(Continued from previous page.)

SLP-P4.7 **NOISE SUPPRESSION BASED ON WAVELET PACKET DECOMPOSITION AND QUANTILE NOISE ESTIMATION FOR ROBUST AUTOMATIC SPEECH RECOGNITION**
Erhard Rank, Tuan Van Pham, Gernot Kubin, Graz University of Technology, Austria

SLP-P4.8 **TEMPORAL MODELLING AND KALMAN FILTERING OF DFT TRAJECTORIES FOR ENHANCEMENT OF NOISY SPEECH**
Esfandiar Zavarehei, Saeed Vaseghi, Qin Yan, Brunel University, United Kingdom

SLP-P4.9 **SPEECH ENHAHANCEMENT BY MULTI-CHANNEL CROSSTALK RESISTANT ADAPTIVE NOISE CANCELLATION**
Qingning Zeng, Waleed H. Abdulla, University of Auckland, New Zealand

SLP-P4.10 **SPEECH BANDWIDTH ENHANCEMENT USING STATE SPACE SPEECH DYNAMICS**
Sheng Yao, Cheung-Fat Chan, City University of Hong Kong, Hong Kong SAR of China

SLP-P4.11 **NEAR END LISTENING ENHANCEMENT: SPEECH INTELLIGIBILITY IMPROVEMENT IN NOISY ENVIRONMENTS**
Bastian Sauert, Peter Vary, University of Technology Aachen (RWTH), Germany

BIO-L1 **Medical Imaging** (Lecture)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Spot
Chair: Dana Brooks, Northeastern University

16:30
BIO-L1.1 **SMOOTH PRINCIPAL COMPONENT ANALYSIS WITH APPLICATION TO FUNCTIONAL MAGNETIC RESONANCE IMAGING**
Magnus Ulfarsson, Victor Solo, University of Michigan, United States

16:50
BIO-L1.2 **ADAPTIVE FILTERING OF FMRI DATA BASED ON CORRELATION AND BOLD RESPONSE SIMILARITY**
Joakim Rydell, Hans Knutsson, Magnus Borga, Linköping University, Sweden

17:10
BIO-L1.3 **SEGMENTATION OF RETINAL BLOOD VESSELS USING SCALE-SPACE FEATURES AND K-NEAREST NEIGHBOUR CLASSIFIER**
Nancy Salem, Asoke Nandi, University of Liverpool, United Kingdom

17:30
BIO-L1.4 **COMPUTER-ASSISTED NAVIGATION FOR THE TREATMENT OF BRAIN ANEURYSMS**
Sonia Pujol, Harvard Medical School, United States; Kai Frerichs, Brigham and Women's Hospital, United States; Carl-Fredrik Westin, Harvard Medical School, United States

17:50
BIO-L1.5 **SEED LOCALIZATION USING TRUS AND GRF BASED GAUSSIAN FILTERING FOR BRACHYTHERAPY APPLICATIONS**
Varsha Sampath, Rochester Institute of Technology, United States; Vladimir Misic, University of Rochester, United States; Eli Saber, Rochester Institute of Technology, United States; Haisong Liu, Yan Yu, University of Rochester, United States

IMDSP-L3 **Distributed Source Coding** (Lecture)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Caravelle 2
Chair: Lina Karam, Arizona State University

16:30
IMDSP-L3.1 **TOWARDS A MULTI-TERMINAL VIDEO COMPRESSION ALGORITHM USING EPIPOLAR GEOMETRY**
Bi Song, Ozgun Bursalioglu, Amit Roy Chowdhury, Ertem Tuncel, University of California, Riverside, United States

16:50
IMDSP-L3.2 **A GLOBAL APPROACH TO JOINT QUANTIZER DESIGN FOR DISTRIBUTED CODING OF CORRELATED SOURCES**
Ankur Saxena, University of California, Santa Barbara, United States; Jayanth Nayak, IRISA / INRIA, France; Kenneth Rose, University of California, Santa Barbara, United States

17:10
IMDSP-L3.3 **INTRA MODE DECISION BASED ON SPATIO-TEMPORAL CUES IN PIXEL DOMAIN WYNER-ZIV VIDEO CODING**
Marco Tagliasacchi, Alan Trapanese, Stefano Tubaro, João Ascenso, Catarina Brites, Fernando Pereira, Politecnico di Milano, Italy

17:30
IMDSP-L3.4 **IMPROVED BIT ALLOCATION IN AN ERROR-RESILIENT SCHEME BASED ON DISTRIBUTED SOURCE CODING**
Marco Fumagalli, Cefriel - Politecnico di Milano, Italy; Marco Tagliasacchi, Stefano Tubaro, Politecnico di Milano, Italy

17:50
IMDSP-L3.5 **EFFICIENT, LOW COMPLEXITY ENCODING OF MULTIPLE, BLURRED NOISY DOWNSAMPLED IMAGES VIA DISTRIBUTED SOURCE CODING PRINCIPLES**
Matthew Gaubatz, Azadeh Vosoughi, Anna Scaglione, Sheila Hemami, Cornell University, United States

18:10
IMDSP-L3.6 **DISTRIBUTED VIDEO CODING WITH LOSSY SIDE INFORMATION**
Wei-Jung Chien, Lina Karam, Arizona State University, United States; Glen P. Abousleman, General Dynamics C4 Systems, United States

SPCOM-L2 **Broadcast Channels** (Lecture)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Ariane 1 & 2
Chair: Nicholas Sidiropoulos, Technical University of Crete

16:30
SPCOM-L2.1 **MULTIPLE ANTENNA BROADCAST CHANNELS WITH LIMITED FEEDBACK**
Peilu Ding, Motorola Labs, United States; David Love, Michael D. Zoltowski, Purdue University, United States

16:50
SPCOM-L2.2 **THE EFFECT OF CHANNEL ESTIMATION ERROR ON THE THROUGHPUT OF BROADCAST CHANNELS**
Ali Vakili, Masoud Sharif, Babak Hassibi, California Institute of Technology, United States

17:10
SPCOM-L2.3 **ANALYSIS OF THE IMPACT OF CHANNEL ESTIMATION ERRORS ON THE DECOMPOSITION OF MULTIUSER MIMO CHANNELS**
Pedro Tejera, Wolfgang Utschick, Munich University of Technology (TUM), Germany; Gerhard Bauch, DoCoMo Communications Laboratories, Europe, Germany; Josef Anton Nossek, Munich University of Technology (TUM), Germany

17:30
SPCOM-L2.4 **ROBUST LINEAR PRECODING FOR UNCERTAIN MISO BROADCAST CHANNELS**
Michael Botros Shenouda, Timothy Davidson, McMaster University, Canada

17:50
SPCOM-L2.5 **MINIMUM RATES SCHEDULING FOR OFDM BROADCAST CHANNELS**
Thomas Michel, Gerhard Wunder, Fraunhofer German-Sino Mobile Communications Lab at Heinrich Hertz Institut, Germany

18:10
SPCOM-L2.6 **GAUSSIAN BROADCAST CHANNELS WITH COOPERATING RECEIVERS: THE SINGLE COMMON MESSAGE CASE**
Samson Lasaulce, CNRS, France; Andrew G. Klein, Cornell University, United States

SPTM-L3 **Applications to Speech and Audio** (Lecture)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Cassiopée
Chair: Simon Godsill, University of Cambridge

16:30
SPTM-L3.1 **A PERCEPTUAL APPROACH TO REDUCE MUSICAL NOISE PHENOMENON WITH WIENER DENOISING TECHNIQUE**
Sofia Ben Jebara, Ecole Supérieure des Communications, Tunisia

16:50
SPTM-L3.2 **THE EFFECT OF MEMORY INCLUSION ON MUTUAL INFORMATION BETWEEN SPEECH FREQUENCY BANDS**
Amr H. Nour-Eldin, Turaj Zakizadeh Shabestary, Peter Kabal, McGill University, Canada

17:10
SPTM-L3.3 **SPARSE REGRESSION WITH STRUCTURED PRIORS: APPLICATION TO AUDIO DENOISING**
Cédric Févotte, University of Cambridge, United Kingdom; Laurent Daudet, Université Pierre et Marie Curie, France; Simon Godsill, University of Cambridge, United Kingdom; Bruno Torrésani, Université de Provence, France

17:30
SPTM-L3.4 **RESTORATION OF SPEECH SIGNALS CONTAMINATED BY STATIONARY TONES USING AN IMAGE PERSPECTIVE**
Blanca Andia, Research Associates for Defense Conversion, United States

17:50
SPTM-L3.5 **GENERALIZED OPTIMAL MULTI-MICROPHONE SPEECH ENHANCEMENT USING SEQUENTIAL MINIMUM VARIANCE DISTORTIONLESS RESPONSE(MVDR) BEAMFORMING AND POSTFILTERING**
Lae-Hoon Kim, Mark Hasegawa-Johnson, University of Illinois at Urbana-Champaign, United States; Koeng-Mo Sung, Seoul National University, Republic of Korea

18:10
SPTM-L3.6 **POLYNOMIAL TIME AND STACK DECODING SOLUTIONS TO BOUNDED ERROR SUBSET SELECTION**
Ahmed Tewfik, University of Minnesota, United States; Masoud Alghoniemy, University of Alexandria, Egypt

SLP-L3 **Spoken Language Dialog** (Lecture)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Auditorium St Exupery
Chair: Esther Levin, Spacegate, Inc.

16:30
SLP-L3.1 **DYNAMIC BAYESIAN NETWORKS FOR NLU SIMULATION WITH APPLICATIONS TO DIALOG OPTIMAL STRATEGY LEARNING**
Olivier Pietquin, Supélec, France; Thierry Dutoit, Faculty of Engineering, Mons, Belgium

16:50
SLP-L3.2 **TOWARDS LEARNING TO CONVERSE: STRUCTURING TASK-ORIENTED HUMAN-HUMAN DIALOGS**
Srinivas Bangalore, Giuseppe Di Fabbrizio, AT&T Labs – Research, United States; Amanda Stent, Stony Brook University, United States

17:10
SLP-L3.3 **DIALOG DESIGN FOR USER ADAPTATION**
Esther Levin, City College of New York, United States; Alex Levin, Spacegate, Inc, United States

17:30
SLP-L3.4 **AUTOMATIC DIALOG ACTS RECOGNITION BASED ON SENTENCE STRUCTURE**
Pavel Kral, Christophe Cerisara, LORIA UMR 7503, France; Jana Kleckova, University of West Bohemia, Czech Republic

17:50
SLP-L3.5 **OPEN MICROPHONE SPEECH UNDERSTANDING: CORRECT DISCRIMINATION OF IN DOMAIN SPEECH**
James Hieronymus, NASA Ames Research Center, United States; Greg Aist, University of Rochester, United States; John Dowding, University of California, Santa Cruz, United States

18:10
SLP-L3.6 **A SITUATION-BASED DIALOGUE MANAGEMENT USING DIALOGUE EXAMPLES**
Cheongjae Lee, Sangkeun Jung, Jihyun Eun, Minwoo Jeong, Gary Geunbae Lee, POSTECH, Republic of Korea

SS-3 **Convex Optimization Methods for Signal Processing and Communications** (Special Session)

Time: Tuesday, May 16, 16:30 - 18:30

Place: Guillaumet 1 & 2

Chair: Yonina Eldar, Technion - Israel Institute of Technology

16:30

SS-3.1 **CONVEX TRANSMIT BEAMFORMING FOR DOWNLINK MULTICASTING TO MULTIPLE CO-CHANNEL GROUPS**

Eleftherios Karipidis, Nicholas Sidiropoulos, Technical University of Crete, Greece; Zhi-Quan Luo, University of Minnesota, United States

16:50

SS-3.2 **ROBUST MINIMUM VARIANCE ADAPTIVE BEAMFORMERS AND MULTIUSER MIMO RECEIVERS: FROM THE WORST-CASE TO PROBABILISTICALLY CONSTRAINED DESIGNS**

Sergiy Vorobyov, Yue Rong, Alex B. Gershman, Darmstadt University of Technology, Germany

17:10

SS-3.3 **DISTRIBUTED OPTIMIZATION OF COUPLED SYSTEMS WITH APPLICATIONS TO NETWORK UTILITY MAXIMIZATION**

Chee Wei Tan, Daniel P. Palomar, Mung Chiang, Princeton University, United States

17:30

SS-3.4 **DOMINATING AND ADMISSIBLE MSE-BOUNDS USING SADDLE-POINT METHODS**

Yonina Eldar, Technion - Israel Institute of Technology, Israel

17:50

SS-3.5 **A DECOMPOSITION METHOD FOR NONSMOOTH CONVEX VARIATIONAL SIGNAL RECOVERY**

Heinz Bauschke, University of British Columbia Okanagan, Canada; Patrick Combettes, Université Pierre et Marie Curie - Paris 6, France; Jean-Christophe Pesquet, Université de Marne-la-Vallée, France

18:10

SS-3.6 **MAXIMUM LIKELIHOOD ESTIMATION IN RANDOM LINEAR MODELS: GENERALIZATIONS AND PERFORMANCE ANALYSIS**

Ami Wiesel, Yonina Eldar, Technion - Israel Institute of Technology, Israel

IMDSP-P4 **Image/Video Indexing and Retrieval** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 1
Chair: A. Enis Cetin, Biilkent University

IMDSP-P4.1 **AUTOMATIC IMAGE ANNOTATION THROUGH MULTI-TOPIC TEXT CATEGORIZATION**
Sheng Gao, De-Hong Wang, Institute for Infocomm Research, Singapore; Chin-Hui Lee, Georgia Institute of Technology, United States

IMDSP-P4.2 **MULTI-SCALE EDGE DETECTION AND OBJECT EXTRACTION FOR IMAGE RETRIEVAL**
Miguel Ferreira, Serkan Kiranyaz, Moncef Gabbouj, Tampere University of Technology, Finland

IMDSP-P4.3 **TEXT DETECTION, LOCALIZATION AND SEGMENTATION IN COMPRESSED VIDEOS**
Xueming Qian, Guizhong Liu, Xi'an Jiaotong University, China

IMDSP-P4.4 **A SHORT-TERM AND LONG-TERM LEARNING APPROACH FOR CONTENT-BASED IMAGE RETRIEVAL**
Michael Wacht, Slippery Rock University, United States; Juan Shan, Xiaojun Qi, Utah State University, United States

IMDSP-P4.5 **A COMBINED LSTM-RNN - HMM - APPROACH FOR MEETING EVENT SEGMENTATION AND RECOGNITION**
Stephan Reiter, Björn Schuller, Gerhard Rigoll, Technische Universität München, Germany

IMDSP-P4.6 **FAST AND ROBUST IDENTIFICATION METHODS FOR JPEG IMAGES WITH VARIOUS COMPRESSION RATIOS**
Fitri Arnia, Ikue Iizuka, Masaaki Fujiyoshi, Hitoshi Kiya, Tokyo Metropolitan University, Japan

(Continued from previous page.)

IMDSP-P4.7 **VIDEO FINGERPRINTING BASED ON CENTROIDS OF GRADIENT ORIENTATIONS**
Sunil Lee, Chang D. Yoo, Korea Advanced Institute of Science and Technology, Republic of Korea

IMDSP-P4.8 **OPTIMIZING METRICS COMBINING LOW-LEVEL VISUAL DESCRIPTORS FOR IMAGE ANNOTATION AND RETRIEVAL**
Qianni Zhang, Ebroul Izquierdo, Queen Mary, University of London, United Kingdom

IMDSP-P4.9 **A MID-LEVEL SCENE CHANGE REPRESENTATION VIA AUDIOVISUAL ALIGNMENT**
Jinqiao Wang, Chinese Academy of Sciences, China; Lingyu Duan, Institute for Infocomm Research, Singapore; Hanqing Lu, Chinese Academy of Sciences, China; Jesse S. Jin, University of Newcastle, Australia; Changsheng Xu, Institute for Infocomm Research, Singapore

IMDSP-P4.10 **LDA VERSUS MMD APPROXIMATION ON MISLABELED IMAGES FOR KEYWORD DEPENDANT SELECTION OF VISUAL FEATURES AND THEIR HETEROGENEITY**
Sabrina Tollari, Hervé Glotin, UMR CNRS 6168 LSIS System and Information Sciences lab, France

IMDSP-P4.11 **A PERCEPTUAL APPROACH FOR SEMANTIC IMAGE RETRIEVAL**
Dejan Depalov, Thrasyvoulos N. Pappas, Northwestern University, United States; Dongge Li, Bhavan Gandhi, Motorola Labs, United States

IMDSP-P4.12 **CONTEXT-BASED CONCEPTUAL IMAGE INDEXING**
Stéphane Ayache, Georges Quénot, CLIPS / IMAG, France; Shin'ichi Satoh, National Institute of Informatics, Japan

MLSP-P2 **Learning Theory and Modeling** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 2
Chair: Phillip Regalia, CUA/GET

MLSP-P2.1 **SYSTEM IDENTIFICATION WITH UNBOUNDED LOSS FUNCTIONS UNDER ALGORITHMIC DEFICIENCY**
Majid Fozunbal, Mat Hans, Ronald Schafer, Hewlett-Packard Company, United States

MLSP-P2.2 **OBJECT DETECTION IN VIDEO WITH GRAPHICAL MODELS**
David Liu, Tsuhan Chen, Carnegie Mellon University, United States

MLSP-P2.3 **FUZZY INTEGRAL-BASED MIXTURE TO SPEED UP THE ONE-AGAINST-ALL MULTICLASS SVM**
Hassiba Nemmour, Youcef Chibani, USTHB, Algeria

MLSP-P2.4 **SEQUENTIAL DETECTION USING LEAST SQUARES TEMPORAL DIFFERENCE METHODS**
Anthony Kuh, University of Hawaii, United States; Danilo Mandic, Imperial College London, United Kingdom

MLSP-P2.5 **A FIXED-POINT ALGORITHM FOR FINDING THE OPTIMAL COVARIANCE MATRIX IN KERNEL DENSITY MODELING**
Jose M. Leiva-Murillo, Antonio Artés-Rodríguez, Universidad Carlos III, Spain

MLSP-P2.6 **SPARSENESS BY ITERATIVE PROJECTIONS ONTO SPHERES**
Fabian Theis, University of Regensburg, Germany; Toshihisa Tanaka, Tokyo University of Agriculture and Technology, Japan

(Continued from previous page.)

MLSP-P2.7 **ITERATIVE CONSTRAINED MAXIMUM LIKELIHOOD ESTIMATION VIA EXPECTATION PROPAGATION**
John Walsh, Cornell University, United States; Phillip Regalia, Catholic University of America, United States

MLSP-P2.8 **A NUMERICAL METHOD TO COMPUTE CRAMÉR-RAO-TYPE BOUNDS FOR CHALLENGING ESTIMATION PROBLEMS**
Justin Dauwels, RIKEN Brain Science Institute, Japan; Sascha Korl, Phonak AG, Switzerland

MLSP-P2.9 **COMPARISON OF SEQUENCE DISCRIMINANT SUPPORT VECTOR MACHINES FOR ACOUSTIC EVENT CLASSIFICATION**
Andrey Temko, Enric Monte, Climent Nadeu, Technical University of Catalonia (UPC), Spain

MLSP-P2.10 **SELF ORGANIZING MAPS FOR REDUCING THE NUMBER OF CLUSTERS BY ONE ON SIMPLEX SUBSPACES**
Constantine Kotropoulos, Vassiliki Moschou, Aristotle University of Thessaloniki, Greece

MLSP-P2.11 **BLOCK DIAGONAL LINEAR DISCRIMINANT ANALYSIS WITH SEQUENTIAL EMBEDDED FEATURE SELECTION**
Roger Pique-Regi, Antonio Ortega, University of Southern California, United States

MMSP-P1 **Multimedia Communications, Applications and 3D Processing** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 3
Chair: Jenq-Neng Hwang, University of Washington

MMSP-P1.1 **CHANNEL-AWARE FRAME DROPPING FOR CELLULAR VIDEO STREAMING**
Hao Liu, Wenjun Zhang, Song Yu Yu, Xiao Kang Yang, Shanghai Jiao Tong University, China

MMSP-P1.2 **PODS: PARTIALLY ORDERED DELIVERY FOR 3D SCENES IN RESOURCE-CONSTRAINED ENVIRONMENTS**
Dihong Tian, Ghassan AlRegib, Georgia Institute of Technology, United States

MMSP-P1.3 **EMULATE LARGE SENSOR ARRAY OF HANDHELD DIGITAL CAMERA**
Tsungnan Lin, Yennan Shen, National Taiwan University, Taiwan

MMSP-P1.4 **SONEL MAPPING: A STOCHASTIC ACOUSTICAL MODELING SYSTEM**
Bill Kapralos, Michael Jenkin, York University, Canada; Evangelos Milios, Dalhousie University, Canada

MMSP-P1.5 **A SPEECH-MUSIC DISCRIMINATOR USING HILN MODEL BASED FEATURES**
Balaji Thoshkahna, Sudha V, Ramakrishnan K.R., Indian Institute of Science, India

MMSP-P1.6 **AN EMBEDDED PACKET TRAIN AND ADAPTIVE FEC SCHEME FOR VOIP OVER WIRED/ WIRELESS IP NETWORKS**
Chih-Wei Huang, Somsak Sukittanon, James A. Ritcey, University of Washington, United States; Aik Chindapol, Siemens Corporate Research, United States; Jenq-Neng Hwang, University of Washington, United States

(Continued from previous page.)

MMSP-P1.7 **CROSS-LAYER VIDEO STREAMING OVER 802.11E-ENABLED WIRELESS MESH NETWORKS**
Nicholas Mastronarde, University of California, Davis, United States; Yiannis Andreopoulos, Mihaela van der Schaar, University of California, Los Angeles, United States; Dilip Krishnaswamy, John Vicente, Intel, United States

MMSP-P1.8 **NETWORK RESOURCE ALLOCATION FOR PERCEPTUALLY BASED UNEQUAL PACKET PROTECTION IN VOICE COMMUNICATION**
Steffen Præstholm, BenQ Denmark ApS, Denmark; Søren Skak Jensen, Søren Vang Andersen, Aalborg University, Denmark; Manohar N. Murthi, University of Miami, United States

MMSP-P1.9 **COMPRESSED DOMAIN VIDEO EDITING**
Ragip Kurceren, Fehmi Chebil, Nokia, United States

MMSP-P1.10 **AN ITERATIVE CONSTRAINED OPTIMIZATION APPROACH TO CLASSIFIER DESIGN**
Sibel Yaman, Chin-Hui Lee, Georgia Institute of Technology, United States

MMSP-P1.11 **BER ANALYSIS OF A COOPERATIVE RANDOM ACCESS PROTOCOL IN RAYLEIGH FADING CHANNELS**
Hailong Yang, Athina Petropulu, Drexel University, United States

MMSP-P1.12 **COOPERATIVE TRANSMISSIONS FOR RANDOM ACCESS WIRELESS NETWORKS WITH FREQUENCY SELECTIVE FADING**
Lun Dong, Jie Yu, Athina Petropulu, Drexel University, United States

SAM-P2 **Sensor Networks I** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 4
Chair: Miguel Lagunas, Centro Tecnológico Telecomunicaciones Cataluña

SAM-P2.1 **A DYNAMIC PROGRAMMING APPROACH TO DISTORTION-ENERGY OPTIMIZATION FOR DISTRIBUTED WAVELET COMPRESSION WITH APPLICATIONS TO DATA GATHERING IN WIRELESS SENSOR NETWORKS**
Alexandre Ciancio, Antonio Ortega, University of Southern California, United States

SAM-P2.2 **ROBUST TARGET TRACKING WITH UNRELIABLE BINARY PROXIMITY SENSORS**
Barbara La Scala, Mark Morelande, Craig Savage, University of Melbourne, Australia

SAM-P2.3 **PARTICLE FILTERS FOR RSS-BASED LOCALIZATION IN WIRELESS SENSOR NETWORKS: AN EXPERIMENTAL STUDY**
Carlo Morelli, Monica Nicoli, Politecnico di Milano, Italy; Vittorio Rampa, IEIIT-CNR Sez. Milano, Italy; Umberto Spagnolini, Cesare Alippi, Politecnico di Milano, Italy

SAM-P2.4 **NONLINEAR FUSION OF MULTIPLE SENSORS WITH MISSING DATA**
Alon Housfater, Xiao-Ping Zhang, Ryerson University, Canada; Yifeng Zhou, Defence Research and Development Canada, Canada

SAM-P2.5 **ACTIVE WIRELESS SENSING: SPACE-TIME INFORMATION RETRIEVAL FROM SENSOR ENSEMBLES**
Thiagarajan Sivanadyan, Akbar Sayeed, University of Wisconsin-Madison, United States

SAM-P2.6 **TARGET TRACKING IN A TWO-TIERED HIERARCHICAL SENSOR NETWORK**
Mahesh Vemula, Monica Bugallo, Petar Djuric, Stony Brook University, United States

(Continued from previous page.)

SAM-P2.7 **DECENTRALIZED MANAGEMENT OF SENSORS IN A MULTI-ATTRIBUTE ENVIRONMENT UNDER WEAK NETWORK CONGESTION**
Michael Maskery, Vikram Krishnamurthy, University of British Columbia, Canada

SAM-P2.8 **CENTRALIZED AND DISTRIBUTED SOURCE LOCALIZATION BY A NETWORK OF SENSORS USING GUARANTEED SET ESTIMATION**
Michel Kieffer, Eric Walter, LSS / CNRS / Supélec / Université Paris-Sud, France

SAM-P2.9 **DECENTRALIZED DETECTION AND LOCALIZATION THROUGH SENSOR NETWORKS DESIGNED AS A POPULATION OF SELF-SYNCHRONIZING OSCILLATORS**
Loreto Pescosolido, Sergio Barbarossa, Gesualdo Scutari, Universitá degli Studi di Roma “La Sapienza”, Italy

SAM-P2.10 **LOCALIZATION OF DIFFUSIVE SOURCES USING DISTRIBUTED SEQUENTIAL BAYESIAN METHODS IN WIRELESS SENSOR NETWORKS**
Tong Zhao, Arye Nehorai, University of Illinois at Chicago, United States

SAM-P2.11 **A MONTE CARLO METHOD FOR JOINT NODE LOCATION AND MANEUVERING TARGET TRACKING IN A SENSOR NETWORK**
Joaquín Míguez, Antonio Artés-Rodríguez, Universidad Carlos III de Madrid, Spain

SAM-P2.12 **SUBSPACE TECHNIQUES FOR VISION-BASED NODE LOCALIZATION IN WIRELESS SENSOR NETWORKS**
Huang Lee, Laura Savidge, Hamid Aghajan, Stanford University, United States

SPCOM-P4 **OFDM Channel Estimation** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 5
Chair: Chong-Yung Chi, National Tsing Hua University

SPCOM-P4.1 **ERROR RATE ANALYSIS OF PHASE-MODULATED OFDM (OFDM-PM) IN AWGN CHANNELS**
Ryan Pacheco, Dimitrios Hatzinakos, University of Toronto, Canada

SPCOM-P4.2 **BLIND CHANNEL ESTIMATION AND EQUALIZATION IN OFDM SYSTEM WITH CIRCULAR PRECODING**
Taejoon Kim, Iksoo Eo, ETRI, Republic of Korea

SPCOM-P4.3 **AN SOS-BASED BLIND CHANNEL SHORTENING ALGORITHM**
Houcem Gazzah, Steve McLaughlin, University of Edinburgh, United Kingdom

SPCOM-P4.4 **BLIND CFO ESTIMATION FOR OFDM/OQAM SYSTEMS**
Tilde Fusco, Mario Tanda, Università di Napoli Federico II, Italy

SPCOM-P4.5 **CONSTRAINED MAXIMUM-SINR EQUALIZATION WITH CHANNEL ESTIMATION CAPABILITIES FOR NBI-CORRUPTED OFDM SYSTEMS**
Donatella Darsena, Università di Napoli Parthenope, Italy; Giacinto Gelli, Luigi Paura, Francesco Verde, Università degli Studi di Napoli Federico II, Italy

SPCOM-P4.6 **ESTIMATION OF RAPIDLY TIME-VARYING CHANNELS FOR OFDM SYSTEMS**
Die Hu, Sotheast University, China; Lianghua He, Tongji University, China; Luxi Yang, Southeast University, China

(Continued from previous page.)

SPCOM-P4.7 ADAPTIVE CHANNEL SHORTENING EQUALIZATION FOR COHERENT OFDM DOUBLY SELECTIVE CHANNELS
John Kleider, General Dynamics, United States; Xiaoli Ma, Auburn University, United States

SPCOM-P4.8 SUBSPACE-BASED BLIND CHANNEL ESTIMATION FOR STBC-OFDM
Daofeng Xu, Luxi Yang, Southeast University, China

SPCOM-P4.9 PHASE-DIRECT CHANNEL ESTIMATION FOR SPACE-TIME OFDM
S. F. Hsieh, T. Y. Wu, National Chiao Tung University, Taiwan

SPCOM-P4.10 COMBINED FREQUENCY AND TIME DOMAIN CHANNEL ESTIMATION IN MOBILE MIMO-OFDM SYSTEMS
Stefan Werner, Mihai Enescu, Visa Koivunen, Helsinki University of Technology, Finland

SPCOM-P4.11 MMSE EQUALIZATION FOR ZERO PADDED MULTICARRIER SYSTEMS WITH INSUFFICIENT GUARD LENGTH
Francois Beaulieu, Benoit Champagne, McGill University, Canada

SPCOM-P4.12 BLIND CHANNEL ESTIMATION FOR LINEARLY PRECODED MIMO-OFDM
Xi Chen, National University of Singapore, Singapore; A. Rahim Leyman, Institute for Infocomm Research, Singapore; Jun Fang, National University of Singapore, Singapore

SPTM-P3 **System Modeling, Representation and Identification** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 6
Chair: Zhi-Quan Luo, University of Minnesota

SPTM-P3.1 **LINEAR REGRESSION WITH A SPARSE PARAMETER VECTOR**
Erik G. Larsson, Royal Institute of Technology (KTH), Sweden; Yngve Selén, Uppsala University, Sweden

SPTM-P3.2 **IMPROVEMENT OF ORTHOGONAL MATCHING PURSUIT STRATEGIES BY BACKWARD AND FORWARD MOVEMENTS**
Miroslav Andrle, Laura Rebollo-Neira, Aston University, United Kingdom

SPTM-P3.3 **PROFILE CONTEXT-SENSITIVE HMMS FOR PROBABILISTIC MODELING OF SEQUENCES WITH COMPLEX CORRELATIONS**
Byung-Jun Yoon, P. P. Vaidyanathan, California Institute of Technology, United States

SPTM-P3.4 **MULTIDIMENSIONAL COMPLEX NUMBER PARAMETRIC MODEL ORDER AND PARAMETERS ESTIMATION**
Denis Kouamé, Carole Garnier, Jean-Marc Gregoire, Jean-Marc Girault, University of Tours, France

SPTM-P3.5 **MINIMUM-VARIANCE PSEUDO-UNBIASED LOW-RANK ESTIMATOR FOR ILL-CONDITIONED INVERSE PROBLEMS**
Isao Yamada, Jamal Elbadraoui, Tokyo Institute of Technology, Japan

SPTM-P3.6 **PARTICLE FILTER AS A CONTROLLED MARKOV CHAIN FOR ON-LINE PARAMETER ESTIMATION IN GENERAL STATE SPACE MODELS**
George Poyiadjis, Sumeetpal S. Singh, University of Cambridge, United Kingdom; Arnaud Doucet, University of British Columbia, Canada

(Continued from previous page.)

SPTM-P3.7 **A ROBUST INTERPOLATION ALGORITHM FOR SPECTRAL ESTIMATION**
Kaushik Mahata, Minyue Fu, University of Newcastle, Australia

SPTM-P3.8 **RECOVERY CONDITIONS OF SPARSE REPRESENTATIONS IN THE PRESENCE OF NOISE.**
Jean-Jacques Fuchs, IRISA / Université de Rennes 1, France

SPTM-P3.9 **A MAXIMUM ENTROPY APPROACH TO UNTRA-WIDEBAND CHANNEL MODELING**
Raul Liberato de Lacerda Neto, Aawatif Menouni, Merouane Debbah, Institut Eurecom, France; Bernard H. Fleury, Aalborg University, Denmark

SPTM-P3.10 **ON SAMPLING METHODS FOR LINEAR SCALE-INVARIANT SYSTEMS**
Pierre Borgnat, Laboratoire de Physique (UMR CNRS 5672) ENS Lyon, France

SPTM-P3.11 **DISCRETE TIME-FREQUENCY MODELS OF GENERALIZED DISPERSIVE SYSTEMS**
Ye Jiang, Antonia Papandreou-Suppappola, Arizona State University, United States

SPTM-P3.12 **A NEW TVAR MODELING IN CASCADE FORM FOR NONSTATIONARY SIGNALS**
Abdullah Zaman, Xiaoulin Luo, Mohammad Ahad, Mohammed Ferdjallah, University of Tennessee, United States

SLP-P6 **Speech Understanding, Translation, Applications and Systems** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 7
Chair: Giuseppe Riccardi, Università degli Studi di Trento

SLP-P6.1 **RERANKING FOR SENTENCE BOUNDARY DETECTION IN CONVERSATIONAL SPEECH**
Brian Roark, Oregon Health & Science University, United States; Yang Liu, University of Texas, Dallas, United States; Mary Harper, Purdue University, United States; Robin Stewart, Williams College, United States; Matthew Lease, Brown University, United States; Matthew Snover, University of Maryland, College Park, United States; Izhak Shafran, Johns Hopkins University, United States; Bonnie Dorr, University of Maryland, College Park, United States; John Hale, Michigan State University, United States; Anna Krasnyanskaya, University of California, Los Angeles, United States; Lisa Yung, Johns Hopkins University, United States

SLP-P6.2 **DISCRIMINATIVELY TRAINED GAUSSIAN MIXTURE MODELS FOR SENTENCE BOUNDARY DETECTION**
Marcus Tomalin, Phil C. Woodland, University of Cambridge, United Kingdom

SLP-P6.3 **SPEECH UTTERANCE CLASSIFICATION MODEL TRAINING WITHOUT MANUAL TRANSCRIPTIONS**
Ye-Yi Wang, Microsoft Research, United States; John Lee, Massachusetts Institute of Technology, United States; Alex Acero, Microsoft Research, United States

SLP-P6.4 **PROSODY GENERATION FOR SPEECH-TO-SPEECH TRANSLATION**
Pablo Daniel Agüero, Jordi Adell, Antonio Bonafonte, Universitat Politècnica de Catalunya (UPC), Spain

SLP-P6.5 **STATISTICAL PHRASE-BASED SPEECH TRANSLATION**
Lambert Mathias, CLSP / The Johns Hopkins University, United States; William Byrne, University of Cambridge, United Kingdom

SLP-P6.6 **N-GRAM BASED FILLER MODEL FOR ROBUST GRAMMAR AUTHORING**
Dong Yu, Yun Cheng Ju, Ye-Yi Wang, Alex Acero, Microsoft Research, United States

(Continued from previous page.)

SLP-P6.7 **OPEN DOMAIN SPEECH RECOGNITION & TRANSLATION: LECTURES AND SPEECHES**
Christian Fuegen, Muntsin Kolss, Dietmar Bernreuther, Matthias Paulik, Sebastian Stueker, Universitaet Karlsruhe (TH), InterACT, Germany; Stephan Vogel, Alex Waibel, Carnegie Mellon University, Germany

SLP-P6.8 **WEBTALK: TOWARDS AUTOMATICALLY BUILDING SPOKEN DIALOG SYSTEMS THROUGH MINING WEBSITES**
Junlan Feng, Dilek Hakkani-Tür, Giuseppe Di Fabbrizio, Mazin Gilbert, Mark Beutnagel, AT&T Labs – Research, United States

SLP-P6.9 **CONCEALED KEY-PHRASE VERIFICATION**
Juan Huerta, IBM, United States

SLP-P6.10 **JOINT SEGMENTATION AND CLASSIFICATION OF DIALOG ACTS IN MULTIPARTY MEETINGS**
Matthias Zimmermann, University of California, Berkeley, United States; Andreas Stolcke, Elizabeth Shriberg, SRI International / University of California, Berkeley, United States

SLP-P6.11 **MULTITASK LEARNING FOR SPOKEN LANGUAGE UNDERSTANDING**
Gokhan Tur, AT&T Labs – Research, United States

SLP-P6.12 **AUTOMATED QUALITY MONITORING IN THE CALL CENTER WITH ASR AND MAXIMUM ENTROPY**
Geoffrey Zweig, Olivier Siohan, George Saon, Bhuvana Ramabhadran, Daniel Povey, Lidia Mangu, Brian Kingsbury, IBM, United States

SLP-P5 **Feature-based Robust Speech Recognition** (Poster)
Time: Tuesday, May 16, 16:30 - 18:30
Place: Poster Area 8
Chair: Yunxin Zhao, University of Missouri

SLP-P5.1 **SPEECH FEATURE ESTIMATION UNDER THE PRESENCE OF NOISE WITH A SWITCHING LINEAR DYNAMIC MODEL**
Jianping Deng, Martin Bouchard, Tet Hin Yeap, University of Ottawa, Canada

SLP-P5.2 **ADAPTIVE REGRESSION BASED FRAMEWORK FOR IN-CAR SPEECH RECOGNITION**
Weifeng Li, Katsunobu Itou, Kazuya Takeda, Nagoya University, Japan; Fumitada Itakura, Meijo University, Japan

SLP-P5.3 **A PITCH-SYNCHRONOUS PEAK-AMPLITUDE BASED FEATURE EXTRACTION METHOD FOR NOISE ROBUST ASR**
Muhammad Ghulam, Junsei Horikawa, Tsuneo Nitta, Toyohashi University of Technology, Japan

SLP-P5.4 **ROBUST FEATURE EXTRACTIN USING KERNEL PCA**
Tetsuya Takiguchi, Yasuo Ariki, Kobe University, Japan

SLP-P5.5 **CEPSTRAL STATISTICS COMPENSATION USING ONLINE PSEUDO STEREO CODEBOOKS FOR ROBUST SPEECH RECOGNITION IN ADDITIVE NOISE ENVIRONMENTS**
Jeih-weih Hung, National Chi Nan University, Taiwan

SLP-P5.6 **USE OF SPECTRAL PEAKS IN AUTOCORRELATION AND GROUP DELAY DOMAINS FOR ROBUST SPEECH RECOGNITION**
Gholamreza Farahani, Mohammad Ahadi, Mohammad Mehdi Homayounpoor, Amirkabir University of Technology, Iran

(Continued from previous page.)

SLP-P5.7 **EVALUATION OF THE SPACE DENOISING ALGORITHM ON AURORA2**
Christophe Cerisara, INRIA-LORIA, France; Khalid Daoudi, IRIT / CNRS, France

SLP-P5.8 **A SINUSOIDAL MODEL APPROACH TO ACOUSTIC LANDMARK DETECTION AND SEGMENTATION FOR ROBUST SEGMENT-BASED SPEECH RECOGNITION**
Tara Sainath, Timothy Hazen, Massachusetts Institute of Technology, United States

SLP-P5.9 **PARAMETRIC NONLINEAR FEATURE EQUALIZATION FOR ROBUST SPEECH RECOGNITION**
Luz García, José C. Segura, Javier Ramírez, Angel de la Torre, Carmen Benítez, Universidad de Granada, Spain

SLP-P5.10 **UNSUPERVISED CLASS-BASED FEATURE COMPENSATION FOR TIME-VARIABLE BANDWIDTH-LIMITED SPEECH**
Nicolas Morales, Universidad Autonoma de Madrid, Spain; Doroteo T. Toledano, ATVS-Universidad Autonoma de Madrid, Spain; John H. L. Hansen, University of Texas, Dallas, United States; Javier Garrido, Jose Colas, Universidad Autonoma de Madrid, Spain

SLP-P5.11 **MODEL-BASED WIENER FILTER FOR NOISE ROBUST SPEECH RECOGNITION**
Takayuki Arakawa, Masanori Tsujikawa, Ryosuke Isotani, NEC, Japan

SLP-P5.12 **NOVEL FEATURE EXTRACTION FOR NOISE ROBUST ASR USING THE AURORA 2 DATABASE**
Penny Hix, Stephen Zahorian, Fansheng Meng, Old Dominion University, United States

IMDSP-L4 **Restoration and Enhancement** (Lecture)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Cassiopée
Chair: Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL)

10:00
IMDSP-L4.1 **NON-IDEAL SAMPLING AND ADAPTED RECONSTRUCTION USING THE STOCHASTIC MATÉRN MODEL**
Sathish Ramani, Dimitri Van de Ville, Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

10:20
IMDSP-L4.2 **FLICKER COMPENSATION FOR ARCHIVED FILM USING A SPATIALLY-ADAPTIVE NONLINEAR MODEL**
Guillaume Forbin, Theodore Vlachos, Simon Tredwell, University of Surrey, United Kingdom

10:40
IMDSP-L4.3 **MULTI-SCALE VARIANCE STABILIZING TRANSFORM FOR MULTI-DIMENSIONAL POISSON COUNT IMAGE DENOISING**
Bo Zhang, Institut Pasteur, France; Jalal Fadili, GREYC UMR 6072 CNRS, France; Jean-Luc Starck, DAPNIA / SEDI-SAP, France

11:00
IMDSP-L4.4 **ADAPTIVE FRAMES-BASED DENOISING OF CONFOCAL MICROSCOPY DATA**
Alberto Santamaria-Pang, Teodor Stefan Bildea, University of Houston, United States; Ioannis Konstantinidis, University of Maryland, United States; Ioannis A. Kakadiaris, University of Houston, United States

11:20
IMDSP-L4.5 **SPARSITY-DRIVEN SPARSE-APERTURE ULTRASOUND IMAGING**
Mujdat Cetin, Sabanci University, Turkey; Emmanuel Bossy, Robin Cleveland, W. Clem Karl, Boston University, United States

11:40
IMDSP-L4.6 **IMAGE DENOISING USING OPTIMAL COLOR SPACE PROJECTION**
Nai-Xiang Lian, Vitali Zagorodnov, Yap-Peng Tan, Nanyang Technological University, Singapore

MLSP-L1 **Learning Theory I** (Lecture)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Caravelle 2
Chair: Jan Larsen, Technical University of Denmark

10:00
MLSP-L1.1 **ESTIMATION OF MIXTURES OF SYMMETRIC ALPHA STABLE DISTRIBUTIONS WITH AN UNKNOWN NUMBER OF COMPONENTS**
Diego Salas-Gonzalez, University of Granada, Spain; Ercan Engin Kuruoglu, ISTI / CNR, Italy; Diego Pablo Ruiz Padillo, University of Granada, Spain

10:20
MLSP-L1.2 **MAXIMUM CONFIDENCE HIDDEN MARKOV MODELING**
Chih-Pin Liao, Jen-Tzung Chien, National Cheng Kung University, Taiwan

10:40
MLSP-L1.3 **HIDDEN MARKOV MODEL FRAMEWORK USING INDEPENDENT COMPONENT ANALYSIS MIXTURE MODEL**
Jian Zhou, Pixelworks Inc., Canada; Xiao-Ping Zhang, Ryerson University, Canada

11:00
MLSP-L1.4 **OUTLIER DETECTION IN BENCHMARK CLASSIFICATION TASKS**
Hongyu Li, Mahesan Niranjan, University of Sheffield, United Kingdom

11:20
MLSP-L1.5 **AN AUGMENTED EXTENDED KALMAN FILTER ALGORITHM FOR COMPLEX-VALUED RECURRENT NEURAL NETWORKS**
Su Lee Goh, Danilo Mandic, Imperial College London, United Kingdom

11:40
MLSP-L1.6 **AN OPTIMAL BASIS FOR FEATURE EXTRACTION WITH SUPPORT VECTOR MACHINE CLASSIFICATION USING THE RADIUS-MARGIN BOUND**
Jeff Fortuna, David Capson, McMaster University, Canada

SPCOM-L3 **Co-operative Communications** (Lecture)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Ariane 1 & 2
Chair: Lang Tong, Cornell University

10:00
SPCOM-L3.1 **JOINT POWER ALLOCATION FOR NONREGENERATIVE MIMO-OFDM RELAY LINKS**
Ingmar Hammerström, Armin Wittneben, ETH Zürich, Switzerland

10:20
SPCOM-L3.2 **AN ADAPTIVE PROTOCOL FOR COOPERATIVE COMMUNICATIONS ACHIEVING ASYMPTOTIC MINIMUM SYMBOL-ERROR-RATE**
Chaiyod Pirak, University of Maryland, College Park, United States / King Mongkut's Institute of Technology North Bangkok, Thailand; Z. Jane Wang, University of British Columbia, Canada; K. J. Ray Liu, University of Maryland, College Park, United States

10:40
SPCOM-L3.3 **ON THE OUTAGE PROPERTIES OF ADAPTIVE NETWORK CODED COOPERATION (ANCC) IN LARGE WIRELESS NETWORKS**
Xingkai Bao, Jing (Tiffany) Li, Lehigh University, United States

11:00
SPCOM-L3.4 **DISTRIBUTED DIFFERENTIAL SCHEMES FOR COOPERATIVE WIRELESS NETWORKS**
Woong Cho, Liuqing Yang, University of Florida, United States

11:20
SPCOM-L3.5 **RECEIVER-ENHANCED COOPERATIVE SPATIAL MULTIPLEXING WITH HYBRID CHANNEL KNOWLEDGE**
Hilde Skjevling, University of Oslo, Norway; David Gesbert, Institut Eurecom, France; Are Hjørungnes, University Graduate Center, Norway

11:40
SPCOM-L3.6 **SECURITY ISSUES IN COOPERATIVE COMMUNICATIONS: TRACING ADVERSARIAL RELAYS**
Yinian Mao, Min Wu, University of Maryland, United States

SPTM-L4 **Frequency Estimation** (Lecture)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Spot
Chair: Chong Yung Chi , National Tsing Hua University

10:00
SPTM-L4.1 **FREQUENCY ESTIMATION USING TAPERED DATA**
Barry Quinn, Macquarie University, Australia

10:20
SPTM-L4.2 **A NOVEL ITERATIVE APPROACH FOR COMPLEX SINGLE-TONE FREQUENCY ESTIMATION**
Kit Wing Frankie Chan, Hing Cheung So, City University of Hong Kong, Hong Kong SAR of China

10:40
SPTM-L4.3 **CRAMER-RAO LOWER BOUND FOR HARMONIC AND SUBHARMONIC ESTIMATION**
Zhili Chen, Behrouz Nowrouzian, University of Alberta, Canada; Christopher Zarowski, NanoDotTek, Canada

11:00
SPTM-L4.4 **MODEL ORDER SELECTION RULE FOR ESTIMATING THE PARAMETERS OF 2-D SINUSOIDS IN COLORED NOISE**
Mark Kliger, Joseph M. Francos, Ben-Gurion University, Israel

11:20
SPTM-L4.5 **INSTANTANEOUS FREQUENCY RATE ESTIMATION BASED ON THE ROBUST CUBIC PHASE FUNCTION**
Pu Wang, University of Electronic Science and Technology of China, China; Igor Djurovic, University of Montenegro, Yugoslavia; Jianyu Yang, University of Electronic Science and Technology of China, China

SLP-L4 **Speech Synthesis I** (Lecture)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Auditorium St Exupery
Chair: Alan Black, Carnegie Mellon University

10:00
SLP-L4.1 **TOWARDS POOLED-SPEAKER CONCATENATIVE TEXT-TO-SPEECH**
Ellen Eide, Michael Picheny, IBM, United States

10:20
SLP-L4.2 **HSMM-BASED MODEL ADAPTATION ALGORITHMS FOR AVERAGE-VOICE-BASED SPEECH SYNTHESIS**
Junichi Yamagishi, Katsumi Ogata, Yuji Nakano, Juri Isogai, Takao Kobayashi, Tokyo Institute of Technology, Japan

10:40
SLP-L4.3 **TEXT-INDEPENDENT VOICE CONVERSION BASED ON UNIT SELECTION**
David Suendermann, Harald Hoege, Siemens Corporate Technology, Germany; Antonio Bonafonte, Technical University of Catalonia (UPC), Spain; Hermann Ney, University of Technology Aachen (RWTH), Germany; Alan W. Black, Carnegie Mellon University, United States; Shrikanth S. Narayanan, University of Southern California, United States

11:00
SLP-L4.4 **RESIDUAL CONVERSION VERSUS PREDICTION ON VOICE MORPHING SYSTEMS**
Helenca Duxans, Antonio Bonafonte, Technical University of Catalonia (UPC), Spain

11:20
SLP-L4.5 **MINIMUM GENERATION ERROR TRAINING FOR HMM-BASED SPEECH SYNTHESIS**
Yi-Jian Wu, Ren-Hua Wang, University of Science and Technology of China, China

11:40
SLP-L4.6 **ON THE USE OF PHONETIC INFORMATION FOR MAPPING FROM ARTICULATORY MOVEMENTS TO VOCAL TRACT SPECTRUM**
Kenichi Nakamura, Nagoya Institute of Technology, Japan; Tomoki Toda, Nara Institute of Science and Technology, Japan; Yoshihiko Nankaku, Keiichi Tokuda, Nagoya Institute of Technology, Japan

SS-4 **Algebra and Geometry: The Search for Structure in Signal Processing** (Special Session)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Guillaumet 1 & 2
Co-Chairs: José M. F. Moura, Carnegie Mellon University and Jonathan Manton, Australian National University

10:00
SS-4.1 **THE ALGEBRAIC STRUCTURE IN SIGNAL PROCESSING: TIME AND SPACE**
Markus Püschel, José M. F. Moura, Carnegie Mellon University, United States

10:20
SS-4.2 **FREE PROBABILITY, SAMPLE COVARIANCE MATRICES, AND SIGNAL PROCESSING**
N. Raj Rao, Alan Edelman, Massachusetts Institute of Technology, United States

10:40
SS-4.3 **ON THE GENERALIZATION OF AR PROCESSES TO RIEMANNIAN MANIFOLDS**
João Xavier, Instituto Superior Técnico, Portugal; Jonathan Manton, Australian National University, Australia

11:00
SS-4.4 **LOCAL CONVERGENCE PROPERTIES OF FASTICA AND SOME GENERALISATIONS**
Knut Hueper, Hao Shen, Abd-Krim Seghouane, National ICT Australia, Australia

11:20
SS-4.5 **INTRINSIC QUADRATIC PERFORMANCE BOUNDS ON MANIFOLDS**
Steven Thomas Smith, MIT Lincoln Laboratory, United States; Louis L. Scharf, Colorado State University, United States; Todd McWhorter, Altius Research Associates, United States

11:40
SS-4.6 **STOCHASTIC ANALYSIS OF GEOMETRIC IMAGE PROCESSING USING B-SPLINES**
Gustavo Rohde, Dennis Healy, Jr., Carlos Bernstein, University of Maryland, United States; Akram Aldroubi, Vanderbilt University, United States; Daniel Rockmore, Dartmouth College, United States

AE-P1 **Loudspeaker and Microphone Array Processing**
(Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 1
Chair: Akihiko (Ken) Sugiyama, NEC Media and Information Reserach Laboratories

AE-P1.1 **BLIND SPEECH SEPARATION USING PARAFAC ANALYSIS AND INTEGER LEAST SQUARES**
Kleanthis Mokios, Nicholas Sidiropoulos, Alexandros Potamianos, Technical University of Crete, Greece

AE-P1.2 **SOLVING THE PERMUTATION PROBLEM OF FREQUENCY-DOMAIN BSS WHEN SPATIAL ALIASING OCCURS WITH WIDE SENSOR SPACING**
Hiroshi Sawada, Shoko Araki, Ryo Mukai, Shoji Makino, NTT Corporation, Japan

AE-P1.3 **BLIND SOURCE SEPARATION COMBINING SIMO-ICA AND SIMO-MODEL-BASED BINARY MASKING**
Yoshimitsu Mori, Tomoya Takatani, Hiroshi Saruwatari, Nara Institute of Science and Technology, Japan; Takashi Hiekata, Takashi Morita, Kobe Steel, Ltd., Japan

AE-P1.4 **LOCALIZATION BASED SEPARATION OF MIXED AUDIO SIGNALS WITH BINARY MASKING OF HILBERT SPECTRUM**
Md. Khademul Islam Molla, Keikichi Hirose, Nobuaki Minematsu, University of Tokyo, Japan

AE-P1.5 **ZERO-CROSSING BASED BINAURAL MASK ESTIMATION FOR MISSING DATA SPEECH RECOGNITION**
Young-Ik Kim, Sung An, Rhee Kil, Korea Advanced Institute of Science and Technology, Republic of Korea

AE-P1.6 **NOISE ROBUST ADAPTIVE BLIND CHANNEL IDENTIFICATION USING SPECTRAL CONSTRAINTS**
Nikolay Gaubitch, Imperial College London, United Kingdom; Md. Kamrul Hasan, Bangladesh University of Engineering and Technology, Bangladesh; Patrick Naylor, Imperial College London, United Kingdom

(Continued from previous page.)

AE-P1.7 **DELAY AND PREDICT EQUALIZATION FOR BLIND SPEECH DEREVERBERATION**
Mahdi Triki, CNRS - Eurecom Institute, France; Dirk Slock, Eurecom Institute, France

AE-P1.8 **MULTI-CHANNEL ROOM IMPULSE RESPONSE SHAPING - A STUDY**
Markus Kallinger, Alfred Mertins, University of Oldenburg, Germany

AE-P1.9 **CASCADED FIR FILTERS FOR MULTIPLE LISTENER LOW FREQUENCY ROOM ACOUSTIC EQUALIZATION**
Sunil Bharitkar, Chris Kyriakakis, Audyssey Laboratories / University of Southern California, United States

AE-P1.10 **ROOM EQUALIZATION BASED ON ITERATIVE SIMPLE COMPLEX SMOOTHING OF ACOUSTIC IMPULSE RESPONSES**
Maamar Ahfir, University of Laghouat, Algeria; Izzet Kale, University of Westminster, United Kingdom; Berkani Daoud, ENPA, Algeria

AE-P1.11 **EFFICIENT DESIGNS FOR BROADBAND LINEAR ARRAYS**
Michael Goodwin, Creative Labs, United States

AE-P1.12 **A NOVEL VOLTERRA-WIENER MODEL FOR EQUALIZATION OF LOUDSPEAKER DISTORTIONS**
Khosrow Lashkari, DoCoMo Communications Laboratories, USA, United States

IMDSP-P5 **Image Coding** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 2
Chair: Chao Tian, Swiss Federal Institute of Technology Lausanne (EPFL)

IMDSP-P5.1 **LOSSLESS COMPRESSION BASED ON A DISCRETE AND EXACT RADON TRANSFORM: A PRELIMINARY STUDY**
Florent Autrusseau, Benoit Parrein, Myriam Servieres, IRCCyN-IVC, France

IMDSP-P5.2 **A BIT-PLANE APPROACH FOR LOSSLESS COMPRESSION OF COLOR-QUANTIZED IMAGES**
António J. R. Neves, Armando J. Pinho, Universidade de Aveiro, Portugal

IMDSP-P5.3 **BLOCK TREE PARTITIONING FOR WAVELET BASED COLOR IMAGE COMPRESSION**
Pramit Singh, M. N. S. Swamy, Rajeev Agarwal, Concordia University, Canada

IMDSP-P5.4 **LOW BIT-RATE IMAGE CODING BASED ON PYRAMIDAL DIRECTIONAL FILTER BANKS**
Yilong Liu, Truong T. Nguyen, Soontorn Oraintara, University of Texas, Arlington, United States

IMDSP-P5.5 **RESIDUAL IMAGE CODING USING TRELLIS QUANTIZATION**
Tomas Eriksson, Norbert Goertz, University of Edinburgh, United Kingdom; Mirek Novak, Lund University, Sweden

IMDSP-P5.6 **IMAGE COMPRESSION WITH VECTOR SPECK ALGORITHM**
Chih-chien Chao, Robert M. Gray, Stanford University, United States

(Continued from previous page.)

IMDSP-P5.7 **DESIGN AND IMPLEMENTATION OF WORD-LEVEL EMBEDDED BLOCK CODING ARCHITECTURE IN JPEG 2000 DECODER**
Yu-Wei Chang, Hung-Chi Fang, Chun-Chia Chen, Liang-Gee Chen, National Taiwan University, Taiwan

IMDSP-P5.8 **WAVELET BASED EMBEDDED IMAGE CODING USING UNIFIED ZERO-BLOCK-ZERO-TREE APPROACH**
Athar A. Moinuddin, Ekram Khan, Aligarh Muslim University, India

IMDSP-P5.9 **A NEW ADAPTIVE SUBBAND THRESHOLDING ALGORITHM FOR MULTISTAGE LATTICE VQ IMAGE CODING**
Mohd Fadzli Mohd Salleh, John Soraghan, University of Strathclyde, United Kingdom

IMDSP-P5.10 **EMBEDDED LINKED SIGNIFICANT TREE WAVELET IMAGE CODER**
Tanzeem Muzaffar, Tae-Sun Choi, Gwangju Institute of Science and Technology, Republic of Korea

IMDSP-P5.11 **HUFFMAN CODING OF WAVELET LOWER TREES FOR VERY FAST IMAGE COMPRESSION**
Jose Oliver, Technical University of Valencia, Spain; Manuel P. Malumbres, Miguel Hernzandez University, Spain

IMDSP-P5.12 **SELECTIVE ERROR DETECTION FOR ERROR-RESILIENT JPEG2000 CODING**
Tuyet-Trang Lam, Lina J. Karam, Arizona State University, United States; Glen P. Abousleman, General Dynamics C4 Systems, United States

MMSP-P2 **Multimedia Human-Machine Interface, Security and Systems** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 3
Chair: Shrikanth Narayanan, University of Southern California

MMSP-P2.1 **REAL-TIME SOFTWARE IMPLEMENTATION OF H.264 BASELINE PROFILE VIDEO ENCODER FOR MOBILE AND HANDHELD DEVICES**
Nageswara Rao G., Prasad R.S.V., Jaya Chandra D., Srividya Narayanan, Emuzed India Private Limited, India

MMSP-P2.2 **PARAMETERIZATION OF MOUTH IMAGES BY LLE AND PCA FOR IMAGE-BASED FACIAL ANIMATION**
Kang Liu, Axel Weissenfeld, Joern Ostermann, University of Hannover, Germany

MMSP-P2.3 **SECRET WAVELET PACKET DECOMPOSITIONS FOR JPEG 2000 LIGHTWEIGHT ENCRYPTION**
Dominik Engel, Andreas Uhl, University of Salzburg, Austria

MMSP-P2.4 **A SPATIAL HEARING MODEL BASED ON RECONSTRUCTION FROM WAVELET TRANSFORM MODULUS MAXIMA**
Jie Zhang, Zhenyang Wu, Southeast University, China

MMSP-P2.5 **PERCEPTION-BASED COMPRESSION OF HAPTIC DATA STREAMS USING KALMAN FILTERS**
Peter Hinterseer, Eckehard Steinbach, Technische Universität München, Germany; Subhasis Chaudhuri, Indian Institute of Technology Bombay, India

MMSP-P2.6 **A ROBUST BLIND WATERMARKING FOR 3D MESHES USING DISTRIBUTION OF SCALE COEFFICIENTS IN IRREGULAR WAVELET ANALYSIS**
Min-Su Kim, Jae-Won Cho, INSA de Lyon, France; Ho-Youl Jung, Yeungnam University, France; Rémy Prost, INSA de Lyon, France

(Continued from previous page.)

MMSP-P2.7 **INDIVIDUAL OBJECT INTERACTION FOR CAMERA CONTROL AND MULTIMEDIA SYNCHRONIZATION**
Richard Yi Da Xu, University of Technology, Sydney, Australia; Jesse S. Jin, University of Newcastle, Australia

MMSP-P2.8 **A NOVEL EMBEDDING METHOD FOR AN ANTI-COLLUSION FINGERPRINTING BY EMBEDDING BOTH A CODE AND AN ORTHOGONAL FINGERPRINT**
Dalwon Jang, Chang D. Yoo, Korea Advanced Institute of Science and Technology, Republic of Korea

MMSP-P2.9 **A HIGHLY EFFICIENT PARALLEL ALGORITHM FOR H.264 VIDEO ENCODER**
Zhuo Zhao, Ping Liang, University of California, Riverside, United States

MMSP-P2.10 **ANALYZING HUMAN BODY 3-D MOTION OF GOLF SWING FROM SINGLE-CAMERA VIDEO SEQUENCES**
Ibrahim Karliga, Jenq-Neng Hwang, University of Washington, United States

MMSP-P2.11 **COLOR OBJECT TRACKING SYSTEM FOR INTERACTIVE ENTERTAINMENT APPLICATIONS**
Jaeyong Chung, Kwanghyun Shim, ETRI, Republic of Korea

SAM-P3 **Beamforming and Space-Time Processing** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 4
Chair: Muralidhar Rangaswamy, Air Force Research Laboratory

SAM-P3.1 **ADAPTIVE BAYESIAN BEAMFORMING FOR STEERING VECTOR UNCERTAINTIES WITH ORDER RECURSIVE IMPLEMENTATION**
Chunwei Jethro Lam, Andrew Singer, University of Illinois at Urbana-Champaign, United States

SAM-P3.2 **DATA DIMENSION REDUCTION USING KRYLOV SUBSPACES: MAKING ADAPTIVE BEAMFORMERS ROBUST TO MODEL ORDER-DETERMINATION**
Hongya Ge, New Jersey Institute of Technology, United States; Ivars Kirsteins, Naval Undersea Warfare Center, United States; Louis L. Scharf, Colorado State University, United States

SAM-P3.3 **ROBUST CAPON BEAMFORMING BY THE ADAPTIVE PROJECTED SUBGRADIENT METHOD**
Konstantinos Slavakis, Masahiro Yukawa, Isao Yamada, Tokyo Institute of Technology, Japan

SAM-P3.4 **ADAPTIVE BEAMFORMING BY CONSTRAINED PARALLEL PROJECTION IN THE PRESENCE OF SPATIALLY-CORRELATED INTERFERENCES**
Masahiro Yukawa, Isao Yamada, Tokyo Institute of Technology, Japan

SAM-P3.5 **APPLICATION OF THE GLOBAL MATCHED FILTER TO STAP DATA: AN EFFICIENT ALGORITHMIC APPROACH**
Sébastien Maria, Jean-Jacques Fuchs, IRISA / Université de Rennes 1, France

SAM-P3.6 **IDMR BEAMFORMING UNDER DIRECTION-INDEPENDENT STEERING VECTOR MISMATCH**
Ernesto Santos, Michael D. Zoltowski, Purdue University, United States

(Continued from previous page.)

SAM-P3.7 **GENERALIZED BROADBAND BEAMFORMING USING A MODAL DECOMPOSITION**
Michael Williams, Thushara Abhayapala, Rodney Kennedy, National ICT Australia, Australia

SAM-P3.8 **AN ADAPTIVE BEAMFORMING SCHEME FOR ENHANCED COCHANNEL INTERFERENCE MITIGATION ON SHORT ARRAY SIGNAL INTERVALS**
Thomas Hunziker, Makoto Taromaru, ATR Spoken Language Communication Research Laboratories, Japan

SAM-P3.9 **A ROBUST CAPON BEAMFORMER WITH NEW UNCERTAINTY CONSTRAINT ON STEERING VECTOR**
Zhu Liang Yu, Meng Hwa Er, Nanyang Technological University, Singapore

SAM-P3.10 **STAP FOR CLUTTER AND INTERFERENCE CANCELLATION IN A HF RADAR SYSTEM**
Giuseppe Fabrizio, Gordon Frazer, Mike Turley, Defence Science and Technology Organisation (DSTO), Australia

SAM-P3.11 **AN IMPROVED PARTIAL ADAPTIVE NARROW-BAND BEAMFORMER USING CONCENTRIC RING ARRAY**
Luis M Vicente, K. C. Ho, University of Missouri-Columbia, United States; Chiman Kwan, Intelligent Automation, Inc., United States

SAM-P3.12 **ROBUSTNESS AND DISTANCE DISCRIMINATION OF ADAPTIVE NEAR FIELD BEAMFORMERS**
Yahong Rosa Zheng, Peng Xie, Steve Grant, University of Missouri-Rolla, United States

SPCOM-P5 **Synchronization** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 5
Chair: Gregori Vazquez, Technical University of Catalonia

SPCOM-P5.1 **GLOBAL STABILITY OF A POPULATION OF MUTUALLY COUPLED OSCILLATORS REACHING GLOBAL ML ESTIMATE THROUGH A DECENTRALIZED APPROACH**
Sergio Barbarossa, Gesualdo Scutari, Loreto Pescosolido, Universitá degli Studi di Roma “La Sapienza”, Italy

SPCOM-P5.2 **SECOND-ORDER BASED CYCLIC FREQUENCY ESTIMATES: THE CASE OF DIGITAL COMMUNICATION SIGNALS**
Pierre Jallon, Antoine Chevreuil, Université de Marne-la-Vallée, France

SPCOM-P5.3 **ITERATIVE SYNCHRONIZATION:EM ALGORITHM VERSUS NEWTON-RAPHSON METHOD**
Cédric Herzet, Xavier Wautelet, Valéry Ramon, Luc Vandendorpe, Université Catholique de Louvain, Belgium

SPCOM-P5.4 **A PILOT-LESS SAMPLE-TIME SYNCHRONIZATION ALGORITHM FOR HIGH-MOBILITY DVB-T RECEIVING**
Lai-Huei Wang, Hsiang-Feng Chi, National Chiao Tung University, Taiwan

SPCOM-P5.5 **A NOVEL SYNCHRONIZATION SCHEME FOR OFDM OVER FADING CHANNELS**
Si Ai, Shu-Hung Leung, Chi-Sing Leung, City University of Hong Kong, Hong Kong SAR of China

SPCOM-P5.6 **CALCULATING THE PERFORMANCE OF A SOFT-INFORMATION-BASED BEST LINEAR UNBIASED ESTIMATOR OF AMPLITUDE AND CARRIER PHASE OFFSET**
Valéry Ramon, Cédric Herzet, Xavier Wautelet, Luc Vandendorpe, Université Catholique de Louvain, Belgium

(Continued from previous page.)

SPCOM-P5.7 A LOW COMPLEXITY FLEXIBLE NON-DATA-AIDED AND NON-TIME-DIRECTED FREQUENCY SYNCHRONIZER FOR QPSK MODULATED SIGNALS
Pilar M. Calvo, Juan F. Sevillano, Igone Velez, Andoni Irizar, CEIT / TECNUN, Spain

SPCOM-P5.8 ASYMPTOTICALLY EFFICIENT PHASE RECOVERY FOR QAM COMMUNICATION SYSTEMS
Stefania Colonnese, Gianpiero Panci, Gaetano Scarano, Universitá degli Studi di Roma “La Sapienza”, Italy

SPCOM-P5.9 THEORETICAL ANALYSIS OF TIMING ERROR IN A DIRECT TRANSMITTER SELF-CALIBRATION SYSTEM
Zhiwen Zhu, Xinping Huang, Communications Research Centre Canada, Canada

SPCOM-P5.10 ACHIEVING CODE SYNCHRONIZATION IN DIRECT-SEQUENCE SPREAD SPECTRUM SYSTEM APPLICATIONS USING RECURRENT NEURAL NETWORKS
Vahid Forutan, Polytechnic of Tehran, Iran

SPCOM-P5.11 A FRAME-START DETECTOR FOR A 4X4 MIMO-OFDM SYSTEM
David Perels, Simon Haene, Andreas Burg, Peter Luethi, Norbert Felber, Wolfgang Fichtner, Swiss Federal Institute of Technology Zurich, Switzerland

SPCOM-P5.12 A GROUP MATCHING PURSUIT ALGORITHM FOR SPARSE CHANNEL ESTIMATION FOR OFDM TRANSMISSION
Chun-Jung Wu, David Lin, National Chiao Tung University, Taiwan

SPTM-P4 **Sampling, Extrapolation and Interpolation I** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 6
Chair: Yonina Eldar, Technion, Israel Institute of Technology

SPTM-P4.1 **SAMPLING THEOREM ASSOCIATED WITH THE DISCRETE COSINE TRANSFORM**
Jelena Kovacevic, Markus Püschel, Carnegie Mellon University, United States

SPTM-P4.2 **SENSITIVITY OF HYBRID FILTER BANKS A/D CONVERTERS TO ANALOG REALIZATION ERRORS AND FINITE WORD LENGTH**
Tudor Petrescu, Jacques Oksman, Ecole Supérieure d'Electricité, France

SPTM-P4.3 **SAMPLED SIGNAL RECONSTRUCTION VIA H^2 OPTIMIZATION**
Gjerrit Meinsma, University of Twente, Israel; Leonid Mirkin, Technion - Israel Institute of Technology, Israel

SPTM-P4.4 **OPTIMISATION OF THE MAXIMUM LIKELIHOOD METHOD USING BIAS MINIMISATION**
M. Ziaur Rahman, Laurence S. Dooley, Gour C. Karmakar, Monash University, Australia

SPTM-P4.5 **ENUMERATION AND PARAMETRIZATION OF DISTINCT DOWNSAMPLING PATTERNS IN TWO-DIMENSIONAL MULTIRATE SYSTEMS**
Zhang Lei, Anamitra Makur, Nanyang Technological University, Singapore

SPTM-P4.6 **PERFECT RECONSTRUCTION SCHEMES FOR SAMPLING PIECEWISE SINUSOIDAL SIGNALS**
Jesse Berent, Pier Luigi Dragotti, Imperial College London, United Kingdom

(Continued from previous page.)

SPTM-P4.7 **A LEVEL-CROSSING SAMPLING SCHEME FOR NON-BANDLIMITED SIGNALS**
Karen Guan, Andrew Singer, University of Illinois at Urbana-Champaign, United States

SPTM-P4.8 **PERIODIC NON UNIFORM SAMPLING OF NON BANDLIMITED SIGNALS**
Jamal Tuqan, University of California, Davis, United States

SPTM-P4.9 **MULTI-RESOLUTION RECONSTRUCTION OF IRREGULARLY SAMPLED SIGNALS WITH COMPACTLY SUPPORTED RADIAL BASIS FUNCTIONS**
Arnaud Gelas, Rémy Prost, CREATIS, INSA, UCB, CNRS UM5515, Inserm U630, France

SPTM-P4.10 **EQUALIZING SAMPLING RATE CONVERTER FOR STORAGE SYSTEMS**
Jamal Riani, Steven Van Beneden, Jan Bergmans, Eindhoven University of Technology, Netherlands

SPTM-P4.11 **QUANTIZATION AND SAMPLING OF NOT NECESSARILY BAND-LIMITED SIGNALS**
Milan S. Derpich, Daniel E. Quevedo, Graham C. Goodwin, University of Newcastle, Australia; Arie Feuer, Technion - Israel Institute of Technology, Israel

SPTM-P4.12 **SIGNAL SAMPLING AND RECOVERY UNDER LONG-RANGE DEPENDENT NOISE WITH APPLICATION TO LACK-OF-FIT TESTS**
Mirek Pawlak, University of Manitoba, Canada; Ulrich Stadtmuller, University of Ulm, Germany

SLP-P7 **Audio-visual and Multimodal Processing** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 7
Chair: Helen Meng, Chinese University of Hong Kong

SLP-P7.1 **AN ARTICULATORY APPROACH TO VIDEO-REALISTIC MOUTH ANIMATION**
Lei Xie, Zhi-Qiang Liu, City University of Hong Kong, Hong Kong SAR of China

SLP-P7.2 **A DEMPSTER-SHAFER BASED FUSION APPROACH FOR AUDIO-VISUAL SPEECH RECOGNITION WITH APPLICATION TO LARGE VOCABULARY FRENCH SPEECH**
Samuel Foucher, France Laliberté, Gilles Boulianne, Langis Gagnon, CRIM, Canada

SLP-P7.3 **AN ANALYSIS OF VISUAL SPEECH INFORMATION APPLIED TO VOICE ACTIVITY DETECTION**
David Sodoyer, Bertrand Rivet, Laurent Girin, Jean-Luc Schwartz, ICP / INPG, France; Christian Jutten, Laboratory of Image and Signal (LIS), France

SLP-P7.4 **ARTICULATORY FEATURE CLASSIFICATION USING SURFACE ELECTROMYOGRAPHY**
Szu-Chen Jou, Carnegie Mellon University, United States; Lena Maier-Hein, Universitaet Karlsruhe, Germany; Tanja Schultz, Alex Waibel, Carnegie Mellon University, United States

SLP-P7.5 **IMPROVED CHINESE CHARACTER INPUT BY MERGING SPEECH AND HANDWRITING RECOGNITION HYPOTHESES**
Xi Zhou, University of Science and Technology of China, China; Ye Tian, Microsoft Corporation, United States; Jian-Lai Zhou, Frank K. Soong, Microsoft Research Asia, China; Bei-qian Dai, University of Science and Technology of China, China

SLP-P7.6 **MULTIMODAL SPEAKER IDENTIFICATION USING CANONICAL CORRELATION ANALYSIS**
Mehmet Emre Sargin, Engin Erzin, Yucel Yemez, A. Murat Tekalp, Koç University, Turkey

(Continued from previous page.)

SLP-P7.7 **LEARNING EDIT MACHINES FOR ROBUST MULTIMODAL UNDERSTANDING**
Michael Johnston, Srinivas Bangalore, AT&T Labs – Research, United States

SLP-P7.8 **DETECTING REPLAY ATTACKS IN AUDIOVISUAL IDENTITY VERIFICATION**
Hervé Bredin, ENST / TSI, France; Antonio Miguel, University of Zaragoza, Spain; Ian Witten, University of Waikato, New Zealand; Gérard Chollet, ENST / TSI, France

SLP-P7.9 **THE VOCAL JOYSTICK**
Jeff Bilmes, Jonathan Malkin, Xiao Li, Susumu Harada, Kelley Kilanski, Katrin Kirchhoff, Richard Wright, Amarnag Subramanya, James Landay, Patricia Dowden, Howard Chizeck, University of Washington, Seattle, United States

SLP-P7.10 **SUBLIME: A SPEECH- AND LANGUAGE-BASED INFORMATION MANAGEMENT ENVIRONMENT**
Jahanzeb Sherwani, Stefanie Tomko, Roni Rosenfeld, Carnegie Mellon University, United States

SLP-P7.11 **HAND AND LIP DESYNCHRONIZATION ANALYSIS IN FRENCH CUED SPEECH: AUTOMATIC TEMPORAL SEGMENTATION OF HAND FLOW**
Noureddine Aboutabit, Denis Beautemps, Institut de la Communication Parlée, France; Laurent Besacier, Communication Langagière et Interaction Personne Système, France

SLP-P8 **Speaker Recognition: Features** (Poster)
Time: Wednesday, May 17, 10:00 - 12:00
Place: Poster Area 8
Chair: Hong-goo Kang, Yonsei University

SLP-P8.1 **SPEAKER VERIFICATION OVER HANDHELD DEVICES WITH REALISTIC NOISY SPEECH DATA**
Ming Ji, Queen's University, Belfast, United Kingdom; Timothy Hazen, James R. Glass, Massachusetts Institute of Technology, United States

SLP-P8.2 **SPEAKER VERIFICATION WITH CONFIDENCE AND RELIABILITY MEASURES**
Jonas Richiardi, Plamen Prodanov, Andrzej Drygajlo, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SLP-P8.3 **ROBUST SPEAKER RECOGNITION USING BINARY TIME-FREQUENCY MASKS**
Yang Shao, DeLiang Wang, The Ohio State University, United States

SLP-P8.4 **LSF ALIASING REMOVAL FOR IMPROVED SPEAKER VERIFICATION**
Halil Uzuner, Stephane Villette, Khaldoon Al-Naimi, Ahmet Kondoz, University of Surrey, United Kingdom

SLP-P8.5 **QUANTIZATION FOR ADAPTED GMM-BASED SPEAKER VERIFICATION**
Ivy H. Tseng, University of Southern California, United States; Olivier Verscheure, Deepak S. Turaga, Upendra V. Chaudhari, IBM T. J. Watson Research Center, United States

SLP-P8.6 **USE OF VOCAL SOURCE FEATURES IN SPEAKER SEGMENTATION**
W. N. Chan, Tan Lee, Nengheng Zheng, Hua Ouyang, Chinese University of Hong Kong, Hong Kong SAR of China

(Continued from previous page.)

SLP-P8.7 **RULES BASED FEATURE MODIFICATION FOR AFFECTIVE SPEAKER RECOGNITION**
Zhaohui Wu, Dongdong Li, Yingchun Yang, Zhejiang University, China

SLP-P8.8 **JOINT ACOUSTIC-MODULATION FREQUENCY FOR SPEAKER RECOGNITION**
Tomi Kinnunen, Institute for Infocomm Research, Singapore

SLP-P8.9 **THE ROLE OF DYNAMIC FEATURES IN TEXT-DEPENDENT AND -INDEPENDENT SPEAKER VERIFICATION**
Ying Liu, Martin Russell, Michael Carey, University of Birmingham, United Kingdom

SLP-P8.10 **FILTER BANK DESIGN FOR SPEAKER DIARIZATION BASED ON GENETIC ALGORITHMS**
Christophe Charbuillet, Bruno Gas, Mohamed Chetouani, Jean Luc Zarader, LISIF, France

AE-L2 **Loudspeaker and Microphone Array Processing**
(Lecture)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Spot
Chair: Walter Kellermann, University Erlangen-Nuremberg

14:00
AE-L2.1 **SPEECH ACQUISITION AND ENHANCEMENT IN A REVERBERANT, COCKTAIL-PARTY-LIKE ENVIRONMENT**
Yiteng (Arden) Huang, Bell Laboratories, Lucent Technologies, United States; Jacob Benesty, INRS-EMT / University of Quebec, Canada; Jingdong Chen, Bell Laboratories, Lucent Technologies, United States

14:20
AE-L2.2 **PROPORTIONATE FREQUENCY DOMAIN ADAPTIVE ALGORITHMS FOR BLIND CHANNEL IDENTIFICATION**
Rehan Ahmad, Andy Khong, Patrick Naylor, Imperial College London, United Kingdom

14:40
AE-L2.3 **DOA ESTIMATION FOR MULTIPLE SPARSE SOURCES WITH NORMALIZED OBSERVATION VECTOR CLUSTERING**
Shoko Araki, Hiroshi Sawada, Ryo Mukai, Shoji Makino, NTT Corporation, Japan

15:00
AE-L2.4 **POST-PROCESSING FOR CONVOLUTIVE BLIND SOURCE SEPARATION**
Robert Aichner, Meray Zourub, Herbert Buchner, Walter Kellermann, University or Erlangen-Nuremberg, Germany

15:20
AE-L2.5 **SUPERDIRECTIVE BEAMFORMING ROBUST AGAINST MICROPHONE MISMATCH**
Simon Doclo, Marc Moonen, Katholieke Universiteit Leuven, Belgium

15:40
AE-L2.6 **FREQUENCY INDEPENDENT FLEXIBLE SPHERICAL BEAMFORMING VIA RBF FITTING**
Arkady Yerukhimovich, Ramani Duraiswami, Nail Gumerov, Dmitry Zotkin, University of Maryland, United States

IMDSP-L5 **Image Segmentation** (Lecture)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Caravelle 2
Chair: Lawrence Carin, Duke University

14:00
IMDSP-L5.1 **HOMOTOPY-BASED SEMI-SUPERVISED HIDDEN MARKOV TREE FOR TEXTURE ANALYSIS**
Nilanjan Dasgupta, Shihao Ji, Lawrence Carin, Duke University, United States

14:20
IMDSP-L5.2 **FOURIER-BASED INVARIANT SHAPE PRIOR FOR SNAKES**
Stephane Derrode, Institut Fresnel / EGIM, France; Mohamed Ali Charmi, Faouzi Ghorbel, Lab. Cristal / GRIFT, Tunisia

14:40
IMDSP-L5.3 **OBJECT BASED IMAGE SEGMENTATION USING FUZZY CLUSTERING**
Mohammad Ameer Ali, Laurence S. Dooley, Gour C. Karmakar, Monash University, Australia

15:00
IMDSP-L5.4 **NEW CRITERIA FOR EVALUATING IMAGE SEGMENTATION RESULTS**
Sylvie Philipp-Foliguet, ETIS, France; Laurent Guigues, CREATIS, France

15:20
IMDSP-L5.5 **STATISTICAL REGION-BASED ACTIVE CONTOURS WITH EXPONENTIAL FAMILY OBSERVATIONS**
François Lecellier, Stéphanie Jehan-Besson, Jalal Fadili, GREYC UMR 6072 CNRS, France; Gilles Aubert, Laboratoire J.A Dieudonne, UMR 6621 CNRS, France; Marinette Revenu, GREYC UMR 6072 CNRS, France

15:40
IMDSP-L5.6 **MEAN SHIFT SPECTRAL CLUSTERING FOR PERCEPTUAL IMAGE SEGMENTATION**
Umut Ozertem, Deniz Erdogmus, Tian Lan, Oregon Health & Science University, United States

SPCOM-L4 **MIMO Training Design and Capacity Issues** (Lecture)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Ariane 1 & 2
Chair: Geert Leus, Delft University of Technology

14:00
SPCOM-L4.1 **CRAMÉR-RAO BOUND AND TRAINING SEQUENCE SELECTION FOR MIMO-OFDMA TRANSMISSIONS IMPAIRED BY FREQUENCY OFFSETS**
Serdar Sezginer, Pascal Bianchi, Supélec, France

14:20
SPCOM-L4.2 **ROBUST DESIGN OF LINEAR MIMO TRANSCEIVERS UNDER CHANNEL UNCERTAINTY**
Xi Zhang, Royal Institute of Technology (KTH), Sweden; Daniel P. Palomar, Princeton University, United States; Björn Ottersten, Royal Institute of Technology (KTH), Sweden

14:40
SPCOM-L4.3 **TRAINING DESIGN FOR CHANNEL AND CFO ESTIMATION IN MIMO SYSTEMS**
Mounir Ghogho, University of Leeds, United Kingdom; Ananthram Swami, Army Research Lab, United States

15:00
SPCOM-L4.4 **CAPACITY ANALYSIS OF MULTIPLE ANTENNA SYSTEMS WITH MISMATCHED CHANNEL QUANTIZATION SCHEMES**
Jun Zheng, Bhaskar Rao, University of California, San Diego, United States

15:20
SPCOM-L4.5 **SUBOPTIMUM SPACE MULTIPLEXING STRUCTURE COMBINING DIRTY PAPER CODING AND RECEIVE BEAMFORMING**
Santiago Zazo, Universidad Politécnica de Madrid, Spain; Howard Huang, Bell Laboratories, Lucent Technologies, United States

15:40
SPCOM-L4.6 **BOUNDS ON CAPACITY OVER GAUSSIAN MIMO MULTIACCESS CHANNELS WITH CHANNEL STATE INFORMATION MISMATCH**
César Gaudes, Enrique Masgrau, University of Zaragoza, Spain

SPTM-L5 **LMS-type Adaptive Filters** (Lecture)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Cassiopée
Chair: Jonathon Chambers, Cardiff Univrersity

14:00
SPTM-L5.1 **A ROBUST VARIABLE STEP SIZE ALGORITHM FOR LMS ADAPTIVE FILTERS**
Marcio Costa, José Carlos Bermudez, Universidade Federal de Santa Catarina, Brazil

14:20
SPTM-L5.2 **MODELING FINITE PRECISION LMS BEHAVIOR USING MARKOV CHAINS**
Yasmín Montenegro, University of Antofagasta, Chile; José Carlos Bermudez, Federal University of Santa Catarina, Brazil; Vítor Nascimento, University of São Paulo, Brazil

14:40
SPTM-L5.3 **STATISTICAL ANALYSIS OF THE LMS ALGORITHM APPLIED TO SUPER-RESOLUTION VIDEO RECONSTRUCTION**
Guilherme Costa, José Carlos Bermudez, Federal University of Santa Catarina, Brazil

15:00
SPTM-L5.4 **ON CONVERGENCE OF PROPORTIONATE-TYPE NLMS ADAPTIVE ALGORITHMS**
Milos Doroslovacki, George Washington University, United States; Hongyang Deng, Acoustic Technologies, Inc., United States

15:20
SPTM-L5.5 **PARALLEL NLMS FILTERS WITH STOCHASTIC ACTIVE TAPS AND STEP-SIZES FOR SPARSE SYSTEM IDENTIFICATION**
Yancheng Li, Yuantao Gu, Kun Tang, Tsinghua University, China

15:40
SPTM-L5.6 **DOUBLE DIRECTION ADAPTATION FOR NOISE REDUCTION IN PRE-WHITENED LMS-TYPE ALGORITHMS**
Hichem Besbes, Sofia Ben Jebara, Ecole Supérieure des Communications de Tunis, Tunisia

SLP-L5 **Advances in Speaker Recognition** (Lecture)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Auditorium St Exupery
Chair: Nikki Mirghafori, University of California, Berkeley

14:00
SLP-L5.1 **SVM BASED SPEAKER VERIFICATION USING A GMM SUPERVECTOR KERNEL AND NAP VARIABILITY COMPENSATION**
William Campbell, Douglas Sturim, Douglas Reynolds, Alex Solomonoff, MIT Lincoln Laboratory, United States

14:20
SLP-L5.2 **THE CONTRIBUTION OF CEPSTRAL AND STYLISTIC FEATURES TO SRI'S 2005 NIST SPEAKER RECOGNITION EVALUATION SYSTEM**
Luciana Ferrer, Stanford University, United States; Elizabeth Shriberg, Sachin Kajarekar, Andreas Stolcke, Kemal Sonmez, Anand Venkataraman, Harry Bratt, SRI International, United States

14:40
SLP-L5.3 **PROBABILISTIC LATENT PROSODY ANALYSIS FOR ROBUST SPEAKER VERIFICATION**
Zi-He Chen, National Central University, Taiwan; Zhi-Ren Zeng, Yuan-Fu Liao, National Taipei University of Technology, Taiwan; Yau-Tarng Juang, National Central University, Taiwan

15:00
SLP-L5.4 **SECONDARY CLASSIFICATION FOR GMM BASED SPEAKER RECOGNITION**
Jason Pelecanos, Daniel Povey, Ganesh Ramaswamy, IBM T. J. Watson Research Center, United States

15:20
SLP-L5.5 **IMPROVEMENTS IN FACTOR ANALYSIS BASED SPEAKER VERIFICATION**
Patrick Kenny, Gilles Boulianne, Pierre Ouellet, Pierre Dumouchel, CRIM, Canada

15:40
SLP-L5.6 **KURTOSIS NORMALIZATION IN FEATURE SPACE FOR ROBUST SPEAKER VERIFICATION**
Yanlu Xie, Beiqian Dai, Zhiqiang Yao, Minghui Liu, University of Science and Technology of China, China

SS-5 **Dealing with Intrinsic Speech Variabilities in ASR**
(Special Session)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Guillaumet 1 & 2
Chair: Stéphane Dupont, Multitel

14:00
SS-5.1 **AUTOMATIC SPEECH RECOGNITION AND INTRINSIC SPEECH VARIATION**
Mohamed Benzeguiba, Eurecom Institute, France; Renato De Mori, Université d'Avignon, France; Olivier Deroo, Acapela Group, Belgium; Stéphane Dupont, Multitel ASBL, Belgium; Teodora Erbes, Eurecom Institute, France; Denis Jouvet, France Télécom, France; Luciano Fissore, Loquendo, Italy; Pietro Laface, Politecnico di Torino, Italy; Alfred Mertins, Carl von Ossietzky Universitat Oldenburg, Germany; Christophe Ris, Multitel, Belgium; Richard Rose, McGill University, Canada; Vivek Tyagi, Christian Wellekens, Eurecom Institute, France

14:20
SS-5.2 **FREQUENCY-WARPING INVARIANT FEATURES FOR AUTOMATIC SPEECH RECOGNITION**
Alfred Mertins, Jan Rademacher, University of Oldenburg, Germany

14:40
SS-5.3 **CHARACTERIZING FEATURE VARIABILITY IN AUTOMATIC SPEECH RECOGNITION SYSTEMS**
Loïc Barrault, Driss Matrouf, Renato De Mori, University of Avignon, France; Roberto Gemello, Franco Mana, Loquendo, Italy

15:00
SS-5.4 **ADAPTATION OF HYBRID ANN/HMM USING WEIGHTS INTERPOLATION**
Stefano Scanzio, Pietro Laface, Politecnico di Torino, Italy; Roberto Gemello, Franco Mana, Loquendo, Italy

15:20
SS-5.5 **USING MULTILINGUAL UNITS FOR IMPROVED MODELING OF PRONUNCIATION VARIANTS**
Katarina Bartkova, Denis Jouvet, France Télécom R&D Division, France

15:40
SS-5.6 **FEPSTRUM AND CARRIER SIGNAL DECOMPOSITION OF SPEECH SIGNALS THROUGH HOMOMORPHIC FILTERING**
Vivek Tyagi, Christian Wellekens, Institut Eurecom, France

IMDSP-P6 **3D Coding, Processing and Applications** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 1
Chair: Marc Antonini, Universite de Nice Sophia Antipolis

IMDSP-P6.1 **FAST ADAPTIVE BLOCK MATCHING FOR RAY-SPACE CODING IN FTV SYSTEM**
Mei Yu, Ningbo University / Peking University, China; Feng Shao, Ningbo University / Zhejiang University, China; Gangyi Jiang, Ningbo University / Peking University, China; Yu Zhou, Ningbo University, China

IMDSP-P6.2 **AN AUTOMATIC 3D CITY MODEL : A BAYESIAN APPROACH USING SATELLITE IMAGES**
Florent Lafarge, Ariana Research Group - INRIA / IGN, France; Xavier Descombes, Josiane Zerubia, Ariana Research Group - INRIA, France; Marc-Pierrot Deseilligny, IGN, France

IMDSP-P6.3 **A NEW OBJECT-BASED FRACTAL STEREO CODEC WITH QUADTREE-BASED DISPARITY OR MOTION COMPENSATION**
Kamel Belloulata, Shiping Zhu, Université de Sherbrooke, Canada

IMDSP-P6.4 **PROGRESSIVE TRANSMISSION OF 3-D POINTTEXTURE IMAGES**
In-Wook Song, Sang-Uk Lee, Seoul National University, Republic of Korea; Chang-Su Kim, Korea University, Republic of Korea

IMDSP-P6.5 **FRACTAL VOLUME RENDERING**
Xiaoliang Li, Hongxing Qin, Jie Yang, Shanghai Jiao Tong University, China; Yuemin Zhu, Creatis, Insa Lyon, France

IMDSP-P6.6 **SHAPE FROM FOCUS USING OPTIMIZATION TECHNIQUE**
Muhammad Bilal Ahmad, Tae-Sun Choi, Gwangju Institute of Science and Technology, Republic of Korea

(Continued from previous page.)

IMDSP-P6.7 **ESTIMATION OF EPIPOLAR GEOMETRY VIA THE RADON TRANSFORM**
Stefan Lehmann, Andrew Bradley, Vaughan Clarkson, University of Queensland, Australia

IMDSP-P6.8 **3-D BODY POSTURE TRACKING FOR HUMAN ACTION TEMPLATE MATCHING**
Massimiliano Pierobon, Marco Marcon, Augusto Sarti, Stefano Tubaro, Politecnico di Milano, Italy

IMDSP-P6.9 **PROJECTIVE RECTIFICATION OF IMAGE TRIPLETS FROM THE FUNDAMENTAL MATRIX**
Florian Kangni, Robert Laganiere, University of Ottawa, Canada

IMDSP-P6.10 **DISPARITY ESTIMATION FROM STEREO IMAGES WITH MULTILAYERED REACTION-DIFFUSION MODELS OF ACTIVATION-INHIBITION MECHANISM**
Atsushi Nomura, Makoto Ichikawa, Hidetoshi Miike, Yamaguchi University, Japan

IMDSP-P6.11 **LATTICE VECTOR QUANTIZATION FOR NORMAL MESH GEOMETRY CODING**
Leonardo Fonteles, Marc Antonini, I3S Laboratory / CNRS / University of Nice-Sophia Antipolis, France

IMDSP-P6.12 **A 3D DCT COMPRESSION ALGORITHM FOR OMNIDIRECTIONAL INTEGRAL IMAGES**
Amar Aggoun, Brunel University, United Kingdom

IMDSP-P7 **Video Coding I** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 2
Chair: Shih-Fu Chang, Columbia University

IMDSP-P7.1 **A PROPOSAL TO SUPPRESS THE TRAINING STAGE IN A COSET-BASED DISTRIBUTED VIDEO CODEC**
Xavi Artigas, Technical University of Catalonia (UPC), Spain; Marco Tagliasacchi, Politecnico di Milano, Italy; Luis Torres, Technical University of Catalonia (UPC), Spain; Stefano Tubaro, Politecnico di Milano, Italy

IMDSP-P7.2 **IMPROVING TRANSFORM DOMAIN WYNER-ZIV VIDEO CODING PERFORMANCE**
Catarina Brites, Instituto Superior Técnico, Portugal; João Ascenso, Instituto Superior de Engenharia de Lisboa, Portugal; Fernando Pereira, Instituto Superior Técnico, Portugal

IMDSP-P7.3 **UNEQUALLY ERROR PROTECTED DATA PARTITIONED VIDEO WITH COMBINED HIERARCHICAL MODULATION AND CHANNEL CODING**
Mohammad Mahdi Ghandi, Bashar Barmada, Ed Jones, Mohammed Ghanbari, University of Essex, United Kingdom

IMDSP-P7.4 **GENERALIZED SOURCE-CHANNEL PREDICTION FOR ERROR RESILIENT VIDEO CODING**
Hua Yang, Thomson, Inc., United States; Kenneth Rose, University of California, Santa Barbara, United States

IMDSP-P7.5 **IMPROVING TURBO CODEC INTEGRATION IN PIXEL-DOMAIN DISTRIBUTED VIDEO CODING**
Marco Dalai, Riccardo Leonardi, University of Brescia, Italy; Fernando Pereira, Instituto Superior Técnico, Portugal

IMDSP-P7.6 **ROBUST VIDEO TRANSMISSION OVER MIXED IP - WIRELESS CHANNELS USING MOTION-COMPENSATED OVERSAMPLED FILTERBANKS**
Jui Chiu Chiang, Chang-Ming Lee, National Chung Cheng University, Taiwan; Michel Kieffer, Pierre Duhamel, LSS / CNRS / Supélec / Université Paris-Sud, XI, France

(Continued from previous page.)

IMDSP-P7.7 **FAST MODE DECISION FOR COARSE GRAIN SNR SCALABLE VIDEO CODING**
He Li, Nanyang Technological University, Singapore; Zheng Guo Li, Institute for Infocomm Research, Singapore; Changyun Wen, Nanyang Technological University, Singapore

IMDSP-P7.8 **ADOPTING SP/SI-FRAMES IN DUAL-BITSTREAM VIDEO STREAMING WITH VCR SUPPORT**
Tak-Piu Ip, Yui-Lam Chan, Wan-Chi Siu, Hong Kong Polytechnic University, Hong Kong SAR of China

IMDSP-P7.9 **COMPOSITE-BLOCK MODEL AND JOINT-PREDICITION ALGORITHM FOR INTER-FRAME VIDEO CODING**
Rong Ding, Fan Wang, Qionghai Dai, Wenli Xu, Dongdong Zhu, Tsinghua University, China

IMDSP-P7.10 **MODELING THE MOTION CODING ERROR FOR MCWT VIDEO CODERS**
Marie Andrée Agostini, Thomas André, Marc Antonini, Michel Barlaud, I3S Laboratory / CNRS / University of Nice-Sophia Antipolis, France

IMDSP-P7.11 **AN ENTROPY CODING SCHEME FOR MULTI-COMPONENT SCALABLE MOTION INFORMATION**
Toni Zgaljic, Marta Mrak, Nikola Sprljan, Ebroul Izquierdo, Queen Mary, University of London, United Kingdom

IMDSP-P7.12 **DESIGN OF COMPUTATION-AWARE MODE DECISION SCHEME FOR H.264/AVC**
Chuan-Yu Cho, Nicole Shih-Yu Huang, Jia-Shung Wang, National Tsing Hua University, Taiwan

MLSP-P3 **Pattern Recognition** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 3
Chair: Ling Guan, Ryerson University

MLSP-P3.1 **OFFERING PATTERN MINING USING HIGH YIELD PARTITION TREES**
Jianying Hu, Aleksandra Mojsilovic, IBM T. J. Watson Research Center, United States

MLSP-P3.2 **FACE RECOGNITION BASED ON SEPARABLE LATTICE HMMS**
Daisuke Kurata, Yoshihiko Nankaku, Keiichi Tokuda, Tadashi Kitamura, Nagoya Institute of Technology, Japan; Zoubin Ghahramani, University College London, United Kingdom

MLSP-P3.3 **LOCATION TRACKING IN WIRELESS LOCAL AREA NETWORKS WITH ADAPTIVE RADIO MAPS**
Azadeh Kushki, Konstantinos Plataniotis, Anastasios Venetsanopoulos, University of Toronto, Canada

MLSP-P3.4 **INTEGRATED DETECTION, TRACKING AND RECOGNITION FOR IR VIDEO-BASED VEHICLE CLASSIFICATION**
Xue Mei, University of Maryland, College Park, United States; Shaohua Zhou, Siemens Corporate Research, United States; Hao Wu, University of Maryland, College Park, United States

MLSP-P3.5 **CONTINUOUS HMM-BASED VOLCANO MONINORING AT DECEPTION ISLAND, ANTARCTICA**
Carmen Benítez, Javier Ramírez, José C. Segura, Antonio J. Rubio, Jesús Ibañez, Javier Almendros, Araceli Garcia Yeguas, University of Granada, Spain

MLSP-P3.6 **A CHERNOFF–BASED APPROACH TO THE ESTIMATION OF TRANSFORMATION MATRICES FOR BINARY HYPOTHESIS TESTING**
Fernando D. Lorenzo-García, Antonio G. Ravelo-García, Juan L. Navarro-Mesa, Sofía I. Martín-González, Pedro J. Quintana-Morales, Eduardo Hernández-Pérez, Universidad de Las Palmas de Gran Canaria, Spain

(Continued from previous page.)

MLSP-P3.7 **REDUCED COMPLEXITY AND SCALING FOR ASYNCHRONOUS HMMS IN A BIMODAL INPUT FUSION APPLICATION**
Marc Al-Hames, Gerhard Rigoll, Technische Universität München, Germany

MLSP-P3.8 **ROBUST AUDIO WATERMARK DECODING BY SUPERVISED LEARNING**
Serap Kirbiz, Bige Gunsel, Istanbul Technical University, Turkey

MLSP-P3.9 **KERNEL BASED SYNTHETIC DISCRIMINANT FUNCTION FOR OBJECT RECOGNITION**
Kyu-Hwa Jeong, Puskal Pokharel, Jian-Wu Xu, Seungju Han, Jose Principe, University of Florida, United States

MLSP-P3.10 **ESTIMATING THE NUMBER OF MARINE MAMMALS USING RECORINGS OF CLICKS FROM ONE MICROPHONE**
Xanadu Halkias, Daniel P. W. Ellis, Columbia University, United States

MLSP-P3.11 **FAST INCREMENTAL TECHNIQUES FOR LEARNING PRODUCTION RULE PROBABILITIES IN RADAR ELECTRONIC SUPPORT**
Guillaume Latombe, Éric Granger, École de Technologie Supérieure, Canada; Fred A. Dilkes, Defence Research and Development Canada, Canada

MLSP-P3.12 **FAST TRAINING AND EFFICIENT LINEAR LEARNING MACHINE**
Abdenour Bounsiar, Pierre Beauseroy, Edith Grall-Maës, Université de Technologie de Troyes, France

SPCOM-P6 **Channel Estimation & Equalization I** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 4
Chair: Tongtong Li, Michigan State University

SPCOM-P6.1 **LOW-POWER ADAPTIVE EQUALIZER VIA SOFT ERROR CANCELLATION**
Jun Won Choi, Andrew Singer, University of Illinois at Urbana-Champaign, United States; Nam IK Cho, Seoul National University, Republic of Korea

SPCOM-P6.2 **MMSE TURBO EQUALIZER FOR CHANNELS WITH COCHANNEL INTERFERENCE**
Yu Gong, Zhiguo Ding, Colin Cowan, Queen's University, Belfast, United Kingdom

SPCOM-P6.3 **PRECONDITIONED AND RANK-FLEXIBLE BLOCK CONJUGATE GRADIENT IMPLEMENTATIONS OF MIMO WIENER DECISION FEEDBACK EQUALIZERS**
Ingmar Groh, German Aerospace Center (DLR), Germany; Guido Dietl, Wolfgang Utschick, Munich University of Technology (TUM), Germany

SPCOM-P6.4 **DEPENDENCY BETWEEN ERROR VARIANCE OF THE A PRIORI INFORMATION AND A MODIFIED CHANNEL NOISE VARIANCE IN TURBO-EQUALISATION**
Gilles Gorlier, Sylvie Perreau, University of South Australia, Australia; Inbar Fijalkow, ENSEA - University of Cergy-Pontoise - CNRS, France

SPCOM-P6.5 **FUZZY ADAPTIVE BLIND EQUALIZER USING EXTENDED KALMAN FILTER BASED ADAPTATION ALGORITHM FOR POWERLINE CHANNEL**
Wai Kit Wong, Heng Siong Lim, Multimedia University, Malaysia

SPCOM-P6.6 **MULTIPATH PARAMETER ESTIMATION OF TIME-VARYING SPACE-TIME COMMUNICATION CHANNELS USING PARALLEL FACTOR ANALYSIS**
André de Almeida, Gérard Favier, Laboratoire I3S / CNRS / UNSA, France; João Mota, Laboratorio GTEL / DETI / UFC, Brazil

(Continued from previous page.)

SPCOM-P6.7 PARTICLE FILTERS FOR BLIND FIR CHANNEL EQUALIZATION IN NON-GAUSSIAN NOISE
Claudio Bordin, Jr., Luiz Baccalá, Escola Politécnica da Universidade de São Paulo, Brazil

SPCOM-P6.8 BLIND MIMO FIR CHANNEL IDENTIFICATION BY EXPLOITING CHANNEL ORDER DISPARITY
Jun Fang, National University of Singapore, Singapore; A. Rahim Leyman, Yong-Huat Chew, Institute for Infocomm Research, Singapore

SPCOM-P6.9 ON DATA AND PARAMETER ESTIMATION USING THE VARIATIONAL BAYESIAN EM-ALGORITHM FOR BLOCK-FADING FREQUENCY-SELECTIVE MIMO CHANNELS
Lars P. B. Christensen, Jan Larsen, Technical University of Denmark, Denmark

SPCOM-P6.10 FAST COMPUTATION OF A CONSTRAINED ENERGY DFE
Ricardo Merched, Universidade Federal do Rio de Janeiro, Brazil

SPCOM-P6.11 POWER-OF-TWO QUANTIZATION IN DECISION FEEDBACK EQUALIZATION
Mansour Aldajani, King Fahd University of Petroleum & Minerals, Saudi Arabia

SPCOM-P6.12 AN EM-MAP-BLOCK ALGORITHM FOR SEMI-BLIND CHANNEL ESTIMATION
Sami Touati, Université de Marne-la-Vallée, France

SPTM-P5 **Time-Frequency Transforms and Operators** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 5
Chair: Ercan Kuruoglu, ISTI - CNR

SPTM-P5.1 **AN ALGORITHM FOR PARAMETER ESTIMATION OF MULTICOMPONENT CHIRP SIGNALS**
Jianyu Yang, Pu Wang, Jintao Xiong, University of Electronic Science and Technology of China, China

SPTM-P5.2 **DOUBLE PRECONDITIONING FOR THE GABOR FRAME OPERATOR**
Peter Balazs, Austrian Academy of Sciences, Austria; Hans G. Feichtinger, Mario Hampejs, Günther Kracher, University of Vienna, Austria

SPTM-P5.3 **AN EXTENSION OF THE CLASS OF UNITARY TIME–WARPING PROJECTORS TO DISCRETE–TIME SEQUENCES**
Arnaud Jarrot, Cornel Ioana, André Quinquis, E3I2 laboratory (EA 3876) - ENSIETA, France

SPTM-P5.4 **THE MULTIPLE-PARAMETER DISCRETE FRACTIONAL FOURIER TRANSFORM AND ITS APPLICATION**
Wen-Liang Hsue, Soo-Chang Pei, National Taiwan University, Taiwan

SPTM-P5.5 **EFFICIENT ALGORITHM FOR MODIFIED LOCAL POLYNOMIAL TIME FREQUENCY TRANSFORM**
Yongmei Wei, Guoan Bi, Nanyang Technological University, Singapore

SPTM-P5.6 **JENSEN-RENYI DIVERGENCE FOR SOURCE SEPARATION ON THE TIME-FREQUENCY PLANE**
Zeyong Shan, Selin Aviyente, Michigan State University, United States

(Continued from previous page.)

SPTM-P5.7 **FRACTIONAL FOURIER TRANSFORMS AND WIGNER DISTRIBUTION FUNCTIONS FOR STATIONARY AND NON-STATIONARY RANDOM PROCESS**
Jian-Jiun Ding, Soo-Chang Pei, National Taiwan University, Taiwan

SPTM-P5.8 **MULTIPLE WINDOW DECOMPOSITION OF TIME-FREQUENCY KERNELS USING A PENALTY FUNCTION FOR SUPPRESSED SIDELOBES**
Maria Hansson, Lund University, Sweden

SPTM-P5.9 **ON THE PROBABILITY DISTRIBUTIONS OF SPECTROGRAM COEFFICIENTS FOR CORRELATED GAUSSIAN PROCESS**
Julien Huillery, Fabien Millioz, Nadine Martin, Image and Signal Processing Laboratory (LIS), France

SPTM-P5.10 **TIME-FREQUENCY REPRESENTATIONS MATCHED TO GUIDED WAVES**
Grégoire Le Touzé, Barbara Nicolas, Jérôme I. Mars, Jean-Louis Lacoume, Laboratory of Image and Signal (LIS), France

SPTM-P5.11 **ON THE INFLUENCE OF SAMPLING ON THE EMPIRICAL MODE DECOMPOSITION**
Gabriel Rilling, Patrick Flandrin, ENS Lyon, France

SPTM-P5.12 **SHORT TIME FOURIER TRANSFORM PROBABILITY DISTRIBUTION FOR TIME-FREQUENCY SEGMENTATION**
Fabien Millioz, Julien Huillery, Nadine Martin, Laboratory of Image and Signal (LIS), France

SLP-P9 **Speech Coding** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 6
Chair: Bastiaan Kleijn, KTH - Royal Institute of Technology

SLP-P9.1 **DYNAMIC SCALING OF ENCODED SPEECH THROUGH THE DIRECT MODIFICATION OF CODED PARAMETERS**
Rafid Sukkar, Rick Younce, Peng Zhang, Tellabs, Inc., United States

SLP-P9.2 **NOVEL CODEC STRUCTURES FOR NOISE FEEDBACK CODING OF SPEECH**
Juin-Hwey Chen, Broadcom Corporation, United States

SLP-P9.3 **CODED DOMAIN LEVEL CONTROL FOR THE AMR SPEECH CODEC**
Antti Pasanen, Nokia Research Center, Finland

SLP-P9.4 **NEW NATO STANAG NARROW BAND VOICE CODER AT 600 BITS/S**
Gwenael Guilmin, Francois Capman, Bertrand Ravera, Frederic Chartier, Thalès Communications, France

SLP-P9.5 **HIGH RATE DESIGN OF TRANSFORM CODERS WITH GAUSSIAN MIXTURE COMPANDERS**
Ethan Duni, Bhaskar Rao, University of California, San Diego, United States

SLP-P9.6 **A CELP-WAVELET SCALABLE WIDEBAND SPEECH CODER**
Mickael De Meuleneire, BenQ Mobile, Germany; Hervé Taddei, Olivier de Zélicourt, Siemens AG, Germany; Dominique Pastor, ENST Bretagne, France; Peter Jax, University of Technology Aachen (RWTH), France

(Continued from previous page.)

SLP-P9.7 **SMVLITE: REDUCED COMPLEXITY SELECTABLE MODE VOCODER**
Chanaveeragouda Goudar, Pankaj Rabha, Murali Deshpande, Ajit Rao, Texas Instruments, Inc., India

SLP-P9.8 **A SCALABLE PHONETIC VOCODER FRAMEWORK USING JOINT PREDICTIVE VECTOR QUANTIZATION OF MELP PARAMETERS**
Alan McCree, MIT Lincoln Laboratory, United States

SLP-P9.9 **NEW SPEECH ENCODING ALGORITHMS FOR ULTRA LOW BIT RATE AT 600/300 BPS**
Jian Cong, The 30th Institute of CETC, China; Suo Cong, University of Zurich, Switzerland

SLP-P9.10 **A NEW POST-FILTERING FOR ARTIFICIALLY REPLICATED HIGH-BAND IN SPEECH CODERS**
Guillaume Fuchs, Roch Lefebvre, University of Sherbrooke, Canada

SLP-P9.11 **ON VARIABLE RATE FRAME INDEPENDENT PREDICTIVE SPEECH CODING: RE-ENGINEERING ILBC**
Christopher M. Garrido, Manohar N. Murthi, University of Miami, United States; Søren Vang Andersen, Aalborg University, Denmark

SLP-P10 **Speech Synthesis II** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 7
Chair: Thierry Dutoit, Faculté Polytechnique de Mons

SLP-P10.1 **LSM-BASED BOUNDARY TRAINING FOR CONCATENATIVE SPEECH SYNTHESIS**
Jerome Bellegarda, Apple Computer, United States

SLP-P10.2 **MEASURING TARGET COST IN UNIT SELECTION WITH KL-DIVERGENCE BETWEEN CONTEXT-DEPENDENT HMMS**
Yong Zhao, Peng Liu, Yusheng Li, Yining Chen, Min Chu, Microsoft Research Asia, China

SLP-P10.3 **IDENTIFYING LANGUAGE ORIGIN OF PERSON NAMES WITH N-GRAMS OF DIFFERENT UNITS**
Yining Chen, Microsoft Research Asia, China; Jiali You, Chinese Academy of Sciences, China; Min Chu, Yong Zhao, Microsoft Research Asia, China; Jinlin Wang, Chinese Academy of Sciences, China

SLP-P10.4 **APPLYING PITCH TARGET MODEL TO CONVERT F0 CONTOUR FOR EXPRESSIVE MANDARIN SPEECH SYNTHESIS**
Yongguo Kang, Jianhua Tao, Bo Xu, Chinese Academy of Sciences, China

SLP-P10.5 **PITCH MODIFICATION OF SPEECH RESIDUAL BASED ON PARAMETERIZED GLOTTAL FLOW WITH CONSIDERATION OF APPROXIMATION ERROR**
Karl Schnell, Goethe-University Frankfurt, Germany

SLP-P10.6 **A NEW PITCH GENERATION MODEL BASED ON INTERNAL DEPENDENCE OF PITCH CONTOUR FOR MANDARIN TTS SYSTEM**
Jian Yu, Wanzhi Zhang, Jianhua Tao, Chinese Academy of Sciences, China

(Continued from previous page.)

SLP-P10.7 **PARSING HIERARCHICAL PROSODIC STRUCTURE FOR MANDARIN SPEECH SYNTHESIS**
Dawei Xu, Toshiba Research & Development Center, Japan; Haifeng Wang, Guohua Li, Toshiba Corporation, China; Takehiko Kagoshima, Toshiba Research & Development Center, Japan

SLP-P10.8 **QUANTITATIVE TARGET APPROXIMATION MODEL: SIMULATING UNDERLYING MECHANISMS OF TONES AND INTONATIONS**
Santitham Prom-on, Yi Xu, University College London, United Kingdom; Bundit Thipakorn, King Mongkut's University of Technology Thonburi, Thailand

SLP-P10.9 **A HIERARCHICAL APPROACH TO AUTOMATIC STRESS DETECTION IN ENGLISH SENTENCES**
Min Lai, University of Science and Technology of China, China; Yining Chen, Min Chu, Yong Zhao, Microsoft Research Asia, China; Fangyu Hu, University of Science and Technology of China, China

SLP-P10.10 **A SHORT-LATENCY UNIT SELECTION METHOD WITH REDUNDANT SEARCH FOR CONCATENATIVE SPEECH SYNTHESIS**
Nobuyuki Nishizawa, ATR Spoken Language Communication Research Laboratories, Japan; Hisashi Kawai, ATR Spoken Language Communication Research Laboratories / KDDI R&D Laboratories, Inc., Japan

SLP-P10.11 **UNIT SELECTION SPEECH SYNTHESIS IN NOISE**
Milos Cernak, Slovak Academy of Sciences, Slovakia

ITT-P1 **Defense and Security Applications** (Poster)
Time: Wednesday, May 17, 14:00 - 16:00
Place: Poster Area 8
Chair: Raghuveer Rao, Rochester Institute of Technology

ITT-P1.1 **ALTERNATIVE CONSTRAINT STRATEGIES TO THE ESMI ALGORITHM IN RADAR SYSTEMS**
Marc Oudin, Jean-Pierre Delmas, Institut National des Télécommunications, France; Cécile Germond, Claude Adnet, Frederic Barbaresco, Thales/TAD/JRS/RBPEF, France

ITT-P1.2 **SIGNAL DETECTION IN CLUTTER USING MAXIMUM ENTROPY PDF ESTIMATION BASED ON FRACTIONAL MOMENTS**
Babak Abbasi Bastami, Hamidreza Amindavar, Amirkabir University of Technology, Iran

ITT-P1.3 **SECURE SOUND CLASSIFICATION: GAUSSIAN MIXTURE MODELS**
Madhusudana Shashanka, Boston University Hearing Research Center, United States; Paris Smaragdis, Mitsubishi Electric Research Laboratories, United States

ITT-P1.4 **EFFICIENT WIDEBAND SPREADING FUNCTION ESTIMATION USING ARBITRARY SHAPED LFM SIGNALS VIA HERMITE DECOMPOSITIONS**
Saman S. Abeysekera, Md. Raihan Sharif, Nanyang Technological University, Singapore

ITT-P1.5 **PERFORMANCE ANALYSIS OF 1D SCATTERING CENTER EXTRACTION FROM WIDEBAND RADAR MEASUREMENTS**
Jianxiong Zhou, Hongzhong Zhao, Zhiguang Shi, Qiang Fu, National University of Defence Technology, China

ITT-P1.6 **AN ECHO-HIDING WATERMARKING TECHNIQUE BASED ON BILATERAL SYMMETRIC TIME SPREAD KERNEL**
S. A. Chou, Shih-Fu Hsieh, National Chiao Tung University, Taiwan

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ITT-P1.7 **RADAR SIGNAL CLASSIFICATION USING PCA-BASED FEATURES**
Amit Mishra, Bernard Mulgrew, University of Edinburgh, United Kingdom

ITT-P1.8 **OPTIMAL THRESHOLD POLICIES FOR HARD-KILL OF ENEMY RADARS WITH HIGH SPEED ANTI-RADIATION MISSILES (HARMS)**
Arsalan Farrokh, Vikram Krishnamurthy, University of British Columbia, Canada

ITT-P1.9 **EQUALIZATION OF A TIME-VARYING CHANNEL IN THE PRESENCE OF DOPPLER RATE**
Ghassan Maalouli, General Dynamics, United States; Andreas Spanias, Arizona State University, United States

ITT-P1.10 **CHEMICAL SOURCE LOCALIZATION IN UNKNOWN TURBULENCE USING THE CROSS-CORRELATION METHOD**
Gail Rosen, Paul Hasler, Georgia Institute of Technology, United States

ITT-P1.11 **REAL-TIME COLLABORATIVE MONITORING IN WIRELESS SENSOR NETWORKS**
Visar Berisha, Homin Kwon, Andreas Spanias, Arizona State University, United States

DISPS-L1 **Fast Algorithm Design and Synthesis** (Lecture)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Spot
Chair: Shuvra Bhattacharyya, University of Maryland, College Park

16:30
DISPS-L1.1 **ALGEBRAIC DERIVATION OF GENERAL RADIX COOLEY-TUKEY ALGORITHMS FOR THE REAL DISCRETE FOURIER TRANSFORM**
Yevgen Voronenko, Markus Püschel, Carnegie Mellon University, United States

16:50
DISPS-L1.2 **ADAPTIVE MULTILINEAR SVD FOR STRUCTURED TENSORS**
Rémy Boyer, LSS / CNRS / Supélec / Université Paris-Sud, XI, France; Roland Badeau, GET / Télécom Paris, France

17:10
DISPS-L1.3 **THE DESIGN OF OPTIMAL L_1 LINEAR PHASE DIGITAL FIR FILTERS**
Liron Grossmann, Yonina Eldar, Technion - Israel Institute of Technology, Israel

17:30
DISPS-L1.4 **SIMPLE ELEMENT INVERSE DCT/DFT HYBRID ARCHITECUTER ALGORITHM**
Jia Hou, Moon Ho Lee, Chonbuk National University, Republic of Korea; Dae Chul Park, Hannam University, Republic of Korea; Kwang Jae Lee, Hanlyo University, Republic of Korea

17:50
DISPS-L1.5 **MODELING AND ANALYSIS OF WINDOWED SYNCHRONOUS ALGORITHMS**
Joachim Keinert, Fraunhofer Institute for Integrated Circuits IIS, Germany; Christian Haubelt, Jürgen Teich, University of Erlangen-Nuremberg, Germany

18:10
DISPS-L1.6 **A SPACE-VARIANT SENSOR STRUCTURE FOR COMPLEX TARGET DETECTION AND TRACKING**
David Claveau, Chunyan Wang, Concordia University, Canada

IMDSP-L6 **Image/Video Indexing and Retrieval** (Lecture)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Cassiopée
Chair: Nikos Nikolaidis, Aristotle University

16:30
IMDSP-L6.1 **CONSTRUCTING DESCRIPTIVE AND DISCRIMINANT FEATURES FOR FACE CLASSIFICATION**
Jie Yu, Qi Tian, University of Texas, San Antonio, United States

16:50
IMDSP-L6.2 **PRE-CLASSIFICATION FOR AUTOMATIC IMAGE ORIENTATION**
Herve Le Borgne, Noel O'Connor, Dublin City University, Ireland

17:10
IMDSP-L6.3 **USING REGIONAL INFORMATION IN LANGUAGE MODEL BASED AUTOMATIC CONCEPT ANNOTATION AND RETRIEVAL OF VIDEO**
Dietrich Klakow, Saarland University, Germany

17:30
IMDSP-L6.4 **SOURCE ADAPTATION FOR IMPROVED CONTENT-BASED VIDEO RETRIEVAL**
Arnab Ghoshal, Sanjeev Khudanpur, Johns Hopkins University, United States

17:50
IMDSP-L6.5 **VIDEO INDEXING BY FACE OCCURRENCE-BASED SIGNATURES**
Costas Cotsaces, Nikos Nikolaidis, Ioannis Pitas, Aristotle University of Thessaloniki, Greece

18:10
IMDSP-L6.6 **A TEMPORAL BELIEF FILTER IMPROVING HUMAN ACTION RECOGNITION IN VIDEOS**
Emmanuel Ramasso, Michèle Rombaut, Denis Pellerin, Laboratoire des Images et des Signaux (LIS - UMR 5083), France

MLSP-L2 **Kernel Machines** (Lecture)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Caravelle 2
Chair: Samy Bengio, IDIAP

16:30
MLSP-L2.1 **KERNEL DENSITY ESTIMATION, AFFINITY-BASED CLUSTERING, AND TYPICAL CUTS**
Deniz Erdogmus, Miguel A. Carreira-Perpinan, Umut Ozertem, Oregon Health & Science University, United States

16:50
MLSP-L2.2 **AN EXPLICIT CONSTRUCTION OF A REPRODUCING GAUSSIAN KERNEL HILBERT SPACE**
Jian-Wu Xu, Puskal Pokharel, Kyu-Hwa Jeong, Jose Principe, University of Florida, United States

17:10
MLSP-L2.3 **SEMI-SUPERVISED KERNEL METHODS FOR REGRESSION ESTIMATION**
Alexei Pozdnoukhov, Samy Bengio, IDIAP Research Institute, Switzerland

17:30
MLSP-L2.4 **SPARSE FORWARD-BACKWARD USING MINIMUM DIVERGENCE BEAMS FOR FAST TRAINING OF CONDITIONAL RANDOM FIELDS**
Chris Pal, Charles Sutton, Andrew McCallum, University of Massachusetts, United States

17:50
MLSP-L2.5 **GENERALIZED LINEAR KERNELS FOR ONE-VERSUS-ALL CLASSIFICATION: APPLICATION TO SPEAKER RECOGNITION**
Andrew Hatch, University of California, Berkeley, United States; Andreas Stolcke, SRI International, United States

18:10
MLSP-L2.6 **CONTROLLING FALSE ALARMS WITH SUPPORT VECTOR MACHINES**
Mark Davenport, Richard Baraniuk, Clayton Scott, Rice University, United States

SAM-L2 **Microphone Array Processing** (Lecture)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Ariane 1 & 2
Chair: Dominic K. C. Ho, University of Missouri-Columbia

16:30
SAM-L2.1 **COHESIVE PARTICLE FILTERING FOR SOUND SOURCE LOCALIZATION**
Jonathan Fillion-Deneault, Jean Rouat, Université de Sherbrooke, Canada

16:50
SAM-L2.2 **DIRECTION OF ARRIVAL ESTIMATION FOR MULTIPLE SPEAKERS USING TIME-FREQUENCY ORTHOGONAL SIGNAL SEPARATION**
Mikael Swartling, Nedelko Grbic, Ingvar Claesson, Blekinge Institute of Technology, Sweden

17:10
SAM-L2.3 **DISAMBIGUATION OF TDOA ESTIMATES IN MULTI-PATH MULTI-SOURCE ENVIRONMENTS (DATEMM)**
Jan Scheuing, Bin Yang, University of Stuttgart, Germany

17:30
SAM-L2.4 **ROBUST 3D LOCALIZATION AND TRACKING OF SOUND SOURCES USING BEAMFORMING AND PARTICLE FILTERING**
Jean-Marc Valin, CSIRO ICT Centre, Australia; François Michaud, Jean Rouat, Université de Sherbrooke, Canada

17:50
SAM-L2.5 **DUAL-MICROPHONE SOURCE LOCATION METHOD IN 2-D SPACE**
Weiwei Cui, Zhigang Cao, Tsinghua University, China; Jianqiang Wei, Panasonic R&D Center (China) Co., Ltd., China

18:10
SAM-L2.6 **PARTICLE FILTERING APPROACH TO LOCALIZATION AND TRACKING OF A MOVING ACOUSTIC SOURCE IN A REVERBERANT ROOM**
C. E. Chen, H. Wang, A. Ali, F. Lorenzelli, R. E. Hudson, K. Yao, University of California, Los Angeles, United States

SLP-L6 **Advances in LVCSR Algorithms** (Lecture)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Auditorium St Exupery
Chair: Geoffrey Zweig, IBM T. J. Watson Research Center

16:30
SLP-L6.1 **MODELING POLYPHONE CONTEXT WITH WEIGHTED FINITE-STATE TRANSDUCERS**
Emilian Stoimenov, John McDonough, Institut fuer Theoretische Informatik, Germany

16:50
SLP-L6.2 **JOINT UNCERTAINTY DECODING (JUD) WITH HISTOGRAM-BASED QUANTIZATION (HQ) FOR ROBUST AND/OR DISTRIBUTED SPEECH RECOGNITION**
Chia-yu Wan, Lin-shan Lee, National Taiwan University, Taiwan

17:10
SLP-L6.3 **AUGMENTED STATISTICAL MODELS FOR SPEECH RECOGNITION**
Martin Layton, Mark J. F. Gales, University of Cambridge, United Kingdom

17:30
SLP-L6.4 **TONE-ENHANCED GENERALIZED CHARACTER POSTERIOR PROBABILITY(GCPP) FOR CANTONESE LVCSR**
Yao Qian, Frank K. Soong, Microsoft Research Asia, China; Tan Lee, Chinese University of Hong Kong, China

17:50
SLP-L6.5 **ACOUSTIC MODEL ADAPTATION BASED ON PRONUNCIATION VARIABILITY ANALYSIS FOR NON-NATIVE SPEECH RECOGNITION**
Yoo Rhee Oh, Jae Sam Yoon, Hong Kook Kim, Gwangju Institute of Science and Technology, Republic of Korea

18:10
SLP-L6.6 **A COMPARATIVE STUDY OF DISCRIMINATIVE METHODS FOR RERANKING LVCSR N-BEST HYPOTHESES IN DOMAIN ADAPTATION AND GENERALIZATION**
Zhengyu Zhou, Chinese University of Hong Kong, Hong Kong SAR of China; Jianfeng Gao, Microsoft Corporation, United States; Frank K. Soong, Microsoft Research Asia, China; Helen Meng, Chinese University of Hong Kong, Hong Kong SAR of China

SS-6 **Task-driven sensing and distributed processing**
(Special Session)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Guillaumet 1 & 2
Co-Chairs: Pascal Frossard, Swiss Federal Institute of Technology Lausanne (EPFL) and Olivier Verscheure, IBM T.J. Watson Research Center

16:30
SS-6.1 **SIGNAL PROCESSING CHALLENGES IN DISTRIBUTED STREAM PROCESSING SYSTEMS**
Pascal Frossard, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Olivier Verscheure, Chitra Venkatramani, IBM Research, United States

16:50
SS-6.2 **QUANTIZATION IN TASK-DRIVEN SENSING AND DISTRIBUTED PROCESSING**
Robert M. Gray, Stanford University, United States

17:10
SS-6.3 **MAXIMUM A POSTERIORI (MAP)-BASED ALGORITHM FOR DISTRIBUTED SOURCE LOCALIZATION USING QUANTIZED ACOUSTIC SENSOR READINGS**
Yoon Hak Kim, Antonio Ortega, University of Southern California, United States

17:30
SS-6.4 **DATA COMPRESSION FOR SIMULTANEOUS/ SEQUENTIAL INFERENCE TASKS IN SENSOR NETWORKS**
Mo Chen, Mark Fowler, SUNY Binghamton, United States; Andrew Noga, Air Force Research Laboratory, United States

17:50
SS-6.5 **TOPOLOGY OF SENSOR NETWORKS IN DISTRIBUTED DETECTION**
Saeed Aldosari, José M. F. Moura, Carnegie Mellon University, United States

18:10
SS-6.6 **DISTRIBUTED MICROPHONE ARRAYS FOR DIGITAL HOME AND OFFICE**
Ying Jia, Yu Luo, Yan Lin, Igor Kozintsev, Intel Corporation, China

AE-P2 **Hearing Aids, Auditory Models and Physical Models** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 1
Chair: Malcolm Slaney, Yahoo! Research

AE-P2.1 **WAVELET PACKET FILTERBANK FOR SPEECH PROCESSING STRATEGIES IN COCHLEAR IMPLANTS**
Waldo Nogueira, Andreas Giese, Bernd Edler, Universität Hannover, Germany; Andreas Büchner, Hannover Hörzentrum, Germany

AE-P2.2 **A COCHLEAR SYSTEM WITH IMPLANT DSP**
Songping Mai, Chun Zhang, Mian Dong, Zhihua Wang, Tsinghua University, China

AE-P2.3 **AUDITORY INFORMATION CODING BY COCHLEAR NUCLEUS ONSET NEURONS**
Huan Wang, Marcus Holmberg, Werner Hemmert, Infineon Technologies - Corporate Research, Germany

AE-P2.4 **DYNAMIC, COMPRESSIVE GAMMACHIRP AUDITORY FILTERBANK FOR PERCEPTUAL SIGNAL PROCESSING**
Toshio Irino, Wakayama University, Japan; Roy Patterson, University of Cambridge, United Kingdom

AE-P2.5 **EXPLOITING VOICING CUES FOR CONTRAST ENHANCED FREQUENCY SHAPING OF SPEECH FOR IMPAIRED LISTENERS**
Naomi Harte, Trinity College Dublin, Ireland; Shahab Ansari, Simon Fraser University, Canada; Ian Bruce, McMaster University, Canada

AE-P2.6 **SMOOTH GMM BASED MULTI-TALKER SPECTRAL CONVERSION FOR SPECTRALLY DEGRADED SPEECH**
Chuping Liu, University of Southern California, United States; Qian-Jie Fu, House Ear Institute, United States; Shrikanth S. Narayanan, University of Southern California, United States

(Continued from previous page.)

AE-P2.7 **BINAURAL MULTI-CHANNEL WIENER FILTERING FOR HEARING AIDS: PRESERVING INTERAURAL TIME AND LEVEL DIFFERENCES**
Thomas J. Klasen, Simon Doclo, Tim Van den Bogaert, Marc Moonen, Jan Wouters, Katholieke Universiteit Leuven, Belgium

AE-P2.8 **HOWLING SUPPRESSION IN HEARING AIDS USING LEAST-SQUARES ESTIMATION AND PERCEPTUALLY MOTIVATED GAIN CONTROL**
Ashutosh Pandey, V. John Mathews, University of Utah, United States

AE-P2.9 **WAVE DIGITAL SIMULATION OF A VACUUM-TUBE AMPLIFIER**
Matti Karjalainen, Jyri Pakarinen, Helsinki University of Technology, Finland

AE-P2.10 **PARAMETRIC EXCITATION MODEL FOR WAVEGUIDE PIANO SYNTHESIS**
Jukka Rauhala, Vesa Välimäki, Helsinki University of Technology, Finland

AE-P2.11 **ON THE ADAPTATION OF THE LINEAR BICHARACTERISTIC SCHEME TO BLOCK-BASED PHYSICAL MODELING FOR DIGITAL SOUND SYNTHESIS OF STRING INSTRUMENTS**
José Escolano, José-Javier López, Technical University of Valencia, Spain

AE-P2.12 **A PHYSICAL MODEL FOR PLATE REVERBERATION**
Stephan Bilbao, Queen's University, United Kingdom; Kevin Arcas, Antoine Chaigne, Unité de Mécanique - ENSTA, France

BIO-P2 **Bioinformatics** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 2
Chair: Al Hero, University of Michigan

BIO-P2.1 **DNA HYBRIDIZATION AS A SIMILARITY CRITERION FOR QUERYING DIGITAL SIGNALS STORED IN DNA DATABASES**
Sotirios Tsaftaris, Vassili Hatzimanikatis, Aggelos Katsaggelos, Northwestern University, United States

BIO-P2.2 **REVERSE ENGINEERING YEAST GENE REGULATORY NETWORKS USING GRAPHICAL MODELS**
Jiayin Wang, Yufei Huang, Maribel Sanchez, Yufeng Wang, University of Texas, San Antonio, United States; Jianqiu (Michelle) Zhang, University of New Hampshire, United States

BIO-P2.3 **AN ALGORITHM FOR MISSING VALUE ESTIMATION FOR DNA MICROARRAY DATA**
Shmuel Friedland, Amir Niknejad, University of Illinois at Chicago, United States; Mostafa Kaveh, Hossein Zare, University of Minnesota, United States

BIO-P2.4 **PARALLEL BICLUSTERING OF GENES WITH COHERENT EVOLUTIONS: ALGORITHM AND BIOLOGICAL SIGNIFICANCE OF THE BICLUSTERS**
Ahmed Tewfik, Alain Tchagang, Laura Vertatschitsch, University of Minnesota, United States

BIO-P2.5 **DNA-RESIDUAL: A DNA COMPRESSION ALGORITHM USING FORWARD LINEAR PREDICTION**
Rony Ferzli, Lina Karam, Arizona State University, United States

BIO-P2.6 **HANDLING UPDATES OF PAIRWISE SEQUENCE ALIGNMENT**
Changjin Hong, Ahmed Tewfik, University of Minnesota, United States

IMDSP-P8 **Biomedical Imaging** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 3
Chair: Al Bovik, University of Texas, Austin

IMDSP-P8.1 **DETECTION OF MICROBUBBLE TRAJECTORIES ON M-MODE IMAGES USING KALMAN FILTERING**
Simone Balocco, CREATIS, Université Claude Bernard Lyon 1, CNRS UMR 5515, INSERM U630, Lyon, France; Olivier Basset, CREATIS, INSA Lyon, CNRS UMR 5515 INSERM U630, Lyon, France; Francesco Guidi, Piero Tortoli, Università di Firenze, Italy; Christian Cachard, CREATIS, Université Claude Bernard Lyon 1, CNRS UMR 5515, INSERM U630, Lyon, France

IMDSP-P8.2 **ON MULTI-STATIC ADAPTIVE MICROWAVE IMAGING METHODS FOR EARLY BREAST CANCER DETECTION**
Yao Xie, Bin Guo, Jian Li, University of Florida, United States; Petre Stoica, Uppsala University, Sweden

IMDSP-P8.3 **NEAR FIELD UWB LCMV IMAGING FOR BREAST CANCER DETECTION WITH ENTROPY BASED ARTIFACTS REMOVAL**
Wanjun Zhi, Francois Chin, Michael Chia, Institute for Infocomm Research, Singapore

IMDSP-P8.4 **THREE-DIMENSIONAL SHAPE ESTIMATION OF BHK CELL CLUSTERS FROM A STILL IMAGE BASED ON SHAPE FROM SHADING FOR IN-SITU MICROSCOPY**
Geovanni Martinez, University of Costa Rica, Costa Rica; Jan-Gerd Frerichs, University of Hannover, Germany; Klaus Joeris, Konstantin Konstantinov, Bayer Healthcare, United States; Thomas Scheper, University of Hannover, Germany

IMDSP-P8.5 **IMAGING ERROR FROM MISLOCATION OF SURFACE SENSORS: SENSITIVITY, DETECTION, AND ESTIMATE CORRECTION, WITH APPLICATION TO EIT**
Saeed Babaeizadeh, Dana Brooks, Northeastern University, United States

IMDSP-P8.6 **TOWARDS A NOVEL DUAL-MODALITY IMAGING USING SCATTERED RADIATION**
Jean-Luc Delarbre, Mai Nguyen, ETIS, France; Tuong Truong, LPTM, France

IMDSP-P8.7 **TOROIDAL GAUSSIAN FILTERS FOR DETECTION AND EXTRACTION OF PROPERTIES OF SPICULATED MASSES**
Mehul Sampat, Alan Bovik, Mia Markey, University of Texas, Austin, United States; Gary Whitman, Tanya Stephens, University of Texas M. D. Anderson Cancer Center, United States

IMDSP-P8.8 **COLOUR AND TEXTURE BASED GASTROINTESTINAL TISSUE DISCRIMINATION**
Michal Mackiewicz, Jeff Berens, Mark Fisher, Duncan Bell, University of East Anglia, United Kingdom

IMDSP-P9 **Filtering, Interpolation and Superresolution** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 4
Chair: Matt Gaubatz, Cornell University

IMDSP-P9.1 **SINGLE IMAGE SUPERRESOLUTION BASED ON SUPPORT VECTOR REGRESSION**
Karl Ni, Sanjeev Kumar, Nuno Vasconcelos, Truong Q. Nguyen, University of California, San Diego, United States

IMDSP-P9.2 **HIGH-RESOLUTION IMAGE RECONSTRUCTION CONSIDERING INACCURATE MOTION INFORMATION**
Min Kyu Park, Moon Gi Kang, Yonsei University, Republic of Korea

IMDSP-P9.3 **REGION-BASED SUPER-RESOLUTION USING MULTIPLE BLURRED AND NOISY UNDERSAMPLED IMAGES**
Boorym Choi, Jong Beom Ra, Korea Advanced Institute of Science and Technology, Republic of Korea

IMDSP-P9.4 **SPATIOTEMPORAL DEMOSAICKING USING MULTI-STAGE PROCESSING CONCEPTS**
Rastislav Lukac, Konstantinos Plataniotis, University of Toronto, Canada

IMDSP-P9.5 **A MINORIZATION-MAXIMIZATION ALGORITHM FOR MAXIMUM A POSTERIORI SIGNAL ESTIMATION**
Guang Deng, La Trobe University, Australia; Wai-Yin Ng, Chinese University of Hong Kong, China

IMDSP-P9.6 **SDP FOR 2-D FILTER DESIGN: GENERAL FORMULATION AND DIMENSION REDUCTION TECHNIQUES**
Ta Hung, Hoang D. Tuan, University of New South Wales, Australia; Ba-Ngu Vo, University of Melbourne, Australia; Truong Q. Nguyen, University of California, San Diego, United States

(Continued from previous page.)

IMDSP-P9.7 **FREE VIEWPOINT, IRIS AND FOCUS IMAGE GENERATION BY USING A THREE-DIMENSIONAL FILTERING BASED ON FREQUENCY ANALYSIS OF BLURS**
Kazuya Kodama, Hiroshi Mo, National Institute of Informatics, Japan; Akira Kubota, Tokyo Institute of Technology, Japan

IMDSP-P9.8 **SHARPENING ORIENTATION SELECTIVITY FOR EFFICIENT IMAGE FILTERING**
Jeffrey Sing Kwong Ng, Anil Bharath, Imperial College London, United Kingdom

IMDSP-P9.9 **ENHANCEMENT OF TEXTURED IMAGES USING COMPLEX DIFFUSION INCORPORATING SCHRODINGER'S POTENTIAL**
Ori Honigman, Yehoshua Y. Zeevi, Technion - Israel Institute of Technology, Israel

IMDSP-P9.10 **BASIS PROJECTION FOR LINEAR TRANSFORM APPROXIMATION IN REAL-TIME APPLICATIONS**
Yinpeng Chen, Hari Sundaram, Arizona State University, United States

MMSP-P3 **Multimedia Database, Content Retrieval, Joint Processing and Standards** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 5
Chair: Ingemar Cox, University College London

MMSP-P3.1 **AN AUTOMATIC VIDEO SEMANTIC ANNOTATION SCHEME BASED ON COMBINATION OF COMPLEMENTARY PREDICTORS**
Yan Song, University of Science and Technology of China, China; Xian-Sheng Hua, Microsft Research Asia, China; Li-Rong Dai, Meng Wang, Ren-Hua Wang, University of Science and Technology of China, China

MMSP-P3.2 **CONTENT-BASED RETRIEVAL OF MP3 SONGS FOR ONE SINGER USING QUANTIZATION TREE INDEXING AND MELODY-LINE TRACKING METHOD**
Tsung-Han Tsai, Jui-Hung Hung, National Central University, Taiwan

MMSP-P3.3 **SOCCER VIDEO RETRIVAL USING ADAPTIVE TIME-FREQUENCY METHODS**
Jonathan Marchal, Cornel Ioana, Emanuel Radoi, Andre Quinquis, ENSIETA, France; Sridhar Krishnan, Ryerson University, Canada

MMSP-P3.4 **FEATURE EXTRACTION FROM TALKING MOUTHS FOR VIDEO-BASED BI-MODAL SPEAKER VERIFICATION**
Hua Ouyang, Tan Lee, W. N. Chan, Chinese University of Hong Kong, Hong Kong SAR of China

MMSP-P3.5 **FEATURE SPACE MODIFICATION FOR CONTENT-BASED MUSIC RETRIEVAL BASED ON USER PREFERENCES**
Keiichiro Hoashi, Kazunori Matsumoto, Fumiaki Sugaya, KDDI R&D Laboratories, Japan; Hiromi Ishizaki, Jiro Katto, Waseda University, Japan

MMSP-P3.6 **FAST INCREMENTAL CLUSTERING OF GAUSSIAN MIXTURE SPEAKER MODELS FOR SCALING UP RETRIEVAL IN ON-LINE BROADCAST**
Jamal Eddine Rougui, Mohammed Rziza, Driss Aboutajdine, GSCM, Faculté des Sciences Rabat, Morocco; Marc Gelgon, Jose Martinez, LINA, France

(Continued from previous page.)

MMSP-P3.7 **MOBILE VIDEO CAPTURE TARGETED NARROWBAND AUDIO CONTENT CLASSIFICATION**
Satu-Marja Mäkelä, Johannes Peltola, Mikko Myllyniemi, VTT Electronics, Finland

MMSP-P3.8 **A STEREO TO MONO DOWNMIXING SCHEME FOR MPEG-4 PARAMETRIC STEREO ENCODER**
Samsudin, Nanyang Technological University, Singapore; Evelyn Kurniawati, STMicroelectronics Asia Pacific, Pte. Ltd, Singapore; Boon Poh Ng, Farook Sattar, Nanyang Technological University, Singapore; Sapna George, STMicroelectronics Asia Pacific, Pte. Ltd, Singapore

MMSP-P3.9 **VIBRATO-MOTIVATED ACOUSTIC FEATURES FOR SINGER IDENTIFICATION**
Haizhou Li, Tin Lay Nwe, Institute for Infocomm Research, Singapore

MMSP-P3.10 **MOTION STREAM SEGMENTATION AND RECOGNITION BY CLASSIFICATION**
Chuanjun Li, Punit Kulkarni, B. Prabhakaran, University of Texas, Dallas, United States

MMSP-P3.11 **ARBITRARY LISTENING-POINT GENERATION USING SUB-BAND REPRESENTATION OF SOUND WAVE RAY-SPACE**
Mehrdad Panahpour Tehrani, Yasushi Hirano, Toshiaki Fujii, Shoji Kajita, Kazuya Takeda, Kenji Mase, Nagoya University, Japan

SPCOM-P7 **UWB and Applications** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 6
Chair: Visa Koivunen, Helsinki University of Technology

SPCOM-P7.1 **RESOLVING INTER-FRAME INTERFERENCE IN A TRANSMIT-REFERENCE ULTRA-WIDEBAND COMMUNICATION SYSTEM**
Quang Hieu Dang, Alle-Jan van der Veen, Delft University of Technology, Netherlands

SPCOM-P7.2 **A UNITARY SPACE-TIME CODING SCHEME FOR UWB SYSTEMS AND ITS APPLICATION IN WIRELESS SECURE COMMUNICATIONS**
Yanbing Zhang, Huaiyu Dai, North Carolina State University, United States

SPCOM-P7.3 **TAP SELECTION BASED MULTIPATH CHANNEL EQUALIZATION FOR UWB SYSTEMS**
Zhiwei Lin, Institute for Infocomm Research, Singapore; Annamalai Premkumar, A. S. Madhukumar, Nanyang Technological University, Singapore

SPCOM-P7.4 **ROBUST MULTIUSER DETECTION FOR IMPULSE RADIO IN NON-GAUSSIAN UWB CHANNELS**
Nazli Guney, Hakan Delic, Mutlu Koca, Bogazici University, Turkey

SPCOM-P7.5 **VERY HIGH DATA RATE DS-UWB SYSTEM DESIGN RELYING ON A MULTICODE APPROACH**
Mohamed Kamoun, Motorola/LSS, France; Laurent Mazet, Marc De Courville, Motorola, France; Pierre Duhamel, LSS, France

SPCOM-P7.6 **NONCOHERENT DEMODULATOR FOR PPM-UWB RADIOS**
Liuqing Yang, University of Florida, United States; Ananthram Swami, Army Research Lab, United States

(Continued from previous page.)

SPCOM-P7.7 EFFICIENT CHAOTIC SPREADING CODES FOR DS-UWB COMMUNICATION SYSTEM
Surendran Shanmugam, Henry Leung, University of Calgary, Canada

SPCOM-P7.8 MULTIPLIER-FREE BANDPASS FILTER-BASED CHANNELIZER
Siwoo Noh, Ohbong Kwon, Fred Taylor, University of Florida, United States

SPCOM-P7.9 POSITIONING ALGORITHMS FOR CELLULAR NETWORKS USING TDOA
Christian Mensing, Simon Plass, German Aerospace Center (DLR), Germany

SPCOM-P7.10 CONSTRAINED LEAST SQUARES ESTIMATION FOR POSITION TRACKING
Zhao Wang, P. C. Ching, Chinese University of Hong Kong, Hong Kong SAR of China

SPCOM-P7.11 DIRECTIONAL PROPAGATION CANCELLATION FOR ACOUSTIC COMMUNICATION ALONG THE DRILL STRING
Sinan Sinanovic, Don Johnson, Rice University, United States; Wallace Gardner, Halliburton Energy Services, United States

SPCOM-P7.12 ARRAY REDUNDANCY AND DIVERSITY FOR WIRELESS TRANSMISSIONS WITH LOW PROBABILITY OF INTERCEPTION
Xiaohua Li, Juite Hwu, State University of New York at Binghamton, United States; E. Paul Ratazzi, Air Force Research Laboratory, United States

SPTM-P6 **Non-stationary Signals and Time-Frequency Analysis** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 7
Co-Chairs: Antonia Papandreou-Suppappola, Arizona State University and Mark J.T. Smith, Purdue University

SPTM-P6.1 **ASYMPTOTIC STATIONARITY OF MARKOV-SWITCHING TIME-FREQUENCY GARCH PROCESSES**
Ari Abramson, Israel Cohen, Technion - Israel Institute of Technology, Israel

SPTM-P6.2 **MATCHING PURSUIT DECOMPOSITIONS OF NON-NOISY SPEECH SIGNALS USING SEVERAL DICTIONARIES**
Bob Sturm, Jerry Gibson, University of California, Santa Barbara, United States

SPTM-P6.3 **SOURCES SEPARATION OF INSTANTANEOUS MIXTURES USING A LINEAR TIME-FREQUENCY REPRESENTATION AND VECTORS CLUSTERING**
Braham Barkat, The Petroleum Institute, United Arab Emirates; Farook Sattar, Nanyang Technological University, Singapore; Karim Abed-Meraim, Télécom Paris, France

SPTM-P6.4 **TESTING FOR STATIONARITY IN THE FREQUENCY DOMAIN USING A SPHERICITY STATISTIC**
Ramon Brcich, Technische Universität Darmstadt, Germany; D. Iskander, Queensland University of Technology, Australia

SPTM-P6.5 **NON LINEAR WEIGHTING FUNCTION FOR NON-STATIONARY SIGNAL DENOISING**
Farès Abda, David Brie, Radu Ranta, CRAN UMR 7039, France

SPTM-P6.6 **A FAMILY OF RANDOM WAVEFORM MODELS FOR AUDIO CODING**
Matthieu Kowalski, Bruno Torrésani, Université de Provence, France

(Continued from previous page.)

SPTM-P6.7 **OPTIMAL SELECTION OF TIME-FREQUENCY REPRESENTATIONS FOR SIGNAL CLASSIFICATION: A KERNEL-TARGET ALIGNMENT APPROACH**
Paul Honeiné, Sonalyse, France; Cédric Richard, ISTIT (FRE CNRS 2732) / Troyes University of Technology, France; Patrick Flandrin, Laboratoire de Physique (UMR CNRS 5672) ENS Lyon, France; Jean-Baptiste Pothin, ISTIT (FRE CNRS 2732) / Troyes University of Technology, France

SPTM-P6.8 **PARAMETER OPTIMIZATION METHODS FOR THE EDS MODEL**
Stijn Lamens, Wim D'haes, University of Antwerp, Belgium

SPTM-P6.9 **ESTIMATION OF INSTANTANEOUS FREQUENCY AND INSTANTANEOUS BANDWIDTH VIA ADAPTIVE SIGNAL DECOMPOSITION**
Sedigheh Ghofrani, Des McLernon, University of Leeds, United Kingdom; Ahmad Ayatollahi, Iran University of Science and Technology, Iran

SPTM-P6.10 **PRINCIPAL COMPONENT ANALYSIS OF THE FRACTIONAL BROWNIAN MOTION FOR 0 < H < 0.5**
Tolga Esat Ozkurt, University of Pittsburgh, United States; Tayfun Akgul, Suleyman Baykut, Istanbul Technical University, Turkey

SPTM-P6.11 **LEAST-SQUARES AND MAXIMUM-LIKELIHOOD TFAR PARAMETER ESTIMATION FOR NONSTATIONARY PROCESSES**
Michael Jachan, Gerald Matz, Franz Hlawatsch, Vienna University of Technology, Austria

SPTM-P6.12 **MPTK: MATCHING PURSUIT MADE TRACTABLE**
Sacha Krstulovic, Rémi Gribonval, IRISA / INRIA, France

SLP-P11 **Front-end For Robust Speech Recognition** (Poster)
Time: Wednesday, May 17, 16:30 - 18:30
Place: Poster Area 8
Chair: Christian Wellekens, Eurecom Institute

SLP-P11.1 **APPLICATION OF MINIMUM STATISTICS AND MINIMA CONTROLLED RECURSIVE AVERAGING METHODS TO ESTIMATE A CEPSTRAL NOISE MODEL FOR ROBUST ASR**
Veronique Stouten, Hugo Van hamme, Patrick Wambacq, Katholieke Universiteit Leuven, Belgium

SLP-P11.2 **SEQUENTIAL NON-STATIONARY NOISE TRACKING USING PARTICLE FILTERING WITH SWITCHING DYNAMICAL SYSTEM**
Masakiyo Fujimoto, Satoshi Nakamura, ATR Spoken Language Communication Research Laboratories, Japan

SLP-P11.3 **ON REAL-TIME MEAN-AND-VARIANCE NORMALIZATION OF SPEECH RECOGNITION FEATURES**
Pere Pujol, Dušan Macho, Climent Nadeu, Technical University of Catalonia (UPC), Spain

SLP-P11.4 **A NOVEL NOISE ROBUST FRONT-END USING FIRST ORDER VTS IN CONSTRUCTION OF MEL-WARPED WIENER FILTER**
Mu Su, Peng Li, Zhuo Wang, Peng Ding, Bo Xu, Institute of Automation, China

SLP-P11.5 **NOISE ROBUST AURORA-2 SPEECH RECOGNITION EMPLOYING A CODEBOOK-CONSTRAINED KALMAN FILTER PREPROCESSOR**
Krishnan Venkatesh, Sabato M. Siniscalchi, David V. Anderson, Mark A. Clements, Georgia Institute of Technology, United States

SLP-P11.6 **ROBUST BROADBAND BEAMFORMER WITH DIAGONALLY LOADED CONSTRAINT MATRIX AND ITS APPLICATION TO SPEECH RECOGNITION**
Wenyi Zhang, Bhaskar Rao, University of California, San Diego, United States

(Continued from previous page.)

SLP-P11.7 **A FEATURE FOR VOICE ACTIVITY DETECTION DERIVED FROM SPEECH ANALYSIS WITH THE EXPONENTIAL AUTOREGRESSIVE MODEL**
Kentaro Ishizuka, Hiroko Kato, NTT Corporation, Japan

SLP-P11.8 **AUTO-SEGMENTATION BASED PARTITIONING AND CLUSTERING APPROACH TO ROBUST ENDPOINTING**
Yu Shi, Frank K. Soong, Jian-Lai Zhou, Microsoft Research Asia, China

SLP-P11.9 **AUTOMATIC SPEECH SEGMENTATION COMBINING AN HMM-BASED APPROACH AND RECURRENCE TREND ANALYSIS**
Runqiang Yan, Shanghai Jiao Tong University, China; Yiqing Zu, Motorola Research Center, China; Yisheng Zhu, Shanghai Jiao Tong University, China

SLP-P11.10 **EFFECTIVE SPEECH/PAUSE DISCRIMINATION USING AN INTEGRATED BISPECTRUM LIKELIHOOD RATIO TEST**
Juan M. Górriz, Javier Ramírez, José C. Segura, Carlos G. Puntonet, Luz García, University of Granada, Spain

SLP-P11.11 **ROBUST ENDPOINT DETECTION FOR SPEECH RECOGNITION BASED ON DISCRIMINATIVE FEATURE EXTRACTION**
Koichi Yamamoto, Toshiba Corporation, Japan; Firas Jabloun, Klaus Reinhard, Toshiba Research Europe Ltd., United Kingdom; Akinori Kawamura, Toshiba Corporation, Japan

SLP-P11.12 **DOUBLE-TALK FREE SPOKEN DIALOGUE INTERFACE COMBINING SOUND FIELD CONTROL WITH SEMI-BLIND SOURCE SEPARATION**
Shigeki Miyabe, Tomoya Takatani, Yoshimitsu Mori, Hiroshi Saruwatari, Kiyohiro Shikano, Nara Institute of Science and Technology, Japan; Yosuke Tatekura, Shizuoka University, Japan

IMDSP-L7 **Feature Extraction and Analysis** (Lecture)
Time: Thursday, May 18, 10:00 - 12:00
Place: Caravelle 2
Chair: Soontorn Oraintara, University of Texas, Arlington

10:00
IMDSP-L7.1 **SPATIO-TEMPORAL APPROACH FOR NOISE ESTIMATION**
Vladimir Zlokolica, Aleksandra Pizurica, Ewout Vansteenkiste, Wilfried Philips, University of Ghent, Belgium

10:20
IMDSP-L7.2 **POINT PROCESSES OF SEGMENTS AND RECTANGLES FOR BUILDING EXTRACTION FROM DIGITAL ELEVATION MODELS**
Mathias Ortner, University of Illinois at Chicago, United States; Xavier Descombes, Josiane Zerubia, ARIANA Research Group, France

10:40
IMDSP-L7.3 **SHIFT-INVARIANT MULTISCALE MULTIDIRECTIONAL IMAGE DECOMPOSITION**
Truong T. Nguyen, Soontorn Oraintara, University of Texas, Arlington, United States

11:00
IMDSP-L7.4 **TEMPORAL VIDEO REGISTRATION FOR WATERMARK DETECTION**
Bertrand Chupeau, Lionel Oisel, Pierrick Jouet, Thomson R&D France, France

11:20
IMDSP-L7.5 **ON DISCRIMINATION BETWEEN PHOTOREALISTIC AND PHOTOGRAPHIC IMAGES**
Ying Wang, Pierre Moulin, University of Illinois at Urbana-Champaign, United States

11:40
IMDSP-L7.6 **ANALYTIC FUNCTIONS, SINGULARITIES AND EDGES: A NEW FORMALISM**
Mohamed Elfataoui, Gagan Mirchandani, University of Vermont, United States

MLSP-L3 **Learning Theory II** (Lecture)
Time: Thursday, May 18, 10:00 - 12:00
Place: Ariane 1 & 2
Chair: Mahesan Niranjan, University of Sheffield

10:00
MLSP-L3.1 **NORMALIZED INFORMATION THEORETIC CRITERIA FOR BLIND SIGNAL EXTRACTION**
Sergio Cruces, Ivan Duran-Diaz, University of Seville, Spain

10:20
MLSP-L3.2 **OPTIMAL FILTERING FOR PARTIALLY OBSERVED POINT PROCESSES USING TRANS-DIMENSIONAL SEQUENTIAL MONTE CARLO**
Arnaud Doucet, University of British Columbia, Canada; Luis Montesano, Universidad de Zaragoza, Spain; Ajay Jasra, Imperial College, United Kingdom

10:40
MLSP-L3.3 **BAYESIAN INFERENCE FOR CONTINUOUS-TIME ARMA MODELS DRIVEN BY NON-GAUSSIAN LEVY PROCESSES**
Simon Godsill, Gary (Ligong) Yang, University of Cambridge, United Kingdom

11:00
MLSP-L3.4 **BAYESIAN L1-NORM SPARSE LEARNING**
Yuanqing Lin, Daniel D. Lee, University of Pennsylvania, United States

11:20
MLSP-L3.5 **A NORMALIZED MINIMUM ERROR ENTROPY STOCHASTIC ALGORITHM**
Seungju Han, Sudhir Rao, Kyu-Hwa Jeong, Jose Principe, University of Florida, United States

11:40
MLSP-L3.6 **A REWARD-DIRECTED BAYESIAN CLASSIFIER**
Hui Li, Xuejun Liao, Lawrence Carin, Duke University, United States

SAM-L3 **Sensor Networks II** (Lecture)
Time: Thursday, May 18, 10:00 - 12:00
Place: Spot
Chair: Lang Tong, Cornell University

10:00
SAM-L3.1 **INNER SOURCE IDENTIFICATION FOR FIELD ESTIMATION IN WIRELESS SENSOR NETWORKS**
Haotian Zhang, Bruce Krogh, José M. F. Moura, Carnegie Mellon University, United States

10:20
SAM-L3.2 **DECENTRALIZED DETECTION IN WIRELESS SENSOR NETWORKS WITH CHANNEL FADING STATISTICS**
Bin Liu, Biao Chen, Syracuse University, United States

10:40
SAM-L3.3 **DISTRIBUTED HYPOTHESIS TESTING USING LOCAL LEARNING BASED CLASSIFIERS**
Ricardo Santiago-Mozos, Antonio Artés-Rodríguez, Universidad Carlos III de Madrid, Spain

11:00
SAM-L3.4 **TRACKING OF TIME-VARYING NUMBER OF MOVING TARGETS IN WIRELESS SENSOR FIELDS BY PARTICLE FILTERING**
Petar Djuric, Monica Bugallo, Stony Brook University, United States

11:20
SAM-L3.5 **OPTIMAL DIMENSIONALITY REDUCTION FOR MULTI-SENSOR FUSION IN THE PRESENCE OF FADING AND NOISE**
Ioannis Schizas, Georgios Giannakis, Zhi-Quan Luo, University of Minnesota, United States

11:40
SAM-L3.6 **ENVIRONMENTAL SAMPLING WITH MULTISCALE SENSING**
Xiangming Kong, Richard Pon, William Kaiser, Gregory Pottie, University of California, Los Angeles, United States

SPTM-L6 **System Identification** (Lecture)
Time: Thursday, May 18, 10:00 - 12:00
Place: Cassiopée
Chair: Athina Petropulu, Drexel University

10:00
SPTM-L6.1 **ALTERNATING LEAST SQUARES IDENTIFICATION OF UNDER-DETERMINED MIXTURES BASED ON THE CHARACTERISTIC FUNCTION**
Myriam Rajih, Pierre Comon, I3S Laboratory / CNRS / University of Nice-Sophia Antipolis, France

10:20
SPTM-L6.2 **SIMO BLIND SYSTEM IDENTIFICATION AND ORDER DETERMINATION**
Kripasagar Venkat, Issa Panahi, University of Texas, Dallas, United States

10:40
SPTM-L6.3 **GENERICITY AND RANK DEFICIENCY OF HIGH ORDER SYMMETRIC TENSORS**
Pierre Comon, I3S Laboratory / CNRS / University of Nice-Sophia Antipolis, France; Bernard Mourrain, INRIA, France; Lek-Heng Lim, Gene Golub, Stanford University, United States

11:00
SPTM-L6.4 **QUADRATIC SYSTEM IDENTIFICATION BY HEREDITARY APPROACH**
Gibran Etcheverry, Wael Suleiman, André Monin, LAAS / CNRS, France

11:20
SPTM-L6.5 **PARAFAC BASED BLIND ESTIMATION OF MIMO SYSTEMS WITH POSSIBLY MORE INPUTS THAN OUTPUTS**
Yuanning Yu, Athina Petropulu, Drexel University, United States

11:40
SPTM-L6.6 **THE VARIATIONAL BAYES APPROXIMATION IN BAYESIAN FILTERING**
Vaclav Smidl, Academy of Sciences of the Czech Republic, Czech Republic; Anthony Quinn, Trinity College Dublin, Ireland

SLP-L7 **Speech Enhancement for Noise Suppression** (Lecture)
Time: Thursday, May 18, 10:00 - 12:00
Place: Auditorium St Exupery
Chair: John Hansen, University of Texas, Dallas

10:00
SLP-L7.1 **AN ASSESSMENT ON THE FUNDAMENTAL LIMITATIONS OF SPECTRAL SUBTRACTION**
Nicholas W. D. Evans, John S. D. Mason, Wei Ming Liu, Benoît Fauve, University of Wales Swansea, United Kingdom

10:20
SLP-L7.2 **A NEW FORWARD MASKING MODEL AND ITS APPLICATION TO SPEECH ENHANCEMENT**
Teddy Gunawan, Eliathamby Ambikairajah, University of New South Wales, Australia

10:40
SLP-L7.3 **SUBJECTIVE COMPARISON OF SPEECH ENHANCEMENT ALGORITHMS**
Yi Hu, Philipos Loizou, University of Texas, Dallas, United States

11:00
SLP-L7.4 **AN ITERATIVE TRAJECTORY REGENERATION ALGORITHM FOR SEPARATING MIXED SPEECH SOURCES**
Siu wa Lee, Chinese University of Hong Kong, Hong Kong SAR of China; Frank K. Soong, Microsoft Research Asia, China; P. C. Ching, Chinese University of Hong Kong, Hong Kong SAR of China

11:20
SLP-L7.5 **HMM-BASED SPEECH ENHANCEMENT USING EXPLICIT GAIN MODELING**
David Zhao, W. Bastiaan Kleijn, Royal Institute of Technology (KTH), Sweden

11:40
SLP-L7.6 **NOISE REDUCTION FOR DRIVER-TO-PIT-CREW COMMUNICATION IN MOTOR RACING**
Mark Hadley, Ben Milner, Richard Harvey, University of East Anglia, United Kingdom

SS-7 **Recent Advances in Multimodal User Authentication**
(Special Session)
Time: Thursday, May 18, 10:00 - 12:00
Place: Guillaumet 1 & 2
Co-Chairs: Jean-Claude Junqua, Panasonic and Bernadette Dorizzi, Institut National des Télécommunication

10:00
SS-7.1 **A PATH FORWARD FOR MULTI-BIOMETRICS**
James L. Wayman, San Jose State University, United States

10:20
SS-7.2 **FUSION OF TALKING FACE BIOMETRIC MODALITIES FOR PERSONAL IDENTITY VERIFICATION**
Ulises Ramos Sanchez, Josef Kittler, University of Surrey, United Kingdom

10:40
SS-7.3 **USING CHIMERIC USERS TO CONSTRUCT FUSION CLASSIFIERS IN BIOMETRIC AUTHENTICATION TASKS: AN INVESTIGATION**
Norman Poh, Samy Bengio, IDIAP Research Institute, Switzerland

11:00
SS-7.4 **A STREAM-WEIGHT AND THRESHOLD ESTIMATION METHOD USING ADABOOST FOR MULTI-STREAM SPEAKER VERIFICATION**
Taichi Asami, Koji Iwano, Sadaoki Furui, Tokyo Institute of Technology, Japan

11:20
SS-7.5 **ON CONSISTENT FUSION OF MULTIMODAL BIOMETRICS**
Sun-Yuan Kung, Princeton University, United States; Man-Wai Mak, Hong Kong Polytechnic University, Hong Kong SAR of China

11:40
SS-7.6 **MULTIMODALITY IN BIOSECURE: EVALUATION ON REAL VS. VIRTUAL SUBJECTS**
Bernadette Dorizzi, Sonia Garcia-Salicetti, Lorène Allano, Institut National des Télécommunications, France

AE-P3 **Audio Coding, Network Audio and Multimedia Applications** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 1
Chair: James Johnston, Microsoft

AE-P3.1 **ENCODER ASSISTED FRAME LOSS CONCEALMENT FOR MPEG-AAC DECODER**
Sang-Uk Ryu, University of California, Santa Barbara, United States; Eddie Choy, Qualcomm Inc., United States; Kenneth Rose, University of California, Santa Barbara, United States

AE-P3.2 **ITU-T G.722.1 ANNEX C: A NEW LOW-COMPLEXITY 14 KHZ AUDIO CODING STANDARD**
Minjie Xie, Dave Lindbergh, Peter Chu, Polycom, Inc., United States

AE-P3.3 **A TWO-STAGE MLP+NLMS LOSSLESS CODER FOR STEREO AUDIO**
Emmanuel Ravelli, Université Pierre et Marie Curie, France; Philippe Gournay, Roch Lefebvre, Université de Sherbrooke, Canada

AE-P3.4 **CASCADED RLS-LMS PREDICTION IN MPEG-4 LOSSLESS AUDIO CODING**
Haibin Huang, Susanto Rahardja, Xiao Lin, Rongshan Yu, Institute for Infocomm Research, Singapore; Pasi Franti, University of Joensuu, Finland

AE-P3.5 **DIFFERENT QUANTISATION NOISE SHAPING METHODS FOR PREDICTIVE AUDIO CODING**
Stefan Wabnik, Gerald Schuller, Jens Hirschfeld, Ulrich Kraemer, Fraunhofer IDMT, Germany

AE-P3.6 **RD OPTIMAL TEMPORAL NOISE SHAPING FOR TRANSFORM AUDIO CODING**
Omar Aziz Niamut, Richard Heusdens, Delft University of Technology, Netherlands

(Continued from previous page.)

AE-P3.7 **VECTORIAL SPECTRAL QUANTIZATION FOR AUDIO CODING**
Adriana Vasilache, Henri Toukomaa, Nokia Research Center, Finland

AE-P3.8 **PERCEPTUAL AUDIO CODING USING N-CHANNEL LATTICE VECTOR QUANTIZATION**
Jan Ostergaard, Omar Aziz Niamut, Jesper Jensen, Richard Heusdens, Delft University of Technology, Netherlands

AE-P3.9 **WIRELESS DIGITAL AUDIO DELIVERY ANALYSIS AND EVALUATION**
Nicolas-Alexander Tatlas, Andreas Floros, John Mourjopoulos, University of Patras, Greece

AE-P3.10 **AUDIO DATA HIDING WITH HIGH DATA RATES BASED ON INTMDCT**
Ralf Geiger, Yoshikazu Yokotani, Fraunhofer IIS, Germany; Gerald Schuller, Fraunhofer IDMT, Germany

AE-P3.11 **A ROBUST PERCEPTUAL AUDIO HASHING USING BALANCED MULTIWAVELETS**
Lahouari Ghouti, Ahmed Bouridane, Queen's University, Belfast, United Kingdom

AE-P3.12 **A NOISE-ROBUST FFT-BASED SPECTRUM FOR AUDIO CLASSIFICATION**
Wei Chu, Benoit Champagne, McGill University, Canada

BIO-P3 **Biomedical Imaging** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 2
Chair: Francoise Peyrin, CREATIS

BIO-P3.1 **ULTRASONIC DETERMINATION OF THREE-DIMENSIONAL SPATIAL AND TEMPORAL THERMAL DISTRIBUTION FOR THERAPY MONITORING**
Ajay Anand, David Savery, Christopher Hall, Philips Research North America, United States

BIO-P3.2 **FUSION OF SVM-BASED MICROSCOPIC COLOR IMAGES THROUGH COLORIMETRIC TRANSFORMATION**
Christophe Charrier, Gilles Lebrun, Olivier Lezoray, UCBN / LUSAC / Vision and Image Analysis Group, France

BIO-P3.3 **LOSSLESS COMPRESSION OF 4D MEDICAL IMAGES USING H.264/AVC**
Victor Sanchez, Panos Nasiopoulos, Rafeef Abugharbieh, University of British Columbia, Canada

BIO-P3.4 **AUTOMATED SYSTEM FOR IMAGE ANALYSIS OF YEAST COLONIES: A NOVEL APPLICATION IN FUNCTIONAL GENOMICS**
Negar Memarian, Javad Alirezaie, Ryerson University, Canada; Ashkan Golshani, Carleton University, Canada

BIO-P3.5 **ULTRASOUND BACKSCATTER CHARACTERIZATION BY USING MARKOV RANDOM FIELD MODEL**
Nizar Bouhlel, Sylvie Sevestre Ghalila, Laboratoire de Mathématiques Appliquées de Paris 5 (MAP5), France; Mériem Jaidane, Unité Signaux et Systèmes, Tunisia; Christine Graffigne, Laboratoire de Mathématiques Appliquées de Paris 5 (MAP5), France

BIO-P3.6 **NONLINEAR EFFECTS ON CONFOCAL-BEAM RADIATION-FORCE IMAGING**
Alexia Giannoula, Dimitrios Hatzinakos, Richard Cobbold, University of Toronto, Canada

(Continued from previous page.)

BIO-P3.7 **MARKOVIAN LEVEL SET: A NEW METHOD FOR BOUNDARY DETECTION FROM ECHOCARDIOGRAPHIC IMAGES**
Jierong Cheng, Say Wei Foo, Nanyang Technological University, Singapore

BIO-P3.8 **AN APPLICATION OF TOPOLOGICAL MEDIAN FILTERS ON DETECTION AND CLUSTERING OF MICROCALCIFICATIONS IN DIGITAL MAMMOGRAMS**
Ibrahim Kivanç Cihan, Havelsan Ehsim A.S., Turkey; Hakan Güray Senel, Anadolu University, Turkey

BIO-P3.9 **TISSUE MIXTURE CHARACTERIZATION IN THE PRESENCE OF MRI INHOMOGENEITY BY THE EM ALGORITHM**
Zhengrong Liang, State University of New York, United States; Lihong Li, College of Staten Island of the City University of New York, United States; Daria Eremina, State University of New York, United States; Hongbing Lu, Fourth Military Medical University, China

BIO-P3.10 **QUADRATIC PULSE INVERSION ULTRASONIC IMAGING (QPI): ANALYSIS AND DESIGN OF QUADRATIC KERNEL IN THE FREQUENCY DOMAIN TO REDUCE TISSUE COMPONENT INTRODUCED BY MOTION**
Mamoun Al-Mistarihi, Jordan University of Science and Technology, Jordan; Emad Ebbini, University of Minnesota, United States

BIO-P3.11 **MULTI-DIMENSIONAL DENOISING OF REAL-TIME OCT IMAGING DATA**
Tyler Ralston, Ian Atkinson, Farzad Kamalabadi, Stephen Boppart, University of Illinois at Urbana-Champaign, United States

BIO-P3.12 **TWO-DIMENSIONAL SUB-SAMPLE SHIFT ESTIMATION USING PLANE PHASE FITTING**
Adrian Basarab, Hervé Liebgott, CREATIS, France; Cristian Grava, Applied Electronics Laboratory, Romania; Philippe Delachartre, CREATIS, France

IMDSP-P10 **Video Segmentation and Tracking** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 3
Chair: Eli Saber, Rochester Institute of Technology

IMDSP-P10.1 **IMPROVED CUT DETECTION FOR THE SEGMENTATION OF ANIMATION MOVIES**
Bogdan Ionescu, Vasile Buzuloiu, LAPI, France; Patrick Lambert, Didier Coquin, LISTIC, France

IMDSP-P10.2 **PROBABILISTIC SPATIO-TEMPORAL VIDEO OBJECT SEGMENTATION INCORPORATING SHAPE INFORMATION**
Rakib Ahmed, Gour C. Karmakar, Laurence S. Dooley, Monash University, Australia

IMDSP-P10.3 **MOTION-BASED MOVING OBJECT TRACKING USING AN ACTIVE CONTOUR**
Boo Hwan Lee, Agency for Defense Development, Republic of Korea; Il Choi, 3B System, Inc., Republic of Korea; Gi Joon Jeon, Kyungpook National University, Republic of Korea

IMDSP-P10.4 **VIDEO CLOCK TIME RECONITION BASED ON TEMPORAL PERIODIC PATTERN CHANGE OF THE DIGIT CHARACTERS**
Yiqun Li, Kongwah Wan, Xin Yan, Xinguo Yu, Changsheng Xu, Institute for Infocomm Research, Singapore

IMDSP-P10.5 **IMPROVED OBJECT TRACKING WITH CAMSHIFT ALGORITHM**
Nouar Ould-Dris, Ali Ganoun, Raphael Canals, Laboratory of Electronics, Signals and Images (LESI), France

IMDSP-P10.6 **VECTOR FIELDS MODELIZATION USING BASIS OF POLYNOMIALS: APPLICATION TO THE ANALYSIS OF SIMPLE FACE MOVEMENTS**
Martin Druon, Benoit Tremblais, Bertrand Augereau, Laboratoire SIC-FRE, France

(Continued from previous page.)

IMDSP-P10.7 DCT-BASED OBJECT TRACKING IN COMPRESSED VIDEO
Lan Dong, Stuart C. Schwartz, Princeton University, United States

IMDSP-P10.8 MOTION BASED CORRESPONDENCE FOR 3D TRACKING OF MULTIPLE DIM OBJECTS
Ashok Veeraraghavan, University of Maryland, United States; Mandyam Srinivasan, Australian National University, Australia; Rama Chellappa, University of Maryland, United States; Emily Baird, Richard Lamont, Australian National University, Australia

IMDSP-P10.9 HMM BASED SPECTRAL FREQUENCY LINE TRACKING: IMPROVEMENTS AND NEW RESULTS
Tuncay Gunes, Nurgun Erdol, Florida Atlantic University, United States

IMDSP-P10.10 LIPTRACKING AND MPEG4 ANIMATION WITH FEEDBACK CONTROL
Brice Beaumesnil, Franck Luthon, LiUPPA, France; Marc Chaumont, LIRMM, France

SPCOM-P8 **MIMO STC and Decoding** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 4
Chair: Holger Boche, Heinrich-Hertz-Institut for Telecommunications

SPCOM-P8.1 **EXTENDED DIFFERENTIAL UNITARY SPACE-TIME MODULATION: A NON-COHERENT SCHEME WITH ERROR PENALTY LESS THAN 3DB**
Wing-Kin Ma, Chong-Yung Chi, National Tsing Hua University, Taiwan; P. C. Ching, Chinese University of Hong Kong, Hong Kong SAR of China

SPCOM-P8.2 **ANALYTICAL ASSESSMENT OF CAPACITY VS. ROBUSTNESS TRADE-OFFS IN SYSTEMS WITH SELECTIVE MULTI-USER DIVERSITY**
Jose Vicario, Carles Anton-Haro, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain

SPCOM-P8.3 **CODEBOOK DESIGN FOR NON-COHERENT COMMUNICATION IN MULTIPLE-ANTENNA SYSTEMS**
Marko Beko, João Xavier, Victor Barroso, Instituto Superior Técnico, Portugal

SPCOM-P8.4 **ITERATIVE LAYERED SPACE-TIME TRANSCEIVER FOR ISI WIRELESS CHANNELS**
T. Ratnarajah, Queen's University, Belfast, United Kingdom; Mathini Sellathurai, Cardiff University, United Kingdom

SPCOM-P8.5 **BLIND DECODING OF MISO-OSTBC SYSTEMS BASED ON PRINCIPAL COMPONENT ANALYSIS**
Javier Vía, Ignacio Santamaría, Jesús Pérez, David Ramírez, University of Cantabria, Spain

SPCOM-P8.6 **FURTHER RESULTS ON SPEEDING UP THE SPHERE DECODER**
Mihailo Stojnic, Haris Vikalo, Babak Hassibi, California Institute of Technology, United States

(Continued from previous page.)

SPCOM-P8.7 UNDER-DETERMINED BLIND IDENTIFICATION OF CYCLO-STATIONARY SIGNALS WITH UNKNOWN CYCLIC FREQUENCIES
Saloua Rhioui, Nadège Thirion-Moreau, Eric Moreau, ISITV, France

SPCOM-P8.8 PERFORMANCE ANALYSIS OF A FIXED-COMPLEXITY SPHERE DECODER IN HIGH-DIMENSIONAL MIMO SYSTEMS
Luis Barbero, John Thompson, University of Edinburgh, United Kingdom

SPCOM-P8.9 DISTRIBUTED VERSUS CO-LOCATED MIMO SYSTEMS WITH CORRELATED FADING AND SHADOWING
Huaiyu Dai, North Carolina State University, United States

SPCOM-P8.10 ON THE CAPACITY OF LINEAR VECTOR GAUSSIAN CHANNELS WITH MAGNITUDE KNOWLEDGE AND PHASE UNCERTAINTY
Miquel Payaro, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain; Ami Wiesel, Technion - Israel Institute of Technology, Israel; Jinhong Yuan, University of New South Wales, Australia; Miguel Angel Lagunas, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain

SPCOM-P8.11 EXACT MAP DECODING OF CABAC ENCODED DATA
Salma Ben Jamaa, Michel Kieffer, Pierre Duhamel, LSS / CNRS / Supélec / Université Paris-Sud, XI, France

SPCOM-P8.12 OPTIMUM POWER ALLOCATION FOR MAXIMUM-LIKELIHOOD CHANNEL ESTIMATION IN SPACE-TIME CODED MIMO SYSTEMS
Chaiyod Pirak, University of Maryland, College Park / Chulalongkorn University, United States; Z. Jane Wang, University of British Columbia, Canada; K. J. Ray Liu, University of Maryland, College Park, United States; Somchai Jitapunkul, Chulalongkorn University, Thailand

SPTM-P7 **Stationary Signals and Spectrum Analysis** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 5
Chair: Arie Yeredor, Tel-Aviv University

SPTM-P7.1 **ESTIMATION OF THE COHERENCE FUNCTION WITH THE MVDR APPROACH**
Jacob Benesty, INRS-EMT / University of Quebec, Canada; Jingdong Chen, Yiteng (Arden) Huang, Bell Laboratories, Lucent Technologies, United States

SPTM-P7.2 **AUTOMATIC SMOOTHING OF PERIODOGRAMS**
Erik Gudmundson, Niclas Sandgren, Petre Stoica, Uppsala University, Sweden

SPTM-P7.3 **A JOINT ESTIMATION ALGORITHM FOR MULTIPLE SINUSOIDAL FREQUENCIES**
Ta-Hsin Li, IBM Research, United States; Kai-Sheng Song, Florida State University, United States

SPTM-P7.4 **DESIGN OF 2-D FIR FILTERS USING POSITIVE TRIGONOMETRIC POLYNOMIALS**
Bogdan Dumitrescu, Tampere University of Technology, Finland

SPTM-P7.5 **SPECTRAL ANALYSIS OF IRREGULARLY SAMPLED DATA USING A BERNOULLI-GAUSSIAN MODEL WITH FREE FREQUENCIES**
Sébastien Bourguignon, Hervé Carfantan, Université Paul Sabatier - Toulouse III, France

SPTM-P7.6 **A NEW APPROACH TO ORDER SELECTION AND PARAMETRIC SPECTRUM ESTIMATION**
Soosan Beheshti, Ryerson University, Canada

(Continued from previous page.)

SPTM-P7.7 **A STATISTICAL ANALYSIS OF THE DETECTION LIMITS IN FAST PHOTOMETRY**
David Mary, Aryabhatta Research Institute of Observational Sciences, India

SPTM-P7.8 **EFFICIENT KALMAN SMOOTHING FOR HARMONIC STATE-SPACE MODELS**
David Barber, IDIAP Research Institute, Switzerland

SPTM-P7.9 **A HOMOTOPY APPROACH FOR MULTIRATE SPECTRUM ESTIMATION**
Ali Nasiri Amini, Shahrouz Takyar, Tryphon Georgiou, Univeristy of Minnesota, United States

SPTM-P7.10 **THREE-WAY ARRAYS FOR HARMONIC RETRIEVAL: THE COLORED NOISE CASE**
Rémy Boyer, CNRS / Université Paris XI (UPS), SUPELEC, France

SPTM-P7.11 **GENERALIZED SPECTRAL THEORY FOR SIGMA-DELTA QUANTIZATION WITH CONSTANT INPUTS**
Nguyen T. Thao, City College of New York, United States; Sinan Gunturk, New York University, United States

SPTM-P7.12 **STUDY OF THE EFFECT OF INTERLEAVERS ON THE POWER SPECTRAL DENSITY APPLICATION TO THE MATRIX INTERLEAVER**
Wilfried Chauvet, Bernard Lacaze, Daniel Roviras, ENSEEIHT / IRIT, France

SLP-P12 **Speech Processing for Reverberation, Quantization and Enhancement** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 6
Chair: Maurizio Omologo, Istituto Trentino di Cultura

SLP-P12.1 **SPEECH DEREVERBERATION BY COMBINING MINT-BASED BLIND DECONVOLUTION AND MODIFIED SPECTRAL SUBTRACTION**
Ken'ichi Furuya, Sumitaka Sakauchi, Akitoshi Kataoka, NTT Corporation, Japan

SLP-P12.2 **SPECTRAL SUBTRACTION STEERED BY MULTI-STEP FORWARD LINEAR PREDICTION FOR SINGLE CHANNEL SPEECH DEREVERBERATION**
Keisuke Kinoshita, Tomohiro Nakatani, Masato Miyoshi, NTT Corporation, Japan

SLP-P12.3 **SPEECH DEREVERBERATION BASED ON PROBABILISTIC MODELS OF SOURCE AND ROOM ACOUSTICS**
Tomohiro Nakatani, NTT Corporation, Japan; Biing-Hwang Juang, Georgia Institute of Technology, United States; Keisuke Kinoshita, Masato Miyoshi, NTT Corporation, Japan

SLP-P12.4 **ON THE USE OF LIME DEREVERBERATION ALGORITHM IN AN ACOUSTIC ENVIRONMENT WITH A NOISE SOURCE**
Marc Delcroix, NTT Corporation / Hokkaido University, Japan; Takafumi Hikichi, NTT Corporation, Japan; Masato Miyoshi, NTT Corporation / Hokkaido University, Japan

SLP-P12.5 **ENHANCED PERCEPTUAL MODEL FOR NON-INTRUSIVE SPEECH QUALITY ASSESSMENT**
Doh-Suk Kim, Ahmed Tarraf, Lucent Technologies, United States

SLP-P12.6 **SPEECH ENHANCEMENT USING TRANSIENT SPEECH COMPONENTS**
Charturong Tantibundhit, J. Robert Boston, Ching-Chung Li, John D. Durrant, Susan Shaiman, Kristie Kovacyk, Amro A. El-Jaroudi, University of Pittsburgh, United States

(Continued from previous page.)

SLP-P12.7 **ENHANCED NON-INTRUSIVE SPEECH QUALITY MEASUREMENT USING DEGRADATION MODELS**
Tiago Falk, Wai-Yip Chan, Queen's University, Canada

SLP-P12.8 **A FAST SEARCH APPROACH FOR LSF PARAMETERS CODEBOOK**
Yanning Bai, Changchun Bao, Beijing University of Technology, China

SLP-P12.9 **EFFICIENT QUANTIZATION OF STATISTICALLY NORMALIZED VECTORS USING MULTI-OPTION PARTIAL-ORDER BIT-ASSIGNMENT SCHEMES**
Sean Ramprashad, DoCoMo Communications Laboratories, USA, United States

SLP-P13 **Speech Synthesis III** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 7
Chair: Hisashi Kawai, Advanced Telecommunications Research Institute

SLP-P13.1 **SCALABLE IMPLEMENTATION OF UNIT SELECTION BASED TEXT-TO-SPEECH SYSTEM FOR EMBEDDED SOLUTIONS**
Nobuo Nukaga, Ryota Kamoshida, Kenji Nagamatsu, Yoshinori Kitahara, Hitachi, Ltd., Japan

SLP-P13.2 **SUB-PHONETIC MODELING FOR CAPTURING PRONUNCIATION VARIATIONS FOR CONVERSATIONAL SPEECH SYNTHESIS**
Kishore Prahallad, Alan W. Black, Ravishankhar Mosur, Carnegie Mellon University, United States

SLP-P13.3 **PRONUNCIATION VARIANT SELECTION FOR SPONTANEOUS SPEECH SYNTHESIS - LISTENING EFFORT AS A QUALITY PARAMETER**
Steffen Werner, Matthias Wolff, Rüdiger Hoffmann, Dresden University of Technology, Germany

SLP-P13.4 **PERCEPTUAL DISTORTION ANALYSIS AND QUALITY ESTIMATION OF PROSODY-MODIFIED SPEECH FOR TD-PSOLA**
Shi-Han Chen, Shun-Ju Chen, Chih-Chung Kuo, Industrial Technology Research Institute, Taiwan

SLP-P13.5 **EFFICIENT INTERACTIVE WEIGHT TUNING FOR TTS SYNTHESIS: REDUCING USER FATIGUE BY IMPROVING USER CONSISTENCY**
Francesc Alías, Enginyeria i Arquitectura La Salle. Ramon Llull University., Spain; Xavier Llorà, University of Illinois at Urbana-Champaign, United States; Lluís Formiga, Enginyeria i Arquitectura La Salle. Ramon Llull University., Spain; Kumara Sastry, David E. Goldberg, University of Illinois at Urbana-Champaign, United States

SLP-P13.6 **IMPROVING LPC SPECTRAL ENVELOPE EXTRACTION OF VOICED SPEECH BY TRUE-ENVELOPE ESTIMATION**
Fernando Villavicencio Marquez, Axel Röbel, Xavier Rodet, IRCAM, France

(Continued from previous page.)

SLP-P13.7 **CONSTRUCTION AND CONTROL OF A THREE-DIMENSIONAL VOCAL TRACT MODEL**
Peter Birkholz, Dietmar Jackel, University of Rostock, Germany; Bernd J. Kroeger, University Hospital Aachen, Germany

SLP-P13.8 **HIGH QUALITY SINUSOIDAL MODELING OF WIDEBAND SPEECH FOR THE PURPOSES OF SPEECH SYNTHESIS AND MODIFICATION**
Dan Chazan, Ron Hoory, Ariel Sagi, Slava Shechtman, Alex Sorin, IBM Research Laboratory in Haifa, Israel, Israel; Zhi Wei Shuang, IBM China Research Lab, Israel; Raimo Bakis, IBM T. J. Watson Research Center, United States

SLP-P13.9 **CONSTRUCTING A PHONETIC-RICH SPEECH CORPUS WHILE CONTROLLING TIME-DEPENDENT VOICE QUALITY VARIABILITY FOR ENGLISH SPEECH SYNTHESIS**
Jinfu Ni, Toshio Hirai, ATR Spoken Language Communication Research Laboratories, Japan; Hisashi Kawai, KDDI R&D Laboratories, Japan

SLP-P13.10 **VISUAL EVALUATION OF VOICE TRANSFORMATION BASED ON KNOWLEDGE OF SPEAKER**
Arthur Toth, Alan W. Black, Carnegie Mellon University, United States

SLP-P13.11 **DATABASE PRUNING FOR UNSUPERVISED BUILDING OF TEXT-TO-SPEECH VOICES**
Jordi Adell, Pablo Daniel Agüero, Antonio Bonafonte, Universitat Politècnica de Catalunya (UPC), Spain

ITT-P2 **Emerging DSP Applications** (Poster)
Time: Thursday, May 18, 10:00 - 12:00
Place: Poster Area 8
Chair: Andreas Spanias, Arizona State University

ITT-P2.1 **A FILTERING APPROACH TO UNDERDETERMINED BLIND SOURCE SEPARATION WITH APPLICATION TO TEMPOROMANDIBULAR DISORDERS**
Clive Cheong Took, Saeid Sanei, Jonathon Chambers, Cardiff University, United Kingdom

ITT-P2.2 **A NEW SPECIFICATION TO GENE SIGNALS SENSORS BY NEURAL SELF ORGANIZING FEATURE MAP (SOFM)**
Mariusz Zoltowski, Collegium Medicum of Nicolaus Copernicus University of Torun, Poland

ITT-P2.3 **AN INTEGRATED 3D FACE-EXPRESSION RECOGNITION APPROACH**
Chao Li, Armando Barreto, Florida International Universtiy, United States

ITT-P2.4 **QEEG-BASED CLASSIFICATION WITH WAVELET PACKET AND MICROSTATE FEATURES FOR TRIAGE APPLICATIONS IN THE ER**
Leslie Prichep, NYU Medical School, United States; Elvir Causevic, Everest Biomedical Instruments, United States; Ronald R. Coifman, Yale University, United States; Robert Isenhart, NYU Medical School, United States; Arnaud Jacquin, Everest Biomedical Instruments, United States; E. Roy John, NYU Medical School, United States; Mauro Maggioni, Yale University, United States; Frederick J. Warner, Plain Sight Systems, United States

ITT-P2.5 **EVALUATION OF FEATURES AND NORMALIZATION TECHNIQUES FOR SIGNATURE VERIFICATION USING DYNAMIC TIME WARPING**
David Fenton, Martin Bouchard, Tet Hin Yeap, University of Ottawa, Canada

ITT-P2.6 **KEYSTROKE IDENTIFICATION BASED ON GAUSSIAN MIXTURE MODELS**
Danoush Hosseinzadeh, Sridhar Krishnan, April Khademi, Ryerson University, Canada

(Continued from previous page.)

ITT-P2.7 **COMPRESSION OF SURFACE EMG SIGNALS WITH ALGEBRAIC CODE EXCITED LINEAR PREDICTION**
Elias S. G. Carotti, Juan Carlos De Martin, Politecnico di Torino, Italy; Roberto Merletti, LISiN/DELEN - Politecnico di Torino, Italy; Dario Farina, Aalborg University, Denmark

ITT-P2.8 **ANALYSIS AND DESIGN OF VOLTAGE REGULATOR WITH IMPROVED LIGHT LOAD EFFICIENCY**
Jaber Abu Qahouq, Lilly Huang, Intel Corporation, United States

ITT-P2.9 **AN ULTRA-LOW POWER SUBBAND-BASED ELECTRONIC STETHOSCOPE**
Julie Johnson, David Hermann, Melody Witter, Etienne Cornu, Robert Brennan, AMIS Canada, Canada; Alain Dufaux, AMIS Switzerland, Switzerland

ITT-P2.10 **ULTRASONIC SIGNAL PROCESSING FOR ARCHAEOLOGICAL CERAMIC RESTORATION**
Addisson Salazar, Ramón Miralles, Angela Parra, Luis Vergara, Jorge Gosalbez, Universidad Politécnica de Valencia, Spain

ITT-P2.11 **RAILWAY INFRASTRUCTURE SYSTEM DIAGNOSIS USING EMPIRICAL MODE DECOMPOSITION AND HILBERT TRANSFORM**
Latifa Oukhellou, Université Paris12, France; Patrice Aknin, Institut National de Recherche sur les Transports et leur Sécurité, France; Eric Delechelle, Université Paris12, France

ITT-P2.12 **SIGNAL PROCESSING ALGORITHMS FOR DSP IMPLEMENTATION OF ANALOG TV RECEIVERS**
Hua Ye, Daniel Iancu, John Glossner, Vladimir Kotlyar, Andrei Iancu, Sandbridge Technologies, Inc., United States

AE-L3 **Audio Signal Analysis, Modeling and Coding** (Lecture)
Time: Thursday, May 18, 14:00 - 16:00
Place: Spot
Chair: Juergen Herre, Fraunhofer IIS

14:00
AE-L3.1 **ACOUSTIC SCENE ANALYSIS BASED ON POWER DECOMPOSITION**
Alain de Cheveigné, Michael Slama, CNRS / Université Paris 5 / ENS, France

14:20
AE-L3.2 **MUSIC PITCH REPRESENTATION BY PERIODICITY MEASURES BASED ON COMBINED TEMPORAL AND SPECTRAL REPRESENTATIONS**
Geoffroy Peeters, IRCAM, France

14:40
AE-L3.3 **MULTI-SCALE FRAME-BASED ANALYSIS OF AUDIO SIGNALS FOR MUSICAL TRANSCRIPTION USING A DICTIONARY OF CHROMATIC WAVEFORMS**
Olivier Derrien, STD-ISITV, Université de Toulon, France

15:00
AE-L3.4 **COMPUTATIONALLY EFFICIENT AMPLITUDE MODULATED SINUSOIDAL AUDIO CODING USING FREQUENCY-DOMAIN LINEAR PREDICTION**
Mads G. Christensen, Søren Holdt Jensen, Aalborg University, Denmark

15:20
AE-L3.5 **HIGH-RESOLUTION SPHERICAL QUANTIZATION OF SINUSOIDS WITH HARMONICALLY RELATED FREQUENCIES**
Pim Korten, Jesper Jensen, Richard Heusdens, Delft University of Technology, Netherlands

15:40
AE-L3.6 **MULTIDIMENSIONAL OPTIMIZATION OF MPEG-4 AAC ENCODING**
Claus Bauer, Matt Fellers, Grant Davidson, Dolby Laboratories, United States

IMDSP-L8 **Biometrics** (Lecture)
Time: Thursday, May 18, 14:00 - 16:00
Place: Caravelle 2
Chair: Hamid Krim, North Carolina State University

14:00
IMDSP-L8.1 **A STATISTICAL STUDY ON THE FINGERPRINT MINUTIAE DISTRIBUTION**
Jiansheng Chen, Yiu Sang Moon, Chinese University of Hong Kong, Hong Kong SAR of China

14:20
IMDSP-L8.2 **FRONTAL VIEW-BASED GAIT IDENTIFICATION USING LARGEST LYAPUNOV EXPONENTS**
Tracey Lee, Singapore Polytechnic, Singapore; Surendra Ranganath, National University of Singapore, Singapore; Saeid Sanei, Cardiff University, United Kingdom

14:40
IMDSP-L8.3 **ELAPSED TIME IN HUMAN GAIT RECOGNITION: A NEW APPROACH**
Dacheng Tao, Xuelong Li, University of London, United Kingdom; Xindong Wu, University of Vermont, United States; Steve Maybank, University of London, United Kingdom

15:00
IMDSP-L8.4 **FACE RECOGNITION WITH KERNEL CORRELATION FILTERS ON A LARGE SCALE DATABASE**
Jingu Heo, Marios Savvides, Ramzi Abiantun, Chunyan Xie, B.V.K. Vijayakumar, Carnegie Mellon University, United States

15:20
IMDSP-L8.5 **CLASS DEPENDENT KERNEL DISCRETE COSINE TRANSFORM FEATURES FOR ENHANCED HOLISTIC FACE RECOGNITION IN FRGC-II**
Marios Savvides, Jingu Heo, Ramzi Abiantun, Chunyan Xie, Vijaya Kumar B.V.K., Carnegie Mellon University, United States

15:40
IMDSP-L8.6 **3D FACE RECOGNITION USING AFFINE INTEGRAL INVARIANTS**
Shuo Feng, Hamid Krim, North Carolina State University, United States; Irene Gu, Mats Viberg, Chalmers University of Technology, Switzerland

MMSP-L2 **Multimedia Security and Content Protection** (Lecture)
Time: Thursday, May 18, 14:00 - 16:00
Place: Ariane 1 & 2
Chair: Mauro Barni, University of Siena

14:00
MMSP-L2.1 **INFORMED AUTHENTICATION WATERMARKING VIA STEGO DATA RECONSTRUCTION**
Chao-Yong Hsu, National Taiwan University, Taiwan; Chun-Shien Lu, Academia Sinica, Taiwan

14:20
MMSP-L2.2 **ESTIMATION OF QUANTIZATION STEP SIZE AGAINST AMPLITUDE MODIFICATION ATTACK IN SCALAR QUANTIZATION-BASED AUDIO WATERMARKING**
Siho Kim, Keunsung Bae, Kyungpook National University, Republic of Korea

14:40
MMSP-L2.3 **MAC AWARE CODING STRATEGY FOR MULTIPLE USER INFORMATION EMBEDDING**
Abdellatif Zaidi, LSS / CNRS / Supélec / ComElec/ ENST, France; Pablo Piantanida, LSS / CNRS / Supélec, France

15:00
MMSP-L2.4 **IMAGE WATERMARKING ROBUST AGAINST NON-LINEAR VALUE-METRIC SCALING BASED ON HIGHER ORDER STATISTICS**
Fabrizio Guerrini, University of Brescia, Italy; Riccardo Leonardi, Mauro Barni, University of Siena, Italy

15:20
MMSP-L2.5 **NON-INTRUSIVE FORENSIC ANALYSIS OF VISUAL SENSORS USING OUTPUT IMAGES**
Ashwin Swaminathan, Min Wu, K. J. Ray Liu, University of Maryland, College Park, United States

15:40
MMSP-L2.6 **ON OPTIMAL COLLUSION STRATEGIES FOR FINGERPRINTING**
Negar Kiyavash, Pierre Moulin, University of Illinois at Urbana-Champaign, United States

SPCOM-L5 **Multi-carrier Systems** (Lecture)
Time: Thursday, May 18, 14:00 - 16:00
Place: Cassiopée
Chair: Mounir Ghogho, University of Leeds

14:00
SPCOM-L5.1 **A DIGITAL AMPLITUDE-TO-PHASE CONVERSION FOR HIGH EFFICIENCY LINEAR OUTPHASE POWER AMPLIFIERS**
Anh Pham, Gregory Wornell, Charles Sodini, Massachusetts Institute of Technology, United States

14:20
SPCOM-L5.2 **AN EFFICIENT SEARCH ALGORITHM FOR THE LAGRANGE MULTIPLIERS OF OPTIMAL SPECTRUM BALANCING IN MULTI-USER XDSL SYSTEMS**
Paschalis Tsiaflakis, Jan Vangorp, Marc Moonen, Katholieke Universiteit Leuven / ESAT, Belgium; Jan Verlinden, Katleen Van Acker, Alcatel, Belgium

14:40
SPCOM-L5.3 **EFFICIENT SOFT DEMODULATION IN MIMO-OFDM SYSTEMS WITH BICM AND CONSTANT MODULUS ALPHABETS**
Dominik Seethaler, Gerald Matz, Franz Hlawatsch, Vienna University of Technology, Austria

15:00
SPCOM-L5.4 **OFDM CHANNEL ESTIMATION BY A LINEAR EM-MAP ALGORITHM**
Jean-Marcel Mamfoumbi-Ocloo, Florence Alberge, LSS, France

15:20
SPCOM-L5.5 **DMT TIME DOMAIN EQUALIZATION BASED ON ARMA MODELS**
Kyriakos Alexopoulos, Stelios Perissakis, Nikolaos Zervos, Ellemedia Technologies, Greece

15:40
SPCOM-L5.6 **OPTIMUM ISI-FREE DMT SYSTEMS WITH INTEGER BITLOADING AND ARBITRARY DATA RATES: WHEN DOES ORTHONORMALITY SUFFICE?**
Xuejie Song, Soura Dasgupta, University of Iowa, United States

SLP-L8 **Efficient Techniques for LVCSR** (Lecture)
Time: Thursday, May 18, 14:00 - 16:00
Place: Auditorium St Exupery
Chair: Enrico Bocchieri, AT&T Research

14:00
SLP-L8.1 **AN INEXPENSIVE PACKET LOSS COMPENSATION SCHEME FOR DISTRIBUTED SPEECH RECOGNITION BASED ON SOFT-FEATURES**
Valentin Ion, Reinhold Haeb-Umbach, University of Paderborn, Germany

14:20
SLP-L8.2 **SPEAKER-INDEPENDENT NAME RECOGNITION USING IMPROVED COMPENSATION AND ACOUSTIC MODELING METHODS FOR MOBILE APPLICATIONS**
Kaisheng Yao, Lorin Netsch, Vishu Viswanathan, Texas Instruments, Inc., United States

14:40
SLP-L8.3 **PARALLEL LVCSR ALGORITHM FOR CELLPHONE-ORIENTED MULTICORE PROCESSORS**
Shin-ya Ishikawa, Kiyoshi Yamabana, Ryosuke Isotani, Akitoshi Okumura, NEC, Japan

15:00
SLP-L8.4 **GAUSSIAN SELECTION WITH NON-OVERLAPPING CLUSTERS FOR ASR IN EMBEDDED DEVICES**
Jussi Leppänen, Imre Kiss, Nokia Research Center, Finland

15:20
SLP-L8.5 **POCKETSPHINX: A FREE, REAL-TIME CONTINUOUS SPEECH RECOGNITION SYSTEM FOR HAND-HELD DEVICES**
David Huggins-Daines, Mohit Kumar, Arthur Chan, Alan W. Black, Mosur Ravishankar, Alexander Rudnicky, Carnegie Mellon University, United States

15:40
SLP-L8.6 **MULTI-FRAME GMM-BASED BLOCK QUANTISATION FOR DISTRIBUTED SPEECH RECOGNITION UNDER NOISY CONDITIONS**
Stephen So, Kuldip Paliwal, Griffith University, Australia

SS-8 **Advanced Methods for Mapping Brain Functions from Functional MRI Datasets** (Special Session)
Time: Thursday, May 18, 14:00 - 16:00
Place: Guillaumet 1 & 2
Chair: Philippe Ciuciu, Service Hospitalier Frédéric Joliot

14:00
SS-8.1 **BAYESIAN JOINT DETECTION-ESTIMATION OF BRAIN ACTIVITY USING MCMC WITH A GAMMA-GAUSSIAN MIXTURE PRIOR MODEL**
Salima Makni, Philippe Ciuciu, SHFJ / CEA, France; Jérôme Idier, IRCCyN / CNRS, France; Jean-Baptiste Poline, SHFJ / CEA, France

14:20
SS-8.2 **HIDDEN MARKOVIAN MODELING AND ANALYSIS OF MULTIPLE-EVENT-SEQUENCE-BASED RANDOM PROCESSES. APPLICATION TO ROBUST DETECTION OF BRAIN FUNCTIONAL ACTIVATION**
Sylvain Faisan, Laurent Thoraval, Fabrice Heitz, LSIIT / UMR CNRS-ULP 7005, France; Jean-Paul Armspach, UMR CNRS-ULP 7004, France

14:40
SS-8.3 **WSPM OR HOW TO OBTAIN STATISTICAL PARAMETRIC MAPS USING SHIFT-INVARIANT WAVELET PROCESSING**
Dimitri Van De Ville, Thierry Blu, Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

15:00
SS-8.4 **CORRECTION OF STRUCTURED NOISE IN FMRI USING SPATIAL COMPONENT ANALYSIS : CORSICA**
Vincent Perlbarg, Pierre Bellec, INSERM U678, France; Jean-Luc Anton, CNRS - Centre IRMf, CHU La Timone, France; Habib Benali, INSERM U678, France

15:20
SS-8.5 **ANATOMO-FUNCTIONAL DESCRIPTION OF THE BRAIN : A PROBABILISTIC APPROACH**
Benjamin Thyreau, Bertrand Thirion, Guillaume Flandin, Jean-Baptiste Poline, Commissariat à l'Energie Atomique (CEA), France

15:40
SS-8.6 **FUSION OF MULTISUBJECT HEMODYNAMIC AND EVENT-RELATED POTENTIAL DATA USING INDEPENDENT COMPONENT ANALYSIS**
Vince Calhoun, Institute of Living / Yale University, United States; Tulay Adali, University of Maryland, Baltimore County, United States

IMDSP-P11 **Image Segmentation** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 1
Chair: Josh Zeevi, Technion - Israel Institute of Technology

IMDSP-P11.1 **MUMFORD-SHAH MODEL WITH FAST ALGORITHM ON LATTICE**
Lu Yu, Qiao Wang, Lenan Wu, Southeast University, China; Jun Xie, PLA University of Science and Technology, China

IMDSP-P11.2 **TEXTURE SEGMENTATION USING STATISTICAL CHARACTERISTICS OF SOM AND MULTI-SCALE BAYESIAN ESTIMATION**
Tae Hyung Kim, Pusan National University, Republic of Korea; Il Kyu Eom, Miryang National University, Republic of Korea; Yoo Shin Kim, Pusan National University, Republic of Korea

IMDSP-P11.3 **CONTEXTUAL ESTIMATION OF HIDDEN MARKOV CHAINS WITH APPLICATION TO IMAGE SEGMENTATION**
Stephane Derrode, EGIM / Institut Fresnel, France; Lamia Benyoussef, GRIFT Lab. Cristal, Tunisia; Wojciech Pieczynski, UMR 5157, France

IMDSP-P11.4 **REGION-BASED IMAGE SEGMENTATION USING TEXTURE STATISTICS AND LEVEL-SET METHODS**
Imen Karoui, ENST Bretagne, France; Ronan Fablet, IFREMER, France; Jean-Marc Boucher, ENST Bretagne, France; Jean-Marie Augustin, IFREMER, France

IMDSP-P11.5 **IMPROVED IMAGE SEGMENTATION WITH A MODIFIED BAYESIAN CLASSIFIER**
Thomas Weldon, University of North Carolina, Charlotte, United States

IMDSP-P11.6 **UNSUPERVISED SEGMENTATION OF NON STATIONARY IMAGES WITH NON GAUSSIAN CORRELATED NOISE USING TRIPLET MARKOV FIELDS AND THE PEARSON SYSTEM**
Dalila Benboudjema, Wojciech Pieczynski, INT / GET, France

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IMDSP-P11.7 EDGE DETECTION USING DYNAMIC OPTIMAL PARTITIONING
Jeff Scargle, Mahmoud Quweider, University of Texas, Brownsville, United States

IMDSP-P11.8 AN ACTIVE CONTOUR APPROACH TO AUTOMATIC DETECTION OF THE INTIMA-MEDIA THICKNESS
Michele Ceccarelli, University of Sannio, Italy; Nicola De Luca, University of Naples, Italy; Sandro Mroganella, University of Sannio, Italy

IMDSP-P11.9 ROBUST CONTOUR LINE EXTRACTION USING CONTEXT
Feng Guo, Gang Qian, Arizona State University, United States

IMDSP-P11.10 OPTIMIZATION AND INTERPOLATION FOR DISTORTED CONTOUR ESTIMATION
Salah Bourennane, Julien Marot, Institut Fresnel, France

MLSP-P4 **Audio and Communication Applications** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 2
Chair: John W. Fisher III, MIT CSAIL

MLSP-P4.1 **GAUSSIAN PROCESSES FOR DIGITAL COMMUNICATIONS**
Fernando Pérez-Cruz, Gatsby Computational Neuroscience Unit. UCL., United Kingdom; Juan José Murillo-Fuentes, Universidad de Sevilla, Spain

MLSP-P4.2 **AN ADAPTIVE PARAUNITARY APPROACH FOR BLIND EQUALIZATION OF ALL EQUALIZABLE MIMO CHANNELS**
Alper Erdogan, Koç University, Turkey

MLSP-P4.3 **A SLIDING-WINDOW KERNEL RLS ALGORITHM AND ITS APPLICATION TO NONLINEAR CHANNEL IDENTIFICATION**
Steven Van Vaerenbergh, Javier Vía, Ignacio Santamaría, University of Cantabria, Spain

MLSP-P4.4 **AUTOMATIC SPEECH PROCESSING METHODS FOR BIOACOUSTIC SIGNAL ANALYSIS: A CASE STUDY OF CROSS-DISCIPLINARY ACOUSTIC RESEARCH**
John Harris, Mark Skowronski, University of Florida, United States

MLSP-P4.5 **A MARKOV-CHAIN MONTE-CARLO APPROACH TO MUSICAL AUDIO SEGMENTATION**
Christophe Rhodes, Michael Casey, University of London, United Kingdom; Samer Abdallah, Mark Sandler, Queen Mary, University of London, United Kingdom

MLSP-P4.6 **ROOM ACOUSTIC PARAMTER EXTRACTION FROM MUSIC SIGNALS**
Paul Kendrick, Trevor Cox, University of Salford, United Kingdom; Yonggang Zhang, Jonathon Chambers, Cardiff University, United Kingdom; Francis Li, Manchester Metropolitan University, United Kingdom

(Continued from previous page.)

MLSP-P4.7 **A STUDY OF PERCEPTRON MAPPING CAPABILITY TO DESIGN SPEECH EVENT DETECTORS**
Sabato M. Siniscalchi, Mark A. Clements, Georgia Institute of Technology, United States; Antonio Gentile, Giorgio Vassallo, Filippo Sorbello, Università degli Studi di Palermo, Italy

MLSP-P4.8 **A SPEECH/MUSIC DISCRIMINATOR FOR RADIO RECORDINGS USING BAYESIAN NETWORKS**
Theodoros Giannakopoulos, Aggelos Pikrakis, Sergios Theodoridis, University of Athens, Greece

MLSP-P4.9 **AUDIO BASED EVENT DETECTION FOR MULTIMEDIA SURVEILLANCE**
Pradeep K. Atrey, National University of Singapore, Singapore; Namunu C. Maddage, Institute for Infocomm Research, Singapore; Mohan S. Kankanhalli, National University of Singapore, Singapore

MLSP-P4.10 **HIERARCHICAL CLASSIFICATION OF MUSICAL INSTRUMENTS ON SOLO RECORDINGS**
Slim Essid, Gaël Richard, Bertrand David, GET / Télécom Paris, France

MLSP-P4.11 **LATENT DIRICHLET DECOMPOSITION FOR SINGLE CHANNEL SPEAKER SEPARATION**
Bhiksha Raj, Mitsubishi Electric Research Laboratories, United States; Madhusudana Shashanka, Boston University Hearing Research Center, United States; Paris Smaragdis, Mitsubishi Electric Research Laboratories, United States

MLSP-P4.12 **A BLOCK FACTOR ANALYSIS BASED RECEIVER FOR BLIND MULTI-USER ACCESS IN WIRELESS COMMUNICATIONS**
Dimitri Nion, Lieven De Lathauwer, ETIS (CNRS, ENSEA, UCP), France

SAM-P4 **Sensor Array Processing** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 3
Chair: Mats Viberg, Chalmers University of Technology

SAM-P4.1 **POSITIONING FOR NLOS PROPAGATION: ALGORITHM DERIVATIONS AND CRAMER-RAO BOUNDS**
Honglei Miao, Kegen Yu, Markku Juntti, University of Oulu, Finland

SAM-P4.2 **WARD: A WEIGHTED ARRAY DATA SCHEME FOR SUBSPACE PROCESSING IN IMPULSIVE NOISE**
Jin He, Zhong Liu, Nanjing University of Science & Technology, China

SAM-P4.3 **ARRAY PROCESSING USING TIME REVERSAL: EXPERIMENTS AND PERFORMANCE**
José M. F. Moura, Yuanwei Jin, Dan Stancil, Jian-Gang Zhu, Ahmet Cepni, Yi Jiang, Ben Henty, Carnegie Mellon University, United States

SAM-P4.4 **THEORY AND DESIGN OF UNIFORM CONCENTRIC SPHERICAL ARRAYS WITH FREQUENCY INVARIANT CHARACTERISTICS**
S. C. Chan, H. H. Chen, University of Hong Kong, China

SAM-P4.5 **OPTIMAL ARRAY RECEIVER FOR SYNCHRONIZATION OF A BPSK SIGNAL CORRUPTED BY NON CIRCULAR INTERFERENCES**
Pascal Chevalier, François Pipon, Thales Communications - EDS/SPM/SBP, France

SAM-P4.6 **CALIBRATION OF A POLARIZATION DIVERSE ARRAY**
Hasan Mir, John Sahr, University of Washington, United States

(Continued from previous page.)

SAM-P4.7 **DIRECTION DEPENDENT SELF CALIBRATION OF LARGE DISTRIBUTED SENSOR ARRAYS**
Brian Jeffs, Brigham Young University, United States; Sebastiaan van der Tol, Alle-Jan van der Veen, Technical University of Delft, Netherlands

SAM-P4.8 **AN IMPROVED SUBSPACE-BASED ALGORITHM IN THE SMALL SAMPLE SIZE REGIME**
Xavier Mestre, Francisco Rubio, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain

SAM-P4.9 **HIGH RESOLUTION VECTOR-SENSOR ARRAY PROCESSING BASED ON BIQUATERNIONS**
Sebastian Miron, Nicolas Le Bihan, Jérôme I. Mars, Laboratoire des Images et des Signaux, France

SAM-P4.10 **COMPARISON OF A DIFFRACTING AND A NON-DIFFRACTING CIRCULAR ACOUSTIC ARRAY**
James Carneal, Marty Johnson, Philip Gillett, Virginia Tech, United States

SAM-P4.11 **UNDERWATER NOISE MODELING AND DIRECTION-FINDING BASED ON CONDITIONAL HETEROSCEDASTICITY TIME SERIES**
Hadi Amiri, Hamidreza Amindavar, Amirkabir University of Technology, Iran; Mahmoud Kamarei, University of Tehran, Iran

SAM-P4.12 **SPATIAL-VECTOR SMOOTHING FOR COHERENT SOURCES IN PRESENCE OF A REFLECTING BOUNDARY**
Jianwu Tao, University of Waterloo, Canada

SPCOM-P9 **Channel Estimation and Equalization II** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 4
Chair: Franz Hlawatsch, Vienna University of Technology

SPCOM-P9.1 **A BLIND ALGORITHM BASED ON DIFFERENCE OF NORMS FOR EQUALIZATION OF BIORTHOGONAL SIGNALS**
Andrew G. Klein, C. Richard Johnson, Jr., Cornell University, United States; Pierre Duhamel, Supélec/LSS, France

SPCOM-P9.2 **A FAMILY OF EQUALIZERS FOR OPTIMAL SEQUENCE DETECTION**
Raman Venkataramani, Fatih Erden, Seagate Technology, United States

SPCOM-P9.3 **BLIND ADAPTIVE EQUALIZATION METHOD WITHOUT CHANNEL ORDER ESTIMATION**
Ibrahim Kacha, Abed-Meraim Karim, Télécom Paris, France; Adel Belouchrani, Ecole Nationale Polytechnique, Algeria

SPCOM-P9.4 **DIRECT FIR LINEAR EQUALIZATION OF DOUBLY SELECTIVE CHANNELS BASED ON SUPERIMPOSED TRAINING**
Jitendra Tugnait, Shuangchi He, Auburn University, United States

SPCOM-P9.5 **ANALYSIS OF MULTI-STAGE RECEIVERS UNDER FINITE SAMPLE-SUPPORT**
Francisco Rubio, Xavier Mestre, Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain

SPCOM-P9.6 **A JOINT CARRIER OFFSET AND CHANNEL ESTIMATION METHOD FOR SYNCHRONOUS CDMA SYSTEM**
Samir Attallah, L. B. Thiagarajan, National University of Singapore, Singapore; Hongyi Fu, Ying-Chang Liang, Institute of Infocomm Research, Singapore

(Continued from previous page.)

SPCOM-P9.7 MMSE OPTIMISATION FOR LS CHANNEL ESTIMATION IN WIDEBAND DS-CDMA RAKE RECEIVERS
Apostolos Georgiadis, Anastasios Papatsoris, Serres Institute of Technology, Greece; Bernard Mulgrew, University of Edinburgh, United Kingdom

SPCOM-P9.8 MAI IMPACT SUPPRESSION WITH PARALLEL INTERFERENCE CANCELLATION IN DS-OCDMA SYSTEMS USING PRIME CODES
Claire Goursaud, Anne Julien-Vergonjanne, Christelle Aupetit-Berthelemot, Jean-Pierre Cances, Jean-Michel Dumas, University of Limoges ENSIl / UMOP-GESTE, France

SPCOM-P9.9 SPACE-TIME CROSS CORRELATION AND SPACE-FREQUENCY CROSS SPECTRUM IN NON-ISOTROPIC SCATTERING ENVIRONMENTS
Tharaka Lamahewa, Thushara Abhayapala, Rodney Kennedy, The Australian National University, Australia; Jaunty Ho, The Australian National University / Monash University, Australia

SPCOM-P9.10 DETERMINISTIC ESTIMATION OF CHANNEL PARAMETERS IN ASYNCHRONOUS CDMA COMMUNICATIONS OVER FREQUENCY-SELECTIVE CHANNELS
Seyed Alireza Razavi, University of Birjand, Iran

SPCOM-P9.11 BLIND CONSTRAINED SET-MEMBERSHIP ALGORITHMS WITH TIME-VARYING BOUNDS FOR CDMA INTERFERENCE SUPPRESSION
Rodrigo de Lamare, Paulo Diniz, LPS/COPPE-UFRJ, Brazil

SPTM-P9 **Signal Restoration, Reconstruction and Enhancement** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 5
Chair: Eric Moulines, ENST

SPTM-P9.1 **ENERGY SPECTRUM RECONSTRUCTION FOR HPGE DETECTORS USING ANALYTICAL PILE-UP CORRECTION**
Thomas Trigano, François Roueff, Eric Moulines, ENST Paris, France; Thierry Montagu, Antoine Souloumiac, Commissariat à l'Energie Atomique (CEA), France

SPTM-P9.2 **KERNEL WIENER FILTER WITH DISTANCE CONSTRAINT**
Makoto Yamada, Graduate School for Advanced Study, Japan; Mahmood Azimi-Sadjadi, Colorado State University, United States

SPTM-P9.3 **THEORETICAL FOUNDATIONS OF SECOND-ORDER-STATISTICS-BASED BLIND SOURCE SEPARATION FOR NON-STATIONARY SOURCES**
Akira Tanaka, Hideyuki Imai, Masaaki Miyakoshi, Hokkaido University, Japan

SPTM-P9.4 **SIGNAL RECONSTRUCTION FROM MULTIPLE UNREGISTERED SETS OF SAMPLES USING GROEBNER BASES**
Patrick Vandewalle, Luciano Sbaiz, Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SPTM-P9.5 **OBTAINING THE BEST LINEAR UNBIASED ESTIMATOR OF NOISY SIGNALS BY NON-GAUSSIAN COMPONENT ANALYSIS**
Masashi Sugiyama, Tokyo Institute of Technology, Japan; Motoaki Kawanabe, Gilles Blanchard, Fraunhofer FIRST.IDA, Germany; Vladimir Spokoiny, Weierstrass Institute and Humboldt University, Germany; Klaus-Robert Mueller, Fraunhofer FIRST.IDA / University of Potsdam, Germany

SPTM-P9.6 **DESIGN OF OVERSAMPLING DELTA-SIGMA DA CONVERTERS VIA H-INFINITY OPTIMIZATION**
Masaaki Nagahara, Toshihiro Wada, Yutaka Yamamoto, Kyoto University, Japan

(Continued from previous page.)

SPTM-P9.7 **SPARSE BLIND DECONVOLUTION ACCOUNTING FOR TIME-SHIFT AMBIGUITY**
Christian Labat, Jérôme Idier, IRCCYN (CNRS UMR 6597), France

SPTM-P9.8 **DESIGN OF LOCAL FILTERS FOR THE DECONVOLUTION OF ELECTRON ENERGY LOSS SPECTRUM**
David Brie, CRAN UMR 7039, France; Christian Heinrich, LSIIT / UMR 7005, France

SPTM-P9.9 **SPARSE APPROXIMATION VIA ITERATIVE THRESHOLDING**
Kyle Herrity, Anna Gilbert, Joel Tropp, University of Michigan, United States

SPTM-P9.10 **THE PEP APPROACH: A NEW FAMILY OF METHODS SOLVING THE PHASE ESTIMATION PROBLEM**
Amar Kachenoura, Laurent Albera, Lotfi Senhadji, Laboratoire Traitement du Signal et de l'Image, France

SPTM-P9.11 **A STATE SPACE APPROACH TO THE INVERSE OF LPTV FILTERS**
Xiaofang Chen, Cishen Zhang, Nanyang Technological University, Singapore; Jingxin Zhang, Monash University, Australia

SPTM-P9.12 **SOLUTION OF L1 MINIMIZATION PROBLEMS BY LARS/HOMOTOPY METHODS**
Iddo Drori, David Donoho, Stanford University, United States

SPTM-P8 **Adaptive Systems and Filtering II** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 6
Chair: Ali Sayed, University of California, Los Angeles

SPTM-P8.1 **SIMULTANEOUS TRACKING OF THE BEST BASIS IN REDUCED-RANK WIENER FILTER**
Toshihisa Tanaka, Tokyo University of Agriculture and Technology, Japan; Simone Fiori, Università Politecnica delle Marche, Italy

SPTM-P8.2 **YAST ALGORITHM FOR MINOR SUBSPACE TRACKING**
Roland Badeau, Bertrand David, Gaël Richard, ENST / TSI, France

SPTM-P8.3 **SUBSPACE TRACKING IN COLORED NOISE BASED ON OBLIQUE PROJECTION**
Minhua Chen, Zuoying Wang, Tsinghua University, China

SPTM-P8.4 **PRINCIPAL AND MINOR SUBSPACE TRACKING: ALGORITHMS & STABILITY ANALYSIS**
Steve Bartelmaos, Karim Abed-Meraim, ENST Paris, France

SPTM-P8.5 **COEFFICIENT SYMMETRY FOR IMPLEMENTING ODD-ORDER LAGRANGE-TYPE VARIABLE FRACTIONAL-DELAY FILTERS**
Tian-Bo Deng, Toho University, Japan

SPTM-P8.6 **CONVEX-OPTIMIZATION-BASED ENFORCEMENT OF ROBUST BIBO STABILITY ON THE AIC SCHEME USING A MODIFIED RLS ALGORITHM**
Nestor Perez Arancibia, University of California, Los Angeles, United States

(Continued from previous page.)

SPTM-P8.7 **SOLUTION TO THE WEIGHT EXTRACTION PROBLEM IN FAST QR-DECOMPOSITION RLS ALGORITHMS**
Mobien Shoaib, Stefan Werner, Helsinki University of Technology, Finland; Jose Apolinario, Instituto Militar de Engenharia, Brazil; Timo I. Laakso, Helsinki University of Technology, Finland

SPTM-P8.8 **ON SEQUENTIAL ON-LINE OUTLIER DETECTION AND A LINESCAN APPLICATION**
Juho Vihonen, Timo Ala-Kleemola, Riitta Kerminen, Juha Jylhä, Ari Visa, Tampere University of Technology, Finland

SPTM-P8.9 **AN EXTENDED EPSILON-PERTURBATION METHOD TO THE PROBLEM OF SEMI-INFINITE QUADRATIC PROGRAMMING IN CONSTRAINED FIR FILTER DESIGN**
Mohammad A. Masnadi-Shirazi, Amin Zollanvari, Shiraz University, Iran

SPTM-P8.10 **DISTRIBUTED ADAPTIVE INCREMENTAL STRATEGIES: FORMULATION AND PERFORMANCE ANALYSIS**
Cassio Lopes, Ali H. Sayed, University of California, Los Angeles, United States

SPTM-P8.11 **AN EXTENDED DUAL PARAMETERIZATION METHOD TO CONSTRAINED LEAST SQUARE LAGUERRE FILTER DESIGN**
Amin Zollanvari, Mohammad A. Masnadi-Shirazi, Shiraz University, Iran

SLP-P14 **Speaker Recognition: Models and Methods** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 7
Chair: Tomoko Matsui, Institute of Statistical Mathematics

SLP-P14.1 **COHORT-BASED SPEAKER MODEL SYNTHESIS FOR CHANNEL ROBUST SPEAKER RECOGNITION**
Wei Wu, Thomas Fang Zheng, Mingxing Xu, Tsinghua University, China

SLP-P14.2 **EXPERIMENTS IN SESSION VARIABILITY MODELLING FOR SPEAKER VERIFICATION**
Robbie Vogt, Sridha Sridharan, Queensland University of Technology, Australia

SLP-P14.3 **TEXT-DEPENDENT SPEAKER-RECOGNITION USING ONE-PASS DYNAMIC PROGRAMMING ALGORITHM**
V. Ramasubramanian, Amitava Das, V. Praveen Kumar, Siemens Corporate Technology, India

SLP-P14.4 **ON MAXIMIZING THE WITHIN-CLUSTER HOMOGENEITY OF SPEAKER VOICE CHARACTERISTICS FOR SPEECH UTTERANCE CLUSTERING**
Wei-Ho Tsai, Hsin-Min Wang, Academia Sinica, Taiwan

SLP-P14.5 **AN EFFICIENT GMM CLASSIFICATION POST-PROCESSING METHOD FOR STRUCTURAL GAUSSIAN MIXTURE MODEL BASED SPEAKER VERIFICATION**
R. Saeidi, Iran University of Science and Technology, Iran; H. R. Sadegh Mohammadi, Iranian Research Institute for Electrical Engineering, Iran; M. Khalaj Amirhosseini, Iran University of Science and Technology, Iran

SLP-P14.6 **MULTIGRAINED MODEL ADAPTATION WITH MAP AND REFERENCE SPEAKER WEIGHTING FOR TEXT INDEPENDENT SPEAKER VERIFICATION**
Xianyu Zhao, Yuan Dong, France Telecom R&D Center (Beijing), China; Jun Luo, Tsinghua University, China; Hao Yang, Beijing University of Posts and Telecommunications, China; Haila Wang, France Telecom R&D Center (Beijing), China

(Continued from previous page.)

SLP-P14.7 **ON THE USE OF VOTING METHODS FOR SPEAKER IDENTIFICATION BASED ON VARIOUS RESOLUTION FILTERBANKS**
Bong-Jin Lee, Sung-Wan Yoon, Hong-Goo Kang, Dae Hee Youn, Yonsei University, Republic of Korea

SLP-P14.8 **SYLLABLE LATTICE BASED RE-SCORING FOR SPEAKER VERIFICATION**
Minho Jin, Korea Advanced Institute of Science and Technology, Republic of Korea; Frank K. Soong, Microsoft Research Asia, China; Chang D. Yoo, Korea Advanced Institute of Science and Technology, Republic of Korea

SLP-P14.9 **IMPROVED GMM-UBM/SVM FOR SPEAKER VERIFICATION**
Minghui Liu, Beiqian Dai, Yanlu Xie, Zhiqiang Yao, University of Science and Technology of China, China

SLP-P14.10 **A COMPARISON OF VARIOUS ADAPTATION METHODS FOR SPEAKER VERIFICATION WITH LIMITED ENROLLMENT DATA**
Man-Wai Mak, Hong Kong Polytechnic University, Hong Kong SAR of China; Roger Hsiao, Carnegie Mellon University, United States; Brian Mak, Hong Kong University of Science and Technology, Hong Kong SAR of China

SLP-P14.11 **EFFECT OF SPEECH TRANSFORMATION ON IMPOSTOR ACCEPTANCE**
Driss Matrouf, Jean-François Bonastre, Corinne Fredouille, University of Avignon, France

SLP-P14.12 **FAR-FIELD SPEAKER RECOGNITION**
Qin Jin, Yue Pan, Tanja Schultz, Carnegie Mellon University, United States

SLP-P15 **Spoken Document Search, Navigation and Summarization** (Poster)
Time: Thursday, May 18, 14:00 - 16:00
Place: Poster Area 8
Chair: Ciprian Chelba, Microsoft

SLP-P15.1 **IMPROVED SPOKEN DOCUMENT SUMMARIZATION USING PROBABILISTIC LATENT SEMANTIC ANALYSIS (PLSA)**
Sheng-Yi Kong, Lin-shan Lee, National Taiwan University, Taiwan

SLP-P15.2 **PRUNING ANALYSIS FOR THE POSITION SPECIFIC POSTERIOR LATTICES FOR SPOKEN DOCUMENT SEARCH**
Jorge Silva, University of Southern California, United States; Ciprian Chelba, Alex Acero, Microsoft Corporation, United States

SLP-P15.3 **KEYWORD SPOTTING OF ARBITRARY WORDS USING MINIMAL SPEECH RESOURCES**
Alvin Garcia, Herbert Gish, BBN Technologies, United States

SLP-P15.4 **SPOKEN PROPER NAME RETRIEVAL IN AUDIO STREAMS FOR LIMITED-RESOURCE LANGUAGES VIA LATTICE BASED SEARCH USING HYBRID REPRESENTATIONS**
Murat Akbacak, John H. L. Hansen, University of Texas, Dallas, United States

SLP-P15.5 **AN AUTOMATIC CAPTIONING SYSTEM FOR TELEMEDICINE**
Yunxin Zhao, Xiaojia Zhang, Rusheng Hu, Jian Xue, Xiaolong Li, Lili Che, Rong Hu, Laura Schopp, University of Missouri, United States

SLP-P15.6 **IMPROVED SPOKEN DOCUMENT RETRIEVAL WITH DYNAMIC KEY TERM LEXICON AND PROBABILISTIC LATENT SEMANTIC ANALYSIS (PLSA)**
Ya-chao Hsieh, Yu-tsun Huang, Chien-chih Wang, Lin-shan Lee, National Taiwan University, Taiwan

(Continued from previous page.)

SLP-P15.7 **MAXIMUM ENTROPY BASED NORMALIZATION OF WORD POSTERIORS FOR PHONETIC AND LVCSR LATTICE SEARCH**
Peng Yu, Microsoft Research Asia, China; Duo Zhang, Tsinghua University, China; Frank Seide, Microsoft Research Asia, China

SLP-P15.8 **CHINESE SPOKEN DOCUMENT SUMMARIZATION USING PROBABILISTIC LATENT TOPICAL INFORMATION**
Berlin Chen, Yao-Ming Yeh, Yao-Min Huang, Yi-Ting Chen, National Taiwan Normal University, Taiwan

SLP-P15.9 **AN EXTREMELY LARGE VOCABULARY APPROACH TO NAMED ENTITY EXTRACTION FROM SPEECH**
Takaaki Hori, Atsushi Nakamura, NTT Corporation, Japan

SLP-P15.10 **TOPIC AND STYLISTIC ADAPTATION FOR SPEECH SUMMARISATION**
Pierre Chatain, Edward W. D. Whittaker, Joanna Mrozinski, Sadaoki Furui, Tokyo Institute of Technology, Japan

SLP-P15.11 **AUTOMATIC SENTENCE SEGMENTATION OF SPEECH FOR AUTOMATIC SUMMARIZATION**
Joanna Mrozinski, Edward W. D. Whittaker, Pierre Chatain, Sadaoki Furui, Tokyo Institute of Technology, Japan

MLSP-L4 **Blind Source Separation I** (Lecture)
Time: Thursday, May 18, 16:30 - 18:30
Place: Caravelle 2
Chair: Tulay Adali, University of Maryland Baltimore County

16:30
MLSP-L4.1 **STATISTICAL INFERENCE OF MISSING SPEECH DATA IN THE ICA DOMAIN**
Justinian Rosca, Siemens Corporate Research, United States; Timo Gerkmann, Bochum University, Germany; Doru-Cristian Balcan, Carnegie Mellon University, United States

16:50
MLSP-L4.2 **NEW ALGORITHMS FOR NON-NEGATIVE MATRIX FACTORIZATION IN APPLICATIONS TO BLIND SOURCE SEPARATION**
Andrzej Cichocki, Rafal Zdunek, Shun-Ichi Amari, RIKEN Brain Science Institute, Japan

17:10
MLSP-L4.3 **BLIND SEPARATION OF REFLECTIONS WITH RELATIVE SPATIAL SHIFTS**
Efrat Be'ery, Arie Yeredor, Tel-Aviv University, Israel

17:30
MLSP-L4.4 **A NOVEL APPROACH TO AUTOMATED SOURCE SEPARATION IN MULTISPEAKER ENVIRONMENTS**
Robert Nickel, Ananth Iyer, The Pennsylvania State University, United States

17:50
MLSP-L4.5 **STABILITY ANALYSIS OF COMPLEX-VALUED NONLINEARITIES FOR MAXIMIZATION OF NONGAUSSIANITY**
Mike Novey, Tulay Adali, University of Maryland, Baltimore County, United States

18:10
MLSP-L4.6 **A BIOLOGICALLY-INSPIRED APPROACH TO THE COCKTAIL PARTY PROBLEM**
Mounya Elhilali, Shihab Shamma, University of Maryland, United States

SAM-L4 **Direction-Of-Arrival Estimation** (Lecture)
Time: Thursday, May 18, 16:30 - 18:30
Place: Ariane 1 & 2
Chair: Fulvio Gini, University of Pisa

16:30
SAM-L4.1 **CONJUGATE MUSIC FOR NON-CIRCULAR SOURCES**
Amjad Salameh, Florida Atlantic University, United States; Nizar Tayem, West Virginia University Institute of Technology, United States

16:50
SAM-L4.2 **EFFICIENT 1-D AND 2-D DOA ESTIMATION FOR NON-CIRCULAR SOURCES WITH HEXAGONAL SHAPED ESPAR ARRAYS**
Florian Roemer, Martin Haardt, Ilmenau University of Technology, Germany

17:10
SAM-L4.3 **EXPLOITING SIGNAL SUBSPACE INVARIANCE TO RESOLVE NON-STATIONARY, NON-ORTHOGONAL SENSOR ARRAY SIGNALS IN CORRELATED NOISE FIELDS**
Karim Oweiss, Michigan State University, United States; David Anderson, University of Michigan, United States

17:30
SAM-L4.4 **STATISTICAL RESOLUTION LIMITS OF DOA FOR DISCRETE SOURCES**
Jean-Pierre Delmas, Institut National des Télécommunications, France; Habti Abeida, INT, France

17:50
SAM-L4.5 **AN EXPLICIT HIGH-RESOLUTION DOA ESTIMATION FORMULA FOR TWO WAVE SOURCES**
Koichi Ichige, Noriaki Takabe, Hiroyuki Arai, Yokohama National University, Japan

18:10
SAM-L4.6 **EXTENSION OF ROOT-MUSIC TO NON-ULA ARRAY CONFIGURATIONS**
Fabio Belloni, Andreas Richter, Visa Koivunen, Helsinki University of Technology, Finland

SPTM-L7 **Time-Frequency Representations: Applications**
(Lecture)
Time: Thursday, May 18, 16:30 - 18:30
Place: Cassiopée
Chair: Faye Boudreaux-Bartels, University of Rhode Island

16:30
SPTM-L7.1 **FREQUENCY ESTIMATION FROM A PARTICULAR ALMOST PERIODIC FUNCTION WITH APPLICATION TO LASER VIBROMETRY SIGNALS**
Céline Levy-Leduc, Université Paris-Sud, France

16:50
SPTM-L7.2 **DOPPLER SIGNAL DETECTION AND PARTICLE TIME OF FLIGHT ESTIMATION USING WAVELET TRANSFORM FOR ACOUSTIC VELOCITY MEASUREMENT**
Anne Degroot, Silvio Montresor, Bruno Gazengel, Olivier Richoux, Laurent Simon, LAUM, France

17:10
SPTM-L7.3 **TIME-FREQUENCY DISTRIBUTION MOMENTS OF HEART RATE VARIABILITY FOR NEONATAL SEIZURE DETECTION**
Malarvili Bala Krishnan, Mostefa Mesbah, Boualem Boashash, Queensland University of Technology, Australia

17:30
SPTM-L7.4 **ENHANCED MODULATION SPECTRUM USING SPACE-TIME AVERAGING FOR IN-BUILDING ACOUSTIC SIGNATURE IDENTIFICATION**
Somsak Sukittanon, Virtual DSP Corporation, United States; Les Atlas, University of Washington, United States; Stephen Dame, Virtual DSP Corporation, United States

17:50
SPTM-L7.5 **S-TRANSFORM TIME-FREQUENCY FEATURE EXTRACTION OF LASER DOPPLER FLOWMETRY SIGNAL USING SVD DECOMPOSITION**
Said Assous, Anne Humeau, Groupe ESAIP-ISAIP, France; Jean-Pierre L'Hullier, LPMI, France

18:10
SPTM-L7.6 **FAST GABOR TRANSFORMATION FOR PROCESSING HIGH QUALITY AUDIO**
Gregor van den Boogaart, Rainer Lienhart, University of Augsburg, Germany

SLP-L9 **Spoken Language Identification** (Lecture)
Time: Thursday, May 18, 16:30 - 18:30
Place: Auditorium St Exupery
Chair: Mary Harper, Purdue University

16:30
SLP-L9.1 **LANGUAGE IDENTIFICATION USING PITCH CONTOUR INFORMATION IN THE ERGODIC MARKOV MODEL**
Chi-Yueh Lin, Hsiao-Chuan Wang, National Tsing Hua University, Taiwan

16:50
SLP-L9.2 **USE OF ANTI-MODELS TO FURTHER IMPROVE STATE-OF-THE-ART PRLM LANGUAGE RECOGNITION SYSTEM**
Pavel Matejka, Petr Schwarz, Lukas Burget, Jan Cernocky, Brno University of Technology, Czech Republic

17:10
SLP-L9.3 **WARPED MAGNITUDE AND PHASE-BASED FEATURES FOR LANGUAGE IDENTIFICATION**
Felicity Allen, Eliathamby Ambikairajah, University of New South Wales, Australia; Julien Epps, National ICT Australia, Australia

17:30
SLP-L9.4 **INTEGRATING ACOUSTIC, PROSODIC AND PHONOTACTIC FEATURES FOR SPOKEN LANGUAGE IDENTIFICATION**
Rong Tong, Bin Ma, Donglai Zhu, Haizhou Li, Institute for Infocomm Research, Singapore; Engsiong Chng, Nanyang Technological University, Singapore

17:50
SLP-L9.5 **DISCRIMINATIVE TRAINING TECHNIQUES FOR ACOUSTIC LANGUAGE IDENTIFICATION**
Lukas Burget, Pavel Matejka, Jan Cernocky, Brno University of Technology, Czech Republic

18:10
SLP-L9.6 **DISCRIMINATIVE CLASSIFIERS FOR LANGUAGE RECOGNITION**
Christopher White, Izhak Shafran, CLSP / The Johns Hopkins University, United States; Jean-luc Gauvain, LIMSI-CNRS, France

ITT-L1 **Speech Processing Applications** (Lecture)
Time: Thursday, May 18, 16:30 - 18:30
Place: Spot
Co-Chairs: Vishu Viswanathan, Texas Instruments and Michael Deisher, Intel Corporation

16:30
ITT-L1.1 **UNSUPERVISED TRAINING ON LARGE AMOUNTS OF BROADCAST NEWS DATA**
Jeff Ma, Spyros Matsoukas, Owen Kimball, Richard Schwartz, BBN Technologies, United States

16:50
ITT-L1.2 **HMM-BASED AND SVM-BASED RECOGNITION OF THE SPEECH OF TALKERS WITH SPASTIC DYSARTHRIA**
Mark Hasegawa-Johnson, Jon Gunderson, Adrienne Perlman, Thomas Huang, University of Illinois at Urbana-Champaign, United States

17:10
ITT-L1.3 **NOISE POWER SPECTRUM ESTIMATION FOR SPEECH ENHANCEMENT USING AN AUTOREGRESSIVE MODEL FOR SPEECH POWER SPECTRUM DYNAMICS**
Ivo Batina, Jesper Jensen, Richard Heusdens, Technical University of Delft, Netherlands

17:30
ITT-L1.4 **MMSE SPEECH SPECTRAL AMPLITUDE ESTIMATORS WITH CHI AND GAMMA SPEECH PRIORS**
Ioannis Andrianakis, Paul White, University of Southampton, United Kingdom

17:50
ITT-L1.5 **A NOVEL APPROACH TO CALCULATION OF LINE SPECTRAL FREQUENCIES BASED ON INTER-FRAME ORDERING PROPERTY**
Vasyl Semenov, DELTA S.P.E., Ukraine

18:10
ITT-L1.6 **VARIABLE FRAME SIZE FOR VECTOR QUANTIZATION**
Carlos Moreno, Fabrice Labeau, McGill University, Canada

SS-9 **Waveform Diverse Sensors and Systems** (Special Session)
Time: Thursday, May 18, 16:30 - 18:30
Place: Guillaumet 1 & 2
Co-Chairs: Muralidhar Rangaswamy, Air Force Research Laboratory and Arye Nehorai, University of Illinois at Chicago

16:30
SS-9.1 **ZERO AUTOCORRELATION WAVEFORMS: A DOPPLER STATISTIC AND MULTIFUNCTION PROBLEMS**
John J. Benedetto, Jeffrey Donatelli, Ioannis Konstantinidis, Christopher Shaw, University of Maryland, United States

16:50
SS-9.2 **WAVEFORM SCHEDULING IN WIDEBAND ENVIRONMENTS**
Sandeep Sira, Antonia Papandreou-Suppappola, Darryl Morrell, Arizona State University, United States

17:10
SS-9.3 **OPTIMAL POLARIZED WAVEFORM DESIGN FOR ACTIVE TARGET PARAMETER ESTIMATION USING ELECTROMAGNETIC VECTOR SENSORS**
Martin Hurtado, Arye Nehorai, University of Illinois at Chicago, United States

17:30
SS-9.4 **TARGET MODEL EFFECTS ON MIMO RADAR PERFORMANCE**
Pier Francesco Sammartino, Christopher J. Baker, Hugh D. Griffiths, University College London, United Kingdom

17:50
SS-9.5 **PERFORMANCE OF ASYNCHRONOUS MULTIPLE ACCESS MIMO OFDM SYSTEMS**
Hyejung Jung, Michael D. Zoltowski, Purdue University, United States

AE-P4 **Applications to Music** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 1
Chair: Jean Laroche, Creative Advanced Technology Center

AE-P4.1 **MUSICAL GENRE CLASSIFICATION VIA GENERALIZED GAUSSIAN AND ALPHA-STABLE MODELING**
Christos Tzagkarakis, Athanasios Mouchtaris, Panagiotis Tsakalides, University of Crete / ICS-FORTH, Greece

AE-P4.2 **MUSICAL INSTRUMENT CLASSIFICATION USING NON-NEGATIVE MATRIX FACTORIZATION ALGORITHMS AND SUBSET FEATURE SELECTION**
Emmanouil Benetos, Margarita Kotti, Constantine Kotropoulos, Aristotle University of Thessaloniki, Greece

AE-P4.3 **LINEAR PREDICTIVE MODELS FOR MUSICAL INSTRUMENT IDENTIFICATION**
Nicolas Chetry, Mark Sandler, Queen Mary, University of London, United Kingdom

AE-P4.4 **INSTROGRAM: A NEW MUSICAL INSTRUMENT RECOGNITION TECHNIQUE WITHOUT USING ONSET DETECTION NOR F0 ESTIMATION**
Tetsuro Kitahara, Kyoto University, Japan; Masataka Goto, National Institute of Advanced Industrial Science and Technology, Japan; Kazunori Komatani, Tetsuya Ogata, Hiroshi G. Okuno, Kyoto University, Japan

AE-P4.5 **DRUM SOUND ANALYSIS FOR THE MANIPULATION OF RHYTHM IN DRUM LOOPS**
Juan P. Bello, Queen Mary, University of London, United Kingdom; Emmanuel Ravelli, Université Pierre et Marie Curie, France; Mark Sandler, Queen Mary, University of London, United Kingdom

AE-P4.6 **AN ERROR CORRECTION FRAMEWORK BASED ON DRUM PATTERN PERIODICITY FOR IMPROVING DRUM SOUND DETECTION**
Kazuyoshi Yoshii, Kyoto University, Japan; Masataka Goto, National Institute of Advanced Industrial Science and Technology, Japan; Kazunori Komatani, Tetsuya Ogata, Hiroshi G. Okuno, Kyoto University, Japan

(Continued from previous page.)

AE-P4.7 **ACOUSTIC MODELLING OF DRUM SOUNDS WITH HIDDEN MARKOV MODELS FOR MUSIC TRANSCRIPTION**
Jouni Paulus, Tampere University of Technology, Finland

AE-P4.8 **REALTIME AUDIO TO SCORE ALIGNMENT FOR POLYPHONIC MUSIC INSTRUMENTS USING SPARSE NON-NEGATIVE CONSTRAINTS AND HIERARCHICAL HMMS**
Arshia Cont, IRCAM / University of California, San Diego, France

AE-P4.9 **GLOBALLY OPTIMAL SHORT-TIME DYNAMIC TIME WARPING APPLICATION TO SCORE TO AUDIO ALIGNMENT**
Hagen Kaprykowsky, Xavier Rodet, IRCAM Centre Pompidou, Germany

AE-P4.10 **F0 ESTIMATION METHOD FOR SINGING VOICE IN POLYPHONIC AUDIO SIGNAL BASED ON STATISTICAL VOCAL MODEL AND VITERBI SEARCH**
Hiromasa Fujihara, Tetsuro Kitahara, Kyoto University, Japan; Masataka Goto, National Institute of Advanced Industrial Science and Technology, Japan; Kazunori Komatani, Tetsuya Ogata, Hiroshi G. Okuno, Kyoto University, Japan

AE-P4.11 **FREQUENCY COMPONENT RESTORATION FOR MUSIC SOUNDS USING A MARKOV RANDOM FIELD AND MAXIMUM ENTROPY LEARNING**
Tomonori Izumitani, Kunio Kashino, NTT Corporation, Japan

AE-P4.12 **FREQUENCY REASSIGNMENT FOR COHERENT MODULATION FILTERING**
Steven Schimmel, University of Washington, United States; Kelly Fitz, Washington State University, United States; Les Atlas, University of Washington, United States

DISPS-P2 **Hardware and Software Implementations of DSP Systems** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 2
Chair: Ingrid Verbauwhede, K.U.Leuven

DISPS-P2.1 **DESIGN OF FRM DIGITAL FILTERS OVER THE CSD MULTIPLIER COEFFICIENT SPACE EMPLOYING GENETIC ALGORITHMS**
Patrick Mercier, Behrouz Nowrouzian, University of Alberta, Canada

DISPS-P2.2 **A HIGH-SPEED FULLY PROGRAMMABLE VLSI DECODER FOR REGULAR LOW DENSITY PARITY CHECK (LDPC) CODES**
Euncheol Kim, NIkhil Jayakumar, Pankaj Bhagwat, Anand Selvarathinam, Gwan Choi, Sunil Khatri, Texas A&M University, United States

DISPS-P2.3 **HUMAN IRIS IDENTIFICATION VIA LOW-COMPLEXITY CIRCULAR PERIODICITY TRANSFORM**
Lei Wang, University of Connecticut, United States

DISPS-P2.4 **FFTSS: A HIGH PERFORMANCE FAST FOURIER TRANSFORM LIBRARY**
Akira Nukada, JST / University of Tokyo, Japan

DISPS-P2.5 **QR-RLS BASED MINIMUM VARIANCE DISTORTIONLESS RESPONSES BEAMFORMER**
Zhu Liang Yu, Wee Ser, Nanyang Technological University, Singapore; Susanto Rahadja, Institute of Infocomm Research, Singapore

DISPS-P2.6 **NEW DESIGNS OF MAXFLAT FIR HALFBAND LOW/HIGH PASS DIGITAL FILTERS WITH NARROW TRANSITION BANDS**
Ishtiaq Rasool Khan, Masahiro Okuda, University of Kitakyushu, Japan

(Continued from previous page.)

DISPS-P2.7 **HARDWARE OPERATOR FOR SIMULTANEOUS SINE AND COSINE EVALUATION**
Arnaud Tisserand, LIRMM, CNRS - Univ. Montpellier II, France

DISPS-P2.8 **IMPLEMENTATION ISSUES OF A LIST SPHERE DECODER**
Jin Lee, Information and Communications University, Republic of Korea; Sungchung Park, Korea Advanced Institute of Science and Technology, Republic of Korea; Yuping Zhang, Keshab K. Parhi, University of Minnesota, United States; Sin-Chong Park, Information and Communications University, Republic of Korea

DISPS-P2.9 **SLIDE: STREAMING AND LOAD-ADAPTIVE PERIODICITY ESTIMATION**
Deepak S. Turaga, Michail Vlachos, Spiros Papadimitriou, Philip Yu, IBM T. J. Watson Research Center, United States

DISPS-P2.10 **FAST ANALYSIS/SYNTHESIS OF HARMONIC SIGNALS**
Miltiadis Vasilakis, University of Crete, Greece; Yannis Agiomyrgiannakis, Yannis Stylianou, University of Crete / ICS-FORTH, Greece

DISPS-P2.11 **ONE DIMENSIONAL CYCLIC CONVOLUTION ALGORITHMS WITH MINIMAL MULTIPLICATIVE COMPLEXITY**
Abraham Diaz-Perez, Polytechnic University of Puerto Rico, United States; Domingo Rodriguez, University of Puerto Rico, United States

IMDSP-P12 **Feature Extraction and Analysis** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 3
Chair: Robert M. Gray, Stanford University

IMDSP-P12.1 **EMOTION DETECTION FROM INFANT FACIAL EXPRESSIONS AND CRIES**
Pritam Pal, Ananth Iyer, Robert Yantorno, Temple University, United States

IMDSP-P12.2 **A SELECTIVE KERNEL PCA ALGORITHM FOR ANOMALY DETECTION IN HYPERSPECTRAL IMAGERY**
Yanfeng Gu, Ying Liu, Ye Zhang, Harbin Institute of Technology, China

IMDSP-P12.3 **IMAGE MATCHING BY NORMALIZED CROSS-CORRELATION**
Feng Zhao, Qingming Huang, Wen Gao, Chinese Academy of Sciences, China

IMDSP-P12.4 **GALAXY FILAMENT DETECTION USING THE QUALITY CANDY MODEL**
Pierre Gernez, Xavier Descombes, Josiane Zerubia, INRIA, France; Eric Slezak, Albert Bijaoui, OCA, France

IMDSP-P12.5 **AN ANALYSIS OF CURVATURE BASED RIDGE AND VALLEY DETECTION**
Siva Chandra, Jayanthi Sivaswamy, International Institute of Information Technology, India

IMDSP-P12.6 **LOCATING 1-D BAR CODES IN DCT-DOMAIN**
Alexander Tropf, Douglas Chai, Edith Cowan University, Australia

(Continued from previous page.)

IMDSP-P12.7 HIERARCHICAL REGION-BASED IMAGE REGISTRATION IN SCALE SPACE
Nan Jiang, Jennie Si, Arizona State University, United States; Glen P. Abousleman, General Dynamics C4 Systems, United States

IMDSP-P12.8 A NEW ADAPTIVE LIFTING SCHEME TRANSFORM FOR ROBUST OBJECT DETECTION
Mahdi Amiri, Hamid Rabiee, Sharif University of Technology, Iran

IMDSP-P12.9 LOCAL INFORMATION BASED OVERLAID TEXT DETECTION BY CLASSIFIER FUSION
Ahmet Ekin, Philips Research, Netherlands

IMDSP-P12.10 EDGE DETECTION USING ADAPTIVE LOCAL HISTOGRAM ANALYSIS
Magid Khallil, Amar Aggoun, Brunel University, United Kingdom

IMDSP-P13 **Image Modeling** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 4
Chair: Nick Kingsbury, Cambridge University

IMDSP-P13.1 **A NON-ISOTROPIC PARAMETRIC MODEL FOR IMAGE SPECTRA**
Ryan Prendergast, Truong Q. Nguyen, University of California, San Diego, United States

IMDSP-P13.2 **RECOVERING DRAWING ORDER FROM OFFLINE HANDWRITTEN IMAGE USING DIRECTION CONTEXT AND OPTIMAL EULER PATH**
Yu Qiao, Makoto Yasuhara, University of Electro-Communications, Japan

IMDSP-P13.3 **A SAMPLING-BASED GEM ALGORITHM WITH CLASSIFICATION FOR TEXTURE SYNTHESIS**
Liu-yuan Lai, Wen-Liang Hwang, Academia Sinica, Taiwan; Si-Long Peng, Chinese Academy of Sciences, China

IMDSP-P13.4 **MULTI-DIMENSIONAL DEPENDENCY-TREE HIDDEN MARKOV MODELS**
Bernard Merialdo, Joakim Jiten, Benoit Huet, Institut Eurecom, France

IMDSP-P13.5 **TIGHTER PERFORMANCE BOUNDS ON IMAGE REGISTRATION**
Min Xu, Pramod Varshney, Syracuse University, United States

IMDSP-P13.6 **HYBRID SKELETON GRAPH ANALYSIS OF DISORDERED POROUS MEDIA. APPLICATION TO TRABECULAR BONE**
Gabriel Aufort, Rachid Jennane, Rachid Harba, Université d'Orléans / LESI, France; Claude Laurent Benhamou, Equipe INSERM U658, Centre Hospitalier Régional d'Orléans, France

(Continued from previous page.)

IMDSP-P13.7 LINEAR ESTIMATION OF SEQUENCES OF MULTI-DIMENSIONAL AFFINE TRANSFORMATIONS
Rami Hagege, Joseph M. Francos, Ben-Gurion University, Israel

IMDSP-P13.8 STATISTICAL IMAGE MODELLING USING INTERSCALE PHASE RELATIONSHIPS OF COMPLEX WAVELET COEFFICIENTS
Mark Miller, Nick Kingsbury, University of Cambridge, United Kingdom

SPCOM-P10 **Multi-Carrier Systems** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 5
Chair: Jitendra K. Tugnait, Auburn University

SPCOM-P10.1 OPTIMAL SPECTRUM BALANCING IN MULTI-USER XDSL SYSTEMS WITH ON/OFF POWER LOADING
Jan Vangorp, Paschalis Tsiaflakis, Marc Moonen, Katholieke Universiteit Leuven / ESAT, Belgium; Jan Verlinden, Katleen Van Acker, Alcatel, Belgium

SPCOM-P10.2 TIME DOMAIN AND FREQUENCY DOMAIN IMPLEMENTATIONS OF FMT MODULATION ARCHITECTURES
Andrea Tonello, University of Udine, Italy

SPCOM-P10.3 PERFORMANCE ANALYSIS AND RANGE IMPROVEMENT IN MULTIBAND-OFDM UWB COMMUNICATIONS
Qiyue Zou, Alireza Tarighat, Ali H. Sayed, University of California, Los Angeles, United States

SPCOM-P10.4 REVISED UPSTREAM POWER BACK-OFF FOR VDSL
Driton Statovci, Tomas Nordström, Rickard Nilsson, Telecommunications Research Center Vienna (ftw.), Austria; Vladimir Oksman, Infineon Technologies North America, United States

SPCOM-P10.5 MIMO EQUALIZATION AND CANCELLATION FOR 10GBASE-T
Jie Chen, Yongru Gu, Keshab K. Parhi, University of Minnesota, United States

SPCOM-P10.6 PERFORMANCE ANALYSIS OF THE STRUCTURED IRREGULAR LDPC CODED MIMO-OFDM SYSTEM WITH ITERATIVE CHANNEL ESTIMATOR
Kyeong Jin Kim, Tejas Bhatt, Victor J. Stolpman, Nokia Research Center, United States; Ronald A. Iltis, University of California, Santa Barbara, United States

(Continued from previous page.)

SPCOM-P10.7 CONSTANT-MODULUS PREAMBLE DESIGN FOR MIMO-OFDM SYSTEMS
Qingyu Zhu, Zhiqiang Liu, University of Iowa, United States

SPCOM-P10.8 BIT AND POWER ALLOCATION FOR GOODPUT OPTIMIZATION IN CODED OFDM SYSTEMS
Bertrand Devillers, Luc Vandendorpe, Université Catholique de Louvain, Belgium

SPCOM-P10.9 POWER-EFFICIENT OFDM WITH REDUCED COMPLEXITY AND FEEDBACK OVERHEAD
Antonio Marques, Rey Juan Carlos University, Spain; Fadel Digham, Georgios Giannakis, University of Minnesota, United States

SPCOM-P10.10 COMBINING REED-SOLOMON CODES AND OFDM FOR IMPULSE NOISE MITIGATION: RS-OFDM
Geert Van Meerbergen, Marc Moonen, Katholieke Universiteit Leuven, Belgium; Hugo De Man, IMEC, Belgium

SPCOM-P10.11 CLOSED-FORM ESTIMATORS OF CARRIER FREQUENCY OFFSETS AND CHANNELS IN THE UPLINK OF MULTIUSER OFDM SYSTEMS
Lars Haering, Stefan Bieder, Andreas Czylwik, University of Duisburg-Essen, Germany

SPCOM-P10.12 MAP DETECTION OF NONLINEARLY DISTORTED OFDM SIGNALS
Ashish Gupta, Jekaterina Reeder, Ali Behravan, Thomas Eriksson, Chalmers University of Technology, Sweden

SPTM-P10 **Estimation** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 6
Co-Chairs: Olivier Cappé, ENST and Arnaud Doucet, University of British Columbia

SPTM-P10.1 **MAXIMUM LIKELIHOOD PARAMETER ESTIMATION FOR LATENT VARIABLE MODELS USING SEQUENTIAL MONTE CARLO**
Adam Johansen, University of Cambridge, United Kingdom; Arnaud Doucet, University of British Columbia, Canada; Manuel Davy, LAGIS, France

SPTM-P10.2 **EFFECTS OF COORDINATE SHIFTS ON TLS ESTIMATION BIAS IN BEARINGS-ONLY TARGET LOCALIZATION PROBLEMS**
Kutluyil Dogancay, University of South Australia, Australia

SPTM-P10.3 **ESTIMATING THE STANDARD DEVIATION OF SOME ADDITIVE WHITE GAUSSIAN NOISE ON THE BASIS OF NON SIGNAL-FREE OBSERVATIONS**
Dominique Pastor, ENST Bretagne, France

SPTM-P10.4 **MINIMAX QUANTIZATION FOR DISTRIBUTED MAXIMUM LIKELIHOOD ESTIMATION**
Parvathinathan Venkitasubramaniam, Lang Tong, Cornell University, United States; Ananthram Swami, Army Research Lab, United States

SPTM-P10.5 **ESTIMATING THE PARAMETERS OF THE MULTIVARIATE POISSON DISTRIBUTION USING THE COMPOSITE LIKELIHOOD CONCEPT**
Thomas Jost, Ramon Brcich, Abdelhak Zoubir, Technical University of Darmstadt, Germany

SPTM-P10.6 **NOISE PARAMETER ESTIMATION IN THE PRESENCE OF RANDOM TIMING ERRORS**
Mark Morelande, University of Melbourne, Australia

(Continued from previous page.)

SPTM-P10.7 **RECURSIVE EM ALGORITHM WITH APPLICATIONS TO DOA ESTIMATION**
Olivier Cappé, Maurice Charbit, Eric Moulines, ENST / TSI, France

SPTM-P10.8 **ESTIMATION OF MINIMUM MEASURE SETS IN REPRODUCING KERNEL HILBERT SPACES AND APPLICATIONS**
Manuel Davy, CNRS, France; Frederic Desobry, University of Cambridge, United Kingdom; Stephane Canu, INSA Rouen, France

SPTM-P10.9 **SINGLE-STAGE WAVEFORM SELECTION FOR ADAPTIVE RESOURCE CONSTRAINED STATE ESTIMATION**
Raghuram Rangarajan, Raviv Raich, Alfred O. Hero, III, University of Michigan, United States

SPTM-P10.10 **LOW-RANK VARIANCE ESTIMATION IN LARGE-SCALE GMRF MODELS**
Dmitry Malioutov, Jason Johnson, Alan Willsky, Massachusetts Institute of Technology, United States

SPTM-P10.11 **ON MAXIMUM LIKELIHOOD ESTIMATION IN THE PRESENCE OF VANISHING INFORMATION MEASURE**
Ori Landau, Anthony Weiss, Tel-Aviv University, Israel

SPTM-P10.12 **PARAMETER ESTIMATION FOR MULTIVARIATE MIXED POISSON DISTRIBUTIONS**
Florent Chatelain, ENSEEIHT / IRIT, France; André Ferrari, University of Nice Sophia-Antipolis, France; Jean-Yves Tourneret, ENSEEIHT / IRIT / TéSA, France

SLP-P17 **Spoken Language Modeling, Identification and Characterization** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 7
Chair: Gokhan Tur, SRI International

SLP-P17.1 **CHINESE DIALECT IDENTIFICATION USING TONE FEATURES BASED ON PITCH FLUX**
Bin Ma, Donglai Zhu, Rong Tong, Institute for Infocomm Research, Singapore

SLP-P17.2 **COMBINING PROSODIC LEXICAL AND CEPSTRAL SYSTEMS FOR DECEPTIVE SPEECH DETECTION**
Martin Graciarena, SRI International, United States; Elizabeth Shriberg, Andreas Stolcke, SRI International / University of California, Berkeley, United States; Frank Enos, Julia Hirschberg, Columbia University, United States; Sachin Kajarekar, SRI International, United States

SLP-P17.3 **UNSUPERVISED ADAPTATION OF A STOCHASTIC LANGUAGE MODEL USING A JAPANESE RAW CORPUS**
Gakuto Kurata, Shinsuke Mori, Masafumi Nishimura, IBM Japan, Ltd., Japan

SLP-P17.4 **PROFILE BASED COMPRESSION OF N-GRAM LANGUAGE MODELS**
Jesper Olsen, Daniela Oria, Nokia, Finland

SLP-P17.5 **BAYESIAN LEARNING OF N-GRAM STATISTICAL LANGUAGE MODELING**
Shuanhu Bai, Haizhou Li, Institute for Infocomm Research, Singapore

SLP-P17.6 **EFFICIENT ESTIMATION OF LANGUAGE MODEL STATISTICS OF SPONTANEOUS SPEECH VIA STATISTICAL TRANSFORMATION MODEL**
Yuya Akita, Tatsuya Kawahara, Kyoto University, Japan

(Continued from previous page.)

SLP-P17.7 **MORPHEME-BASED LANGUAGE MODELING FOR ARABIC LVCSR**
Ghinwa Choueiter, Massachusetts Institute of Technology, United States; Daniel Povey, Stanley Chen, Geoffrey Zweig, IBM T. J. Watson Research Center, United States

SLP-P17.8 **THE USE OF WORD N-GRAMS AND PARTS OF SPEECH FOR HIERARCHICAL CLUSTER LANGUAGE MODELING**
Wen Wang, Dimitra Vergyri, SRI International, United States

SLP-P17.9 **MAXIMUM ENTROPY MODELING OF ACOUSTIC AND LINGUISTIC FEATURES**
Chuang-Hua Chueh, Jen-Tzung Chien, National Cheng Kung University, Taiwan

SLP-P17.10 **BOOTSTRAPPING LANGUAGE MODELS FOR SPOKEN DIALOG SYSTEMS FROM THE WORLD WIDE WEB**
Dilek Hakkani-Tür, Mazin Gilbert, AT&T Labs – Research, United States

SLP-P17.11 **STRATEGIES FOR LANGUAGE MODEL WEB-DATA COLLECTION**
Vincent Wan, Thomas Hain, University of Sheffield, United Kingdom

SLP-P17.12 **OBJECTIVE EVALUATION OF THE NEUTRAL TONE IN PUTONGHUA PROFICIENCY TESTING**
Lin Tang, Jiangmen Polytechnic, China; Jun-xun Yin, South China University of Technology, China

SLP-P16 **Speaker Tracking and Adaptation** (Poster)
Time: Thursday, May 18, 16:30 - 18:30
Place: Poster Area 8
Chair: Olivier Siohan, IBM T. J. Watson Research Center

SLP-P16.1 **ON THE INTERACTION BETWEEN SPEAKER NORMALIZATION, ENVIRONMENT COMPENSATION, AND DISCRIMINANT FEATURE SPACE TRANSFORMATIONS**
Richard Rose, Alireza Keyvani, McGill University, Canada; Antonio Miguel, University of Zaragoza, Spain

SLP-P16.2 **FAST AND ROBUST SPEAKER CLUSTERING USING THE EARTH MOVER'S DISTANCE AND MIXMAX MODELS**
Thilo Stadelmann, Bernd Freisleben, University of Marburg, Germany

SLP-P16.3 **UNSUPERVISED LEARNING OF OVERLAP SPEECH MODEL PARAMETERS FOR MULTICHANNEL SPEECH ACTIVITY DETECTION IN MEETINGS**
Kornel Laskowski, Tanja Schultz, Carnegie Mellon University, United States

SLP-P16.4 **FAST SPEAKER ADAPTION VIA MAXIMUM PENALIZED LIKELIHOOD KERNEL REGRESSION**
Ivor W, Tsang, James T. Kwok, Brian Mak, Kai Zhang, Jeffrey J. Pan, Hong Kong University of Science and Technology, Hong Kong SAR of China

SLP-P16.5 **IMPROVING RAPID UNSUPERVISED SPEAKER ADAPTATION BASED ON HMM SUFFICIENT STATISTICS**
Randy Gomez, Tomoki Toda, Hiroshi Saruwatari, Kiyohiro Shikano, National Institute of Advanced Industrial Science and Technology, Japan

SLP-P16.6 **ACOUSTIC MODEL ADAPTATION BASED ON COARSE/FINE TRAINING OF TRANSFER VECTORS USING DIRECTIONAL STATISTICS**
Shinji Watanabe, Atsushi Nakamura, NTT Corporation, Japan

(Continued from previous page.)

SLP-P16.7 **SPEAKER TRACKING BY ANCHOR MODELS USING SPEAKER SEGMENT CLUSTER INFORMATION**
Mikaël Collet, Delphine Charlet, France Télécom, France; Frédéric Bimbot, IRISA (CNRS - INRIA), France

SLP-P16.8 **WHO REALLY SPOKE WHEN? FINDING SPEAKER TURNS AND IDENTITIES IN BROADCAST NEWS AUDIO**
Sue Tranter, University of Cambridge, United Kingdom

SLP-P16.9 **NUTS AND FLAKES: A STUDY OF DATA CHARACTERISTICS IN SPEAKER DIARIZATION**
Nikki Mirghafori, Chuck Wooters, University of California, Berkeley, United States

SLP-P16.10 **ON THE USE OF LINGUISTIC INFORMATION FOR BROADCAST NEWS SPEAKER TRACKING**
William Antoni, Corinne Fredouille, Jean-François Bonastre, University of Avignon, France

SLP-P16.11 **PURITY ALGORITHMS FOR SPEAKER DIARIZATION OF MEETINGS DATA**
Xavier Anguera, Chuck Wooters, University of California, Berkeley, United States; Javier Hernando, Technical University of Catalonia (UPC), Spain

BIO-L2 **Bioinformatics and Genomics** (Lecture)
Time: Friday, May 19, 10:00 - 12:00
Place: Ariane 1 & 2
Chair: Thrasyvoulos N. Pappas, Northwestern University

10:00
BIO-L2.1 **ON LIMITS OF PERFORMANCE OF DNA MICROARRAYS**
Haris Vikalo, Babak Hassibi, Arjang Hassibi, California Institute of Technology, United States

10:20
BIO-L2.2 **NORMALIZATION OF CDNA MICROARRAY DATA BASED ON LEAST ABSOLUTE DEVIATION REGRESSION**
Juan Ramirez, Jose Paredes, Universidad de Los Andes, Venezuela; Gonzalo Arce, University of Delaware, United States

10:40
BIO-L2.3 **A NOVEL ALGORITHM FOR THE ANALYSIS OF ARRAY CGH DATA**
Mehrnoush Khojasteh, University of British Columbia, Canada; Bradley P. Coe, British Columbia Cancer Research Center, Canada; Sohrab Shah, Rabab K. Ward, University of British Columbia, Canada; Wan L. Lam, Calum MacAulay, British Columbia Cancer Research Center, Canada

11:00
BIO-L2.4 **GENE IDENTIFICATION USING THE Z-CURVE REPRESENTATION**
Ahmad Rushdi, Jamal Tuqan, University of California, Davis, United States

11:20
BIO-L2.5 **INFERENCE OF BIOLOGICALLY RELEVANT GENE INFLUENCE NETWORKS USING THE DIRECTED INFORMATION CRITERION**
Arvind Rao, Alfred O. Hero, III, David J. States, James Douglas Engel, University of Michigan, United States

11:40
BIO-L2.6 **MODELING AND BASE-CALLING FOR DNA SEQUENCING-BY-SYNTHESIS**
Helmy Eltoukhy, Abbas El Gamal, Stanford University, United States

SPED-L1 **Signal Processing Education** (Lecture)
Time: Friday, May 19, 10:00 - 12:00
Place: Spot
Chair: Huseyin Abut, San Diego State University/Sabanci University

10:00
SPED-L1.1 **A HOST PORT INTERFACE BOARD TO ENHANCE THE TMS320C6713 DSK**
Michael Morrow, University of Wisconsin-Madison, United States; Thad Welch, U.S. Naval Academy, United States; Cameron Wright, University of Wyoming, United States

10:20
SPED-L1.2 **AN INTERACTIVE SOFTWARE FOR REAL-TIME SIMULATION OF THROUGH-THE-WALL IMAGING RADAR**
Habib Estephan, Fauzia Ahmad, Moeness Amin, Villanova University, United States

10:40
SPED-L1.3 **ON THE USE OF COMPILERS IN DSP LABORATORY INSTRUCTION**
Matthew Kleffner, Douglas Jones, University of Illinois at Urbana-Champaign, United States; Jason Hiser, University of Virginia, United States; Prasad Kulkarni, Florida State University, United States; Julie Parent, University of Virginia, United States; Stephen Hines, David Whalley, Florida State University, United States; Jack Davidson, University of Virginia, United States; Kyle Gallivan, Florida State University, United States

11:00
SPED-L1.4 **GAIALAB: A WEBLAB PROJECT FOR DIGITAL COMMUNICATIONS DISTRIBUTED LEARNING**
Javier Ramirez, José C. Segura, Juan M. Górriz, Carmen Benítez, Antonio J. Rubio, University of Granada, Spain

11:20
SPED-L1.5 **DSP SYSTEM DESIGN USING LABVIEW AND SIMULINK: A COMPARATIVE EVALUATION**
Nasser Kehtarnavaz, Chandan Gope, University of Texas, Dallas, United States

11:40
SPED-L1.6 **SIGMA-DELTA CONVERTERS AS A SP TEACHING TOOL**
Roxana Saint-Nom, Daniel Jacoby, Instituto Tecnológico de Buenos Aires, Argentina

SPCOM-L6 **Channel Estimation & Equalization** (Lecture)
Time: Friday, May 19, 10:00 - 12:00
Place: Caravelle 2
Chair: Phillip Regalia, Catholic University of America

10:00
SPCOM-L6.1 **SUBSPACE-BASED BLIND CHANNEL ESTIMATION IN DS-CDMA SYSTEMS WITH UNKNOWN WIDE-SENSE STATIONARY INTERFERENCE**
Keyvan Zarifi, Alex B. Gershman, Darmstadt University of Technology, Germany

10:20
SPCOM-L6.2 **ROBUST BLIND SIMO CHANNEL ESTIMATION USING ADATRON**
Dongho Han, Jose Principe, Liuqing Yang, University of Florida, United States; Ignacio Santamaría, Javier Vía, University of Cantabria, Spain

10:40
SPCOM-L6.3 **BAYESIAN DLL FOR MULTIPATH MITIGATION IN NAVIGATION SYSTEMS USING PARTICLE FILTERS**
Pau Closas, Carles Fernández-Prades, Juan Fernández-Rubio, Universitat Politècnica de Catalunya (UPC), Spain

11:00
SPCOM-L6.4 **PILOT-ASSISTED TIME-VARYING OFDM CHANNEL ESTIMATION**
Zijian Tang, Geert Leus, Delft University of Technology, Netherlands; Rocco Claudio Cannizzaro, Paolo Banelli, University of Perugia, Italy

11:20
SPCOM-L6.5 **CHANNEL ESTIMATION AND WINDOWED DFE FOR OFDM WITH DOPPLER SPREAD**
Luca Rugini, Paolo Banelli, Rocco Claudio Cannizzaro, University of Perugia, Italy; Geert Leus, Technical University of Delft, Netherlands

11:40
SPCOM-L6.6 **EQUALIZATION FOR MIMO ISI SYSTEMS USING CHANNEL INVERSION UNDER CAUSALITY, STABILITY AND ROBUSTNESS CONSTRAINTS**
Nikola Vucic, Fraunhofer German-Sino Lab for Mobile Communications, Germany; Holger Boche, Technical University of Berlin, Germany

SPTM-L8 **Time-Frequency Distributions and Radar** (Lecture)
Time: Friday, May 19, 10:00 - 12:00
Place: Cassiopée
Co-Chairs: Fulvio Gini, University of Pisa and Ljubisa Stankovic, University of Montenegro

10:00
SPTM-L8.1 **HIGH RESOLUTION – HIGH FOCUSED SQUINT-MODE RADAR IMAGING USING THE FRACTIONAL CHIRP SCALING ALGORITHM**
Ahmed Amein, John Soraghan, University of Strathclyde, United Kingdom

10:20
SPTM-L8.2 **ESTIMATION OF FM PARAMETERS USING A TIME-FREQUENCY HOUGH TRANSFORM**
Luke Cirillo, Abdelhak Zoubir, Technical University of Darmstadt, Germany; Moeness Amin, Villanova University, United States

10:40
SPTM-L8.3 **ANALYSIS OF TIME-FREQUENCY TRANSIENT COMPONENTS USING PHASE CHIRPING OPERATOR**
Cornel Ioana, Arnaud Jarrot, Andre Quinquis, ENSIETA, France; Srdjan Stankovic, LJubisa Stankovic, University of Montenegro, Yugoslavia

11:00
SPTM-L8.4 **SAR IMAGES IMPROVEMENTS BY USING THE S-METHOD**
Vesna Popovic, Milos Dakovic, University of Montenegro, Yugoslavia; Thayananthan Thayaparan, Defence Research and Development Canada, Canada; LJubisa Stankovic, University of Montenegro, Yugoslavia

11:20
SPTM-L8.5 **COMPUTATIONALLY EFFICIENT TIME-VARYING ISAR IMAGING**
Stephen Alty, King's College London, United Kingdom; Andreas Jakobsson, Karlstad University, Sweden

11:40
SPTM-L8.6 **TARGET DETECTION IN ABRUPTLY NON-STATIONARY DOPPLER-SPREAD CLUTTER**
Dinesh Ramakrishnan, Jeffrey Krolik, Duke University, United States

SLP-L10 **Speaker Adaptation** (Lecture)
Time: Friday, May 19, 10:00 - 12:00
Place: Auditorium St Exupery
Chair: Renato De Mori, Université d'Avignon

10:00
SLP-L10.1 **INCREMENTAL ADAPTATION USING BAYESIAN INFERENCE**
Kai Yu, Mark J. F. Gales, University of Cambridge, United Kingdom

10:20
SLP-L10.2 **FEATURE ADAPTATION BASED ON GAUSSIAN POSTERIORS**
Suleyman S. Kozat, Karthik Visweswariah, Ramesh Gopinath, IBM T. J. Watson Research Center, United States

10:40
SLP-L10.3 **A NON-LINEAR SPEAKER ADAPTATION TECHNIQUE USING KERNEL RIDGE REGRESSION**
George Saon, IBM, United States

11:00
SLP-L10.4 **IMPROVING REFERENCE SPEAKER WEIGHTING ADAPTATION BY THE USE OF MAXIMUM-LIKELIHOOD REFERENCE SPEAKERS**
Brian Mak, Tsz-Chung Lai, Hong Kong University of Science and Technology, Hong Kong SAR of China; Roger Hsiao, Carnegie Mellon University, United States

11:20
SLP-L10.5 **REFERENCE SPEAKER WEIGHTING ADAPTATION FOR SUB-PHONETIC POLYNOMIAL SEGMENT MODEL**
Siu-Kei Au yeung, Man-Hung Siu, Hong Kong University of Science and Technology, Hong Kong SAR of China

11:40
SLP-L10.6 **REGULARIZED ADAPTATION OF DISCRIMINATIVE CLASSIFIERS**
Xiao Li, Jeff Bilmes, University of Washington, Seattle, United States

SS-10 **Sensing Reality and Communicating Bits** (Special Session)
Time: Friday, May 19, 10:00 - 12:00
Place: Guillaumet 1 & 2
Co-Chairs: Michael Gastpar, University of California, Berkeley and Martin Vetterli, EPFL Pier Dragotti, Imperial College London

10:00
SS-10.1 **AN UPPER BOUND TO THE RATE OF IDEAL DISTRIBUTED LOSSY SOURCE CODING OF DENSELY SAMPLED DATA**
David Neuhoff, Sandeep Pradhan, University of Michigan, United States

10:20
SS-10.2 **RELIABLE TARGET TRACKING WITH UNRELIABLE COMMUNICATIONS**
Venkatesh Saligrama, David Castanon, Boston University, United States

10:40
SS-10.3 **EFFICIENT TRACKING IN A NETWORK OF SLEEPY SENSORS**
Venugopal Veeravalli, Jason Fuemmeler, University of Illinois at Urbana-Champaign, United States

11:00
SS-10.4 **DISTRIBUTED FOUNTAIN CODES FOR NETWORKED STORAGE**
Alexandros G. Dimakis, Vinod Prabhakaran, Kannan Ramchandran, University of California, Berkeley, United States

11:20
SS-10.5 **A UNIVERSAL MATCHED SOURCE-CHANNEL COMMUNICATION SCHEME FOR WIRELESS SENSOR ENSEMBLES**
Waheed Bajwa, Jarvis Haupt, Akbar Sayeed, Robert Nowak, University of Wisconsin-Madison, United States

11:40
SS-10.6 **SENSING AND COMMUNICATION WITH AND WITHOUT BITS**
Michael Gastpar, University of California, Berkeley, United States; Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Pier Luigi Dragotti, Imperial College London, United Kingdom

AE-P5 **Acoustic Echo Cancellation and Active Noise Control** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 1
Chair: Steve Grant, University of Missouri-Rolla

AE-P5.1 **EFFECT OF INTERCHANNEL COHERENCE ON CONDITIONING AND MISALIGNMENT PERFORMANCE FOR STEREO ACOUSTIC ECHO CANCELLATION**
Andy Khong, Imperial College London, United Kingdom; Jacob Benesty, INRS-EMT / University of Quebec, Canada; Patrick Naylor, Imperial College London, United Kingdom

AE-P5.2 **AN ACOUSTIC ECHO SUPPRESSOR BASED ON A FREQUENCY-DOMAIN MODEL OF HIGHLY NONLINEAR RESIDUAL ECHO**
Osamu Hoshuyama, Akihiko Sugiyama, NEC Corporation, Japan

AE-P5.3 **NONLINEAR ACOUSTIC ECHO CANCELLATION USING ORTHOGONAL POLYNOMIAL**
Guan-Yu Jiang, Shih-Fu Hsieh, National Chiao Tung University, Taiwan

AE-P5.4 **EFFICIENT ADAPTIVE NONLINEAR ECHO CANCELLATION USING SUB-BAND IMPLEMENTATION OF THE ADAPTIVE VOLTERRA FILTER**
Dayong Zhou, Victor DeBrunner, Yan Zhai, Mark Yeary, University of Oklahoma, United States

AE-P5.5 **ROBUST ACOUSTIC ECHO CONTROL USING A SIMPLE ECHO PATH MODEL**
Christof Faller, Christophe Tournery, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

AE-P5.6 **FAST FILTERED-X AFFINE PROJECTION ALGORITHM WITH EFFICIENT COMPUTATION OF COEFFICIENT UPDATE**
Alberto Gonzalez, Miguel Ferrer, Maria de Diego, Gema Piñero, Universidad Politécnica de Valencia, Spain

(Continued from previous page.)

AE-P5.7 **DEVELOPMENT OF FREQUENCY DOMAIN BLOCK FILTERED-S LMS (FBFSLMS) ALGORITHM FOR ACTIVE NOISE CONTROL SYSTEM**
Debi Prasad Das, Central Electronics Engineering Research Institute, India; Ganapati Panda, National Institute of Technology, India; Dilip Kumar Nayak, C. V. Raman College of Engineering, India

AE-P5.8 **CONVERGENCE ANALYSIS OF NARROWBAND ACTIVE NOISE CONTROL**
Sen Kuo, Ajay Puvvala, Northern Illinois University, United States; Woon Gan, Nanyang Technological University, Singapore

AE-P5.9 **IMPROVEMENT OF CANCELLATION PERFORMANCE FOR ANC SYSTEM USING THE SIMULTANEOUS PERTURBATION METHOD**
Yukinobu Tokoro, Yoshinobu Kajikawa, Yasuo Nomura, Kansai University, Japan

AE-P5.10 **STABILITY CONTROL IN A TWO-CHANNEL SPEECH REINFORCEMENT SYSTEM FOR VEHICLES**
Alfonso Ortega, Eduardo Lleida, Enrique Masgrau, Luis Buera, Antonio Miguel, University of Zaragoza, Spain

AE-P5.11 **APPLICATION OF ACTIVE NOISE CONTROL FOR REDUCING SNORE**
Sreeram Chakravarthy, Ingenient Technologies, United States; Sen M. Kuo, Northern Illinois University, United States

AE-P5.12 **OPTIMAL LOOP-SHAPING IN THE CEPSTRAL DOMAIN FOR ACTIVE NOISE CANCELING HEADSETS**
Jean Laroche, Creative Advanced Technology Center, United States

IMDSP-P15 **Image Restoration and Denoising** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 2
Chair: Rabab Ward, University of British Columbia

IMDSP-P15.1 **NOISE IDENTIFICATION AND ESTIMATION OF ITS STATISTICAL PARAMETERS BY USING UNSUPERVISED VARIATIONAL CLASSIFICATION**
Benoit Vozel, Kacem Chehdi, Luc Klaine, IETR / TSI2M, University of Rennes 1 / ENSSAT, France; Vladimir V. Lukin, Sergey K. Abramov, National Aerospace University, Ukraine

IMDSP-P15.2 **STRUCTURE-ORIENTED SPATIO-TEMPORAL VIDEO NOISE ESTIMATION**
Mohammed Ghazal, Aishy Amer, Ali Ghrayeb, Concordia University, Canada

IMDSP-P15.3 **HOMOGENEITY-BASED DIRECTIONAL WIENER FILTERING OF VIDEO NOISE**
Mohammed Ghazal, Aishy Amer, Ali Ghrayeb, Concordia University, Canada

IMDSP-P15.4 **BLIND IMAGE RESTORATION USING A BLOCK-STATIONARY SIGNAL MODEL**
Tom Bishop, James Hopgood, University of Edinburgh, United Kingdom

IMDSP-P15.5 **A MULTIRESOLUTION APPROACH FOR IMPROVING QUALITY OF IMAGE DENOISING ALGORITHMS**
Alexey Lukin, Moscow State University, Russian Federation

IMDSP-P15.6 **TOTAL VARIATION-BASED IMAGE DECONVOLUTION: A MAJORIZATION-MINIMIZATION APPROACH**
José Bioucas-Dias, Mário Figueiredo, João Oliveira, Instituto Superior Técnico, Portugal

(Continued from previous page.)

IMDSP-P15.7 USING GABOR DICTIONARIES IN A TV-L{INFTY} MODEL, FOR DENOISING
Tieyong Zeng, François Malgouyres, University Paris 13, France

IMDSP-P15.8 IMAGE DENOISING IN THE TRANSFORMED DOMAIN USING NON LOCAL NEIGHBORHOODS
Wided Souidene, Télécom Paris, France; Azeddine Beghdadi, L2TI, Univ. Paris13, France; Karim Abed-Meraim, Télécom Paris, France

IMDSP-P15.9 MODULAR MORPHOLOGICAL NEURAL NETWORK TRAINING VIA ADAPTIVE GENETIC ALGORITHM FOR DESIGNING TRANSLATION INVARIANT OPERATORS
Ricardo de A. Araújo, Francisco Madeiro, Robson P. de Sousa, Catholic University of Pernambuco, Brazil; Lúcio F. C. Pessoa, Freescale Semiconductor, Inc., United States

IMDSP-P15.10 USING DATA COMPRESSION TO ENHANCE THE SECURITY OF IDENTIFICATION DOCUMENT
Guoqin Cui, Chinese Academy of Sciences, China; Aleksandar M. Ivanovic, Thomas Huang, University of Illinois at Urbana-Champaign, United States; Lizhen Chen, Chinese Academy of Sciences, China

IMDSP-P15.11 LOCAL IMAGE FUSION USING DISPERSION MINIMISATION
Qi Li, Tania Stathaki, Imperial College London, United Kingdom

IMDSP-P14 **Image Formation** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 3
Chair: Ingemar Cox, University College London

IMDSP-P14.1 **PUPIL CONFIGURATION FOR EXTENDED SOURCE IMAGING WITH OPTICAL INTERFEROMETRY: A COMPUTATIONAL GEOMETRY APPROACH**
Trung Nguyen, Jean-Daniel Boissonnat, INRIA Sophia-Antipolis, France; Philippe Blanc, Frederic Falzon, Eric Thomas, Alcatel Alenia Space, France

IMDSP-P14.2 **STATISTICAL ANALYSIS OF SAR DATA IN DIFFERENT VEGETATED AREAS**
Maria Greco, Fulvio Gini, University of Pisa, Italy

IMDSP-P14.3 **REALIZATION OF 2-D SEISMIC MIGRATION FIR DIGITAL FILTERS FOR 3-D SEISMIC VOLUMES VIA SINGULAR VALUE DECOMPOSITION**
Wail Mousa, Said Boussakta, Des McLernon, Leeds University, United Kingdom

IMDSP-P14.4 **REGULARIZATION OF AN INVERSE PROBLEM IN REMOTE SENSING IMAGING BY APERTURE SYNTHESIS**
Eric Anterrieu, OMP - UMR5572, France

IMDSP-P14.5 **CHARACTERISTIC SCALE IN SATELLITE IMAGES**
Bin Luo, Jean-Francois Aujol, Yann Gousseau, Said Ladjal, Henri Maitre, GET / Télécom Paris, France

IMDSP-P14.6 **EVALUATION OF KERNELS FOR MULTICLASS CLASSIFICATION OF HYPERSPECTRAL REMOTE SENSING DATA**
Mathieu Fauvel, Jocelyn Chanussot, LIS-INPG, France; Jon Atli Benediktsson, University of Iceland, Iceland

(Continued from previous page.)

IMDSP-P14.7 UNSUPERVISED CALIBRATED SONAR IMAGING FOR SEABED OBSERVATION USING HIDDEN MARKOV RANDOM FIELDS
Ronan Fablet, Ifremer/STH/LASAA, France; Jean-Marie Augustin, Ifremer/TSI/AS, France

IMDSP-P14.8 LOW REDUNDANCY OVERSAMPLED LAPPED TRANSFORMS AND APPLICATION TO 3D SEISMIC DATA FILTERING
Jérôme Gauthier, Laurent Duval, Institut Français du Pétrole, France; Jean-Christophe Pesquet, Université de Marne-la-Vallée, France

IMDSP-P14.9 SEMI-RIGID REGISTRATION OF REMOTE SENSING AIRBORNE SCANNER IMAGES
Claude Cariou, Kacem Chehdi, IETR / TSI2M - University of Rennes 1, France

IMDSP-P14.10 ADAPTIVE IMAGE FUSION USING ICA BASES
Nikolaos Mitianoudis, Tania Stathaki, Imperial College London, United Kingdom

IMDSP-P14.11 PROCESSING MULTICHANNEL RADAR IMAGES BY MODIFIED VECTOR SIGMA FILTER FOR EDGE DETECTION ENHANCEMENT
Vladimir V. Lukin, National Aerospace University, Ukraine; Oleg V. Tsymbal, Kalmykov Center for Radiophysical Sensing of Earth, Ukraine; Benoit Vozel, Kacem Chehdi, IETR / TSI2M, University of Rennes 1 / ENSSAT, France

IMDSP-P14.12 SAR IMAGE EDGE DETECTION BY RATIO-BASED HARRIS METHOD
Xin Kang, Chongzhao Han, Yi Yang, Tangfei Tao, Xi'an Jiaotong University, China

SAM-P5 **Source Detection, Estimation and Separation** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 4
Chair: Hongya Ge, New Jersey Institute of Technology

SAM-P5.1 **SOURCE DETECTION USING REPETITIVE STRUCTURE**
R. Mitchell Parry, Irfan Essa, Georgia Institute of Technology, United States

SAM-P5.2 **A LARGE DEVIATION ANALYSIS OF DETECTION OVER MULTI-ACCESS CHANNELS WITH RANDOM NUMBER OF SENSORS**
Animashree Anandkumar, Lang Tong, Cornell University, United States

SAM-P5.3 **MULTICHANNEL PARAMETRIC RAO DETECTOR**
Kwang June Sohn, Hongbin Li, Stevens Institute of Technology, United States; Braham Himed, Air Force Research Laboratory / SNRT, United States

SAM-P5.4 **A MODIFIED LIKELIHOOD RATIO TEST FOR DETECTION-ESTIMATION IN UNDER-SAMPLED TRAINING CONDITIONS**
Yuri I. Abramovich, Defence Science and Technology Organisation (DSTO), Australia; Ben A. Johnson, RLM Management, Pty. Ltd., Australia

SAM-P5.5 **SIGNAL INDEPENDENT WIDEBAND ACTIVITY DETECTION FEATURES FOR MICROPHONE ARRAYS**
Tuomo Pirinen, Ari Visa, Tampere University of Technology, Finland

SAM-P5.6 **SOURCE SEPARATION USING SPARSE DISCRETE PRIOR MODELS**
Radu Balan, Justinian Rosca, Siemens Corporate Research, United States

(Continued from previous page.)

SAM-P5.7 **CRAMER-RAO BOUND ANALYSIS ON MULTIPLE SCATTERING IN MULTISTATIC POINT SCATTERER ESTIMATION**
Gang Shi, Arye Nehorai, University of Illinois at Chicago, United States

SAM-P5.8 **A FAST ADAPTIVE METHOD FOR SUBSPACE BASED BLIND CHANNEL ESTIMATION**
Jon Altuna, University of Mondragon, Spain; Bernie Mulgrew, University of Edinburgh, United Kingdom; Roland Badeau, Télécom Paris, France; Vicente Atxa, University of Mondragon, Spain

SAM-P5.9 **ON A STOCHASTIC VERSION OF THE PLENACOUSTIC FUNCTION**
Thibaut Ajdler, Luciano Sbaiz, Andrea Ridolfi, Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SAM-P5.10 **PARTICLE FILTERING APPROACH TO ADAPTIVE TIME-DELAY ESTIMATION**
Eric Lehmann, Western Australian Telecommunications Research Institute, Australia

SAM-P5.11 **CLOSED FORM PARAMETERS ESTIMATION FOR 3-D NEAR FIELD SOURCES**
Ke Deng, Qinye Yin, Xi'an Jiaotong University, China

SAM-P5.12 **SIMULTANEOUS DIAGONALIZATION WITH SIMILARITY TRANSFORMATION FOR NON-DEFECTIVE MATRICES**
Tuo Fu, Xiqi Gao, Southeast University, China

SPCOM-P11 **Co-operative Communications** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 5
Chair: Josep Vidal, Technical University of Catalonia

SPCOM-P11.1 TDMA COOPERATION USING SPATIAL REUSE OF THE RELAY SLOT WITH INTERFERING POWER DISTRIBUTION INFORMATION
Adrian Agustin, Josep Vidal, Technical University of Catalonia (UPC), Spain

SPCOM-P11.2 PERFORMANCE OF DECODE-BASED DIFFERENTIAL MODULATION FOR WIRELESS RELAY NETWORKS IN NAKAGAMI-M CHANNELS
Qiang Zhao, Hongbin Li, Stevens Institute of Technology, United States

SPCOM-P11.3 RANDOMIZED SPACE-TIME CODING FOR DISTRIBUTED COOPERATIVE COMMUNICATION: FRACTIONAL DIVERSITY
Birsen Sirkeci Mergen, Anna Scaglione, Cornell University, United States

SPCOM-P11.4 PERFORMANCE OF AMPLIFY-AND-FORWARD AND DECODE-AND-FORWARD RELAYING IN RAYLEIGH FADING WITH TURBO CODES
Michael Souryal, National Institute of Standards and Technology, United States; Branimir Vojcic, George Washington University, United States

SPCOM-P11.5 AN EFFICIENT ALGORITHM FOR OPTIMUM POWER ALLOCATION IN A DECODE-AND-FORWARD COOPERATIVE SYSTEM WITH ORTHOGONAL TRANSMISSIONS
Paul Anghel, Mostafa Kaveh, Zhi-Quan Luo, University of Minnesota, United States

SPCOM-P11.6 OPTIMAL POWER ALLOCATION FOR FULL-DUPLEX COOPERATIVE MULTIPLE ACCESS
Wessam Mesbah, Timothy Davidson, McMaster University, Canada

(Continued from previous page.)

SPCOM-P11.7 OPTIMAL NON-COHERENT M-ARY ENERGY SHIFT KEYING FOR COOPERATIVE TRANSMISSION IN SENSOR NETWORKS
Albert Krohn, University of Karlsruhe, Germany

SPCOM-P11.8 A CODING THEOREM FOR MULTITERMINAL ESTIMATION
Amin Zia, James P. Reilly, Timothy R. Feild, Sharham Shirani, McMaster University, Canada

SPCOM-P11.9 ON THE MULTITERMINAL RATE-DISTORTION FUNCTION FOR ACOUSTIC SENSING
Robert L. Konsbruck, Emre Telatar, Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SPCOM-P11.10 MULTI-STEP ADAPTIVE SENSOR SCHEDULING FOR TARGET TRACKING IN WIRELESS SENSOR NETWORKS
Wendong Xiao, Institute for Infocomm Research, Singapore; Lihua Xie, Nanyang Technological University, Singapore; Jianfeng Chen, Louis Shue, Institute for Infocomm Research, Singapore

SPCOM-P11.11 FEATURE-BASED INFORMATION PROCESSING WITH SELECTIVE ATTENTION
Christopher Rozell, Ilan Goodman, Don Johnson, Rice University, United States

SPCOM-P11.12 OPTIMIZED DATA FUSION IN BANDWIDTH AND ENERGY CONSTRAINED SENSOR NETWORKS
Xianren Wu, Zhi Tian, Michigan Tech University, United States

SPTM-P11 **Nonlinear Systems and Signal Processing** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 6
Co-Chairs: Kenneth Barner , University of Delaware and Douglas Williams, Georgia Institute of Technology

SPTM-P11.1 **THRESHOLDING DISTANCE PLOTS USING TRUE RECURRENCE POINTS**
Christer Ahlström, Peter Hult, Per Ask, Linköping University, Sweden

SPTM-P11.2 **ON THE ROOTS OF THE 3X3 MEDIAN FILTER**
Andrea Cordoba, Alfredo Restrepo, Universidad de los Andes, Colombia

SPTM-P11.3 **SYMBOLIC COMPUTATIONS IN VOLTERRA SYSTEM IDENTIFICATION**
Kimon Kontosis, University of Athens, Greece; Panagiotis Angelikopoulos, National Technical University of Athens, Greece; Panos Koukoulas, Nicholas Kalouptsidis, Ioannis Emiris, University of Athens, Greece

SPTM-P11.4 **COMPANDING DIGITAL SIGNAL PROCESSORS**
Ari Klein, Yannis Tsividis, Columbia University, United States

SPTM-P11.5 **NEWTON METHOD FOR RIEMANNIAN CENTROID COMPUTATION IN NATURALLY REDUCTIVE HOMOGENEOUS SPACES**
Ricardo Ferreira, João Xavier, João Costeira, Victor Barroso, Instituto Superior Técnico, Portugal

SPTM-P11.6 **MUTUAL INFORMATION BETWEEN RANDOM PROCESSES FROM HIGH DIMENSIONAL DATA**
Victor Solo, University of Michigan, Ann Arbor, United States

(Continued from previous page.)

SPTM-P11.7 IDENTIFICATION OF QUADRATIC NON LINEAR SYSTEMS USING HIGHER ORDER STATISTICS AND FUZZY MODELS
Jilali Antari, Radouane Iqdour, Cadi Ayyad University, Morocco; Said Safi, National School of Applied Sciences, Morocco; Abdelouhab Zeroual, Cadi Ayyad University, Morocco; Abdelouahid Lyhyaoui, National School of Applied Sciences, Morocco

SPTM-P11.8 NETWORKS OF THE POOLING TYPE AND OPTIMAL QUANTIZATION
Pierre-Olivier Amblard, Steeve Zozor, LIS-CNRS UMR 5083, France; Olivier J. J. Michel, LUAN / CNRS UMR 6525-UNSA, France

SPTM-P11.9 A CLOSED FORM SOLUTION FOR A NONLINEAR WIENER FILTER
Puskal Pokharel, Jian-Wu Xu, University of Florida, United States; Deniz Erdogmus, Oregon Health & Science University, United States; Jose Principe, University of Florida, United States

SPTM-P11.10 MANEUVERING TARGET TRACKING USING THE NONLINEAR NON-GAUSSIAN KALMAN FILTER
Igal Bilik, Joseph Tabrikian, Ben-Gurion University, Israel

SPTM-P11.11 NOISE ANALYSIS OF MODULATED QUANTZER BASED ON OVERSAMPLED SIGNALS
Yuk-Fan Ho, Queen Mary, University of London, United Kingdom; Wing-Kuen Ling, King's College London, United Kingdom; Joshua Reiss, Queen Mary, University of London, United Kingdom

SLP-P18 **LVCSR Systems** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 7
Chair: Eric Fosler, The Ohio State University

SLP-P18.1 **THE CU-HTK MANDARIN BROADCAST NEWS TRANSCRIPTION SYSTEM**
Rohit Sinha, Mark J. F. Gales, Do Yeong Kim, Xunying Andrew Liu, Khe Chai Sim, Phil C. Woodland, University of Cambridge, United Kingdom

SLP-P18.2 **MULTI-LINGUAL SPEAKER-INDEPENDENT VOICE USER INTERFACE FOR MOBILE DEVICES**
Juha Iso-Sipilä, Marko Moberg, Olli Viikki, Nokia Technology Platforms, Finland

SLP-P18.3 **PROSODIC AND SEGMENTAL RUBRICS IN EMOTION IDENTIFICATION**
Roberto Barra, Juan Manuel Montero, Javier Macias-Guarasa, Luis Fernando D'Haro, Ruben San-Segundo, Ricardo Cordoba, Universidad Politécnica de Madrid, Spain

SLP-P18.4 **MORPHOLOGICAL DECOMPOSITION FOR ARABIC BROADCAST NEWS TRANSCRIPTION**
Bing Xiang, BBN Technologies, United States; Kham Nguyen, Northeastern University, United States; Long Nguyen, Richard Schwartz, John Makhoul, BBN Technologies, United States

SLP-P18.5 **ARABIC BROADCAST NEWS TRANSCRIPTION USING A ONE MILLION WORD VOCALIZED VOCABULARY**
Abdel. Messaoudi, Jean-Luc Gauvain, Lori Lamel, LIMSI-CNRS, France

SLP-P18.6 **ROBUST ESTIMATION OF VOICE QUALITY PARAMETERS UNDER REAL WORLD DISTURBANCES**
Marko Lugger, Bin Yang, Wolfgang Wokurek, University of Stuttgart, Germany

(Continued from previous page.)

SLP-P18.7 **ACOUSTIC-PHONETIC UNIT SIMILARITIES FOR CONTEXT DEPENDENT ACOUSTIC MODEL PORTABILITY**
Viet-Bac Le, Laurent Besacier, CLIPS / IMAG, France; Tanja Schultz, Carnegie Mellon University, United States

SLP-P18.8 **SPEECH RECOGNITION ON CODE-SWITCHING AMONG THE CHINESE DIALECTS**
Dau-cheng Lyu, Academia Sinica, Taiwan; Ren-yuan Lyu, Chang Gung University, Taiwan; Yuang-chin Chiang, National Tsing Hua University, Taiwan; Chun-nan Hsu, Academia Sinica, Taiwan

SLP-P18.9 **EFFICIENT GRAMMAR GENERATION AND TUNING FOR INTERACTIVE VOICE RESPONSE APPLICATIONS**
Ellis Cave, Intervoice, Inc., United States; Mithun Balakrishna, Dan Moldovan, University of Texas, Dallas, United States

SLP-P18.10 **A DECODER FOR LVCSR BASED ON FIXED-POINT ARITHMETIC**
Enrico Bocchieri, Doug Blewett, AT&T Labs – Research, United States

SLP-P19 **Model-based Robust Speech Recognition** (Poster)
Time: Friday, May 19, 10:00 - 12:00
Place: Poster Area 8
Chair: Murat Saraclar, Bogazici University

SLP-P19.1 **MODELING VARIANCE VARIATION IN A VARIABLE PARAMETER HMM FRAMEWORK FOR NOISE ROBUST SPEECH RECOGNITION**
Xiaodong Cui, University of California, Los Angeles, United States; Yifan Gong, Microsoft Corporation, United States

SLP-P19.2 **NOVEL MODEL COMPENSATION FOR FEATURES BASED ON SNR-DEPENDENT NON-UNIFORM SPECTRAL COMPRESSION**
Geng-Xin Ning, South China University of Technology, China; Shu-Hung Leung, Kam-Keung Chu, City University of Hong Kong, China; Gang Wei, South China University of Technology, China

SLP-P19.3 **UNSUPERVISED ONLINE ADAPTATION OF SEGMENTAL SWITCHING LINEAR GAUSSIAN HIDDEN MARKOV MODELS FOR ROBUST SPEECH RECOGNITION**
Qiang Huo, University of Hong Kong, Hong Kong SAR of China; Donglai Zhu, Institute for Infocomm Research, Singapore; Jian Wu, Microsoft Corporation, United States

SLP-P19.4 **PATTERN-BASED DYNAMIC COMPENSATION TOWARDS ROBUST SPEECH RECOGNITION IN MOBILE ENVIRONMENTS**
Huayun Zhang, Jun Xu, InfoTalk Technology, Singapore

SLP-P19.5 **MODEL ADAPTATION FOR LONG CONVOLUTIONAL DISTORTION BY MAXIMUM LIKELIHOOD BASED STATE FILTERING APPROACH**
Chandra Kant Raut, Takuya Nishimoto, Shigeki Sagayama, University of Tokyo, Japan

SLP-P19.6 **LIMITED TRAINING DATA ROBUST SPEECH RECOGNITION USING KERNEL-BASED ACOUSTIC MODELS**
Martin Schaffoener, Sven Krueger, Edin Andelic, Marcel Katz, Andreas Wendemuth, Otto-von-Guericke University, Germany

(Continued from previous page.)

SLP-P19.7 **ROBUST SPEECH RECOGNITION FROM NOISE-TYPE BASED FEATURE COMPENSATION AND MODEL INTERPOLATION IN A MULTIPLE MODEL FRAMEWORK**
Haitian Xu, Zheng-Hua Tan, Paul Dalsgaard, Borge Lindberg, Aalborg University, Denmark

SLP-P19.8 **AN IMPROVED MANDARIN KEYWORD SPOTTING SYSTEM USING MCE TRAINING AND CONTEXT-ENHANCED VERIFICATION**
JiaEn Liang, Meng Meng, XiaoRui Wang, Peng Ding, Bo Xu, Chinese Academy of Sciences, China

SLP-P19.9 **RANDOM FORESTS-BASED CONFIDENCE ANNOTATION USING NOVEL FEATURES FROM CONFUSION NETWORK**
Jian Xue, Yunxin Zhao, University of missouri-Columbia, United States

SLP-P19.10 **COMPENSATING FOR WORD POSTERIOR ESTIMATION BIAS IN CONFUSION NETWORKS**
Dustin Hillard, Mari Ostendorf, University of Washington, United States

DISPS-L2 **Efficient implementations of Communications and Coding Applications** (Lecture)
Time: Friday, May 19, 14:00 - 16:00
Place: Spot
Chair: Chaitali Chakrabarti, Arizona State University

14:00
DISPS-L2.1 **ARCHITECTURE DESIGN OF LOW POWER INTEGER MOTION ESTIMATION FOR H.264/AVC**
Tung-Chien Chen, Yu-Han Chen, Sung-Fang Tsai, Liang-Gee Chen, National Taiwan University, Taiwan

14:20
DISPS-L2.2 **A PARALLEL PROCESSING HARDWARE ARCHITECTURE FOR ELLIPTIC CURVE CRYPTOSYSTEMS**
Kazuo Sakiyama, Elke De Mulder, Bart Preneel, Ingrid Verbauwhede, Katholieke Universiteit Leuven, Belgium

14:40
DISPS-L2.3 **AN ENERGY EFFICIENT SUB-THRESHOLD BASEBAND PROCESSOR ARCHITECTURE FOR PULSED ULTRA-WIDEBAND COMMUNICATIONS**
Vivienne Sze, Raul Blazquez, Manish Bhardwaj, Anantha Chandrakasan, Massachusetts Institute of Technology, United States

15:00
DISPS-L2.4 **PROBABILISTIC LIST SPHERE DECODING FOR LDPC-CODED MIMO-OFDM SYSTEMS**
Sungchung Park, Kwyro Lee, Korea Advanced Institute of Science and Technology, Republic of Korea; Yuping Zhang, Keshab K. Parhi, University of Minnesota, United States; Jin Lee, Sin-Chong Park, Information and Communications University, Republic of Korea

15:20
DISPS-L2.5 **AGGREGATED CIRCULANT MATRIX BASED LDPC CODES**
Yuming Zhu, Chaitali Chakrabarti, Arizona State University, United States

15:40
DISPS-L2.6 **DISTRIBUTED ARCHITECTURE AND INTERCONNECTION SCHEME FOR MULTIPLE MODEL PARTICLE FILTERS**
Akshay Athalye, Sangjin Hong, Petar Djuric, Stony Brook University, United States

IMDSP-L9 **Video Segmentation and Tracking** (Lecture)
Time: Friday, May 19, 14:00 - 16:00
Place: Ariane 1 & 2
Chair: Benoit Macq, Universite Catholique de Louvain

14:00
IMDSP-L9.1 **ACTIVE CONTOUR ATTRACTED BY A REFERENCE CONTOUR: A REGION-BASED APPROACH**
Cédric De Roover, Jacek Czyz, Benoit Macq, Université Catholique de Louvain, Belgium

14:20
IMDSP-L9.2 **A CONTOUR TRACKING ALGORITHM FOR ROTOSCOPY**
Vincent Garcia, Eric Debreuve, Michel Barlaud, Laboratoire I3S / CNRS / UNSA, France

14:40
IMDSP-L9.3 **NOVEL COLOR-BASED TARGET REPRESENTATION FOR VISUAL OBJECT TRACKING**
Yuantao Gu, Yilun Chen, Tsinghua University, China; Jie Wang, University of Toronto, Canada

15:00
IMDSP-L9.4 **MONOCULAR HUMAN MOTION TRACKING WITH THE DE-MC PARTICLE FILTER**
Ming Du, Ling Guan, Ryerson University, Canada

15:20
IMDSP-L9.5 **TEMPORAL VIDEO SEGMENTATION BY GRAPH PARTITIONING**
Zuzana Cernekova, Nikos Nikolaidis, Ioannis Pitas, Aristotle University of Thessaloniki, Greece

15:40
IMDSP-L9.6 **FIRE DETECTION IN VIDEO SEQUENCES USING STATISTICAL COLOR MODEL**
Turgay Celik, Hasan Demirel, Huseyin Ozkaramanli, Mustafa Uyguroglu, Eastern Mediterranean University, Turkey

SPCOM-L7 **Wireless Sensor Networks** (Lecture)
Time: Friday, May 19, 14:00 - 16:00
Place: Caravelle 2
Chair: Zhi-Quan (Tom) Luo, University of Minnesota, Minneapolis

14:00
SPCOM-L7.1 **TRANSMISSION SCHEDULING FOR SENSOR NETWORK LIFETIME MAXIMIZATION: A SHORTEST PATH BANDIT FORMULATION**
Yunxia Chen, Qing Zhao, University of California, Davis, United States; Vikram Krishnamurthy, Dejan Djonin, University of British Columbia, Canada

14:20
SPCOM-L7.2 **SENSOR SYSTEM OPTIMIZATION FOR BAYESIAN FUSION OF DISTRIBUTED STOCHASTIC SIGNALS UNDER RESOURCE CONSTRAINTS**
Sudharman K. Jayaweera, Wichita State University, United States

14:40
SPCOM-L7.3 **SOI-KF: DISTRIBUTED KALMAN FILTERING WITH LOW-COST COMMUNICATIONS USING THE SIGN OF INNOVATIONS**
Alejandro Ribeiro, Georgios Giannakis, Stergios Roumeliotis, University of Minnesota, United States

15:00
SPCOM-L7.4 **OPTIMAL DISTRIBUTED ESTIMATION IN CLUSTERED SENSOR NETWORKS**
Qingjiang Tian, Edward Coyle, Purdue University, United States

15:20
SPCOM-L7.5 **RANDOM MULTIRESOLUTION REPRESENTATIONS FOR ARBITRARY SENSOR NETWORK GRAPHS**
Wei Wang, Kannan Ramchandran, University of California, Berkeley, United States

15:40
SPCOM-L7.6 **DISTRIBUTED COMPRESSION IN ACOUSTIC SENSOR NETWORKS USING OVERSAMPLED A/D CONVERSION**
Olivier Roy, Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SLP-L11 **Advances in Speech Analysis and Representations**
(Lecture)
Time: Friday, May 19, 14:00 - 16:00
Place: Cassiopée
Chair: Shrikanth Narayanan, University of Southern California

14:00
SLP-L11.1 **INTRINSIC FOURIER ANALYSIS ON THE MANIFOLD OF SPEECH SOUNDS**
Aren Jansen, Partha Niyogi, University of Chicago, United States

14:20
SLP-L11.2 **SPECTRAL ENVELOPE ESTIMATION AND REGULARIZATION**
L. Anders Ekman, W. Bastiaan Kleijn, Royal Institute of Technology (KTH), Sweden; Manohar N. Murthi, University of Miami, United States

14:40
SLP-L11.3 **A ROBUST PITCH EXTRACTION SYSTEM BASED ON PHASE LOCKED LOOPS**
Patricia Pelle, University of Buenos Aires, Argentina

15:00
SLP-L11.4 **GENERALIZED PERCEPTUAL FEATURES FOR VOCALIZATION ANALYSIS ACROSS MULTIPLE SPECIES**
Patrick Clemins, Marek Trawicki, Kuntoro Adi, Jidong Tao, Michael Johnson, Marquette University, United States

15:20
SLP-L11.5 **VOICING-CHARACTER ESTIMATION OF SPEECH SPECTRA: APPLICATION TO NOISE ROBUST SPEECH RECOGNITION**
Peter Jancovic, University of Birmingham, United Kingdom; Munevver Kokuer, Coventry University, United Kingdom

15:40
SLP-L11.6 **PARA-LINGUISTIC INFORMATION REPRESENTED AS DISTORTION OF THE ACOUSTIC UNIVERSAL STRUCTURE IN SPEECH**
Nobuaki Minematsu, Satoshi Asakawa, Keikichi Hirose, University of Tokyo, Japan

SLP-L12 **Discriminative Training** (Lecture)
Time: Friday, May 19, 14:00 - 16:00
Place: Auditorium St Exupery
Chair: Bill Byrne, Cambridge University

14:00
SLP-L12.1 **LARGE MARGIN GAUSSIAN MIXTURE MODELING FOR PHONETIC CLASSIFICATION AND RECOGNITION**
Fei Sha, Lawrence Saul, University of Pennsylvania, United States

14:20
SLP-L12.2 **RECENT IMPROVEMENT ON MAXIMUM RELATIVE MARGIN ESTIMATION OF HMMS FOR SPEECH RECOGNITION**
Chaojun Liu, Panasonic R&D Company of America, United States; Hui Jiang, York University, Canada; Luca Rigazio, Panasonic R&D Company of America, United States

14:40
SLP-L12.3 **TRAINING ALGORITHMS FOR HIDDEN CONDITIONAL RANDOM FIELDS**
Milind Mahajan, Asela Gunawardana, Alex Acero, Microsoft Research, United States

15:00
SLP-L12.4 **MAXIMUM CONDITIONAL MUTUAL INFORMATION WEIGHTED SCORING FOR SPEECH RECOGNITION**
Mohamed Omar, Ganesh Ramaswamy, IBM T. J. Watson Research Center, United States

15:20
SLP-L12.5 **JOINT DISCRIMINITIVE FRONT END AND BACK END TRAINING FOR IMPROVED SPEECH RECOGNITION ACCURACY**
Jasha Droppo, Alex Acero, Microsoft Research, United States

15:40
SLP-L12.6 **DISCRIMINANT INITIALIZATION FOR FACTOR ANALYZED HMM TRAINING**
Fabrice Lefevre, Jean-Luc Gauvain, LIMSI-CNRS, France

SS-11 **Image Formation and Analysis for Molecular and Cellular Imaging** (Special Session)
Time: Friday, May 19, 14:00 - 16:00
Place: Guillaumet 1 & 2
Chair: Jean-Christophe Olivo-Marin, Institut Pasteur

14:00
SS-11.1 **WAVELET-BASED DETECTION OF STIMULUS RESPONSES IN TIME-LAPSE MICROSCOPY**
Dimitri Van De Ville, Brice Bathellier, Riccardo Accolla, Alan Carleton, Thierry Blu, Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

14:20
SS-11.2 **TIME-LAPSE MICROSCOPY AND CLASSIFICATION OF IN VITRO CELL MIGRATION USING HIDDEN MARKOV MODELING**
Karin Althoff, Johan Degerman, Chalmers University of Technology, Sweden; Carolina Wählby, Uppsala University, Sweden; Thorleif Thorlin, Jonas Faijerson, Peter S. Eriksson, Institute of Clinical Neuroscience, Sweden; Tomas Gustavsson, Chalmers University of Technology, Sweden

14:40
SS-11.3 **QUANTUM DOTS NANO-PARTICLES FULL FIELD IMAGING WITH OPTICAL SECTIONING AND 3D LOCALIZATION**
Frederic Chasles, Benoit Dubertret, CNRS, France; Claude Boccara, ESPCI, France

15:00
SS-11.4 **AN OVERVIEW OF IMAGE ANALYSIS IN MULTIDIMENSIONAL BIOLOGICAL MICROSCOPY**
Jean-Christophe Olivo-Marin, Institut Pasteur, France

15:20
SS-11.5 **ADAPTIVE MULTIRESOLUTION TECHNIQUES FOR SUBCELLULAR PROTEIN LOCATION CLASSIFICATION**
Gowri Srinivasa, Thomas Merryman, Amina Chebira, Jelena Kovacevic, Carnegie Mellon University, United States; Alexia Mintos, University of Virgin Islands, United States Virgin Islands

AE-P6 **Spatial and Multichannel Audio** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 1
Chair: Gerald Schuller, Fraunhofer IDMT

AE-P6.1 **SIMULATION OF ROOM ACOUSTICS USING 2-D DIGITAL WAVEGUIDE MESHES**
Antti Kelloniemi, Vesa Välimäki, Lauri Savioja, Helsinki University of Technology, Finland

AE-P6.2 **WAVE FIELD SIMULATION WITH THE FUNCTIONAL TRANSFORMATION METHOD**
Stefan Petrausch, Rudolf Rabenstein, University of Erlangen-Nuremberg, Germany

AE-P6.3 **SOUND FIELD ANALYSIS WITH A TWO-DIMENSIONAL MICROPHONE ARRAY**
Mathieu Guillaume, Yves Grenier, ENST / GET, France

AE-P6.4 **DISTANCE VARIATION FUNCTION FOR SIMULATION OF NEAR-FIELD VIRTUAL AUDITORY SPACE**
Alan Kan, Craig Jin, Andre van Schaik, University of Sydney, Australia

AE-P6.5 **DEVELOPMENT OF MICRO-DODECAHEDRAL LOUDSPEAKER FOR MEASURING HEAD-RELATED TRANSFER FUNCTIONS IN THE PROXIMAL REGION**
Seiichiro Hosoe, Takanori Nishino, Katsunobu Itou, Kazuya Takeda, Nagoya University, Japan

AE-P6.6 **LISTENING THROUGH DIFFERENT EARS IN THE SYDNEY OPERA HOUSE**
Angela Qian Li, Craig Jin, Andre Van Schaik, University of Sydney, Australia

(Continued from previous page.)

AE-P6.7 **HEADPHONE-BASED REPRODUCTION OF 3D AUDITORY SCENES CAPTURED BY SPHERICAL/ HEMISPHERICAL MICROPHONE ARRAYS**
Zhiyun Li, University of Maryland, United States; Ramani Duraiswami, University of Maryland, College Park, United States

AE-P6.8 **A NEW METHOD FOR BINAURAL 3-D LOCALIZATION BASED ON HRTFS**
Fakheredine Keyrouz, Youssef Naous, Klaus Diepold, Technische Universität München, Germany

AE-P6.9 **IMMERSIVE RENDERING OF CODED AUDIO STREAMS USING REDUCED RANK MODELS OF SUBBAND-DOMAIN HEAD-RELATED TRANSFER FUNCTIONS**
Pinaki Shankar Chanda, LG Soft India, India; Sungjin Park, LG Mobile Handset R&D Center, Republic of Korea

AE-P6.10 **AUTOMATED DESIGN OF DIGITAL FILTERS FOR 3-D SOUND LOCALIZATION IN EMBEDDED APPLICATIONS**
Kosuke Tsujino, Kyoto University, Japan; Wataru Kobayashi, Arnis Sound Technologies, Co., Ltd., Japan; Takao Onoye, Osaka University, Japan; Yukihiro Nakamura, Kyoto University, Japan

AE-P6.11 **INVERSE FILTER DESIGN USING MINIMAX APPROXIMATION TECHNIQUES FOR 3-D AUDIO**
Harsha .I.K Rao, V. John Mathews, University of Utah, United States; Young-Cheol Park, Yonsei University, Republic of Korea

AE-P6.12 **SEPARATION OF AUDIO SIGNALS INTO DIRECT AND DIFFUSE SOUNDFIELDS FOR SURROUND SOUND**
Benjamin Olswang, Loud Technologies Inc., United States; Zoran Cvetkovic, King's College London, United Kingdom

BIO-P4 **Biomedical Signal Processing II** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 2
Chair: Douglas Jones, University of Illinois at Urbana-Champaign

BIO-P4.1 **BAYESIAN NETWORK MODELING FOR DISCOVERING "DIRECTED SYNERGIES" AMONG MUSCLES IN REACHING MOVEMENTS**
Junning Li, Jane Wang, Martin McKeown, University of British Columbia, Canada

BIO-P4.2 **DETECTION OF MULTIPLE HEARTBEATS USING DOPPLER RADAR**
Qin Zhou, Jianhan Liu, Anders Host-Madsen, Olga Boric-Lubecke, Victor Lubecke, University of Hawaii, United States

BIO-P4.3 **TOPOGRAPHIC SEGMENTATION AND TRANSIT TIME ESTIMATION FOR ENDOSCOPIC CAPSULE EXAMS**
Miguel Coimbra, Paulo Campos, João Paulo Silva Cunha, IEETA / University of Aveiro, Portugal

BIO-P4.4 **CLASSIFICATION OF AORTIC STIFFNESS FROM EIGENDECOMPOSITION OF THE DIGITAL VOLUME PULSE WAVEFORM**
Natalia Angarita-Jaimes, Heriot-Watt University, United Kingdom; Stephen Alty, King's College London, United Kingdom; Sandrine Millasseau, Philip Chowienczyk, GKT School of Biomedical Sciences, St. Thomas' Hospital, United Kingdom

BIO-P4.5 **A REAL TIME MUSIC SYNTHESIS ENVIRONMENT DRIVEN WITH BIOLOGICAL SIGNALS**
R.Burak Arslan, Faculté Polytechnique de Mons, Belgium; Andrew Brouse, University of Plymouth, United Kingdom; Julien Castet, Polytechnics National Institute of Grenoble, France; Remy Léhembre, Cedric Simon, Jean Julien Filatriau, Quentin Noirhomme, Université catholique de Louvain, Belgium

BIO-P4.6 **WAVELET-BASED PROCESSING AND ADAPTIVE FUZZY CLUSTERING FOR AUTOMATED LONG-TERM POLYSOMNOGRAPHY ANALYSIS**
Chih-Feng Chao, Joe-Air Jiang, National Taiwan University, Taiwan; Ming-Jang Chiu, National Taiwan University Hospital, Taiwan; Ren-Guey Lee, National Taipei University of Technology, Taiwan

(Continued from previous page.)

BIO-P4.7 **A NEW ALGORITHM FOR DETECTION OF S1 AND S2 HEART SOUNDS**
Dinesh Kumar, Paulo Carvalho, University of Coimbra, Portugal; Manual Antunes, University Hospital of Coimbra, Portugal; Paulo Gil, Jorge Henriques, University of Coimbra, Portugal; Luis Eugénio, University Hospital of Coimbra, Portugal

BIO-P4.8 **A ROBUST CONSTRAINED METHOD FOR THE EXTRACTION OF P300 SUBCOMPONENTS**
Loukianos Spyrou, Saeid Sanei, Cardiff University, United Kingdom

BIO-P4.9 **A TIME-VARYING EIGENSPECTRUM/SVM METHOD FOR SEMG CLASSIFICATION OF REACHING MOVEMENTS IN HEALTHY AND STROKE SUBJECTS**
Joyce Chiang, Jane Wang, Martin McKeown, University of British Columbia, Canada

BIO-P4.10 **OPTIMAL LOCALIZATION OF LEADS IN ATRIAL FIBRILLATION EPISODES**
Jorge Igual, Raul Llinares, Maria Guillem, Jose Millet, Polytechnic University of Valencia, Spain

BIO-P4.11 **MAP FILTERING IN THE DIVERSITY-ENHANCED WAVELET DOMAIN APPLIED TO ECG SIGNALS DENOISING**
Marius Oltean, "Politehnica" University of Timisoara, Romania; Jean-Marc Boucher, GET / ENST Bretagne, France; Alexandru Isar, "Politehnica" University of Timisoara, Romania

BIO-P4.12 **SPECTRAL CORRELATION OF THE EMBOLIC BLOOD DOPPLER SIGNAL**
Jean-Marc Girault, University of Tours, France; Mathieu Biard, INSERM U619, France; Denis Kouamé, University of Tours, France; Aurore Bleuzen, François Tranquart, INSERM U619, France

IMDSP-P16 **Video Coding II** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 3
Chair: Sheila Hemami, Cornell University

IMDSP-P16.1 A FAST DCT DOMAIN BASED VIDEO DOWNSCALING SYSTEM
Sudhir Porwal, Defence Electronics Applications Laboratory, India; Jayanta Mukhopadhyay, Indian Institute of Technology Kharagpur, India

IMDSP-P16.2 A HYBRID VIDEO CODER BASED ON H.264 WITH MATCHING PURSUITS
Haoxiang Zhang, Xiaopeng Wang, Wei Huo, Don Monro, University of Bath, United Kingdom

IMDSP-P16.3 TWO-STAGE MODE SELECTION OF H.264/AVC VIDEO ENCODING WITH RATE DISTORTION OPTIMIZATION
Win-Bin Huang, Yi-Li Lin, Hung-Wei Cheng, Alvin Wen Yu Su, Yau-Hwang Kuo, National Cheng Kung University, Taiwan

IMDSP-P16.4 LOW-COMPLEXITY FUZZY VIDEO RATE CONTROLLER FOR STREAMING
Mehdi Rezaei, Tampere University of Technology, Finland; Miska Hannuksela, Nokia Research Center, Finland; Moncef Gabbouj, Tampere University of Technology, Finland

IMDSP-P16.5 ENHANCED DIAMOND SEARCH USING FOUR-CORNER-BASED INNER SEARCH FOR FAST BLOCK MOTION ESTIMATION
Lai-Man Po, Chi-Wang Ting, Ka-Ho Ng, City University of Hong Kong, Hong Kong SAR of China

IMDSP-P16.6 ADAPTIVE MAD PREDICTION AND REFINED R-Q MODEL FOR H.264/AVC RATE CONTROL
Yang Liu, Nanyang Technological University, Singapore; Zheng Guo Li, Institute for Infocomm Research, Singapore; Yeng Chai Soh, Nanyang Technological University, Singapore

(Continued from previous page.)

IMDSP-P16.7 A MODIFIED RATE-DISTORTION OPTIMISATION STRATEGY FOR HYBRID WAVELET VIDEO CODING
Thomas Davies, BBC Research and Development, United Kingdom

IMDSP-P16.8 A NOVEL MOTION ESTIMATION METHOD BASED ON STRUCTURAL SIMILARITY FOR H.264 INTER PREDICTION
Zhi-Yi Mai, Chun-Ling Yang, Kai-Zhi Kuang, South China University of Technology, China; Lai-Man Po, City University of Hong Kong, China

IMDSP-P16.9 A PREDICTIVE BLOCK-SIZE MODE SELECTION FOR INTER FRAME IN H.264
Jiajun Bu, Shuiyong Lou, Chun Chen, Jingjing Zhu, Zhejiang University, China

IMDSP-P16.10 FAST MODE DECISION ALGORITHM FOR INTRA PREDICTION IN H.264/AVC
Rui Su, Guizhong Liu, Tongyu Zhang, Xi'an Jiaotong University, China

IMDSP-P16.11 AN EFFICIENT DEBLOCKING FILTER WITH SELF-TRANSPOSING MEMORY ARCHITECTURE FOR H.264/AVC
Mahdi Nazm Bojnordi, Tehran University, Iran; Omid Fatemi, Mahmoud Reza Hashemi, University of Tehran, Iran

IMDSP-P16.12 A LOW COMPLEXITY RATE-DISTORTION SOURCE MODELING FRAMEWORK
Chun-Yuan Chang, Tsungnan Lin, National Taiwan University, Taiwan; Din-Yuan Chan, National Chiayi University, Taiwan; Shih-Hao Hung, National Taiwan University, Taiwan

MLSP-P5 **Blind Source Separation III** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 4
Chair: Danilo Mandic, Imperial College

MLSP-P5.1 **BLIND SIGNAL SEPARATION USING A CRITERION BASED ON PRINCIPLE OF MINIMAL DISTURBANCE**
Uttachai Manmontri, Patrick Naylor, Imperial College London, United Kingdom

MLSP-P5.2 **ENHANCED SOURCE SEPARATION BY MORPHOLOGICAL COMPONENT ANALYSIS**
Jerome Bobin, Yassir Moudden, Jean-Luc Starck, Commissariat à l'Energie Atomique (CEA), France

MLSP-P5.3 **FREQUENCY DOMAIN BLIND SOURCE SEPARATION OF A REDUCED AMOUNT OF DATA USING FREQUENCY NORMALIZATION**
Enrique Robledo-Arnuncio, Hiroshi Sawada, Shoji Makino, NTT Corporation, Japan

MLSP-P5.4 **EIGENVECTOR ALGORITHMS USING REFERENCE SIGNALS**
Mitsuru Kawamoto, AIST, Japan; Kiyotaka Kohno, Yujiro Inouye, Shimane University, Japan

MLSP-P5.5 **ITERATIVE PROJECTION APPROXIMATION ALGORITHMS FOR PCA**
Seungjin Choi, Jong-Hoon Ahn, POSTECH, Republic of Korea; Andrzej Cichocki, RIKEN Brain Science Institute, Japan

MLSP-P5.6 **BLIND SOURCE SEPARATION OF NONLINEARLY CONSTRAINED MIXED SOURCES USING POLYNOMIAL SERIES REVERSION**
Pei Gao, Li Chin Khor, Wai Lok Woo, Satnam Singh Dlay, University of Newcastle upon Tyne, United Kingdom

(Continued from previous page.)

MLSP-P5.7 **A TIME-FREQUENCY CORRELATION-BASED BLIND SOURCE SEPARATION METHOD FOR TIME-DELAYED MIXTURES**
Matthieu Puigt, Yannick Deville, Laboratoire d'Astrophysique de Toulouse-Tarbes, France

MLSP-P5.8 **MOTIF : AN EFFICIENT ALGORITHM FOR LEARNING TRANSLATION INVARIANT DICTIONARIES**
Philippe Jost, Pierre Vandergheynst, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Sylvain Lesage, Rémi Gribonval, Institut de Recherche en Informatique et Systèmes Aléatoires, France

MLSP-P5.9 **POST-NONLINEAR UNDERCOMPLETE BLIND SIGNAL SEPARATION: A BAYESIAN APPROACH**
Chen Wei, Li Chin Khor, Wai Lok Woo, Satnam Singh Dlay, University of Newcastle upon Tyne, United Kingdom

MLSP-P5.10 **FAST NOISE COMPENSATION FOR SPEECH SEPARATION IN DIFFUSE NOISE**
Rong Hu, Yunxin Zhao, University of Missouri-Columbia, United States

MLSP-P5.11 **PHONEMES AS SHORT TIME COGNITIVE COMPONENTS**
Ling Feng, Lars Kai Hansen, Technical University of Denmark, Denmark

MLSP-P5.12 **METHODS OF FAIR COMPARISON OF PERFORMANCE OF LINEAR ICA TECHNIQUES IN PRESENCE OF ADDITIVE NOISE**
Zbynek Koldovsky, Technical University of Liberec, Czech Republic; Petr Tichavsky, Institute of Information Theory and Automation, Czech Republic

SPCOM-P12 **MIMO: Precoding / Beamforming** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 5
Chair: Anna Scaglione, Cornell University

SPCOM-P12.1 COSTA PRECODING IN ONE DIMENSION
Jinfeng Du, Erik G. Larsson, Mikael Skoglund, Royal Institute of Technology (KTH), Sweden

SPCOM-P12.2 PARTIAL UPDATE ADAPTIVE TRANSMIT BEAMFORMING WITH LIMITED FEEDBACK
Eduardo Zacarias, Stefan Werner, Risto Wichman, Helsinki University of Technology, Finland

SPCOM-P12.3 DIVERSITY-MULTIPLEXING TRADEOFF OF OSTBC OVER CORRELATED NAKAGAMI-M FADING CHANNELS
Jiee Chen, Xiqi Gao, Southeast University, China

SPCOM-P12.4 LARGE-SYSTEM COMPARISON OF SPACE-TIME TRANSMIT DIVERSITY AND ORTHOGONAL TRANSMIT DIVERSITY FOR DOWNLINK W-CDMA
Belkacem Mouhouche, Freescale Semiconductor, Inc., France

SPCOM-P12.5 CO-ORDINATE INTERLEAVED SPATIAL MULTIPLEXING WITH CHANNEL KNOWLEDGE AT TRANSMITTER AND RECEIVER
K. V. Srinivas, J. Klutto Milleth, R. D. Koilpillai, K. Giridhar, Indian Institute of Technology Madras, India

SPCOM-P12.6 NON-REDUNDANT AND REDUNDANT POSTCODING IN OFDM SYSTEMS
Syed Faisal Shah, Ahmed Tewfik, University of Minnesota, United States

(Continued from previous page.)

SPCOM-P12.7 ZERO-FORCING BEAMFORMING FOR NON-COLLABORATIVE SPACE DIVISION MULTIPLE ACCESS
Jayakrishnan Mundarath, University of Wisconsin-Madison, United States; Jayesh Kotecha, Freescale Semiconductor, Inc., United States

SPCOM-P12.8 JOINTLY OPTIMAL PRECODING/POSTCODING FOR COLORED MIMO SYSTEMS
Duong H. Pham, Hoang D. Tuan, University of New South Wales, Australia; Ba-Ngu Vo, University of Melbourne, Australia; Truong Q. Nguyen, University of California, San Diego, United States

SPCOM-P12.9 PERFORMANCE ANALYSIS OF A DSTTD SYSTEM WITH DECISION-FEEDBACK DETECTION
Hyounkuk Kim, Hyuncheol Park, Information and Communications Univeristy, Republic of Korea; Taejoon Kim, Iksoo Eo, Electronics and Telecommunication Research Institute (ETRI), Republic of Korea

SPCOM-P12.10 ACCURATE BER OF TRANSMITTER ANTENNA SELECTION/RECEIVER-MRC OVER ARBITRARILY CORRELATED NAKAGAMI FADING CHANNELS
Bao-Yun Wang, Nanjing University of Posts and Telecommunications, China

SPCOM-P12.11 ALTERNATING OPTIMIZATION FOR MMSE BROADCAST PRECODING
Raphael Hunger, Wolfgang Utschick, David A. Schmidt, Michael Joham, Munich University of Technology (TUM), Germany

SPCOM-P12.12 BLIND MIMO CHANNEL ESTIMATION BASED ON STRUCTURED TRANSMIT DELAY
Qi Ling, Tongtong Li, Michigan State University, United States

SPTM-P12 **Adaptive Systems and Filtering I** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 6
Chair: Phillip Regalia, Catholic University of America

SPTM-P12.1 **ECHO CANCELLATION - A LIKELIHOOD RATIO TEST FOR DOUBLE-TALK VS. CHANNEL CHANGE**
Neil Bershad, University of California, Irvine, United States; Jean-Yves Tourneret, IRIT / ENSEEIHT / TéSA, France

SPTM-P12.2 **ROBUST RLS WITH ROUND ROBIN REGULARIZATION INCLUDING APPLICATION TO STEREO ACOUSTIC ECHO CANCELLATION**
Jack Stokes, John Platt, Microsoft Research, United States

SPTM-P12.3 **A METHOD FOR UNBIASED IDENTIFICATION OF THE FEEDBACK PATH IN HEARING AIDS**
Hideaki Sakai, Takehiro Fujinaga, Kyoto University, Japan

SPTM-P12.4 **NOISE CANCELLATION USING TWO CLOSELY SPACED MICROPHONES: EXPERIMENTAL STUDY WITH A SPECIFIC MODEL AND TWO ADAPTIVE ALGORITHMS**
Mohamed Djendi, University of Rennes - IRISA / ENSSAT, France; André Gilloire, France Télécom R&D Division, France; Pascal Scalart, University of Rennes - IRISA / ENSSAT, France

SPTM-P12.5 **ROOM IMPULSE RESPONSE ESTIMATION USING SPARSE ONLINE PREDICTION AND ABSOLUTE LOSS**
Yacov Crammer, Daniel D. Lee, University of Pennsylvania, United States

SPTM-P12.6 **COMPUTATIONALLY EFFICIENT NORM-CONSTRAINED ADAPTIVE BLIND DECONVOLUTION USING THIRD-ORDER MOMENTS**
Patrik Pääjärvi, James LeBlanc, Luleå University of Technology, Sweden

(Continued from previous page.)

SPTM-P12.7 **IMPROVED BLIND EQUALIZATION VIA ADAPTIVE COMBINATION OF CONSTANT MODULUS ALGORITHMS**
Jerónimo Arenas-García, Aníbal R. Figueiras-Vidal, Universidad Carlos III de Madrid, Spain

SPTM-P12.8 **STOCHASTIC MODEL FOR THE NLMS ALGORITHM WITH CORRELATED GAUSSIAN DATA**
Elen Lobato, Orlando Tobias, Rui Seara, Federal University of Santa Catarina, Brazil

SPTM-P12.9 **STOCHASTIC MODEL FOR THE GENERALIZED SUBBAND DECOMPOSITION EPSYLON-NLMS ALGORITHM WITH GAUSSIAN DATA**
Javier Kolodziej, Orlando Tobias, Rui Seara, Federal University of Santa Catarina, Brazil

SPTM-P12.10 **STEADY-STATE PERFORMANCE OF CONSTRAINED NORMALIZED ADAPTIVE FILTERS FOR CDMA SYSTEMS**
Renato L. G. Cavalcante, Isao Yamada, Tokyo Institute of Technology, Japan

SPTM-P12.11 **PERFORMANCE ASSESSMENT OF A COMPUTATIONALLY EFFICIENT MMSE RECEIVER FOR ASYNCHRONOUS MC-CDMA SYSTEMS OVER MULTIPATH FADING CHANNELS**
Shijun Yi, C. C. Tsimenidis, Bayan Sharif, Stephane Le Goff, University of Newcastle upon Tyne, United Kingdom

SPTM-P12.12 **LOW COMPLEXITY BLIND CONSTRAINED DATA-REUSING ALGORITHMS BASED ON MINIMUM VARIANCE AND CONSTANT MODULUS CRITERIA**
Tiago Vinhoza, Pontifícia Universidade Católica do Rio de Janeiro, Brazil; Rodrigo de Lamare, University of York, United Kingdom; Raimundo Sampaio-Neto, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

SPTM-P13 **Detection, Estimation, Classification Theory and Applications** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 7
Chair: Rob Nowak, University of Wisconsin-Madison

SPTM-P13.1 **REGULARIZED LOCAL DISCRIMIMANT EMBEDDING**
Yanwei Pang, Nenghai Yu, University of Science and Technology of China, China

SPTM-P13.2 **MULTILABEL CLASSIFICATION RULE WITH PERFORMANCE CONSTRAINTS**
Edith Grall-Maës, Pierre Beauseroy, Abdenour Bounsiar, Université de Technologie de Troyes, France

SPTM-P13.3 **PITCH BASED SOUND CLASSIFICATION**
Andreas Brinch Nielsen, Lars Kai Hansen, Technical University of Denmark, Denmark; Ulrik Kjems, Oticon A/S, Denmark

SPTM-P13.4 **COMPARISON OF TWO UNSUPERVISED METHODS OF CLASSIFICATION FOR SEGMENTING MULTI-SPECTRAL IMAGES**
Danielle Nuzillard, Cosmin Lazar, URCA, France

SPTM-P13.5 **A STATISTICAL TEST FOR IMPROPRIETY OF COMPLEX RANDOM SIGNALS**
Peter Schreier, University of Newcastle, Australia; Louis L. Scharf, Colorado State University, United States; Alfred Hanssen, Universitetet i Tromso, Norway

SPTM-P13.6 **AN INFO-GAP APPROACH TO LINEAR REGRESSION**
Miriam Zacksenhouse, Simona Nemets, Anna Yoffe, Yakov Ben-Haim, Technion - Israel Institute of Technology, Israel; Mikhail Lebedev, Miguel Nicolelis, Duke University, United States

(Continued from previous page.)

SPTM-P13.7 **INCREMENTAL UPDATING OF NEAREST NEIGHBOR-BASED HIGH-DIMENSIONAL ENTROPY ESTIMATION**
Jan Kybic, Czech Technical University Prague, Czech Republic

SPTM-P13.8 **A DIRECT METHOD TO GENERATE APPROXIMATIONS OF THE BARANKIN BOUND**
Angela Quinlan, Trinity College Dublin, Ireland; Eric Chaumette, Thales Naval France, France; Pascal Larzabal, SATIE, France

SPTM-P13.9 **BOOTSTRAP FOR MULTIFRACTAL ANALYSIS**
Herwig Wendt, ENS Lyon, France; Patrice Abry, ENS Lyon, CNRS, France

SPTM-P13.10 **DETECTING ENCRYPTED INTERACTIVE STEPPING-STONE CONNECTIONS**
Ting He, Lang Tong, Cornell University, United States

SPTM-P13.11 **COMPRESSED SENSING VS. ACTIVE LEARNING**
Rui Castro, Rice University / University of Wisconsin, United States; Jarvis Haupt, Robert Nowak, University of Wisconsin, United States

SPTM-P13.12 **A MINIMUM CO-USER INTERFERENCE APPROACH FOR MULTI-USER MIMO DOWNLINK PRECODING**
Nima Khajehnouri, Ali H. Sayed, University of California, Los Angeles, United States

SLP-P20 **Acoustic Modeling and Adaptation** (Poster)
Time: Friday, May 19, 14:00 - 16:00
Place: Poster Area 8
Chair: Mari Ostendorf, University of Washington

SLP-P20.1 **HMM STATE CLUSTERING BASED ON EFFICIENT CROSS-VALIDATION**
Takahiro Shinozaki, University of Washington, United States

SLP-P20.2 **STATE DIVERGENCE-BASED DETERMINATION OF THE NUMBER OF GAUSSIAN COMPONENTS OF EACH STATE IN HMM**
Xiao-Bing Li, Ren-Hua Wang, University of Science and Technology of China, China

SLP-P20.3 **GRADIENT BOOSTING LEARNING OF HIDDEN MARKOV MODELS**
Rusheng Hu, Xiao L. Li, Yunxin Zhao, University of Missouri, United States

SLP-P20.4 **TRAJECTORY CLUSTERING OF SYLLABLE-LENGTH ACOUSTIC MODELS FOR CONTINUOUS SPEECH RECOGNITION**
Yan Han, Annika Hämäläinen, Louis Boves, Radboud University, Netherlands

SLP-P20.5 **ESTIMATING TRAJECTORY HMM PARAMETERS USING MONTE CARLO EM WITH GIBBS SAMPLER**
Heiga Zen, Yoshihiko Nankaku, Keiichi Tokuda, Tadashi Kitamura, Nagoya Institute of Technology, Japan

SLP-P20.6 **INCORPORATION OF PENTAPHONE-CONTEXT DEPENDENCY BASED ON HYBRID HMM/BN ACOUSTIC MODELING FRAMEWORK**
Sakriani Sakti, Konstantin Markov, Satoshi Nakamura, ATR Spoken Language Communication Research Laboratories, Japan

(Continued from previous page.)

SLP-P20.7 **MULTI-PARAMETER FREQUENCY WARPING FOR VTLN BY GRADIENT SEARCH**
Sankaran Panchapagesan, Abeer Alwan, University of California, Los Angeles, United States

SLP-P20.8 **INTEGRATION OF HETEROSCEDASTIC LINEAR DISCRIMINANT ANALYSIS (HLDA) INTO ADAPTIVE TRAINING**
Georg Stemmer, Siemens AG, Gabon; Fabio Brugnara, Trentino Cultural Institute, Italy

SLP-P20.9 **ADAPTATION OF HYBRID ANN/HMM MODELS USING LINEAR HIDDEN TRANSFORMATIONS AND CONSERVATIVE TRAINING**
Roberto Gemello, Franco Mana, Loquendo, Italy; Stefano Scanzio, Pietro Laface, Politecnico di Torino, Italy; Renato De Mori, University of Avignon, France

SLP-P20.10 **TOWARDS EXPLOITING THE POTENTIAL OF ENVIRONMENT ADAPTATION**
Christian Geißler, Josef G. Bauer, Siemens AG, Corporate Technology, Germany

SLP-P20.11 **DYNAMIC NOISE ADAPTATION**
Steven Rennie, Trausti Kristjansson, Peder Olsen, Ramesh Gopinath, IBM, Canada

SLP-P20.12 **VTLN WARPING FACTOR ESTIMATION USING ACCUMULATION OF SUFFICIENT STATISTICS**
Jonas Lööf, Hermann Ney, University of Technology Aachen (RWTH), Germany; Srinivasan Umesh, Indian Institute of Technology Kanpur, India

IMDSP-L10 **Watermarking** (Lecture)
Time: Friday, May 19, 16:30 - 18:30
Place: Ariane 1 & 2
Chair: Gaurav Sharma, University of Rochester

16:30
IMDSP-L10.1 **A NOVEL WATERMARKING SCHEME BASED ON BILINEAR INTERPOLATION FOR DIGITAL IMAGES**
Vincent Martin, Marie Chabert, Bernard Lacaze, ENSEEIHT / IRIT, France

16:50
IMDSP-L10.2 **PROTECTION OF 3D OBJECT THROUGH SILHOUETTE WATERMARKING**
Jihane Bennour, Jean-Luc Dugelay, Institut Eurecom, France

17:10
IMDSP-L10.3 **ROBUST IMAGE HASHING VIA NON-NEGATIVE MATRIX FACTORIZATIONS**
Vishal Monga, Xerox Innovation Group, United States; Kivanc Mihcak, Microsoft Research, United States

17:30
IMDSP-L10.4 **SET THEORETIC QUANTIZATION INDEX MODULATION WATERMARKING**
Oktay Altun, Gaurav Sharma, Mark Bocko, University of Rochester, United States

17:50
IMDSP-L10.5 **TOWARD A BETTER UNDERSTANDING OF DIRTY PAPER TRELLIS CODES**
Chin Wang, Gwenael Doerr, Ingemar Cox, University College London, United Kingdom

18:10
IMDSP-L10.6 **PERFORMANCE ANALYSIS OF SCALAR DC-QIM FOR WATERMARK DETECTION**
Jean Philippe Boyer, CTA / GIP, France; Pierre Duhamel, LSS / CNRS, France; Jacques Blanc-Talon, CTA / GIP, France

SPCOM-L8 **MIMO STC and Decoding** (Lecture)
Time: Friday, May 19, 16:30 - 18:30
Place: Caravelle 2
Chair: Dadvid Gesbert, Eurecom Institute, Sophia Antipolis

16:30
SPCOM-L8.1 **DESIGN OF ORTHOGONAL SPACE-TIME BLOCK CODES FOR MIMO-OFDM SYSTEMS WITH FULL DIVERSITY AND FAST ML DECODING**
Wei Zhang, Hong Kong University of Science and Technology, Hong Kong SAR of China; Xiang-Gen Xia, University of Delaware, United States; P. C. Ching, Chinese University of Hong Kong, Hong Kong SAR of China

16:50
SPCOM-L8.2 **CONSTRUCTION OF M-QAM STCC BASED ON QPSK STCC**
Christophe Rouchy, Hamid Sadjadpour, University of California, Santa Cruz, United States

17:10
SPCOM-L8.3 **OUTAGE PROBABILITY OF OSTBC: OPTIMAL TRANSMIT STRATEGY AND SUBOPTIMALITY OF ODD NUMBER OF TRANSMIT ANTENNAS**
Eduard Jorswieck, Aydin Sezgin, Holger Boche, Fraunhofer Institute for Telecommunications, Germany

17:30
SPCOM-L8.4 **ITERATIVE MMSE DECODER FOR TRACE-ORTHOGONAL SPACE-TIME CODING**
Antonio Fasano, Sergio Barbarossa, University of Roma, Italy

17:50
SPCOM-L8.5 **CHANNEL DEPENDENT TERMINATION OF THE SEMIDEFINITE RELAXATION DETECTOR**
Joakim Jalden, Björn Ottersten, Royal Institute of Technology (KTH), Sweden

18:10
SPCOM-L8.6 **MAXIMUM-LIKELIHOOD NONCOHERENT LATTICE DECODING OF QAM**
Daniel Ryan, University of Sydney, Australia; Iain Collings, CSIRO ICT Centre, Australia; Vaughan Clarkson, University of Queensland, Australia

SPTM-L9 **Affine Projection Algorithms** (Lecture)
Time: Friday, May 19, 16:30 - 18:30
Place: Cassiopée
Chair: Alberto Carini, University of Urbino

16:30
SPTM-L9.1 **SUBBAND AFFINE PROJECTION ALGORITHM USING VARIABLE STEP SIZE**
Hun Choi, Sang-Wook Sohn, Al-Chan Youn, Jae-Won Suh, Hyeon-Deok Bae, Chungbuk National University, Republic of Korea

16:50
SPTM-L9.2 **ANALYSIS OF A MULTICHANNEL FILTERED-X SET-MEMBERSHIP AFFINE PROJECTION ALGORITHM**
Alberto Carini, University of Urbino, Italy; Giovanni L. Sicuranza, University of Trieste, Italy

17:10
SPTM-L9.3 **OPTIMUM VARIABLE EXPLICIT REGULARIZED AFFINE PROJECTION ALGORITHM**
Hernan Rey, Leonardo Rey Vega, Sara Tressens, University of Buenos Aires, Argentina; Jacob Benesty, INRS-EMT / University of Quebec, Canada

17:30
SPTM-L9.4 **AFFINE PROJECTION ALGORITHMS WITH ADAPTIVE REGULARIZATION MATRIX**
Young-Seok Choi, Pohang University of Science and Technology, Republic of Korea; Hyun-Chool Shin, Johns Hopkins School of Medicine, United States; Woo-Jin Song, Pohang University of Science and Technology, Republic of Korea

17:50
SPTM-L9.5 **AFFINE PROJECTION ALGORITHM WITH SELECTIVE REGRESSORS**
Kyu-Young Hwang, Woo-Jin Song, POSTECH, Republic of Korea

18:10
SPTM-L9.6 **PIECEWISE-LINEAR EXPANSIONS FOR NONLINEAR ACTIVE NOISE CONTROL**
Giovanni L. Sicuranza, University of Trieste, Italy; Alberto Carini, University of Urbino, Italy

SLP-L13 **Missing Data Methods in Robust Speech Recognition**
(Lecture)
Time: Friday, May 19, 16:30 - 18:30
Place: Auditorium St Exupery
Chair: Alex Acero, Microsoft

16:30
SLP-L13.1 **RECOGNITION OF REVERBERANT SPEECH USING FULL CEPSTRAL FEATURES AND SPECTRAL MISSING DATA**
Kalle J. Palomäki, Helsinki University of Technology, Finland; Guy J. Brown, Jon P. Barker, University of Sheffield, United Kingdom

16:50
SLP-L13.2 **HANDLING TIME-DERIVATIVE FEATURES IN A MISSING DATA FRAMEWORK FOR ROBUST AUTOMATIC SPEECH RECOGNITION**
Hugo Van hamme, Katholieke Universiteit Leuven, Belgium

17:10
SLP-L13.3 **A SUPERVISED LEARNING APPROACH TO UNCERTAINTY DECODING FOR ROBUST SPEECH RECOGNITION**
Soundararajan Srinivasan, DeLiang Wang, The Ohio State University, United States

17:30
SLP-L13.4 **MASK ESTIMATION FOR MISSING DATA RECOGNITION USING BACKGROUND NOISE SNIFFING**
Sébastien Demange, Christophe Cerisara, Jean-Paul Haton, LORIA UMR 7503, France

17:50
SLP-L13.5 **BAND-INDEPENDENT MASK ESTIMATION FOR MISSING-FEATURE RECONSTRUCTION IN THE PRESENCE OF UNKNOWN BACKGROUND NOISE**
Wooil Kim, University of Texas, Dallas, United States; Richard Stern, Carnegie Mellon University, United States

18:10
SLP-L13.6 **SPEECH RECOGNITION IN MULTISOURCE REVERBERANT ENVIRONMENTS WITH BINAURAL INPUTS**
Nicoleta Roman, The Ohio State University at Lima, United States; Soundararajan Srinivasan, DeLiang Wang, The Ohio State University, United States

SS-12 **Hyperspectral Signal Processing** (Special Session)
Time: Friday, May 19, 16:30 - 18:30
Place: Spot
Co-Chairs: Pramod Varshney, Syracuse University and Raghuveer Rao, Rochester Institute of Technology

16:30
SS-12.1 **SIGNAL PROCESSING FOR HYPERSPECTRAL DATA**
Pramod Varshney, Syracuse University, United States; Manoj Arora, Indian Institute of Technology Roorkee, India; Raghuveer Rao, Rochester Institute of Technology, United States

16:50
SS-12.2 **REMOTE SENSING AND IMAGE FUSION METHODS: A COMPARISON**
Thierry Ranchin, Ecole des Mines de Paris, France

17:10
SS-12.3 **IMAGE REGISTRATION AND FUSION STUDIES FOR THE INTEGRATION OF MULTIPLE REMOTE SENSING DATA**
Jacqueline Le Moigne, NASA Goddard Space Flight Center, United States; Arlene Cole-Rhodes, Morgan State University, United States; Roger Eastman, Loyola College, United States; Peyush Jain, Aimee Joshua, Nargess Memarsadeghi, NASA Goddard Space Flight Center, United States; David Mount, Nathan Netanyahu, University of Maryland, United States; Jeffrey Morisette, Ezinne Uko-Ozoro, NASA Goddard Space Flight Center, United States

17:30
SS-12.4 **PHYSICS BASED TARGET DETECTION USING A HYBRID ALGORITHM WITH AN INFEASIBILITY METRIC**
Emmett Ientilucci, John Schott, Rochester Institute of Technology, United States

17:50
SS-12.5 **PARAMETRIC ADAPTIVE SIGNAL DETECTION FOR HYPERSPECTRAL IMAGING**
Hongbin Li, Stevens Institute of Technology, United States; James H. Michels, JHM Technologies, United States

18:10
SS-12.6 **AN ADAPTIVE THRESHOLD METHOD FOR HYPERSPECTRAL TARGET DETECTION**
Joshua Broadwater, Rama Chellappa, University of Maryland, United States

SS-13 **Speech Translation for Cross-Lingual Communication** (Special Session)
Time: Friday, May 19, 16:30 - 18:30
Place: Guillaumet 1 & 2
Co-Chairs: Yuqing Gao, IBM and Kristin Precoda, Guiseppe Riccardi SRI, University of Trento

16:30
SS-13.1 **IBM MASTOR: MULTILINGUAL AUTOMATIC SPEECH-TO-SPEECH TRANSLATOR**
Yuqing Gao, Bowen Zhou, Liang Gu, Ruhi Sarikaya, Hong-Kwang Kuo, A.-V. I. Rosti, Mohamed A. Afify, Weizhong Zhu, IBM T. J. Watson Research Center, United States

16:50
SS-13.2 **SPEECH RECOGNITION ENGINEERING ISSUES IN SPEECH TO SPEECH TRANSLATION SYSTEM DESIGN FOR LOW RESOURCE LANGUAGES AND DOMAINS**
Shrikanth S. Narayanan, Panayiotis G. Georgiou, Abhinav Sethy, Dagen Wang, Murtaza Bulut, Shiva Sundaram, Emil Ettalaie, Sankaranarayanan Ananthakrishnan, University of Southern California, United States; Horacio Franco, Kristin Precoda, Dimitra Vergyri, Jing Zheng, Wen Wang, Ramana Rao Gadde, Martin Graciarena, Victor Abrash, Michael Frandsen, Colleen Richey, SRI International, United States

17:10
SS-13.3 **CHALLENGES WITH RAPID ADAPTATION OF SPEECH TRANSLATION SYSTEMS TO NEW LANGUAGE PAIRS**
Tanja Schultz, Alan W. Black, Carnegie Mellon University, United States

17:30
SS-13.4 **INTEGRATING SPEECH RECOGNITION AND MACHINE TRANSLATION: WHERE DO WE STAND?**
Evgeny Matusov, Stephan Kanthak, Hermann Ney, University of Technology Aachen (RWTH), Germany

17:50
SS-13.5 **ASR AND TRANSLATION FOR UNDER-RESOURCED LANGUAGES**
Laurent Besacier, Viet-Bac Le, Christian Boitet, Vincent Berment, CLIPS / IMAG, France

18:10
SS-13.6 **RAPID DEVELOPMENT OF A SPEECH TRANSLATION SYSTEM FOR KOREAN**
Farzad Ehsani, Jim Kimzey, Demitrios Master, Sehda, Inc., United States; Hunil Park, Independent Consultant, United States; Karen Sudre, Sehda, Inc., United States

DISPS-P3 **Design and Mapping Techniques for DSP Systems**
(Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 1
Chair: Wonyong Sung, Seoul National University

DISPS-P3.1 **AN FPGA BASED COPROCESSOR FOR CANCER CLASSIFICATION USING NEAREST NEIGHBOUR CLASSIFIER**
Muhammad Atif Tahir, Ahmed Bouridane, Queen's University, Belfast, United Kingdom

DISPS-P3.2 **STUDY OF EARLY STOPPING CRITERIA FOR TURBO DECODING AND THEIR APPLICATIONS IN WCDMA SYSTEMS**
Zhongfeng Wang, Oregon State University, United States; Yuping Zhang, Keshab K. Parhi, University of Minnesota, United States

DISPS-P3.3 **CUSTOM-MADE DESIGN OF A DIGITAL PID CONTROL SYSTEM**
Francisco Fons, Mariano Fons, Enrique Cantó, Rovira i Virgili University, Spain

DISPS-P3.4 **ARCHITECTURE AND PERFORMANCE ANALYSIS OF LOSSLESS FFT IN OFDM SYSTEMS**
Wei-Hsin Chang, Truong Q. Nguyen, University of California, San Diego, United States

DISPS-P3.5 **DESIGN OF APPLICATION SPECIFIC PROCESSORS FOR THE CACHED FFT ALGORITHM**
Oguzhan Atak, Abdullah Atalar, Erdal Arikan, Bilkent University, Turkey; Harold Ishebabi, David Kammler, Gerd Ascheid, Heinrich Meyr, University of Technology Aachen (RWTH), Germany; Mario Nicola, Guido Masera, Politecnico di Torino, Italy

DISPS-P3.6 **IMAGE RESOLUTION SCALING WITH ARBITRARY UNEQUAL RATIOS IN EACH DIRECTION IN THE DCT DOMAIN**
Kebin An, Jun Sun, Lei Zhou, Shanghai Jiao Tong University, China

(Continued from previous page.)

DISPS-P3.7 **EFFICIENT CORDIC DESIGNS FOR MULTI-MODE OFDM FFT**
Cheng-Ying Yu, Sau-Gee Chen, Jen-Chuan Chih, National Chiao Tung University, Taiwan

DISPS-P3.8 **SINGLE CYCLE NONLINEAR VLSI CELL FOR THE ICA ALGORITHM**
Vijay Jain, University of South Florida, United States

DISPS-P3.9 **DESIGN AND IMPLEMENTATION OF SPEECH RECOGNITION ON A SOFTCORE BASED FPGA**
Hyunjin Lim, Kisun You, Wonyong Sung, Seoul National University, Republic of Korea

DISPS-P3.10 **SPIRAL: JOINT RUNTIME AND ENERGY OPTIMIZATION OF LINEAR TRANSFORMS**
Marek Telgarsky, James C. Hoe, José M. F. Moura, Carnegie Mellon University, United States

DISPS-P3.11 **MAPPING MULTIMEDIA APPLICATIONS ONTO CONFIGURABLE HARDWARE WITH PARAMETERIZED CYCLO-STATIC DATAFLOW GRAPHS**
Fiorella Haim, Mainak Sen, Dong-Ik Ko, Shuvra Bhattacharyya, University of Maryland, United States; Wayne Wolf, Princeton University, United States

IMDSP-P17 **Image Quality Assessment and Enhancement** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 2
Chair: Thrasos Pappas, Northwestern University

IMDSP-P17.1 **EDGE-BASED STRUCTURAL SIMILARITY FOR IMAGE QUALITY ASSESSMENT**
Guan-Hao Chen, Chun-Ling Yang, South China University of Technology, China; Lai-Man Po, City University of Hong Kong, China; Sheng-Li Xie, South China University of Technology, China

IMDSP-P17.2 **ON THE USE OF PHASE CONGRUENCY TO EVALUATE IMAGE SIMILARITY**
Zheng Liu, Robert Laganiere, University of Ottawa, Canada

IMDSP-P17.3 **'MEAN TIME BETWEEN FAILURES': A SUBJECTIVELY MEANINGFUL VIDEO QUALITY METRIC**
Nitin Suresh, Nikil Jayant, Georgia Institute of Technology, United States

IMDSP-P17.4 **SPATIAL RESOLUTION AND QUANTIZATION NOISE TRADEOFFS FOR SCALABLE IMAGE COMPRESSION**
Soo Hyun Bae, Georgia Institute of Technology, United States; Thrasyvoulos N. Pappas, Northwestern University, United States; Biing-Hwang Juang, Georgia Institute of Technology, United States

IMDSP-P17.5 **NONLINEAR IMAGE CONTRAST ENHANCEMENT BASED ON MUNSELL'S SCALE**
Sean Matz, Boeing Company, United States; Rui de Figueiredo, University of California, Irvine, United States

IMDSP-P17.6 **AUTOMATIC DIGITAL IMAGE ENHANCEMENT FOR DARK PICTURES**
Jie Zhao, Shawmin Lei, Sharp Labs of America, United States

(Continued from previous page.)

IMDSP-P17.7 EMPIRICAL CONDITIONAL MEAN: NONPARAMETRIC ESTIMATOR FOR COMPARAMETRIC EXPOSURE COMPENSATION
Dong Sik Kim, Su Yeon Lee, Hankuk University of Foreign Studies, Republic of Korea; Kiryung Lee, LG Electronnics Institue of Technology, Republic of Korea

IMDSP-P17.8 QUALITATIVE ANALYSIS OF VIDEO PACKET LOSS CONCEALMENT WITH GAUSSIAN MIXTURES
Daniel Persson, Thomas Eriksson, Per Hedelin, Chalmers University of Technology, Sweden

IMDSP-P17.9 A GENERALIZED AND AUTOMATIC IMAGE CONTRAST ENHANCEMENT USING GRAY LEVEL GROUPING
Zhiyu Chen, Besma Abidi, David Page, Mongi Abidi, University of Tennessee, United States

MLSP-P6 **Biomedical and Other Applications** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 3
Chair: Jean Rouat, Université de Sherbrooke

MLSP-P6.1 **EXPLORING THREE-BASE PERIODICITY FOR DNA COMPRESSION AND MODELING**
Paulo J. S. G. Ferreira, António J. R. Neves, Vera Afreixo, Armando J. Pinho, University of Aveiro, Portugal

MLSP-P6.2 **SPIKE SORTING USING NON PARAMETRIC CLUSTERING VIA CAUCHY SCHWARTZ PDF DIVERGENCE**
Sudhir Rao, Justin Sanchez, Seungju Han, Jose Principe, University of Florida, United States

MLSP-P6.3 **A MIXTURE MODEL FOR SPIKE TRAIN ENSEMBLE ANALYSIS USING SPECTRAL CLUSTERING**
Rong Jin, Michigan State University, United States; Yashir Suhail, The Johns Hopkins University, United States; Karim Oweiss, Michigan State University, United States

MLSP-P6.4 **AUGMENTING INFORMATION CHANNELS IN HEARING AIDS AND COCHLEAR IMPLANTS UNDER ADVERSE CONDITIONS**
Yasir Suhail, Johns Hopkins University, United States; Karim Oweiss, Michigan State University, United States

MLSP-P6.5 **CONSTRAINED NON-NEGATIVE MATRIX FACTORIZATION METHOD FOR EEG ANALYSIS IN EARLY DETECTION OF ALZHEIMER DISEASE**
Zhe Chen, Andrzej Cichocki, Tomasz Rutkowski, RIKEN Brain Science Institute, Japan

MLSP-P6.6 **DETECTION OF HAND EXTENSION MOVEMENTS IN THE CONTEXT OF A 3-STATE ASYNCHRONOUS BRAIN INTERFACE**
Ali Bashashati, Rabab K. Ward, Gary E. Birch, University of British Columbia, Canada

(Continued from previous page.)

MLSP-P6.7 **MAJORITY VOTE AND DECISION TEMPLATE BASED ENSEMBLE CLASSIFIERS TRAINED ON EVENT RELATED POTENTIALS FOR EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE**
Nicholas Stepenosky, Rowan Unviersity, United States; Deborah Green, John Kounios, Drexel University, United States; Christopher Clark, University of Pennsylvania, United States; Robi Polikar, Rowan Unviersity, United States

MLSP-P6.8 **USING A MULTIPLE CLASSIFIER SYSTEM FOR IMPROVING THE PERFORMANCE OF ASYNCHRONOUS BRAIN INTERFACE SYSTEMS**
Mehrdad Fatourechi, Gary E. Birch, Rabab K. Ward, University of British Columbia, Canada

MLSP-P6.9 **MULTIPLE VIDEO OBJECT EXTRACTION USING MULTI-CATEGORY PSI-LEARNING**
Yi Liu, Yuan F. Zheng, The Ohio State University, United States; Xiaotong Shen, University of Minnesota, United States

MLSP-P6.10 **AUTOMATIC FACE RECOGNITION USING STEREO IMAGES**
Anjali Samani, Joab Winkler, Mahesan Niranjan, University of Sheffield, United Kingdom

MLSP-P6.11 **ON DIMENSIONALITY REDUCTION FOR CLASSIFICATION AND ITS APPLICATION**
Raviv Raich, University of Michigan, United States; Jose Costa, California Institute of Technology, United States; Alfred O. Hero, III, University of Michigan, United States

MLSP-P6.12 **CEPSTRAL ANALYSIS OF DRIVING BEHAVIORAL SIGNALS FOR DRIVER IDENTIFICATION**
Chiyomi Miyajima, Yoshihiro Nishiwaki, Koji Ozawa, Toshihiro Wakita, Katsunobu Itou, Kazuya Takeda, Nagoya University, Japan

SAM-P6 **Applications of Multichannel Signal Processing** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 4
Chair: Alle-Jan van der Veen, Delft University of Technology

SAM-P6.1 **ACOUSTIC TOMOGRAPHY METHOD FOR MEASURING TEMPERATURE AND WIND VELOCITY**
Ivana Jovanovic, Luciano Sbaiz, Martin Vetterli, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SAM-P6.2 **OPTIMAL EXPERIMENTS WITH SEISMIC SENSORS**
Mubashir Alam, Volkan Cevher, James H. McClellan, Georgia Institute of Technology, United States

SAM-P6.3 **MULTICHANNEL SPEECH ENHANCEMENT BASED ON SPEECH SPECTRAL MAGNITUDE ESTIMATION USING GENERALIZED GAMMA PRIOR DISTRIBUTION**
Tran Huy Dat, Kazuya Takeda, Nagoya University, Japan; Fumitada Itakura, Meijo University, Japan

SAM-P6.4 **A HARDWARE BASED IMPLEMENTATION OF A TACTILE SENSORY SYSTEM FOR NEUROMORPHIC SIGNAL PROCESSING APPLICATIONS**
Martin Pearson, Mokhtar Nibouche, Ian Gilhespy, University of the West of England, United Kingdom; Kevin Gurney, University of Sheffield, United Kingdom; Chris Melhuish, University of the West of England, United Kingdom; Ben Mitchinson, University of Sheffield, United Kingdom; Anthony Pipe, University of the West of England, United Kingdom

SAM-P6.5 **A QUARTIC ALGORITHM FOR SQUINT SAR IMAGING**
Kaizhi Wang, Xingzhao Liu, Shanghai Jiao Tong University, China

SAM-P6.6 **ECHO-ROBUST AND REAL-TIME 3D TRACKING OF MARINE-MAMMALS USING THEIR TRANSIENT CALLS RECORDED BY HYDROPHONES ARRAY**
Pascale Giraudet, Université du Sud - Toulon / LSIS-CNRS, France; Hervé Glotin, LSIS UMR CNRS 6168, France

(Continued from previous page.)

SAM-P6.7 **SPATIAL SEPARATION OF SPEECH SIGNALS USING CONTINUOUSLY-VARIABLE MASKS ESTIMATED FROM COMPARISONS OF ZERO CROSSINGS**
Hyung-Min Park, Richard Stern, Carnegie Mellon University, United States

SAM-P6.8 **A NON-SEARCH OPTIMAL CONTROL SOLUTION FOR A TEAM OF MUAVS IN A RECONNAISSANCE MISSION**
David W. Casbeer, Pengcheng Zhan, A. Lee Swindlehurst, Brigham Young University, United States

SAM-P6.9 **DWFS: DISTRIBUTED WAVE FIELD SYNTHESIS**
Georgios Lilis, Sergio Servetto, Cornell University, United States

SAM-P6.10 **INVESTIGATION OF COMPUTATIONAL COMPOUND-EYE IMAGING SYSTEM WITH SUPER-RESOLUTION RECONSTRUCTION**
W. S. Chan, Edmund Y. Lam, University of Hong Kong, Hong Kong SAR of China; Michael K. Ng, Hong Kong Baptist University, Hong Kong SAR of China

SAM-P6.11 **SEISMIC VELOCITY/POLARIZATION ESTIMATION AND POLARIZED WAVEFIELD SEPARATION**
Daniela Donno, Politecnico di Milano, Italy; Arye Nehorai, University of Illinois at Chicago, United States; Umberto Spagnolini, Politecnico di Milano, Italy

SAM-P6.12 **SOURCE DETECTION AND SEPARATION IN POWER PLANT PROCESS MONITORING: APPLICATION OF THE BOOTSTRAP**
Rostom Aouada, Supélec, France; Saïd Aouada, Darmstadt University of Technology, Germany; Guy d'URSO, Electricité de France, France; Abdelhak Zoubir, Darmstadt University of Technology, Germany

SPCOM-P13 **Broadcast Channels / Multi-User Detection** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 5
Chair: Ananthram Swami, Army Research Lab

SPCOM-P13.1 AN EFFICIENT HEURISTIC APPROACH TO INFEASIBLE DOWNLINK POWER CONTROL PROBLEM
Noriyuki Takahashi, Masahiro Yukawa, Isao Yamada, Tokyo Institute of Technology, Japan

SPCOM-P13.2 ITERATIVE POWER CONTROL FOR MULTIMEDIA WIRELESS COMMUNICATIONS
Onur Sahin, Elza Erkip, David Goodman, Polytechnic University, United States

SPCOM-P13.3 SUBF VS. MUBF IN A GAUSSIAN MIMO BROADCAST CHANNEL WITH PARTIAL CHANNEL STATE INFORMATION
Youngjae Kim, John Cioffi, Stanford University, United States; Ravi Narasimhan, University of California, Santa Cruz, United States

SPCOM-P13.4 ASYMPTOTIC ANALYSIS OF THE GAUSSIAN BROADCAST CHANNEL WITH PERTURBATION PREPROCESSING
Mihailo Stojnic, Haris Vikalo, Babak Hassibi, California Institute of Technology, United States

SPCOM-P13.5 STOCHASTIC LEARNING ALGORITHMS FOR ADAPTIVE MODULATION
Anup Misra, Vikram Krishnamurthy, Robert Schober, University of British Columbia, Canada

SPCOM-P13.6 MAXIMAL CONDITIONAL EFFICIENCY SUCCESSIVE INTERFERENCE CANCELLATION
Ananya Sen Gupta, Andrew Singer, University of Illinois at Urbana-Champaign, United States

(Continued from previous page.)

SPCOM-P13.7 INTEGRATION OF THE KRYLOV SUBSPACE METHOD IN AN ITERATIVE MULTI-USER DETECTOR FOR TIME-VARIANT CHANNELS
Charlotte Dumard, Thomas Zemen, ftw. Forschungszentrum Telekommunikation Wien, Austria

SPCOM-P13.8 PARTICLE FILTERING FOR ITERATIVE DATA AND PHASE ESTIMATION
Didier Le Ruyet, CNAM, France; Tanya Bertozzi, DIGINEXT, France; Nicolas Paul, CNAM, France

SPCOM-P13.9 AUDIO WATERMARKING BASED ON SINUSOIDAL AMPLITUDE MODULATION
Akira Nishimura, Tokyo University of Information Sciences, Japan

SPCOM-P13.10 CHARACTERIZATION OF TWO-DIMENSIONAL DIGITAL STORAGE SYSTEMS
Steven Van Beneden, Jamal Riani, Jan Bergmans, University of Technology Eindhoven, Netherlands

SPTM-P14 **Sampling, Extrapolation and Interpolation II** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 6
Chair: Dan Fuhrmann, Washington University

SPTM-P14.1 **INTERPOLATION OF SIGNALS WITH MISSING DATA USING PCA**
Paulo Oliveira, IST / ISR, Portugal

SPTM-P14.2 **APPROXIMATING REPRESENTATION COEFFICIENTS FROM NON IDEAL SAMPLES**
Tsvi Dvorkind, Hagai Kirshner, Yonina Eldar, Moshe Porat, Technion - Israel Institute of Technology, Israel

SPTM-P14.3 **A NEW ONE-STEP BAND-LIMITED EXTRAPOLATION PROCEDURE USING EMPIRICAL ORTHOGONAL FUNCTIONS**
Jianfeng Weng, Zhejiang University of Science and Technology, China

SPTM-P14.4 **SPATIALLY INTERPOLATED BEAMFORMING USING DISCRETE PROLATE SPHEROIDAL SEQUENCES**
Matt Ruan, Australian National University, Australia; Leif W. Hanlen, Mark C. Reed, National ICT Australia, Australia

SPTM-P14.5 **SPEECH BANDWIDTH EXTENSION: EXTRAPOLATIONS OF SPECTRAL ENVELOP AND HARMONICITY QUALITY OF EXCITATION**
Saeed Vaseghi, Esfandiar Zavarehei, Qin Yan, Brunel University, United Kingdom

SPTM-P14.6 **COMPENSATION OF COEFFICIENT ERASURES IN FRAME REPRESENTATIONS**
Petros Boufounos, Alan V. Oppenheim, Massachusetts Institute of Technology, United States

(Continued from previous page.)

SPTM-P14.7 **HÖLDERIAN REGULARITY-BASED IMAGE INTERPOLATION**
Jacques Levy-Vehel, Pierrick Legrand, INRIA, France

SPTM-P14.8 **IMPROVING THE STABILITY OF THE DFT ERROR RECOVERY CODES BY USING THE VANDERMONDE FAST DECODING ALGORITHM**
Abdolali Momenai, Siamak Talebi, Shahid Bahonar University of Kerman, Iran

SPTM-P14.9 **OPTIMAL INTERPOLATION OF FRACTIONAL BROWNIAN MOTION GIVEN ITS NOISY SAMPLES**
Thierry Blu, Michael Unser, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland

SPTM-P14.10 **INTERPOLATED ALLPASS FRACTIONAL-DELAY FILTERS USING ROOT DISPLACEMENT**
Huseyin Hacihabiboglu, Banu Gunel, Ahmet Kondoz, University of Surrey, United Kingdom

SPTM-P14.11 **ROW-ACTION METHODS FOR COMPRESSED SENSING**
Suvrit Sra, University of Texas, Austin, United States; Joel Tropp, University of Michigan, Ann Arbor, United States

SPTM-P14.12 **RANDOM FILTERS FOR COMPRESSIVE SAMPLING AND RECONSTRUCTION**
Joel Tropp, University of Michigan, Ann Arbor, United States; Michael Wakin, Marco Duarte, Dror Baron, Richard Baraniuk, Rice University, United States

SLP-P21 **Speech Detection, Enhancement and Analysis** (Poster)
Time: Friday, May 19, 16:30 - 18:30
Place: Poster Area 7
Chair: Kuldip K. Paliwal, Griffith University

SLP-P21.1 **BLIND IDENTIFICATION OF NON-GAUSSIAN AUTOREGRESSIVE MODELS FOR EFFICIENT ANALYSIS OF SPEECH SIGNALS**
Chunjian Li, Søren Vang Andersen, Aalborg University, Denmark

SLP-P21.2 **NOISY SPEECH SEGMENTATION USING NON-LINEAR OBSERVATION SWITCHING STATE SPACE MODEL AND UNSCENTED KALMAN FILTERING**
Pamornpol Jinachitra, Stanford University, United States

SLP-P21.3 **EFFECTIVE SPEECH/PAUSE DISCRIMINATION COMBINING NOISE SUPPRESSION AND FUZZY LOGIC RULES**
Rafael Culebras, Javier Ramírez, Juan M. Górriz, University of Granada, Spain

SLP-P21.4 **FLEXIBLE SCORE FUNCTIONS FOR BLIND SEPARATION OF SPEECH SIGNALS BASED ON GENERALIZED GAMMA PROBABILITY DENSITY FUNCTIONS**
Kostas Kokkinakis, Asoke K. Nandi, University of Liverpool, United Kingdom

SLP-P21.5 **DYNAMIC PROGRAMMING BASED OPTIMUM NON-UNIFORM SAMPLES FOR SPEECH RECONSTRUCTION AND CODING**
Prasanta Ghosh, T. V. Sreenivas, Indian Institute of Science, India

SLP-P21.6 **ASSESSMENT OF OBJECTIVE QUALITY MEASURES FOR SPEECH INTELLIGIBILITY ESTIMATION**
Wei Ming Liu, University of Wales Swansea, United Kingdom; Keith A Jellyman, Swansea University, United Kingdom; John S. D. Mason, Nicholas W. D. Evans, University of Wales Swansea, United Kingdom

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SLP-P21.7 **TOWARDS AN OBJECTIVE MODEL OF THE CONVERSATIONAL SPEECH QUALITY**
Marie Guéguin, Régine Le Bouquin-Jeannès, Gérard Faucon, INSERM, U642, Laboratoire Traitement du Signal et de l'Image, Université de Rennes1, LTSI, Campus de Beaulieu, Rennes 35042 Cedex, France, France; Vincent Barriac, France Télécom R&D Division, France

SLP-P21.8 **SEPARATION OF SNR VIA DIMENSION EXPANSION IN A MODEL OF THE CENTRAL AUDITORY SYSTEM**
Woojay Jeon, Biing-Hwang Juang, Georgia Institute of Technology, United States

SLP-P21.9 **WORD INDEPENDENT MODEL FOR SYLLABLE STRESS EVALUATION**
Ashish Verma, IBM India Research Lab, India; Kunal Lal, Indian Institute of Technology New Delhi, India; Yuen Yee Lo, Jayanta Basak, IBM India Research Lab, India

SLP-P21.10 **DETECTING HIGH LEVEL DIALOG STRUCTURE WITHOUT LEXICAL INFORMATION**
Matthew Aylett, University of California, Berkeley / University of Edinburgh, United Kingdom

SLP-P21.11 **STUDY OF NON-LINEAR FREQUENCY WARPING FUNCTIONS FOR SPEAKER NORMALIZATION**
Bharath Kumar S. V., University of California, San Diego, United States; Umesh S., Indian Institute of Technology Kanpur, India; Rohit Sinha, University of Cambridge, United Kingdom

ITT-P3 **Multimedia, Automotive, Printing and Networking Applications** (Poster)

Time: Friday, May 19, 16:30 - 18:30

Place: Poster Area 8

Co-Chairs: Eli Saber, Rochester Institute of Technology and Ryan Heidari, Qualcomm

ITT-P3.1 **DYNAMIC OPTIMIZATION ALGORITHM FOR GENERATING INVERSE PRINTER MAP WITH REDUCED MEASUREMENTS**
Sohail Dianat, Rochester institute of Technology, United States; Lalit K Mestha, Xerox Corporation, United States; Athimootitil Mathew, Rochester Institute of Technology, United States

ITT-P3.2 **AUDIO TRANSCODING ALGORITHM FOR MOBILE MULTIMEDIA APPLICATION**
Kyoung Ho Bang, Young-Cheol Park, Dae Hee Youn, Yonsei University, Republic of Korea

ITT-P3.3 **IMAGE PRE-PROCESSING FOR BAR CODE DETECTION IN MOBILE DEVICES**
Radu Ciprian Bilcu, Adrian Burian, Markku Vehvilainen, Nokia Research Center, Finland

ITT-P3.4 **A NEW METHOD FOR CREATING A DEPTH MAP FOR CAMERA AUTO FOCUS USING AN ALL IN FOCUS PICTURE AND 2D SCALE SPACE MATCHING**
Earl Wong, Sony Electronics, United States

ITT-P3.5 **FAST AUTO-FOCUS CONTROL ALGORITHM USING THE VCM HYSTERESIS COMPENSATION IN THE MOBILE PHONE CAMERA**
Tae-Kyu Kim, Jae-Sik Sohn, Kyungpook National University, Republic of Korea; Suk-Hwan Lee, Tongmyong University of Information Technology, Republic of Korea; Ki-Ryong Kwon, Pusan University, Republic of Korea; DukiGyoo Kim, Kyungpook National University, Republic of Korea

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Raghuveer Rao, Seungsin Lee, Rochester Institute of Technology, United States

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Farhad Ghassemi, Vikram Krishnamurthy, University of British Columbia, Canada

ITT-P3.8 **GEAR SIGNAL SEPARATION BY EXPLOITING THE SPECTRAL DIVERSITY AND CYCLOSTATIONARITY**
Khalid Sabri, GSCM, Faculté des Sciences Rabat / Université Jean Monnet, Morocco; Mohamed El Badaoui, François Guillet, LASPI, Université Jean Monnet, IUT de Roanne, France; Abdellah Adib, GSCM, Université Mohammed V, FSR, Morocco; Driss Aboutajdine, GSCM, Faculté des Sciences Rabat, Morocco

ITT-P3.9 **MULTI-BAND SPEECH ENHANCEMENT FOR FUNCTIONAL MRI**
Venkat Raghavendra Ramachandran, Issa Panahi, Yi Hu, Philipos Loizou, University of Texas, Dallas, United States; Richard Briggs, University of Texas Southwestern Medical Center, United States; Shawn Mc Caslin, National Instruments, Inc., United States

ITT-P3.10 **REAL-TIME NON-INTRUSIVE VOIP EVALUATION USING SECOND GENERATION NETWORK PROCESSOR**
Dorel Picovici, Adil Raja, Colin Flanagan, University of Limerick, Ireland

ITT-P3.11 **PERFORMANCES OF LOW SNR DVB-RCS MODEM USING TEST FREQUENCY ALGORITHM**
Caroline Bazile, CNES, France; Jean-François Delaune, Thalès Communications, France; Xavier Deplancq, CNES, France; Jacques Eudes, Thalès Communications, France; Guy Lesthievent, CNES, France; Dominique Merel, Thalès Communications, France; Thierry Robert, Jean-Philippe Taisant, CNES, France

ITT-P3.12 **A NOVEL APPROACH TO BASS ENHANCEMENT IN AUTOMOBILE CABIN**
Liang Wang, Woon Seng Gan, Yong Kim Chong, Nanyang Technological University, Singapore; Sen M. Kuo, Northern Illinois University, United States

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