

2023 31st European Signal Processing Conference (EUSIPCO 2023)

**Helsinki, Finland
4-8 September 2023**

Pages 1-684



**IEEE Catalog Number: CFP2340S-POD
ISBN: 979-8-3503-2811-0**

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IEEE Catalog Number:	CFP2340S-POD
ISBN (Print-On-Demand):	979-8-3503-2811-0
ISBN (Online):	978-9-4645-9360-0
ISSN:	2219-5491

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**Thu PM2.L5.1: COMPUTED TOMOGRAPHY IMAGE RESTORATION USING A 845
QUANTUM-BASED DEEP UNROLLED DENOISER AND A PLUG-AND-PLAY
FRAMEWORK**

Sayantana Dutta, Kenule Tuador Nwigbo, Jérôme Michetti, Institut de Recherche en Informatique de Toulouse, UMR CNRS 5505, Université de Toulouse, France; Bertrand Georgeot, Laboratoire de Physique Théorique, Université de Toulouse, CNRS, UPS, France; Duong Hung Pham, Denis Kouamé, Institut de Recherche en Informatique de Toulouse, UMR CNRS 5505, Université de Toulouse, France; Adrian Basarab, Université de Lyon, INSA-Lyon, UCBL, CNRS, Inserm, CREATIS UMR 5220, U1206, France

Thu PM2.L5.2: KERNELLESS BLIND INVERSE IMAGING FOR FLAT META-OPTICS CAMERA 850

Samuel Pinilla, Science and Technology Facilities Council, United Kingdom; Wenzhu Xing, Seyyed Reza Miri Rostami, Vladimir Katkovnik, Igor Shevkunov, Tampere University, Finland; Johannes E. Froch, Arka Majumdar, University of Washington, United States; Karen Egiazarian, Tampere University, Finland

**Thu PM2.L5.3: SEISMIC SHOT RECOVERY VIA LOW-RANK TENSOR MODELING ON THE 855
CROSS-SPREAD DOMAIN**

Iván Ortiz, Universidad Industrial de Santander, Colombia; Tatiana Gelvez-Barrera, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm,, France; Laura Galvis, Henry Arguello, Universidad Industrial de Santander, Colombia

**Wed AM1.L4: ADVANCED SIGNAL PROCESSING APPROACHES FOR HIGH-
RESOLUTION AUTOMOTIVE RADAR SYSTEMS**

**Wed AM1.L4.1: DOPPLER-TOLERANT WAVEFORM DESIGN AND SIGNAL PROCESSING FOR 715
INTERFERENCE IMMUNE RADAR SYSTEMS**

Robin Amar, Mohammad Alae-Kerahroodi, Gabriel Beltrao, Bhavani Shankar M. R., University of Luxembourg, Luxembourg, Luxembourg

**Wed AM1.L4.2: COOPERATIVE SENSING IN AUTOMOTIVE URBAN SCENARIOS USING 720
POISSON LINE PROCESSES**

François De Saint Moulin, Charles Wiame, Claude Oestges, Luc Vandendorpe, Catholic University of Louvain - UCLouvain, Belgium

**Wed AM1.L4.3: MULTI-TARGET RANGE AND ANGLE DETECTION FOR MIMO-FMCW RADAR 725
WITH LIMITED ANTENNAS**

Himali Singh, Arpan Chattopadhyay, Indian Institute of Technology Delhi, India

Wed AM1.L4.4: DEEP LEARNING BASED COMPUTATIONALLY EFFICIENT UNROLLING IAA 730 FOR DIRECTION-OF-ARRIVAL ESTIMATION

Ruxin Zheng, Hongshan Liu, Shunqiao Sun, The University of Alabama, United States; Jian Li, University of Florida, United States

Wed AM1.L4.5: NEAR-FIELD LOW-WISL UNIMODULAR WAVEFORM DESIGN FOR 735 TERAHERTZ AUTOMOTIVE RADAR

Arian Eamaz, Farhang Yeganegi, University of Illinois Chicago, United States; Kumar Vijay Mishra, United States DEVCOM Army Research Laboratory, Adelphi, United States; Mojtaba Soltanalian, University of Illinois Chicago, United States

Wed AM1.L4.6: MILLIMETER WAVE V2V BEAM TRACKING USING RADAR: ALGORITHMS 740 AND REAL-WORLD DEMONSTRATION

Hao Luo, Umut Demirhan, Ahmed Alkhateeb, Arizona State University, United States

Wed PM1.L2: EMERGING TECHNOLOGIES FOR SIGNAL PROCESSING FOR REMOTE HEALTH MONITORING

Wed PM1.L2.1: GRAPH BASED METHOD FOR ENHANCED HEART RATE TRACE ESTIMATION 775 USING UWB IMPULSE RADAR

Hui Tang, Xueqin Liu, Wuhan University of Science and Technology, China; Yu Rong, Daniel Bliss, Arizona State University, United States

Wed PM1.L2.2: A NOVEL GRAPH NEURAL NETWORK BASED APPROACH FOR HUMAN 780 ACTIVITY RECOGNITION

Ritesh Chandra Tewari, Patitapaban Palo, Aurobinda Routray, Jhaheswar Maiti, Indian Institute of Technology Kharagpur, India

Wed PM1.L2.3: SEMI-SUPERVISED CONVOLUTIONAL AUTOENCODER WITH ATTENTION 785 MECHANISM FOR ACTIVITY RECOGNITION

Zahra Sadeghi-Adl, Fauzia Ahmad, Temple University, United States

Wed PM1.L2.4: NOVEL HEARTBEAT DETECTION METHOD IN PRESENCE OF 790 LARGE-SCALE RANDOM BODY MOVEMENT USING SFCW RADAR: A SIMULATED STUDY

Yu Rong, Daniel W. Bliss, Arizona State University, United States

Thu PM1.P: EXPLAINABILITY AND INTERPRETABILITY IN BIOMETRIC AND HUMAN-CENTRIC INFORMATION PROCESSING / FRACTAL-WAVELET TECHNIQUES IN SIGNAL PROCESSING

Thu PM1.P.1: ARE EXPLAINABILITY TOOLS GENDER BIASED? A CASE STUDY ON FACE 945 PRESENTATION ATTACK DETECTION

Marco Huber, Meiling Fang, Fadi Boutros, Naser Damer, Fraunhofer Institute for Computer Graphics Research IGD, Germany

Thu PM1.P.2: UNVEILING THE TWO-FACED TRUTH: DISENTANGLING MORPHED 955 IDENTITIES FOR FACE MORPHING DETECTION

Eduarda Caldeira, Pedro C. Neto, Tiago Gonçalves, INESC TEC, Portugal; Naser Damer, Fraunhofer Institute for Computer Graphics Research IGD, Germany; Ana F. Sequeira, Jaime Cardoso, INESC TEC, Portugal

Thu PM1.P.3: EPILEPTIC SEIZURE PREDICTION FROM EIGEN-WAVELET MULTIVARIATE 970 SELFSIMILARITY ANALYSIS OF MULTI-CHANNEL EEG SIGNALS

Charles-Gérard Lucas, ENS Lyon, France; Patrice Abry, ENS Lyon, CNRS, France; Herwig Wendt, IRIT, CNRS, France; Gustavo Didier, Tulane University, France

Thu PM1.P: GEOMETRIES IN SIGNAL AND IMAGE PROCESSING

Thu PM1.P.1: A GAUSSIAN MIXTURE MODEL WITH MULTIPLE TANGENT PLANES 950

Sara Akodad, Centre National des Etudes Spatiales, France; Lionel Bombrun, Christian Germain, Yannick Berthoumieu, University of Bordeaux, France

Thu PM1.P.2: NOVEL SPD MATRIX REPRESENTATIONS CONSIDERING 960 CROSS-FREQUENCY COUPLING FOR EEG CLASSIFICATION USING RIEMANNIAN GEOMETRY

Maria Sayu Yamamoto, LISN, University Paris-Saclay, France; Apolline Mellot, Inria, CEA, University Paris-Saclay, France; Sylvain Chevallier, LISN, University Paris-Saclay, France; Fabien Lotte, Inria center at the University of Bordeaux, France

Thu PM1.P.3: RANK ESTIMATION FOR THIRD-ORDER TENSOR COMPLETION IN THE 965 TENSOR-TRAIN FORMAT

Charlotte Vermeylen, Katholieke Universiteit Leuven, Belgium; Guillaume Olikier, Pierre-Antoine Absil, Université catholique de Louvain, Belgium; Marc Van Barel, Katholieke Universiteit Leuven, Belgium

Wed AM1.L3: BIOMEDICAL SIGNAL PROCESSING I

Wed AM1.L3.1: STIMULUS-INFORMED GENERALIZED CANONICAL CORRELATION 1000 ANALYSIS OF STIMULUS-FOLLOWING BRAIN RESPONSES

Simon Geirnaert, Tom Francart, Alexander Bertrand, KU Leuven, Belgium

Wed AM1.L3.2: SUPERVISED CHANGE-POINT DETECTION WITH DIMENSION 1005 REDUCTION

Charles Truong, Laurent Oudre, ENS Paris-Saclay, France

Wed AM1.L3.3: EXPLORING WAV2VEC 2.0 MODEL FOR HEART MURMUR DETECTION 1010

Davoud Shariat Panah, Technological University Dublin, Ireland; Andrew Hines, University College Dublin, Ireland; Susan McKeever, Technological University Dublin, Ireland

Wed AM1.L3.4: DEVICE AGNOSTIC MEASUREMENT OF BLOOD PRESSURE FROM RPPG 1015 SIGNAL

Praveen K Parashiva, Rohit Damodaran, Mohammed Abdul Kareem, Nikhil S Narayan, MFine, India

Wed AM1.L3.5: ASSESSING GENDER FAIRNESS IN EEG-BASED MACHINE LEARNING 1020 DETECTION OF PARKINSON'S DISEASE: A MULTI-CENTER STUDY

Anna Kurbatskaya, University of Stavanger, Norway; Alberto Jaramillo-Jimenez, Stavanger University Hospital, Norway; John Fredy Ochoa-Gomez, Grupo de Neurociencias de Antioquia, Norway; Kolbjørn Brønnick, Stavanger University Hospital, Norway; Alvaro Fernandez-Quilez, University of Stavanger, Norway

Wed AM1.L3.6: BRAIN FINGERPRINTING USING EEG GRAPH INFERENCE 1025

Maliheh Miri, Lund University, Sweden; Vahid Abootalebi, Yazd University, Iran; Enrico Amico, Ecole Polytechnique Fédérale de Lausanne, Switzerland; Hamid Saeedi-Sourck, Yazd University, Iran; Dimitri Van De Ville, Hamid Behjat, Ecole Polytechnique Fédérale de Lausanne, Switzerland

Thu AM1.L3: BIOMEDICAL SIGNAL PROCESSING II

Thu AM1.L3.1: FUNCTIONAL CLUSTERING OF CONTINUOUS CARDIOVASCULAR AND 1080 BRAIN OXYGENATION SIGNALS DURING AN ACTIVE STAND TEST IN THE IRISH LONGITUDINAL STUDY ON AGEING (TILDA)

Feng Xue, Silvin Knight, Emma Connolly, Eoin Duggan, Roman Romero-Ortuno, Trinity College Dublin, Ireland

Thu AM1.L3.2: NEURAL ARCHITECTURE SEARCH FOR TINY DETECTORS OF INTER-BEAT 1085 INTERVALS

Rafael G. de Lima, Samsung Electronics, Brazil; Pedro G. Freitas, University of Brasília, Brazil; Giovanni D. Lucafo, Samsung Electronics, Brazil; Vanessa Fioravanti, McKinsey and Company, Brazil; Ismael Seidel, University of Santa Catarina, Brazil; Otavio A. B. Penatti, Samsung Electronics, Brazil

Thu AM1.L3.3: ACCELERATED SAMPLE-ACCURATE R-PEAK DETECTORS BASED ON 1090 VISIBILITY GRAPHS

Jonas Emrich, Taulant Koka, Sebastian Wirth, Michael Muma, Technische Universität Darmstadt, Germany

Thu AM1.L3.4: COCHLEAR FILTER-BASED CEPSTRAL FEATURES FOR DYSARTHIC 1095 SEVERITY-LEVEL CLASSIFICATION

Siddharth Rathod, Priyanka Gupta, Aastha Kachhi, Hemant A. Patil, Dhirubhai Ambani Institute of Information and Communication Technology, India

Thu AM1.L3.5: BRIDGING THE SOURCE-TARGET MISMATCH WITH PSEUDO LABELING 1100 FOR NEONATAL SEIZURE DETECTION

Aengus Daly, Munster Technological University, Ireland; Gordon Lightbody, Andriy Temko, University College Cork, Ireland

Thu AM1.L3.6: DETECTION OF ATTENTION DEFICIT HYPERACTIVITY DISORDER BY 1105 USING EEG FEATURE MAPS AND DEEP LEARNING

Burak Akbugday, Ozge Ada Bozbas, Izmir University of Economics, Turkey; Ozlem Karabiber Cura, Izmir Katip Celebi University, Turkey; Sude Pehlivan, Aydin Akan, Izmir University of Economics, Turkey

Tue PM2.L3: BIOMEDICAL IMAGE PROCESSING

Tue PM2.L3.1: DETECTION AND LOCALIZATION OF MELANOMA SKIN CANCER IN975 HISTOPATHOLOGICAL WHOLE SLIDE IMAGES

Neel Kanwal, Roger Amundsen, University of Stavanger, Norway; Helga Hardardottir, Stavanger University Hospital, Norway; Luca Tomasetti, University of Stavanger, Norway; Erling Sandoy Undersrud, Emiel A.M. Janssen, Stavanger University Hospital, Norway; Kjersti Engan, University of Stavanger, Norway

Tue PM2.L3.2: SELF-SUPERVISED LEARNING OF A TAILORED CONVOLUTIONAL AUTO980 ENCODER FOR HISTOPATHOLOGICAL PROSTATE GRADING.

Zahra Tabatabaei, Universitat Politècnica de València\Tyris-software, Spain; Adrián Colomer, Universitat Politècnica de València, Spain; Kjersti Engan, University of Stavanger, Norway; Javier Oliver, Tyris-software, Spain; Valery Naranjo, Universitat Politècnica de València, Spain

Tue PM2.L3.3: ATTENTION TO DETAIL: INTER-RESOLUTION KNOWLEDGE985 DISTILLATION

Rocío del Amor, Universitat Politècnica de València, Spain; Julio Silva-Rodríguez, ÉTS Montreal, Spain; Adrián Colomer, Valery Naranjo, Universitat Politècnica de València, Spain

Tue PM2.L3.4: EMITD: ENHANCED MICROWAVE IMAGING FOR BREAST TUMOR990 DETECTION

Andrew Gigie, Krishna Kanth Rokkam, Achanna Anil Kumar, Tapas Chakravarty, Anwasha Khasnobish, Arpan Pal, TCS Research, India

Tue PM2.L3.5: USFORMER: A LIGHT NEURAL NETWORK FOR LEFT ATRIUM995 SEGMENTATION OF 3D LGE MRI

Hui Lin, Santiago Lopez Tapia, Florian Schiffers, Yunan Wu, Huili Yang, Nikolay Iakovlev, Bradley D. Allen, Ryan Avery, Daniel C. Lee, Daniel Kim, Aggelos K. Katsaggelos, Northwestern University, United States

Wed PM1.L3: ARTIFICIAL INTELLIGENCE IN BIOMEDICAL APPLICATIONS I

Wed PM1.L3.1: TS-MOCO: TIME-SERIES MOMENTUM CONTRAST FOR 1030 SELF-SUPERVISED PHYSIOLOGICAL REPRESENTATION LEARNING

Philipp Hallgarten, TU Munich / Porsche AG, Germany; David Bethge, LMU Munich, Germany; Ozan Özdenizci, Institute of Theoretical Computer Science, TU Graz / TU Graz-SAL DES Lab, Austria; Tobias Grosse-Puppenthal, Porsche AG, Germany; Enkelejda Kasneci, TU Munich, Germany

Wed PM1.L3.2: ASSESSING THE QUALITY OF PHOTOPLETHYSMOGRAMS VIA GRAMIAN 1035 ANGULAR FIELDS AND VISION TRANSFORMER

Pedro Garcia Freitas, University of Brasília, Brazil; Rafael de Lima, Giovani Lucafo, Otavio Penatti, Samsung Electronics, Brazil

Wed PM1.L3.3: SLEEP APNEA EVENTS CLASSIFICATION FROM A DUAL ACCELEROMETRY 1040 SYSTEM USING DEEP LEARNING MODELS

Hugo Lafaye de Micheaux, Julie Fontecave-Jallon, Aurélien Bricout-Serrurier, Pierre-Yves Guméry, Univ. Grenoble Alpes, CNRS, UMR 5525, VetAgro Sup, Grenoble INP, TIMC, France

Wed PM1.L3.4: ACTIVE LEARNING BASED DOMAIN ADAPTATION FOR TISSUE 1045 SEGMENTATION OF HISTOPATHOLOGICAL IMAGES

Saul Fuster, University of Stavanger, Norway; Farbod Khoraminia, Erasmus Medical Center, Netherlands; Trygve Eftestøl, University of Stavanger, Norway; Tahlita C. M. Zuiverloon, Erasmus Medical Center, Netherlands; Kjersti Engan, University of Stavanger, Norway

Wed PM1.L3.5: COUNTERFACTUAL FUNCTIONAL CONNECTOMES FOR NEUROLOGICAL 1050 CLASSIFIER SELECTION

Nicolas Vercheval, UGent, Belgium; Marin Benčević, FERIT, Croatia (Hrvatska); Dario Mužević, Osijek University Hospital Center, Croatia (Hrvatska); Irena Irena Galić, FERIT, Croatia (Hrvatska); Aleksandra Pižurica, UGent, Croatia (Hrvatska)

Wed PM2.L3: ARTIFICIAL INTELLIGENCE IN BIOMEDICAL APPLICATIONS II

Wed PM2.L3.1: LSTMS FOR EEG-BASED AUDITORY ATTENTION DECODING 1055

René Pallenberg, Ann-Katrin Griedelbach, Alfred Mertins, University of Lübeck, Germany

Wed PM2.L3.2: END-TO-END TRAINABLE GAUSSIAN FILTERING FOR 1060 ELECTROCARDIOGRAM SIGNAL CLASSIFICATION USING DEEP LEARNING

Angelos Nalmpantis, Nikolaos Passalis, Anastasios Tefas, Aristotle University of Thessaloniki, Thessaloniki, Greece

Wed PM2.L3.3: CLASSIFICATION OF ADHD BY USING MULTIPLE FEATURE MAPS OF EEG 1065 SIGNALS AND DEEP FEATURE EXTRACTION

Ozlem Karabiber Cura, Sibel Kocaaslan Atli, Izmir Katip Celebi University, Turkey; Sena Yagmur Sen, Aydin Akan, Izmir University of Economics, Turkey

Wed PM2.L3.4: TOWARDS THE ON-DEMAND WHOLE SLIDE IMAGE GENERATION: 1070 PROSTATE PATCH SYNTHESIS THROUGH A CONDITIONAL PROGRESSIVE GROWING GAN

Alejandro Golfe, Rocío del Amor, Instituto Universitario de Investigación en Tecnología Centrada en el Ser Humano, HUMAN-tech, Spain; Adrián Colomer, Instituto Universitario de Investigación en Tecnología Centrada en el Ser Humano, HUMAN-tech and ValgrAI – Valencian Graduate School and Research Network for Artificial Intelligence, Spain; María Ángeles Sales, Liria Terradez, Anatomical Pathology Service, University Clinical Hospital of Valencia, Valencia, Spain, Spain; Valery Naranjo, Instituto Universitario de Investigación en Tecnología Centrada en el Ser Humano, HUMAN-tech, Spain

Wed PM2.L3.5: AUGMENTATION STRATEGIES FOR SELF-SUPERVISED REPRESENTATION 1075 LEARNING FROM ELECTROCARDIOGRAMS

Matilda Andersson, Mattias Nilsson, Neko Health, Sweden; Gabrielle Flood, Kalle Åström, Lund University, Sweden

Tue PM1.P: BIOMEDICAL SIGNAL AND IMAGE PROCESSING I

Tue PM1.P.1: DEEP EMBEDDED CLUSTERING REGULARIZATION FOR SUPERVISED 1165 IMBALANCED CEREBRAL EMBOLI CLASSIFICATION USING TRANSCRANIAL DOPPLER ULTRASOUND

Yamil Vindas, Emmanuel Roux, Biomedical Imaging Research Lab - CREATIS, France; Blaise Kévin Guépié, Université de Technologie de Troyes, France; Marilys Almar, Atys Medical, France; Philippe Delachartre, Biomedical Imaging Research Lab - CREATIS, France

Tue PM1.P.2: EEG SOURCE IMAGING BY SUPERVISED LEARNING 1170

Sarah Reynaud, Adrien Merlini, IMT Atlantique, France; Douraied Ben Salem, CHU Brest, France; François Rousseau, IMT Atlantique, France

Tue PM1.P.3: EFFICIENT AND ACCURATE NEURAL FINGERPRINTS OBTAINED VIA MEAN 1175 CURVE LENGTH OF HIGH DIMENSIONAL MODEL REPRESENTATION OF EEG SIGNALS

Evrin Korkmaz Özay, Beykent University, Turkey; Tolga Esat Özkurt, Middle East Technical University, Turkey

Tue PM1.P.4: RECONSTRUCTION OF BODY SURFACE POTENTIAL FROM 12-LEAD ECG: A 1180 CONDITIONAL GAN BASED APPROACH

Rohan Banerjee, Oishee Mazumder, Ayan Mukherjee, Tata Consultancy Services, India; Soumitra Sinhaajari, Jadavpur University, India; Aniruddha Sinha, Tata Consultancy Services, India

Tue PM1.P.5: CONVOLUTIONAL NEURAL NETWORKS USING SCALOGRAMS FOR STRESS 1185 RECOGNITION IN DRIVERS

Pamela Zontone, Antonio Affanni, Alessandro Piras, Roberto Rinaldo, University of Udine, Italy

Tue PM1.P.6: PERFORMANCE OF USING MEL-FREQUENCY CEPSTRUM BASED 1190 FEATURES IN NONLINEAR CLASSIFIERS FOR PHONOCARDIOGRAPHY RECORDINGS

Ibrahim Ozkan, Atila Yilmaz, Hacettepe University, Turkey

Tue PM1.P.7: COMBINATIONS OF EEG TOPOGRAPHIC FEATURE MAPS FOR THE 1195 CLASSIFICATION OF ADHD

Sude Pehlivan, Onur Akdemir, Izmir University of Economics, Turkey; Ozlem Karabiber Cura, Izmir Katip Çelebi University, Turkey; Burak Akbuğday, Aydın Akan, Izmir University of Economics, Turkey

Tue PM1.P.8: NEW MCI DETECTION METHOD BASED ON TRANSFORMER AND EEG DATA..... 1200

Siwar Chaabene, Brahim Haroun Hassan, Amal Boudaya, MIRACL Laboratory, Tunisia; Lotfi Chaari, University of Toulouse IRIT, France; Bassem Bouaziz, MIRACL Laboratory, Tunisia

Tue PM1.P.9: DETECTING TRANSLOCATION OF DNA NANOSTRUCTURES THROUGH 1205 NANOPORES: FIRST STEPS TOWARDS STRUCTURAL BARCODE READOUT

Pratima Upretee, Ghent University - imec, Belgium; Sybren Santermans, Koen Martens, Juliette Gevers, Sanjin Marion, Wouter Van Den Bosch, imec, Belgium; Jan Fostier, Nilesh Madhu, Ghent University - imec, Belgium

Tue PM1.P.10: A NOVEL APPROACH FOR TRANSFER LEARNING MOTOR IMAGERY 1210 CLASSIFICATION BASED ON IVA

Caroline Pires Alavez Moraes, Federal University of ABC (UFABC), Brazil; Denis Gustavo Fantinato, State University of Campinas (UNICAMP), Brazil; Aline de Oliveira Neves Panazio, Federal University of ABC (UFABC), Brazil

Tue AM1.P: BIOMEDICAL SIGNAL AND IMAGE PROCESSING II

Tue AM1.P.1: DYNAMIC SLIDING WINDOW ENCODING FOR DATA STORAGE ON DNA 1110 UNDER BIOLOGICAL AND INDEXING CONSTRAINTS

Chloé Berton, Gouenou Coatrieux, IMT Atlantique, France; Dominique Lavenier, GENSCALE, INRIA, France; Sahar Haddad, Unite INSERM 1101 LaTIM, France

Tue AM1.P.2: M2UNET: METAFORMER MULTI-SCALE UPSAMPLING NETWORK FOR POLYP SEGMENTATION 1115

Quoc-Huy Trinh, Nhat-Tan Bui, Mau Trong-Hieu Nguyen, Minh-Van Nguyen, Minh Phan, Minh-Triet Tran, Hai-Dang Nguyen, University of Science, VNU-HCM, Viet Nam

Tue AM1.P.3: HYBRID COMPARTMENT MODEL FORMULATION FOR ACCELERATED BOLUS FITTING 1120

Diogo Filipe Silva, Steffen Leonhardt, Rheinisch-Westfälische Technische Hochschule Aachen, Germany

Tue AM1.P.4: ON THE USE OF KERNEL FISHER DISCRIMINANT ANALYSIS AS A REDUCTION METHOD FOR THE CLASSIFICATION OF EMG SIGNALS 1125

Ines Moudjari, Université de Rennes, France; Caroline Pautard, Clément Jouanneau, Blueback, France; Régine Le Bouquin Jeannès, Université de Rennes, France

Tue AM1.P.5: JOINT REGISTRATION AND FUSION OF 3D MAGNETIC RESONANCE AND 2D ULTRASOUND IMAGES FOR ENDOMETRIOSIS SURGERY 1130

Youssra EL BENNIOUI, Fabien VIDAL, University of Toulouse, France; Adrian BASARAB, University of Lyon, France; Jean-Yves Tournet, University of Toulouse, France

Tue AM1.P.6: A BOUNDARY OPTIMIZATION SCHEME FOR LIVER TUMORS FROM CT IMAGES 1135

Ming Gong, John Soraghan, Gaetano Di Caterina, Xiaoquan Li, University of Strathclyde, United Kingdom; Derek Grose, Beatson West of Scotland Cancer Centre, United Kingdom

Tue AM1.P.7: MODELING OF OLFACTORY BRAINWAVES FOR ODOUR INDEPENDENT BIOMETRIC IDENTIFICATION 1140

Meghna Pandharipande, Rupayan Chakraborty, Sunil Kumar Kopparapu, TCS Research - India, India

Tue AM1.P.8: EFFICACY OF DYNAMICS-BASED FEATURES FOR MACHINE LEARNING CLASSIFICATION OF RENAL HEMODYNAMICS 1145

Purva R. Chopde, Illinois Institute of Technology, United States; Rocío Álvarez-Cedron, Illinois Institute of Technology and Universidad Politécnica de Madrid, United States; Sebastian Alphonse, Illinois Institute of Technology, United States; Aaron J. Polichnowski, East Tennessee State University, United States; Karen A. Griffin, Loyola University Medical Center and Hines Veterans Administration Hospital, United States; Geoffrey A. Williamson, Illinois Institute of Technology, United States

Tue AM1.P.10: FETAL HEART RATE ANALYSIS FROM A MULTI-TASK LEARNING PERSPECTIVE WITH GAUSSIAN PROCESSES 1155

Tong Chen, Guanchao Feng, Cassandra Heiselman, J. Gerald Quirk, Petar M. Djuric, Stony Brook University, United States

Tue AM1.P.11: PREDICTING OVARIAN CANCER WITH MACHINE LEARNING: INTEGRATING CLINICAL AND GENETIC DATA .. 1160

Ismael Gómez-Talal, Universidad Rey Juan Carlos, Spain; Arantzazu Barquín, Hospital HM Sanchinarro, Spain; Luis Bote-Curiel, Universidad Rey Juan Carlos, Spain; Mónica Yagüe-Fernández, Hospital HM Sanchinarro, Spain; José Luis Rojo-Álvarez, Universidad Rey Juan Carlos, Spain; Jesús García-Donás, Hospital HM Sanchinarro, Spain

Tue AM1.L4: INTERPRETABLE AND EXPLAINABLE DEEP LEARNING

Tue AM1.L4.1: STOCHASTIC UNROLLED PROXIMAL POINT ALGORITHM FOR LINEAR IMAGE INVERSE PROBLEMS 1215

Brandon Le Bon, INRIA Rennes - Bretagne Atlantique, France; Mikaël Le Pendu, INTERDIGITAL, France; Christine Guillemot, INRIA Rennes - Bretagne Atlantique, France

Tue AM1.L4.2: PRIOR FOR MULTI-TASK INVERSE PROBLEMS IN IMAGE RECONSTRUCTION USING DEEP EQUILIBRIUM MODELS 1220

Samuel Willingham, Inria, France; Mårten Sjöström, Mid Sweden University, Sweden; Christine Guillemot, Inria, France

Tue AM1.L4.3: VARIANCE PREDICTIONS IN VAMP/UAMP WITH RIGHT ROTATIONALLY INVARIANT MEASUREMENT MATRICES FOR NIID GENERALIZED LINEAR MODELS	1225
<i>Zilu Zhao, Dirk Slock, EURECOM, France</i>	
Tue AM1.L4.4: GRAPH-TIME TREND FILTERING AND UNROLLING NETWORK	1230
<i>Mohammad Sabbaqi, Elvin Isufi, Delft University of Technology, Netherlands</i>	
Tue AM1.L4.5: QUANTITATIVE EVALUATION OF VIDEO EXPLAINABILITY METHODS VIA ANOMALY LOCALIZATION	1235
<i>Xinyue Zhang, Boris Joukovsky, Nikos Deligiannis, Vrije Universiteit Brussel, Belgium</i>	
Tue AM1.L4.6: HARNESSING THE POWER OF EXPLANATIONS FOR INCREMENTAL TRAINING: A LIME-BASED APPROACH	1240
<i>Arnab Neelim Mazumder, University of Maryland Baltimore County, United States; Niall Lyons, Ashutosh Pandey, Avik Santra, Infineon Technologies, United States; Tinoosh Mohsenin, University of Maryland Baltimore County, United States</i>	
 Tue PM1.L4: LEARNING THEORY AND ALGORITHMS I	
Tue PM1.L4.1: ASSESSMENT OF A TWO-STEP INTEGRATION METHOD AS AN OPTIMIZER FOR DEEP LEARNING	1245
<i>Paul Rodriguez, PUCP, Peru</i>	
Tue PM1.L4.2: IMPROVED AUTO-ENCODING USING DETERMINISTIC PROJECTED BELIEF NETWORKS AND COMPOUND ACTIVATION FUNCTIONS	1250
<i>Paul Baggenstoss, Fraunhofer, Germany</i>	
Tue PM1.L4.3: DATA-FREE BACKBONE FINE-TUNING FOR PRUNED NEURAL NETWORKS	1255
<i>Adrian Holzbock, Ulm University, Germany; Achyut Hegde, Karlsruhe Institute of Technology, Germany; Klaus Dietmayer, Ulm University, Germany; Vasileios Belagiannis, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany</i>	
Tue PM1.L4.4: A STATISTICAL MODEL FOR PREDICTING GENERALIZATION IN FEW-SHOT CLASSIFICATION	1260
<i>Yassir Bendou, Vincent Gripon, Bastien Padeloup, Giulia Lioi, IMT ATLANTIQUE, France; Lukas Mauch, Stefan Uhlich, Fabien Cardinaux, Ghouthi Boukli Hacene, Javier Alonso Garcia, Sony Europe, Germany</i>	
Tue PM1.L4.5: MULTICLASS MINIMAX LEARNING FOR DEEP NEURAL NETWORKS	1265
<i>Cyprien Gilet, Université de Technologie de Compiègne, France; Marie Guyomard, Barbosa Susana, Lionel Fillatre, Université Côte d'Azur, France</i>	
 Tue PM2.L4: LEARNING THEORY AND ALGORITHMS II	
Tue PM2.L4.1: REGULARIZATION TRADE-OFFS WITH FAKE FEATURES	1270
<i>Martin Hellkvist, Ayca Özcelikkale, Anders Ahlén, Uppsala University, Sweden</i>	
Tue PM2.L4.2: ASYMPTOTIC AND NON-ASYMPTOTIC RATE-LOSS BOUNDS FOR LINEAR REGRESSION WITH SIDE INFORMATION	1275
<i>Jiahui WEI, University of Rennes, INSA Rennes, France; Elsa DUPRAZ, IMT-Atlantique, France; Philippe MARY, University of Rennes, INSA Rennes, France</i>	
Tue PM2.L4.3: PROBABILISTIC SEMI-NONNEGATIVE MATRIX FACTORIZATION VIA MAXIMUM-LIKELIHOOD AND VARIATIONAL INFERENCE	1280
<i>Junbin Liu, Mingjie Shao, Wing-Kin Ma, The Chinese University of Hong Kong, China</i>	
Tue PM2.L4.4: DOMAIN AND MODALITY ADAPTATION USING MULTI-KERNEL MATCHING	1285
<i>Tamir Baruch Yampolsky, Ronen Talmon, Technion – Israel Institute of Technology, Israel; Ofir Lindenbaum, Bar-Ilan University, Israel</i>	

Tue PM2.L4.5: IDENTIFIABILITY OF POLYTOPIC MATRIX FACTORIZATION 1290
Olivier Vu Thanh, Nicolas Gillis, University of Mons, Belgium

Wed PM1.L4: SIGNAL PROCESSING AND MACHINE LEARNING FOR BIG DATA

Wed PM1.L4.1: A WATER-FILLING ALGORITHM MAXIMIZING THE VOLUME OF SUBMATRICES ABOVE THE RANK 1295

Claude Petit, Aline Roumy, Thomas Maugey, INRIA, France

Wed PM1.L4.2: CONDITIONAL DIFFUSION WITH LABEL SMOOTHING FOR DATA SYNTHESIS FROM EXAMPLES WITH NOISY LABELS 1300

Gentry Atkinson, Xiaomin Li, Vangelis Metsis, Texas State University, United States

Wed PM1.L4.3: UNCERTAINTY-INFORMED ON-DEVICE PERSONALISATION USING EARLY EXIT NETWORKS ON SENSOR SIGNALS 1305

Terry Fawden, University of Cambridge, United Kingdom; Lorena Qendro, University of Cambridge; Nokia Bell Labs, Cambridge, United Kingdom; Cecilia Mascolo, University of Cambridge, United Kingdom

Wed PM1.L4.4: PROPORTION INFERENCE USING DEEP NEURAL NETWORKS. APPLICATIONS TO X-RAY DIFFRACTION AND HYPERSPECTRAL IMAGING 1310

Titouan Simonnet, Mame Diarra Fall, Bruno Galerne, Université d'Orléans, France; Francis Claret, Sylvain Grangeon, BRGM, France

Wed PM1.L4.5: MULTI-BVOC SUPER-RESOLUTION EXPLOITING COMPOUNDS INTER-CONNECTION 1315

Antonio Giganti, Sara Mandelli, Paolo Bestagini, Marco Marcon, Stefano Tubaro, Politecnico di Milano, Italy

Wed AM1.P: APPLICATIONS OF MACHINE LEARNING IN SPEECH AND NATURAL LANGUAGE

Wed AM1.P.1: GREEKPOLITICS: SENTIMENT ANALYSIS ON GREEK POLITICALLY CHARGED TWEETS 1320

Emmanouil Patsiouras, Ioanna Koroni, Ioannis Mademlis, Ioannis Pitas, Aristotle University of Thessaloniki, Greece

Wed AM1.P.2: ONLINE HANDWRITING GESTURE RECOGNITION USING TRANSFORMER AND NATURAL LANGUAGE PROCESSING 1325

Guenole Silvestre, Felix Balado, Olumide Akinremi, Mirco Ramo, University College Dublin, Ireland

Wed AM1.P.3: IMPROVED DISENTANGLED SPEECH REPRESENTATIONS USING CONTRASTIVE LEARNING IN FACTORIZED HIERARCHICAL VARIATIONAL AUTOENCODER 1330

Yuying Xie, Thomas Arildsen, Zheng-Hua Tan, Aalborg University, Denmark

Wed AM1.P.4: APPLYING SPEECH DERIVED BREATHING PATTERNS TO AUTOMATICALLY CLASSIFY HUMAN CONFIDENCE 1335

Gauri Deshpande, TCS Research, University of Augsburg Germany, India; Yagna Gudipalli, Sachin Patel, TCS Research, Pune India, India; Bjorn Schuller, University of Augsburg Germany, GLAM – Group on Language, Audio, & Music, Imperial College London, UK, Germany

Wed AM1.P.5: ATTENTIONS FOR SHORT DURATION SPEECH CLASSIFICATION 1340

Hastin Modi, Maitreya Patel, Hemant A. Patil, Dhirubhai Ambani Institute of Information and Communication Technology, United States

Wed AM1.P.6: COULD DISCOURSE ANALYSIS REVEAL PRE-FRAILTY IN OLDER ADULTS? 1345

Manuel Abbas, Joaquim Prud'Homme, Fabien Lemoine, Guy Carrault, Université de Rennes 1, France; Dominique Somme, Centre Hospitalier Universitaire (CHU) de Rennes, France; Régine Le Bouquin Jeannès, Université de Rennes 1, France

Thu AM1.P: APPLICATIONS OF MACHINE LEARNING IN DETECTION AND LOCALISATION

Thu AM1.P.1: RECONSTRUCTION-BASED OUT-OF-DISTRIBUTION DETECTION FOR 1350 SHORT-RANGE FMCW RADAR

Sabri Mustafa Kahya, Muhammet Sami Yavuz, Eckehard Steinbach, Technical University of Munich, Germany

Thu AM1.P.2: IMPROVING INERTIAL-BASED UAV LOCALIZATION USING DATA-EFFICIENT ... 1355 DEEP REINFORCEMENT LEARNING

Dimitrios Tsiakmakis, Nikolaos Passalis, Anastasios Tefas, Aristotle University of Thessaloniki, Greece

Thu AM1.P.3: SELF-SUPERVISED LEARNING OF DEPTH MAPS FOR AUTONOMOUS CARS..... 1360

Andrei-Sebastian Petrescu, Constantin-Cristian Damian, Daniela Colțuc, University Politehnica of Bucharest, Romania

Thu AM1.P.4: TEST-TIME ADVERSARIAL DETECTION AND ROBUSTNESS FOR LOCALIZING 1365 HUMANS USING ULTRA WIDE BAND CHANNEL IMPULSE RESPONSES

Abhiram Kolli, Muhammad Jehanzeb Mirza, Horst Possegger, Horst Bischof, Graz University of Technology, Austria

Thu AM1.P.5: STACKING DEEP LEARNING MODELS FOR EARLY DETECTION OF 1370 WILDFIRE SMOKE PLUMES

Gonçalo Falcão, INESC-ID, Instituto Superior Técnico, Universidade de Lisboa, Portugal; Armando M. Fernandes, INOV and INESC-ID, Portugal; Nuno Garcia, Helena Aidos, LASIGE, Faculdade de Ciências, Universidade de Lisboa, Portugal; Pedro Tomás, INESC-ID, Instituto Superior Técnico, Universidade de Lisboa, Portugal

Thu AM1.P.6: EFFICIENT ECG-BASED ATRIAL FIBRILLATION DETECTION VIA 1375 PARAMETERISED HYPERCOMPLEX NEURAL NETWORKS

Leonie Basso, Zhao Ren, Wolfgang Nejd, Leibniz Universität Hannover, Germany

Thu AM1.P.8: STATISTICAL PRIOR KNOWLEDGE FOR ROBUST MEDICAL IMAGE 1150 SEGMENTATION BY LEVEL SET

Dorsaf HMIDA, Mohamed Amine MEZGHICH, Ines Sakly, Slim MHIRI, Faouzi Ghorbel, ENSI, Tunisia

Thu PM1.P: LEARNING FROM SEQUENTIAL DATA

Thu PM1.P.1: ACTIVE HYPOTHESIS TESTING IN UNKNOWN ENVIRONMENTS USING 1380 RECURRENT NEURAL NETWORKS AND MODEL FREE REINFORCEMENT LEARNING

George Stamatelis, Nicholas Kalouptsidis, National and Kapodistrian university of Athens, Greece

Thu PM1.P.2: COLLABORATIVE REGRET MINIMIZATION FOR PIECEWISE-STATIONARY 1385 MULTI-ARMED BANDIT

Xiaotong Cheng, Setareh Maghsudi, University of Tübingen, Germany

Thu PM1.P.3: LEARNING SENTINEL-2 REFLECTANCE DYNAMICS FOR DATA-DRIVEN 1390 ASSIMILATION AND FORECASTING

Anthony Frion, Lucas Drumetz, IMT Atlantique, France; Guillaume Tochon, EPITA, France; Mauro Dalla Mura, GIPSA-LAB, France; Abdeldjalil Aïssa El Bey, IMT Atlantique, France

Thu PM1.P.4: INTRADAY VOLATILITY-VOLUME JOINT MODELING AND FORECASTING: A 1395 STATE-SPACE APPROACH

Shengjie Xiu, Daniel Palomar, The Hong Kong University of Science and Technology, China

Thu PM1.P.5: DETECTING CONFOUNDERS IN MULTIVARIATE TIME SERIES USING 1400 STRENGTH OF CAUSATION

YUHAO LIU, Chen Cui, Daniel Waxman, Kurt Butler, Petar M. Djuric, STONY BROOK UNIVERSITY, United States

Thu PM1.P.6: STLFORMER: EXPLOIT STL DECOMPOSITION AND RANK CORRELATION 1405 FOR TIME SERIES FORECASTING

Zuokun OUYANG, Meryem JABLOUN, Philippe RAVIER, Univeristy of Orléans, France

**Thu PM1.P.7: AN APPROACH TO LEARNING THE HIERARCHICAL ORGANIZATION OF THE ... 1410
FRONTAL LOBE**

Kurt Butler, Stony Brook University, United States; Duncan Cleveland, University of Wisconsin - Madison, United States; Charles Mikell, Sima Mofakham, Stony Brook University, United States; Yuri Saalman, University of Wisconsin - Madison, United States; Petar Djuric, Stony Brook University, United States

Tue AM1.L5: SIGNAL PROCESSING FOR COMMUNICATIONS

**Tue AM1.L5.1: ANALOG VERSUS DIGITAL PULSE AMPLITUDE MODULATION FOR 1415
GOAL-ORIENTED WIRELESS COMMUNICATIONS**

Francesco Binucci, Paolo Banelli, University of Perugia, Italy; Paolo Di Lorenzo, Sergio Barbarossa, Sapienza University of Rome, Italy

**Tue AM1.L5.2: LINEARIZATION OF ACTIVE ARRAY TRANSMITTERS UNDER CROSSTALK VIA . 1420
OVER-THE-AIR OBSERVATIONS**

Joel Fernandez, Lauri Anttila, Mikko Valkama, Tampere University, Finland; Thomas Eriksson, Chalmers University of Technology, Sweden

**Tue AM1.L5.3: MACHINE LEARNING-BASED PRE-EQUALIZERS FOR MAXIMUM 1425
LIKELIHOOD SEQUENCE ESTIMATION IN HIGH-SPEED PONs**

Wouter Lanneer, Yannick Lefevre, Nokia, Belgium

**Tue AM1.L5.4: CHANNEL PARAMETER ESTIMATION USING A WIDEBAND LFM PREAMBLE: 1430
COMPARISON OF THE FRACTIONAL FOURIER TRANSFORM AND MATCHED
FILTERING**

Ids van der Werf, Richard Hendriks, Richard Heusdens, Delft University of Technology, Netherlands

Tue AM1.L5.5: EVENT DETECTION IN OPTICAL SIGNALS VIA DOMAIN ADAPTATION..... 1435

Antonino Maria Rizzo, Luca Magri, Politecnico di Milano, Italy; Pietro Invernizzi, Enrico Sozio, Gabriele Aquaro, Stefano Binetti, Cisco Photonics, Italy; Cesare Alippi, Politecnico di Milano / Università della Svizzera Italiana, Italy; Giacomo Boracchi, Politecnico di Milano, Italy

Tue AM1.L5.6: METHOD OF MOMENTS ESTIMATION FOR ENERGY SPECTRUM SENSING 1440

Jesus Perez, Jesus Ibañez, Universidad de Cantabria, Spain

Tue PM1.L5: MIMO AND ARRAY PROCESSING

**Tue PM1.L5.1: LOW COMPLEXITY PMI SELECTION FOR BICM-MIMO RATE 1445
MAXIMIZATION IN 5G NEW RADIO SYSTEMS**

Marjan Maleki, Ilmenau University of Technology, Germany; Juening Jin, Huawei Technologies, China; Martin Haardt, Ilmenau University of Technology, Germany

**Tue PM1.L5.2: ASYMPTOTIC PERFORMANCE ANALYSIS OF THE REGULARIZED LEAST 1450
SQUARES PRECODING WITH RESTRICTED TRANSMIT POWER IN MULTI-USER
MASSIVE MIMO**

Xiuxiu Ma, Abul Kammoun, King Abdullah University of Science and Technology, Saudi Arabia; Ayed M. Alrashdi, University of Ha'il, Saudi Arabia; Tarig Ballal, Mohamed-Slim Alouini, Tareq Al-Naffouri, King Abdullah University of Science and Technology, Saudi Arabia

**Tue PM1.L5.3: VELOCITY-AIDED CHANNEL ESTIMATION FOR SPATIALLY SELECTIVE 1455
MMWAVE MASSIVE MIMO COMMUNICATIONS**

Evangelos Vlachos, ATHENA Research Center, Greece; Christos Mavrokefalidis, Kostas Berberidis, University of Patras, Greece

**Tue PM1.L5.4: FAST SUBSPACE-BASED SEMI-BLIND CHANNEL ESTIMATION FOR 1460
MIMO-OFDM COMMUNICATIONS**

Kabiru Aliyu, Abdulmajid Lawal, King Fahd University of Petroleum and Minerals, Saudi Arabia; Karim Abed-Meraim, PRISME lab., Univ. Orléans, France; Azzedine Zerguine, King Fahd University of Petroleum and Minerals, Saudi Arabia

Tue PM1.L5.5: MULTIUSER MULTIPLE-ANTENNA WIRELESS COMMUNICATIONS SYSTEMS BASED ON SUPER-RESOLUTION ARRAYS 1464

Silvio F. B. Pinto, Rodrigo C. de Lamare, Pontifical Catholic University of Rio de Janeiro, Brazil

Tue PM2.L5: CELL FREE MIMO SYSTEMS AND MULTIPLE ACCESS

Tue PM2.L5.1: USER ASSOCIATION AND POWER CONTROL IN CELL-FREE MASSIVE MIMO WITH THE APG METHOD 1469

Chongzheng Hao, Nanjing University of Aeronautics and Astronautics, Queen's University Belfast, United Kingdom; Tung T. Vu, Linköping University, Queen's University Belfast, Sweden; Hien Quoc Ngo, Queen's University Belfast, United Kingdom; Minh N. Dao, RMIT University, Australia; Xiaoyu Dang, Nanjing University of Aeronautics and Astronautics, China; Michail Matthaiou, Queen's University Belfast, United Kingdom

Tue PM2.L5.2: MULTIPAIR DF RELAYING WITH NETWORK-ASSISTED FULL-DUPLEX CELL-FREE MASSIVE MIMO 1474

Tung Thanh Vu, Linköping University, Sweden; Hien Quoc Ngo, Queen's University Belfast, United Kingdom; Minh N. Dao, RMIT University, Australia; Erik G. Larsson, Linköping University, Sweden

Tue PM2.L5.3: UNCOORDINATED TRANSMISSIONS IN UPLINK IOT CELL-FREE MASSIVE MIMO SYSTEMS BASED ON NOMA 1479

Joumana Farah, INSA Rennes, France; Cybele Ghanem, Lebanese University, Lebanon; Eric Pierre Simon, University of Lille, France

Tue PM2.L5.4: SEQUENTIAL MULTIUSER SCHEDULING AND POWER ALLOCATION FOR CLUSTERED CELL-FREE MASSIVE MIMO NETWORKS 1484

Saeed Mashdour, Rodrigo de Lamare, Pontifical Catholic University of Rio de Janeiro, Brazil; Anke Schmeink, RWTH Aachen University, Germany; João Lima, CPQD Brazil, Brazil

Tue PM2.L5.5: NON-ORTHOGONAL MULTIPLE ACCESS ASSISTED BY RECONFIGURABLE INTELLIGENT SURFACE USING UNSUPERVISED MACHINE LEARNING 1489

Finn Siegismund-Poschmann, Volkswagen AG, Germany; Bile Peng, Eduard Jorswieck, TU Braunschweig, Germany

Thu AM1.P: ANALYSIS AND SIGNAL PROCESSING AND OPTIMIZATION FOR COMMUNICATIONS

Thu AM1.P.1: MODEL-FREE DECENTRALIZED TRAINING FOR DEEP LEARNING BASED RESOURCE ALLOCATION IN COMMUNICATION NETWORKS 1494

Pourya Behmandpoor, Panagiotis Patrinos, Marc Moonen, KU Leuven, Belgium

Thu AM1.P.2: PROBABILISTIC ASYNCHRONOUS INFERENCE IN WIRELESS NETWORKS WITH SPECTRAL CLUSTERING 1499

Emmanouil Kariotakis, Aggelos Bletsas, Technical Univ. of Crete, Greece

Thu AM1.P.3: ENERGY-EFFICIENT RATE SPLITTING FOR MIMO STAR-RIS-ASSISTED BROADCAST CHANNELS WITH I/Q IMBALANCE 1504

Mohammad Soleymani, Universität Paderborn, Germany; Ignacio Santamaria, Universidad de Cantabria, Spain; Eduard Jorswieck, Technische Universität Braunschweig, Germany

Thu AM1.P.4: FULL-DUPLEX-ENABLED JOINT COMMUNICATIONS AND SENSING WITH RECONFIGURABLE INTELLIGENT SURFACES 1509

Chandan Kumar Sheemar, University of Luxembourg, Luxembourg; George Alexandropoulos, National and Kapodistrian University of Athens, Greece; Dirk Slock, EURECOM, France; Jorge Querol, Symeon Chatzinotas, University of Luxembourg, Luxembourg

Thu AM1.P.5: LORA-BASED OVER-THE-AIR COMPUTING FOR SAT-IOT 1514

Marc Martínez-Gost, Ana Perez-Neira, Miguel Ángel Lagunas, Centre Tecnològic de Telecomunicacions de Catalunya, Spain

Thu AM1.P.6: BI-STATIC VISIBLE LIGHT BACKSCATTER MODELLING AND TAG LOCALISATION 1519

Yirui Deng, Deepak Mishra, Aruna Seneviratne, University of New South Wales, Australia

Thu AM1.P.7: MISSPECIFICATION UNDER THE NARROWBAND ASSUMPTION: A CRAMÉR-RAO BOUND PERSPECTIVE 1524

Sebastian Semper, Eduardo Pérez, TU Ilmenau, Germany; Markus Landmann, Fraunhofer IIS Ilmenau, Germany; Reiner Thomä, TU Ilmenau, Germany

Thu AM1.P.8: SENSOR-AIDED NILM WITH GAUSSIAN MIXTURE MODELS 1529

Nidhal BALTI, Baptiste VRIGNEAU, Pascal SCALART, Univ of Rennes, France

Thu AM1.P.9: CODING FOR THE UNSOURCED A-CHANNEL WITH ERASURES: THE LINKED LOOP CODE 1534

William Weijia Zheng, The Chinese University of Hong Kong, China; Jamison R. Ebert, Texas A&M University, United States; Stefano Rini, National Yang Ming Chiao Tung University, Taiwan; Jean-Francois Chamberland, Texas A&M University, United States

Thu AM1.P.10: SPATIAL SECRECY SPECTRAL EFFICIENCY OPTIMIZATION ENABLED BY RECONFIGURABLE INTELLIGENT SURFACES 1539

Konstantinos Katsanos, George Alexandropoulos, National and Kapodistrian University of Athens, Greece

Wed PM1.L5: DIRECTION-OF-ARRIVAL ESTIMATION

Wed PM1.L5.1: A TOEPLITZ PRIOR-BASED DEEP LEARNING FRAMEWORK FOR DOA ESTIMATION WITH UNKNOWN MUTUAL COUPLING 1544

Zhuoqian Jiang, Jingmin Xin, Weiliang Zuo, Nanning Zheng, Xi'an Jiaotong University, China; Akira Sano, Keio University, Japan

Wed PM1.L5.2: MIXED-PRECISION ARRANGEMENT VIA CRB FOR DOA ESTIMATION USING SLA 1549

Xinnan Zhang, Yuanbo Cheng, Xiaolei Shang, Jun Liu, University of Science and Technology of China, China

Wed PM1.L5.3: BARANKIN BOUND VS CRAMÉR-RAO BOUND FOR INTERFEROMETRIC-LIKE ARRAY DESIGN AT LOW SNR 1554

Jianhua WANG, Lucien Bacharach, Université Paris-Saclay, SATIE, France; Mohammed Nabil El Korso, Université Paris-Saclay, L2S, France; Pascal Larzabal, Université Paris-Saclay, SATIE, France

Wed PM1.L5.4: DIRECTION-OF-ARRIVAL ESTIMATION FOR CORRELATED SOURCES AND LOW SAMPLE SIZE 1559

Yani Zhang, ETH Zurich, Switzerland; Tianyi Liu, Marius Pesavento, TU Darmstadt, Germany

Wed PM1.L5.5: EXTENSION OF POWER METHOD TO PARA-HERMITIAN MATRICES: POLYNOMIAL POWER METHOD 1564

Faizan Khattak, Ian Proudler, Stephan Weiss, University of Strathclyde, United Kingdom

Thu AM1.L5: GRAPH SIGNAL PROCESSING

Thu AM1.L5.1: SPARSITY-AWARE BLOCK DIAGONAL REPRESENTATION FOR SUBSPACE CLUSTERING 1594

Aylin Tastan, Michael Muma, Technische Universität Darmstadt, Germany; Esa Ollila, Aalto University, Finland; Abdelhak M. Zoubir, Technische Universität Darmstadt, Germany

Thu AM1.L5.2: GRAPH-BASED MULTIVARIATE MULTISCALE PERMUTATION ENTROPY: STUDY OF ROBUSTNESS TO NOISE AND APPLICATION TO TWO-PHASE FLOW DATA 1599

John Stewart Fabila Carrasco, The University of Edinburgh, United Kingdom; Chao Tan, Tianjin University, China; Javier Escudero, The University of Edinburgh, United Kingdom

Thu AM1.L5.3: ERROR DETECTION ON KNOWLEDGE GRAPHS WITH TRIPLE EMBEDDING 1604

Yezi Liu, University of California Irvine, United States; Qinggang Zhang, The Hong Kong Polytechnic University, China; Mengnan Du, New Jersey Institute of Technology, United States; Xiao Huang, The Hong Kong Polytechnic University, China; Xia Hu, Rice University, United States

Thu AM1.L5.4: CLUSTERING WITH SIMPLICIAL COMPLEXES..... 1609

Siddartha Reddy Thummaluru, Sundeep Prabhakar Chepuri, Indian Institute of Science, India; Pierre Borgnat, ENS de Lyon, CNRS, Lab. Physique, France

Thu AM1.L5.5: TOWARDS MODEL-AGNOSTIC FEDERATED LEARNING OVER NETWORKS..... 1614

Alexander Jung, Shamsiat Abdurakhmanova, Olga Kuznetsova, Yasmin Sarcheshmehpour, Aalto University, Finland

Thu AM1.L5.6: PRODUCT GRAPH GAUSSIAN PROCESSES FOR MULTI-DOMAIN DATA IMPUTATION AND ACTIVE LEARNING 1619

Sai Kiran Kadambari, Sundeep Prabhakar Chepuri, Indian Institute of Science, Bengaluru, India

Wed PM2.L5: RADAR SIGNAL PROCESSING

Wed PM2.L5.1: MIMO VIRTUAL ARRAY DESIGN FOR MMWAVE 4D-IMAGING RADAR SENSORS 1569

Nazila Karimian Sichani, Shahid Beheshti University, Luxembourg; Mohammad Alae-Kerahroodi, Ehsan Raei, Bhavani Shankar M. R, University of Luxembourg, Luxembourg; Esfandiar Mehrshahi, Seyyed Ali Ghorashi, Shahid Beheshti University, Luxembourg

Wed PM2.L5.2: GLRT DETECTOR FOR ASPECT-DEPENDENT FLUCTUATING TARGETS USING DISTRIBUTED MMWAVE MIMO RADAR SENSORS 1574

Ahmed Murtada, Bhavani Shankar Mysore Rama Rao, University of Luxembourg, Luxembourg; Udo Schroeder, IEE S.A., Luxembourg

Wed PM2.L5.3: MULTI-UNIMODULAR WAVEFORM DESIGN WITH LOW PEAK SIDELobe LEVEL VIA DIRECT PHASE OPTIMIZATIONS 1579

Xiaohan Zhao, Yongzhe Li, Ran Tao, Beijing Institute of Technology, China

Wed PM2.L5.4: POWER ALLOCATION IN MIMO COLLABORATIVE CO-EXISTING RADAR AND COMMUNICATIONS SYSTEMS: A NON-COOPERATIVE GAME APPROACH 1584

Xianyang Zheng, Junze Zhu, Qian He, University of Electronic Science and Technology of China, China

Wed PM2.L5.5: ROBUST PARETO-OPTIMAL RADAR RECEIVE FILTER DESIGN FOR NOISE AND SIDELobe SUPPRESSION 1589

Costas Kokke, Delft University of Technology, Netherlands; Mario Coutino, Netherlands Organisation for Applied Scientific Research, Netherlands; Richard Heusdens, Geert Leus, Delft University of Technology, Netherlands; Laura Anitori, Netherlands Organisation for Applied Scientific Research, Netherlands

Thu PM1.L5: ROBUST ARRAY SIGNAL PROCESSING

Thu PM1.L5.1: ROBUST BEAMFORMING FOR RECONFIGURABLE INTELLIGENT SURFACES-AIDED DYNAMIC TDD SYSTEMS 1624

Gerald Nwalozie, Martin Haardt, Ilmenau University of Technology, Germany

Thu PM1.L5.2: POLYNOMIAL PROCRUSTES PROBLEM: PARAUNITARY APPROXIMATION OF MATRICES OF ANALYTIC FUNCTIONS 1629

Stephan Weiss, University of Strathclyde, United Kingdom; Sebastian J. Schlecht, Aalto University, Finland; Orchisama Das, Enzo De Sena, University of Surrey, United Kingdom

**Thu PM1.L5.3: ROBUST ADAPTIVE BEAMFORMING WITH MULTIPLE SIGNAL MISMATCH 1634
CONSTRAINTS: A SEQUENTIAL CONVEX APPROXIMATION METHOD**

Xianlian Lin, Yongwei Huang, Wenzheng Yang, Guangdong University of Technology, China; Jingwei Xu, Xidian University, China

**Thu PM1.L5.4: NONLINEAR CAUSALITY INFERENCE USING A ROBUST ERR-BASED 1639
METHOD IN THE CONTEXT OF EPILEPSY**

Marc Greige, Ahmad Karfoul, Isabelle Merlet, Régine Le Bouquin Jeannès, Université de Rennes, France

**Thu PM1.L5.5: EFFICIENT TIME-OF-ARRIVAL SELF-CALIBRATION USING SOURCE 1644
IMPLICITIZATION**

Malte Larsson, Viktor Larsson, Magnus Oskarsson, Lund University, Sweden

Tue AM1.P: ARRAY SIGNAL PROCESSING

**Tue AM1.P.1: TOPOLOGICAL ESTIMATION OF NUMBER OF SOURCES IN LINEAR 1649
MONOCOMPONENT MIXTURES**

Sean Kennedy, Murali Tummala, John McEachen, Naval Postgraduate School, United States

**Tue AM1.P.2: A DISTRIBUTED ADAPTIVE ALGORITHM FOR NODE-SPECIFIC SIGNAL 1654
FUSION PROBLEMS IN WIRELESS SENSOR NETWORKS**

Cem Ates Musluoglu, Alexander Bertrand, KU Leuven, Belgium

**Tue AM1.P.3: IMPROVING EVENT TRANSMISSIONS VIA NOVEL MULTIUSER 1659
COMMUNICATION SCHEME**

Pedro E. Gória Silva, Lappeenranta–Lahti University of Technology, Finland; Plínio S. Dester, State University of Campinas (Unicamp), Brazil; Harun Siljak, Nicola Marchetti, Trinity College Dublin, Ireland; Pedro H. J. Nardelli, Lappeenranta–Lahti University of Technology, Finland; Rausley A. A. de Souza, National Institute of Telecommunications (Inatel), Brazil

**Tue AM1.P.4: OPTIMAL SENSOR PLACEMENT FOR SOURCE SEPARATION WITH NOISY 1664
MEASUREMENTS**

Mohammad SADEGHI, Bertrand Rivet, GIPSA-lab, France; Massoud Babaie-Zadeh, Sharif University of Technology, Iran

**Tue AM1.P.6: NESTED PARAFAC TENSOR-BASED CHANNEL ESTIMATION METHOD FOR 1674
DOUBLE RIS-AIDED MIMO COMMUNICATION SYSTEMS**

Sepideh Gherekhloo, TU Ilmenau, Germany; Khaled Ardah, Lenovo (Deutschland) GmbH, Germany; André De Almeida, Federal University of Ceará, Brazil; Marjan Maleki, Martin Haardt, TU Ilmenau, Germany

Tue AM1.P.7: KALMAN SMOOTHING FOR BETTER RFID LANDSLIDE MONITORING..... 1679

Arthur Charléty, Olivier Michel, Université Grenoble Alpes (UGA), France; Mathieu Le Breton, Geolithe, France

**Tue AM1.P.8: NEAR-FIELD BEAMFORMING FOR MU-MIMO MILLIMETER WAVE 1683
COMMUNICATION SYSTEM**

Gerald Nwalozie, Damir Rakhimov, Martin Haardt, Ilmenau University of Technology, Germany

**Tue AM1.P.9: LEAKAGE-BASED COORDINATED BEAMFORMING FOR RECONFIGURABLE 1688
INTELLIGENT SURFACES-AIDED DYNAMIC TDD SYSTEMS**

Gerald Nwalozie, Martin Haardt, Ilmenau University of Technology, Germany

Tue PM1.P: MULTICHANNEL SIGNAL PROCESSING APPLICATIONS

**Tue PM1.P.1: VIBFORMER VIBRATION TRANSLATION FOR BRIDGE LIVE-LOAD 1693
DISPLACEMENT MONITORING**

Murtuza Petladwala, Takahiro Kumura, NEC Corporation, Japan; Chul-Woo Kim, Kyoto University, Japan

**Tue PM1.P.2: AUTOMATED CLUSTERING AND PIPELINING OF DATAFLOW ACTORS FOR 1698
CONTROLLED SCHEDULING COMPLEXITY**

Ophélie Renaud, Naouel Haggui, Karol Desnos, Jean-François Nezan, Univ Rennes, INSA Rennes, CNRS, IETR, France

**Tue PM1.P.3: SENSOR DATA REPRESENTATION WITH TRANSFORMER-BASED 1703
CONTRASTIVE LEARNING FOR HUMAN ACTION RECOGNITION AND DETECTION**

Lei Yang, Yuzhe Hao, Koichi Shinoda, Tokyo Institute of Technology, Japan

**Tue PM1.P.4: TRANSFORM BASED SUBSPACE INTERPOLATION FOR UNSUPERVISED 1708
DOMAIN ADAPTATION APPLIED TO MACHINE INSPECTION**

Kriti Kumar, Tata Consultancy Services (TCS), India; Angshul Majumdar, Indraprastha Institute of Information Technology, Delhi (IIITD), India; A Anil Kumar, M Girish Chandra, Tata Consultancy Services (TCS), India

**Tue PM1.P.5: A UNIFIED APPROACH FOR INVERSE PROBLEM IN EEG AND BRAIN 1713
CONNECTIVITY WITH APPLICATION TO EPILEPSY. A PROOF OF CONCEPT STUDY.**

Ahmad Karfoul, Amar Kachenoura, Laurent Albera, Université de Rennes, France

**Tue PM1.P.6: PLUG-AND-PLAY FOR JOINT DEBLURRING AND GUIDED 1718
SUPER-RESOLUTION OF SINGLE-PHOTON 3D LIDAR DATA**

Abderrahim Halimi, Stephen McLaughlin, Heriot Watt University, United Kingdom

**Tue PM1.P.7: COMBINING MULTI-SPECTRAL DATA WITH STATISTICAL AND 1723
DEEP-LEARNING MODELS FOR IMPROVED EXOPLANET DETECTION IN DIRECT
IMAGING AT HIGH CONTRAST**

Olivier Flasseur, Centre de Recherche Astrophysique de Lyon, CNRS, Univ. de Lyon, Univ. Claude Bernard Lyon 1, ENS de Lyon, France; Théo Bodrito, Département d'Informatique de l'Ecole Normale Supérieure (ENS-PSL, CNRS, Inria), France; Julien Mairal, Univ. Grenoble Alpes, Inria, CNRS, Grenoble INP, LJK, France; Jean Ponce, Département d'Informatique de l'Ecole Normale Supérieure (ENS-PSL, CNRS, Inria), France; Maud Langlois, Centre de Recherche Astrophysique de Lyon, CNRS, Univ. de Lyon, Univ. Claude Bernard Lyon 1, ENS de Lyon, France; Anne-Marie Lagrange, Laboratoire d'Etudes Spatiales et d'Instrumentation en Astrophysique, Obs. de Paris, Univ. PSL, Sorbonne Univ., Univ. Diderot, France

**Tue PM1.P.8: BROADBAND FREQUENCY-INVARIANT BROADSIDE BEAMFORMING WITH A 1728
DIFFERENTIAL LOUDSPEAKER ARRAY**

Yankai Zhang, Jiayi Mao, Fuyang Normal University, China; Yefeng Cai, Chao Ye, SuZhou Sonavox Electronics Co.,Ltd, China; Qiaoxi Zhu, University of Technology Sydney, Australia

**Tue PM1.P.9: GRAPH ASSISTED UNSUPERVISED DOMAIN ADAPTATION FOR MACHINE 1733
FAULT DIAGNOSIS**

Naibedya Pattnaik, Kriti Kumar, A Anil Kumar, M Girish Chandra, Tata Consultancy Services (TCS), India

Tue PM1.L2: OPTIMIZATION METHODS

**Tue PM1.L2.1: A PROJECTED PROXIMAL GRADIENT METHOD FOR EFFICIENT 1738
RECOVERY OF SPECTRALLY SPARSE SIGNALS**

Xi Yao, Wei Dai, Imperial College London, United Kingdom

**Tue PM1.L2.2: NEGOTIATION STRATEGIES TO IMPROVE DISTRIBUTED POWER 1743
ALLOCATION FOR SELF-ORGANIZING HETEROGENEOUS NETWORKS**

Juan Parras, Santiago Zazo, Universidad Politécnica de Madrid, Spain

Tue PM1.L2.3: SAFE PEELING FOR L0-REGULARIZED LEAST-SQUARES..... 1748

Theo Guyard, Inria de l'Université de Rennes, France; Gilles Monnoyer, UCLouvain, Belgium; Clement Elvira, CentraleSupélec, France; Cedric Herzet, Inria de l'Université de Rennes, France

Tue PM1.L2.4: EXACT AND HEURISTIC METHODS FOR SIMULTANEOUS SPARSE CODING 1753

Alexandra Dache, Université de Mons, Belgium; Nicolas Nadisic, Ghent University, Belgium; Arnaud Vandaele, Nicolas Gillis, Université de Mons, Belgium

Tue PM1.L2.5: A RECURSIVE NEWTON METHOD FOR SMOOTHING IN NONLINEAR STATE SPACE MODELS 1758

Fatemeh Yaghoobi, Hany Abdulsamad, Simo Särkkä, Aalto University, Finland

Thu AM1.L2: BAYESIAN METHODS

Thu AM1.L2.1: PROXIMAL-LANGEVIN SAMPLERS FOR NONSMOOTH COMPOSITE POSTERIORES: APPLICATION TO THE ESTIMATION OF COVID19 REPRODUCTION NUMBER 1813

Patrice Abry, CNRS, ENS de Lyon, France; Gersende Fort, CNRS, Institut de Mathématiques de Toulouse, France; Barbara Pascal, Nantes Université, École Centrale Nantes, CNRS, LS2N, UMR 6004, France; Nelly Pustelnik, CNRS, ENS de Lyon, France

Thu AM1.L2.2: MULTI-TARGET TRACKING PIPELINE FOR MIMO-FMCW RADARS BASED ON MODIFIED GM-PHD ... 1818

S. Hamed Javadi, Ruoyu Feng, André Bourdoux, Hichem Sahli, Interuniversity Micro-Electronics Center (IMEC), Belgium

Thu AM1.L2.3: PARAMETER ESTIMATION OF THE NORMAL RATIO DISTRIBUTION WITH VARIATIONAL INFERENCE 1823

Nizar BOUHLEL, Institut Agro, Univ Angers, INRAE, IRHS, SFR QuaSaV, France; Félix MERCIER, Université d'Angers, LARIS, UMR INRAe IRHS, France; Angelina EL GHAZIRI, Institut Agro, Univ Angers, INRAE, IRHS, SFR QuaSaV, France; David ROUSSEAU, Université d'Angers, LARIS, UMR INRAe IRHS, France

Thu AM1.L2.4: EXPECTATION-PROPAGATION WITH LOW-RANK CONSTRAINTS FOR LINEAR INVERSE PROBLEMS 1828

Dongrui SHEN, City University of Hong Kong, China; Stephen McLAUGHLIN, Yoann ALTMANN, Heriot-Watt University, United Kingdom

Thu AM1.L2.5: MARGINAL MAP ESTIMATION OF A BERNOULLI-GAUSSIAN SIGNAL: CONTINUOUS RELAXATION APPROACH 1833

Pierre Barbault, L2S, Université Paris-Saclay, CNRS, CentraleSupélec, France; Matthieu Kowalski, Université Paris-Saclay, CNRS, Laboratoire Interdisciplinaire des Sciences du Numériques, France; Charles Soussen, L2S, Université Paris-Saclay, CNRS, CentraleSupélec, France

Thu AM1.L2.6: VARIATIONAL GAUSSIAN FILTERING VIA WASSERSTEIN GRADIENT FLOWS 1838

Adrien Corenflos, Hany Abdulsamad, Aalto University, Finland

Tue PM2.L2: TIME-FREQUENCY AND TIME-SCALE ANALYSIS

Tue PM2.L2.1: HIGHLY ACCURATE AND NOISE-ROBUST PHASE DELAY ESTIMATION USING MULTITAPER REASSIGNMENT 1763

Maria Åkesson, Oskar Keding, Isabella Reinhold, Maria Sandsten, Lund University, Sweden

Tue PM2.L2.2: NULL OR LINEAR-PHASE FILTERS FOR THE DERIVATION OF A NEW VARIANT OF THE MSE 1768

Eric Grivel, Bordeaux INP, France; Bastien Berthelot, Thales AVS France, France; Pierrick Legrand, University of Bordeaux, France; Gaetan Colin, ENSEIRB-MATMECA, France

Tue PM2.L2.3: THE DISCRETE ORTHOGONAL STOCKWELL TRANSFORMS FOR INFINITE-LENGTH SIGNALS AND THEIR REAL-TIME IMPLEMENTATIONS 1773

Yusong Yan, Beijing Institute of Technology, China; Hongmei Zhu, York University, Canada

Tue PM2.L2.4: BIVARIATE MULTIFRACTAL ANALYSIS FOR NON-HOMOGENOUS POINT PROCESSES, WITH APPLICATION TO GEOSPATIAL DATA 1778

Janka Lengyel, Stéphane G. Roux, Ptashanna Thiriaux, Patrice Abry, ENS de Lyon, France; Olivier Bonin, Univ Gustave Eiffel, Ecole des Ponts, France; Stéphane Jaffard, Univ Paris Est Creteil, CNRS, France

Tue PM2.L2.5: BENCHMARKS OF MULTI-COMPONENT SIGNAL ANALYSIS METHODS 1783
Juan Manuel Miramont, Nantes Université, France; Quentin Legros, INP Grenoble, France; Dominique Fourer, University of Evry / Paris-Saclay, France; François Auger, Nantes Université, France

Wed PM2.L2: ROBUST METHODS

Wed PM2.L2.1: ROBUST SPARSE BAYESIAN LEARNING FOR DOA 1788
Christoph Mecklenbräuker, TU Wien, Austria; Peter Gerstoft, University of California, San Diego (UCSD), United States; Esa Ollila, Aalto University, Finland; Yongsung Park, University of California, San Diego (UCSD), United States

Wed PM2.L2.2: T-WDA: A NOVEL DISCRIMINANT ANALYSIS APPLIED TO EEG 1793
CLASSIFICATION
Imen Ayadi, Florent Bouchard, Frédéric Pascal, Université Paris-Saclay, CNRS, CentraleSupélec, laboratoire des signaux et systèmes, France

Wed PM2.L2.3: TOWARDS ROBUST IDENTIFICATION OF NONSTATIONARY SYSTEMS..... 1798
Artur Gancza, Marta Chelkowska, Natalia Kleinschmidt, Gdansk University of Technology, Poland

Wed PM2.L2.4: ONLINE KERNEL-BASED QUANTILE REGRESSION USING HUBERIZED 1803
PINBALL LOSS
Takumi Ichinose, Masahiro Yukawa, Keio University, Japan; Renato Cavalcante, Fraunhofer Heinrich Hertz Institute, Germany

Wed PM2.L2.5: A ROBUST MODEL AND ITS EM ALGORITHM FOR THE ESTIMATION OF 1808
THE MULTIFRACTALITY PARAMETER
Lorena Leon, University of Toulouse, France; Herwig Wendt, University of Toulouse, CNRS, France; Jean-Yves Tourneret, University of Toulouse, INP Toulouse, France; Patrice Abry, Univ. Lyon, ENS de Lyon, Univ. Claude Bernard, CNRS, France

Fri AM1.L1: SIGNAL PROCESSING THEORY AND METHODS

Fri AM1.L1.1: INTRODUCING STOCHASTIC FUNCTIONAL LINK POLYNOMIAL FILTERS 1888
Simone Orcioni, Università Politecnica delle Marche, Italy; Alberto Carini, University of Trieste, Italy; Stefania Cecchi, Massimo Conti, Università Politecnica delle Marche, Italy

Fri AM1.L1.2: WEIGHTED TOTAL LEAST SQUARES FOR QUADRATIC 1893
ERRORS-IN-VARIABLES REGRESSION
Peng Liu, Kailai Li, Gustaf Hendeby, Fredrik Gustafsson, Linköping University, Sweden

Fri AM1.L1.3: TIME ENCODING SAMPLING OF BANDPASS SIGNALS..... 1898
Zhong Liu, Feng Xi, Shengyao Chen, Nanjing University of Science and Technology, China

Fri AM1.L1.4: PERFECT RECONSTRUCTION OF CLASSES OF 3D NON-BANDLIMITED 1903
SIGNALS FROM TOMOGRAPHIC PROJECTIONS AT UNKNOWN ANGLES
Renke Wang, Pier Luigi Dragotti, Imperial College London, United Kingdom

Fri AM1.L1.5: WIDELY LINEAR COMPLEX-VALUED SPLINE-BASED ALGORITHM FOR 1908
NONLINEAR FILTERING
Long Shi, Southwestern University of Finance and Economics, China; Lu Shen, Yuriy Zakharov, University of York, United Kingdom; Rodrigo C. de Lamare, Pontifical Catholic University of Rio de Janeiro, Brazil

Thu PM1.L2: SIGNAL PROCESSING OVER GRAPHS

Thu PM1.L2.1: FORECASTING GRAPH SIGNALS WITH RECURSIVE MIMO GRAPH FILTERS 1843
Jelmer van der Hoeven, Alberto Natali, Geert Leus, TU Delft, Netherlands

Thu PM1.L2.2: CORRELATION-BASED GRAPH SMOOTHNESS MEASURES IN GRAPH SIGNAL PROCESSING 1848

Jari Miettinen, Sergiy A. Vorobyov, Esa Ollila, Xinjue Wang, Aalto University, Finland

Thu PM1.L2.3: SIGNED GRAPH BALANCING WITH GRAPH CUT 1853

Haruki Yokota, Junya Hara, Yuichi Tanaka, Osaka University, Japan; Gene Cheung, York University, Canada

Thu PM1.L2.4: JOINT GRAPH AND VERTEX IMPORTANCE LEARNING 1858

Benjamin Girault, École Nationale de la Statistique et de l'Analyse de l'Information, France; Eduardo Pavez, Antonio Ortega, University of Southern California, United States

Thu PM2.L2: STATISTICAL AND MACHINE LEARNING

**Thu PM2.L2.1: DEEP LEARNING-BASED OPTIMAL SPATIAL SUBSAMPLING IN ULTRASOUND ... 1863
NONDESTRUCTIVE TESTING**

Han Wang, Fraunhofer Institute for Nondestructive Testing, Germany; Eduardo Pérez, Technische Universität Ilmenau, Germany; Florian Römer, Fraunhofer Institute for Nondestructive Testing, Germany

**Thu PM2.L2.2: DOWNLINK CHANNEL ESTIMATION IN FDD MASSIVE MIMO SYSTEMS 1868
BASED ON MULTI-RESOLUTION DISCRIMINATION DICTIONARY LEARNING**

Zhentaο Zou, School of Information Science and Engineering, Lanzhou University, China; Lin Chen, Wireless Network RAN Research Department, Huawei Technologies Co. LTD, China; Xue Jiang, School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China; Pei Xiao, Institute for Communication Systems, University of Surrey, United Kingdom

Thu PM2.L2.3: DEEP EQUILIBRIUM MODELS MEET FEDERATED LEARNING 1873

Alexandros Gkillas, University of Patras, Greece; Dimitris Ampeliotis, Ionian University, Greece; Kostas Berberidis, University of Patras, Greece

Thu PM2.L2.4: SOCIAL LEARNING WITH NON-BAYESIAN LOCAL UPDATES 1878

Virginia Bordignon, Mert Kayaalp, EPFL, Switzerland; Vincenzo Matta, University of Salerno, Italy; Ali H. Sayed, EPFL, Switzerland

**Thu PM2.L2.5: LABEL-CONSISTENT CONVOLUTIONAL DICTIONARY LEARNING FOR 1883
MACHINE INSPECTION**

Saurabh Sahu, TCS Research, India; Kriti Kumar, TCS Research and Indraprastha Institute of Information Technology Delhi, India; Angshul Majumdar, Indraprastha Institute of Information Technology Delhi, India; A Anil Kumar, M Girish Chandra, TCS Research, India

Tue AM1.P: COMPRESSED SENSING AND SPARSE MODELING

**Tue AM1.P.1: EXTREMELY LIGHTWEIGHT NEURAL NETWORK FOR LARGE-SCALE IMAGE 1913
COMPRESSIVE SENSING**

Gang-Xuan Lin, Shih-Wei Hu, Chun-Shien Lu, Academia Sinica, Taiwan

Tue AM1.P.2: COMPRESSED SENSING OF GENERATIVE SPARSE-LATENT (GSL) SIGNALS 1918

Antoine Honoré, Anubhab Ghosh, Saikat Chatterjee, KTH Royal Institute of Technology, Sweden

Tue AM1.P.3: CONVEX COMBINATION OF COMPRESSED SENSING ALGORITHMS 1923

Ketan Atul Bapat, Mrityunjoy Chakraborty, Indian Institute of Technology Kharagpur, India

**Tue AM1.P.4: MODEL SELECTION IN HIGH-DIMENSIONAL BLOCK-SPARSE GENERAL 1928
LINEAR REGRESSION**

Prakash Borpatra Gohain, Ericsson, Sweden; Magnus Jansson, KTH Royal Institute of Technology, Sweden, Sweden

- Tue AM1.P.5: A NOVEL APPROACH FOR SOLVING MPI FOR MULTI-TARGET TOF IMAGING 1933**
USING SUBDIVISION-BASED NESTED COMPRESSED SENSING
Sanhita Guha, Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany; Faisal Ahmed, Miguel Heredia Conde, University of Siegen, Germany
- Tue AM1.P.6: COMPRESSIVE SAMPLING PATTERNS FOR SPARSE RECOVERY VIA 1938**
DISCRETE COSINE TRANSFORM TYPE-I EVEN
María Elena Domínguez-Jiménez, Universidad Politécnica de Madrid, Spain
- Tue AM1.P.7: ON THE FORMULATION OF CODED DEMODULATION AND 3D 1943**
RECONSTRUCTION IN ROTATING PB-TOF SENSORS
Alvaro Lopez Paredes, Miguel Heredia Conde, University of Siegen, Germany
- Tue AM1.P.8: NEGATIVE BINOMIAL OPTIMIZATION FOR LOW-COUNT OVERDISPERSED 1948**
SPARSE SIGNAL RECONSTRUCTION
Yu Lu, Roummel F. Marcia, University of California, Merced, United States
- Tue AM1.P.9: RECONSTRUCTION OF IMAGES WITH FINITE RATE OF INNOVATION FROM 1953**
NOISY TOMOGRAPHIC PROJECTIONS
Renke Wang, Imperial College London, United Kingdom; Thierry Blu, The Chinese University of Hong Kong, China; Pier Luigi Dragotti, Imperial College London, United Kingdom
- Wed AM1.P: DETECTION AND ESTIMATION METHODS I**
- Wed AM1.P.1: PARAMETRIC DICTIONARY LEARNING FOR TOPOLOGICAL SIGNAL 1958**
REPRESENTATION
Claudio Battiloro, Paolo Di Lorenzo, Sapienza University of Rome, Italy; Alejandro Ribeiro, University of Pennsylvania, United States
- Wed AM1.P.2: AIRGNNS: GRAPH NEURAL NETWORKS OVER THE AIR 1963**
Zhan Gao, University of Cambridge, United Kingdom; Deniz Gunduz, Imperial College London, United Kingdom
- Wed AM1.P.3: A UNIFIED VIEW BETWEEN TENSOR HYPERGRAPH NEURAL NETWORKS 1968**
AND SIGNAL DENOISING
Fuli Wang, Karella Pena-Pena, Wei Qian, Gonzalo Arce, University of Delaware, United States
- Wed AM1.P.4: GRAPH-BASED MATRIX COMPLETION APPLIED TO WEATHER DATA 1973**
Benoît Loucheur, Pierre-Antoine Absil, ICTEAM Institute, Belgium; Michel Journée, Royal Meteorological Institute, Belgium
- Wed AM1.P.5: YULE-WALKER-BASED APPROACHES FOR ESTIMATION OF 1978**
NOISE-CORRUPTED PERIODIC AUTOREGRESSIVE MODEL - FINITE- AND INFINITE-VARIANCE CASES
Wojciech Żuławiński, Agnieszka Wyłomańska, Radosław Zimroz, Wrocław University of Science and Technology, Poland
- Wed AM1.P.6: DECONVOLUTION OF CYCLO-STATIONARY PROCESSES USING 1983**
HIGHER-ORDER CROSS-FREQUENCY CORRELATION
Arvid Trapp, Peter Wolfsteiner, Munich University of Applied Sciences, Germany
- Wed AM1.P.7: ESTIMATING JOINT PROBABILITY DISTRIBUTION WITH LOW-RANK 1988**
Tensor DECOMPOSITION, RADON TRANSFORMS AND DICTIONARIES
Pranava Singhal, Waqar Mirza, Ajit Rajwade, IIT Bombay, India; Karthik S. Gurumoorthy, U.S. Omni Tech Walmart Global Tech, India
- Wed AM1.P.8: COHERENCE EXPECTATION MINIMISATION AND COMBINING WEIGHTED 1993**
MULTITAPER ESTIMATES
Oskar Keding, Maria Åkesson, Maria Sandsten, Lund University, Sweden

**Wed AM1.P.9: LOCAL LEGENDRE POLYNOMIAL FITTING-BASED PREPROCESSING FOR 1998
IMPROVING THE INTERPRETATION OF PERMUTATION ENTROPY IN STATIONARY
TIME SERIES**

Meryem JABLOUN, Orleans University - PRISME laboratory, France

Wed PM1.P: DETECTION AND ESTIMATION METHODS II

**Wed PM1.P.1: COMPLEX SEASONAL CIRCULAR BLOCK BOOTSTRAP FOR ELECTRICITY 2003
LOAD FORECASTING**

Pertami Kunz, Abdelhak Zoubir, Technische Universität Darmstadt, Germany

**Wed PM1.P.2: UNDERDETERMINED BLIND IDENTIFICATION VIA K-SPARSE 1669
COMPONENT ANALYSIS: RANSAC-DRIVEN ORTHOGONAL SUBSPACE SEARCH**

Ehsan Eqlimi, Ghent University, Belgium; Bahador Makkiabadi, Tehran University of Medical Sciences, Iran; Mayadeh Kouti, Shahid Chamran University of Ahvaz, Iran; Ardeshir Fotouhi, Tehran University of Medical Sciences, Iran; Saeid Sanei, Nottingham Trent University, United Kingdom

**Wed PM1.P.3: OPTIMAL DATA FUSION FOR THUNDERSTORM RISK ASSESSMENT BY THE 2013
SADDLEPOINT METHOD**

Christian Musso, Aurélie Bouchard, Magalie Buguet, Office national d'études et de recherches aérospatiales, France

Wed PM1.P.4: ON THE TEMPORAL PARALLELISATION OF THE VITERBI ALGORITHM..... 2018

Simo Särkkä, Aalto University, Finland; Ángel García-Fernández, University of Liverpool, United Kingdom

Wed PM1.P.5: ELASSO FOR ESTIMATING THE SIGNAL DIMENSION IN ICA 2023

Mengxi Yi, Beijing Normal University, China; Klaus Nordhausen, University of Jyväskylä, Finland

**Wed PM1.P.6: GRANGER CAUSALITY PATTERN LEARNING EQUIPPED WITH NOISE 2028
INVALIDATION SOFT THRESHOLDING**

Khashayar Bayati, Karthikeyan Umapathy, Soosan Beheshti, Toronto Metropolitan University, Canada

**Wed PM1.P.7: ONLINE CHANGE POINT DETECTION ON RIEMANNIAN MANIFOLDS WITH 2033
KARCHER MEAN ESTIMATES**

Xiuheng Wang, Université Côte d'Azur, CNRS, OCA., France; Ricardo Augusto Borsoi, Université de Lorraine, CNRS, CRAN., France; Cédric Richard, Université Côte d'Azur, CNRS, OCA., France

Wed PM1.P.8: BEARINGS-ONLY TRACKING WITH SPEED AND RANGE CONSTRAINTS 2038

Shreya Das, Indian Institute of Technology Patna, India; Kundan Kumar, Aalto University, Finland; Shovan Bhaumik, Indian Institute of Technology Patna, India

Wed PM1.P.9: SUBSPACE OUTLIERS DETECTION BY SIGNAL SUBSPACE MATCHING..... 2043

Mati Wax, Technion, Israel; Amir Adler, Braude College of Engineering, Israel