

Morning program

9:00 **Welcome Coffee**

Session 1

Session Chair : **Antonin Chambolle**

- 9:30 - 10:20 **Invited Talk**
Some generic results for compressed sensing off-the-grid: the fisher metric, optimal sample complexity and stability
Clarice Poon
Department of mathematical sciences, University of Bath, UK
- 10:20 - 10:40 ***Selection of regularization parameter in sparse inverse problems for DOA estimation***
Alice Delmer^{1,2}, Anne Ferreol^{1,2} and Pascal Larzabal²
¹Thales, Gennevilliers, France
²SATIE, CNRS, ENS Paris-Saclay, Université Paris-Saclay, Cachan, France
- 10:40 - 11:00 ***Sparse recovery for inverse potential problems in divergence form***
Laurent Baratchart, Cristobal Villalobos-Guillen, Douglas Hardin and Juliette Leblond
INRIA, Sophia Antipolis, France

11:00 - 11:30 **Coffee Break & poster session**

Session 2

Session chair: **Dominique Lesselier**

- 11:30 - 11h50 ***A justification of the topological derivative as a tool for qualitative inverse scattering***
Marc Bonnet¹ and Fioralba Cakoni²
¹POEMS (CNRS, INRIA, ENSTA), ENSTA, Palaiseau, France
²Department of Mathematics, Rutgers University, Piscataway, USA
- 11:50 - 12:10 ***A multi-resolution computational method to solve highly non-linear inverse scattering problems***
Marco Salucci¹ and Alessandro Polo¹, Kuiwen Xu², and Yu Zhong³
¹ELEDIA Research Center (ELEDIA UniTN - University of Trento), Italy
²Key Lab of RF Circuits and Systems of Ministry of Education, Hangzhou Dianzi University, Hangzhou, China
³Institute of High Performance Computing, A*STAR, Singapore
- 12:10 - 12:30 ***Adaptive parameter selection for weighted-TV image reconstruction problems***
Luca Calatroni¹, Alessandro Lanza², Monica Pragliola² and Fiorella Sgallari²
¹CMAF, Ecole Polytechnique, Palaiseau, France
²University of Bologna, Italy

12:30 - 14:00 **Lunch**

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Afternoon program

Session 3

Session chair: **Thomas Rodet**

- 14:00 - 14:20 ***Bayesian data assimilation with Transport Maps sampling and PGD model order reduction***
Paul-Baptiste Rubio, François Louf and Ludovic Chamoin
LMT, ENS Paris-Saclay, Cachan, France
- 14:20 - 14:40 ***Thermographic characterisation of delamination in laminates***
Almpion Ratsakou¹, Christophe Reboud¹, Anastassios Skarlatos¹ and Dominique Lesselier²
¹CEA, LIST, Centre de Saclay, Gif-sur-Yvette F-91191, France
²Laboratoire des Signaux et Systèmes (CNRS-CentraleSupélec-Univ. Paris Sud),
Université Paris-Saclay, Gif-sur-Yvette cedex, France
- 14:40 - 15:00 ***NDT/NDE by means of a probabilistic differential compressive sensing method***
Giorgio Gottardi, Mohammad Abdul Hannan and Alessandro Polo
ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy

15:00 - 15:30 **Coffee Break & poster session**

Session 4

Session chair: **Marc Bonnet**

- 15:30 - 16:20 **Invited Talk**
Imaging a waveguide: the importance of using modes
Laurent Bourgeois
POEMS laboratory, ENSTA ParisTech, Palaiseau, France
- 16:20 - 16:40 ***Regularization Techniques for Inverse Problem in DOT Applications***
Alessandro Benfenati¹, Paola Causin², Marina Giulia Lupieri³ and Giovanni Naldi⁴
^{1,4}Dipartimento di Scienze Politiche ed Ambientali, Università degli studi di Milano, Italy
^{2,3}Dipartimento di Matematica "Federigo Enriques", Università degli studi di Milano, Italy
- 16:40 - 17:00 ***Sequential Sparse Blind Source Separation for Non-Linear Mixtures***
Christophe Kervazo and Jerome Bobin
CEA Saclay, Gif-sur-Yvette, France

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Poster session program

Poster session
Frequency-based inversion of a single wireless link for indoor passive target detection
Giorgio Gottardi, Mohammad Abdul Hannan, Alessandro Polo, Marco Salucci and Federico Viani ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy
Convergence of regularization methods with filter functions for a regularization parameter chosen with GSURE
Bruno Sixou CREATIS, INSA-Lyon; Inserm, U1044; CNRS UMR 5220; Université Lyon 1, Lyon, France
A learning-based inversion strategy for passive wireless detection of crowds
Alessandro Polo, Mohammad Abdul Hannan, Giorgio Gottardi and Federico Viani ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy
Retrieving missing elements of a 2-D micro-structure: joint sparsity inversion and convolutional neural networks
Peipei Ran ¹ , Yingying Qin ^{1,2} , Dominique Lesselier ¹ and Mohammed Serhir ³ ¹ L2S (CNRS-CentraleSupélec-U. Paris-Sud) U. Paris-Saclay, Gif-sur-Yvette, France ² SATIE -Ecole normale supérieure Paris-Saclay, Cachan, France ³ GeePs (CNRS-CentraleSupélec-U. Paris Sud-U. Pierre et Marie Curie), U. Paris-Saclay, Gif sur Yvette, France
Solving an inverse problem for the prediction of photovoltaic plant power production in smart grids
Alessandro Polo, Marco Salucci and Federico Viani ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy
A multi-focusing contrast source Bayesian compressive method for solving inverse scattering problems
Giorgio Gottardi, Mohammad Abdul Hannan and Alessandro Polo ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy
A convex optimization-based inversion method for the synthesis of monopulse linear arrays
Federico Boulos ¹ , Luca Dall'Asta ¹ , Giorgio Gottardi ¹ , Mohammad Abdul Hannan ¹ , Alessandro Polo ¹ and Aaron Salas-Sanchez ^{1,2} ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy ² Department of Applied Physics, University of Santiago de Compostela, Spain
PCA-Based inversion of WiFi signal for robust device-free indoor target detection
Giorgio Gottardi ¹ , Mohammad Abdul Hannan ¹ , Baozhu Li ^{1,2} , Alessandro Polo ¹ , Marco Salucci ¹ and Federico Viani ¹ ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy ² School of Physics and Technology, Nanjing Normal University, Wenyuan, Nanjing, China
A computational inversion method for interference suppression in reconfigurable thinned ring array
Federico Boulos ¹ , Luca Dall'Asta, Giorgio Gottardi ¹ , Mohammad Abdul Hannan ¹ , Alessandro Polo ¹ , Aaron Salas-Sanchez ^{1,2} and Marco Salucci ¹ ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Italy ² Department of Applied Physics, University of Santiago de Compostela, Spain