

Morning program

- 9:00 **Welcome Coffee**
- Session 1**
Session Chair : **Antonin Chambolle**
- 9:30 - 10:20 **Invited Talk**
Learning better models for inverse problem in imaging
Thomas Pock
Institute of Computer Graphics and Vision (ICG), TU, Graz, Austria
- 10:20 - 10:40 ***A low-rank approach to off-the-grid sparse deconvolution***
Paul Catala¹, Vincent Duval^{2,3}, and Gabriel Peyré^{1,4}
¹ DMA, ENS, 45 rue d'Ulm, 75005 Paris
² Mokaplan, Inria Paris, 2 rue Simone Iff, 75012 Paris
³ CEREMADE, Univ. Paris-Dauphine, Place du Maréchal de Lattre de Tassigny, 75016 Paris
⁴ CNRS, UMR 8553
- 10:40 - 11:00 ***Efficient Smoothed Concomitant Lasso Estimation for High Dimensional Regression***
Eugene Ndiaye¹, Olivier Fercoq¹, Alexandre Gramfort¹, Vincent Leclère², and Joseph Salmon¹
¹ LTCI, Télécom ParisTech, Université Paris-Saclay, 46 rue Barrault, 75013 Paris, France
² Université Paris-Est, Cermics (ENPC), 77455 Marne-la-Vallée, France
- 11:00 - 11:30 **Coffee Break & poster session**
- Session 2**
Session chair: **Dominique Lesselier**
- 11:30 - 11h50 ***Real Time Groove Characterization Combining Partial Least Squares and SVR Strategies: Application to Eddy Current Testing***
S Ahmed¹, M Salucci², R Miorelli¹, N Anselmi², G Oliveri², P Calmon¹, C Reboud¹ and A Massa^{2,3}
¹ CEA LIST, Centre de Saclay, F- 91191 Gif-sur-Yvette, France
² ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy
³ ELEDIA Research Center (ELEDIA@L2S - UMR8506), 3 rue Joliot-Curie 91192 Gif-sur-Yvette, France
- 11:50 - 12:10 ***A compressive sensing-based computational method for the inversion of wide-band ground penetrating radar data***
A Gelmini¹, G Gottardi¹ and T Moriyama²
¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy
² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki), 852-8521, Nagasaki, Japan
- 12:10 - 12:30 ***A fast gradient projection method for 3D image reconstruction from limited tomographic data***
V.L. Coli¹, E. Loli Piccolomini², E. Morotti³ and L. Zanni¹
¹ Department of Physics, Informatics and Mathematics, University of Modena and Reggio Emilia
² Department of Mathematics, University of Bologna
³ Department of Mathematics, University of Padova⁴
- 12:30 - 14:00 **Lunch**

Afternoon program

Session 3

Session chair: **Laure Blanc-Féraud**

14:00 - 14:50

Invited Talk

Inexact forward-backward methods for inverse imaging problems

Silvia Bonettini

Università degli studi di Ferrara, dipartimento di matematica informatica, Ferrara, Italy.

14:50 – 15:10

A fast subgradient algorithm in image super-resolution

D. Lazzaro¹, E. Loli Piccolomini¹, V. Ruggiero², F. Zama¹

¹ Department of Mathematics, University of Bologna

² Department of Mathematics and Computer Science, University of Ferrara

15:10 - 15:30

Minimum Mean Square Distance Estimation of Subspaces in presence of Gaussian sources with application to STAP detection

R. Ben abdallah, A. Breloy, M. N. El Korso, D. Lautru, H. Ousslimani

LEME, Université Paris Ouest, 50, rue de Sevres, 92410 Ville d'Avray, France

15:30 - 15:50

Coffee Break & poster session

Session 4

Session chair: **Marc Bonnet**

15:50 - 16:40

Invited Talk

Tomographic Microwave Imaging for Brain Stroke Detection: model and numerical method

Marion Darbas

LAMFA, CNRS UMR 7352, Université de Picardie Jules Verne, France.

16:40 - 17:00

Multi-frequency direct sampling method in inverse scattering problem

Sangwoo Kang¹, Marc Lambert¹, and Won-Kwang Park²

¹Group of Electrical Engineering, Paris (GeePs), UMR CNRS 8507, CentraleSupélec, Univ. Paris Sud, Université. Paris Saclay, UPMC Univ Paris 6, 3 & 11 rue Joliot-Curie 91192, Gif-sur-Yvette, France.

²Department of Information Security, Cryptology, and Mathematics, Kookmin University, Seoul, 02707, Korea

17:00 - 17:20

3D reconstruction of surface cracks using bi-frequency eddy current images and a direct semi-analytic model

Caifang Cai¹, Thierry Bore², Florentin Delaine³, Nicolas Gasnier³, Eric Vourc'h³

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²School of Civil Engineering, University of Queensland, St Lucia, Australia

³SATIE, ENS Paris-Saclay / Université Paris-Saclay /CNRS, France

Poster session program

ADI splitting methods for image osmosis models
L. Calatroni ¹ , C. Estatico ² , N. Garibaldi ² , S. Parisotto ³ ¹ CMAP, Ecole Polytechnique 91128 Palaiseau Cedex, France ² Dipartimento di Matematica, Università di Genova, Via Dodecaneso 35, 16146, Genova, Italy ³ Cambridge Centre for Analysis, Wilberforce Road, CB3 0WA, University of Cambridge, UK
Vascular blood flow reconstruction from tomographic projections with the adjoint method and receding optimal control strategy
Bruno Sixou, Loic Boussel and Sigovan Monica CREATIS, INSA-Lyon; Inserm, U1044; CNRS UMR 5220; Université Lyon 1, Lyon, France
Brain waves-based index for workload estimation and mental effort engagement recognition
A Zammouri ^{1,*} , S Chraa-Mesbahi ² , A Ait Moussa ¹ , S Zerouali ³ , M Sahnoun ³ , H Tairi ² , A M Mahraz ² , ¹ Department of Computer Science, Faculty of Sciences, Mohammed First University, Av. Med VI, P.B. 717, 60000 Oujda, Morocco ² University of Sidi Mohammed Ben Abdellah, Department of Informatics, Faculty of Science Dhar-Mahraz, P.B.1796, 30000 Atlas-Fez, Morocco ³ CESI-Centre Nord-Ouest, 1 Rue Marconi – CS 30285, 76137 Mont Saint Aignan, France
An inversion strategy for energy saving in smart building through wireless monitoring
G Gottardi ¹ and T Moriyama ² ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento) Via Sommarive 9, I-38123 Trento, Italy ² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki) 852-8521, Nagasaki, Japan
Magnetization moment recovery using Kelvin transformation and Fourier analysis
L. Baratchart ¹ , J. Leblond ¹ , E. A. Lima ² , D. Ponomarev ³ ¹ Projet APICS, INRIA, 2004 Route des Lucioles, 06902 Sophia Antipolis Cedex, France ² Earth, Atmospheric, and Planetary Sciences department, MIT, Cambridge, MA 02139, USA ³ Laboratoire POEMS, ENSTA ParisTech, 828 Boulevard des Maréchaux, 91762 Palaiseau Cedex, France
Remarks on a financial inverse problem by means Monte Carlo Methods
Salvatore Cuomo, Vittorio Di Somma, Federica Sica Università degli Studi di Napoli Federico II, Strada Vicinale Cupa Cinthia, 21, Naples, Italy
Adaptive Order Non-Convex Lp-norm Regularization in Image Restoration
Manya Afonso and Joao Miguel Sanches Institute of Systems and Robotics, Instituto Superior Tecnico, Lisbon, Portugal
Filtering techniques for efficient inversion of two-dimensional Nuclear Magnetic Resonance data
V. Bortolotti ¹ , L. Brizi ^{2,3} , P. Fantazzini ^{2,3} , G. Landi ⁴ , F. Zama ⁴ ¹ Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy. ² Department of Physics and Astronomy, University of Bologna, Italy. ³ Museo Storico della Fisica e Centro Studi e Ricerche Enrico Fermi, Roma, Italy. ⁴ Department of Mathematics, University of Bologna, Italy.
Indoor detection of passive targets recast as an inverse scattering problem
G Gottardi ¹ and T Moriyama ² ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy ² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki), 852-8521, Nagasaki, Japan
An optimal inversion method for the synthesis of monopulse linear arrays through convex optimization
M Salucci ¹ and T Moriyama ² ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy ² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki), 852-8521, Nagasaki, Japan
Interference suppression in reconfigurable thinned ring arrays through inverse problem optimization
M Salucci ¹ and T Moriyama ² ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy ² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki), 852-8521, Nagasaki, Japan
Robust antenna design through a hybrid inversion strategy combining interval analysis and nature-inspired optimization
M Salucci ¹ and T Moriyama ² ¹ ELEDIA Research Center (ELEDIA@UniTN - University of Trento), Via Sommarive 9, I-38123 Trento, Italy ² ELEDIA Research Center (ELEDIA@UniNAGA - University of Nagasaki), 852-8521, Nagasaki, Japan