

## **Monday June 1st**

### **Plenary Session 1: (9H00-10H00)**

*Alfred Hero* - Combinatorial continuum limits and their applications.

### **Oral Session 1: Scale-space 1 (10H30-11H20)**

Spectral Representations of One-Homogeneous Functionals. *Martin Burger, Lina Eckardt, Guy Gilboa, Michael Moeller*

The Morphological Equivalents of Relativistic and Alpha-Scale-Spaces - *Martin Schmidt, Joachim Weickert*

### **Oral Session 2: Restauration/Reconstruction (11H30-12H20)**

On debiasing restoration algorithms: applications to total-variation and nonlocal-means - *Charles-Alban Deledalle, Nicolas Papadakis, Joseph Salmon*

Cartoon-Texture-Noise Decomposition with Transport Norms - *Christoph Brauer, Dirk Lorenz*

### **Oral Session 3: Optimization methods in Imaging(14H15-15H30)**

A sparse algorithm for dense optimal transport - *Bernhard Schmitzer*

Activity Identification and Local Linear Convergence of Douglas-Rachford/ADMM under Partial Smoothness - *Jingwei Liang, Jalal Fadili, Gabriel Peyre, Russell Luke*

Bilevel optimization with nonsmooth lower level problems - *Peter Ochs, René Ranftl, Thomas Brox, Tom Pock*

### **Poster Session 1: (15H30-16H00)**

#### **Photography, texture and color processing:**

A L1-TV algorithm for robust perspective photometric stereo with spatially-varying lightings - *Yvain Queau, Francois Lauze, Jean-Denis Durou*

Duality Principle for Image Regularization and Perceptual Color Correction Models - *Thomas Batard, Marcelo Bertalmio*

PDE-based Color Morphology Using Matrix Fields. - *Michael Breuss, Ali Sharifi Boroujerdi, Andreas Kleefeld, Bernhard Burgeth*

Conditional Gaussian Models for Texture Synthesis - *Lara Raad, Agnès Desolneux, Jean-Michel Morel*

Multiscale Texture Orientation Analysis using Spectral Total-Variation Decomposition - *Dikla Horesh, Guy Gilboa*

#### **Denoising, Restoration and Reconstruction :**

Solution-Driven Adaptive Total-Variation Regularization - *Frank Lenzen, Johannes Berger*

Some nonlocal  $\ell_1$  formulation using functional rearrangements - *Gonzalo Galiano, Julian Velasco*

Compressing Images with  $\ell_1$ - and Exemplar-based Inpainting - *Pascal Peter, Joachim Weickert*

Total Variation Restoration of Images Corrupted by Poisson Noise with Iterated Conditional Expectations - *Rémy Abergel, Cécile Louchet, Lionel Moisan, Tiejong Zeng*

Regularization with Sparse Vector Fields: From Image Compression to TV-type Reconstruction - *Eva-Maria Brinkmann, Martin Burger, Joana Grah*

Artifact-free variational MPEG decompression - *Martin Holler, Kristian Bredies*

### **Oral Session 8: Optical flow/Registration (17H00-17H50)**

Sparse Aggregation Framework for Optical Flow Estimation - *Denis Fortun, Patrick Bouthemy, Charles Kervrann*

An Image Registration Framework for Sliding Motion with Piecewise Smooth Deformations - *Stefan Heldmann, Thomas Polzin, Alexander Derksen, Benjamin Berkels*

## Thursday June 2nd

### **Plenary Session 2:** (9H00-10H00)

*Marc Teboulle* - Algorithms for High Dimensional Structured Optimization

### **Oral Session 5: Denoising** (10H30-11H20)

Convex image denoising via Non-Convex Regularization - *Serena Morigi, Fiorella Sgallari, Alessandro Lanza*

Bilevel Image Denoising using Gaussianity tests – *Jérôme Fehrenbach, Mila Nikolova, Gabriele Steidl, Pierre Weiss*

### **Oral Session 6: Surfaces** (11H30-12H20)

Discrete varifolds: a unified framework for discrete approximations of surfaces and mean curvature - *Blanche Buet, Gian Paolo Leonardi, Simon Masnou*

Robust Poisson Surface Reconstruction - *Virginia Estellers, Michael Scott, Kevin Tew, Stefano Soatto*

### **Oral Session 7: Color Processing** (14H15-15H30)

Luminance-Hue Specification in the RGB Space - *Fabien Pierre, Jean-François Aujol, Aurélie Bugeau, Vinh-Thong Ta*

Variational Exposure Fusion with Optimal Local Contrast - *David Hafner, Joachim Weickert*

A Variational Model for Color Assignment - *Jan Henrik Fitschen, Mila Nikolova, Fabien Pierre, Gabriele Steidl*

### **Poster Session 2:** (15H30-16H00)

#### **Motion/Registration/Optical Flow:**

Second Order Minimum Energy Filtering on SE(3) with Nonlinear Measurement Equations. - *Johannes Berger, Andreas Neufeld, Florian Becker, Frank Lenzen, Christoph Schnoerr*

Computation and Visualization of Local Deformation for Multiphase Metallic Materials by In<sub>mal</sub> Convolution of TV-type Functionals - *Frank Balle, Dietmar Eier, Jan Henrik Fitschen, Sebastian Schuff, Gabriele Steidl*

Nonlocal Joint Segmentation Registration Model - *Solène Ozeré, Carole Le Guyader*

Deformable Image Registration with Automatic Non-Correspondence Detection - *Kanglin Chen, Alexander Derksen, Stefan Heldmann, Marc Hallmann, Benjamin Berkels*

Bezier curves in the space of images - *Stefan Simon, Kirsten Stahn, Martin Rumpf, Benedikt Wirth, Alexander Effland*

#### **Scale-space and PDE methods:**

Morphological Scale-Space Operators for Images Supported on Point Clouds - *Jesus Angulo*

Separable time-causal and time-recursive spatio-temporal receptive fields - *Tony Lindeberg*

Partial Differential Equations of Bivariate Median Filters - *Martin Welk*

New Approximation of a Scale Space Kernel on SE(3) and Applications in Neuroimaging - *Jorg Portegies, Gonzalo Sanguinetti, Stephan Meesters, Remco Duits*

Fundamentals of Non-local Total Variation Spectral Theory - *Jean-François Aujol, Guy Gilboa, Nicolas Papadakis*

A Linear Scale-Space Theory for Continuous Nonlocal Evolutions - *Giovanno Marcelo R. Cardenas, Joachim Weickert, Sarah Schaeffer*

### **Oral Session 8: Segmentation 1** (17H00-17H50)

Convex Color Image Segmentation with Optimal Transport Distances - *Julien Rabin, Nicolas Papadakis*

Piecewise Geodesics for Vessel Centerline Extraction and Boundary Delineation with application to Retina Segmentation - *Da Chen, Laurent Cohen*

## Wednesday June 3rd

### **Plenary Session 2:** (9H00-10H00)

*Gabriele Steidl* - Second order non-smooth variational models for restoring manifold-valued images

### **Poster Session 3:** (10H00-11H30)

#### **Shape, surface and 3D problems:**

Data-driven Sub-Riemannian Geodesics in SE(2) - *Erik Bekkers, Remco Duits, Alexey Mashtakov, Gonzalo Sanguinetti*

Edge-Preserving Integration of a Normal Field: Weighted Least-squares, TV and L1 Approaches - *Yvain Queau, Jean-Denis Durou*

Reconstruction of Surfaces from Point Clouds using a Lagrangian Surface Evolution Model - *Mariana Remesikova, Karol Mikula, Matej Medla, Patrik Daniel*

Solving Minimal Surface Problems on Surfaces and Point Clouds - *Daniel Tenbrinck, François Lozes, Abderrahim Elmoataz*

#### **Optimization theory and Methods in Imaging:**

Infinite Dimensional Optimization Models and PDEs for Dejittering - *Guozhi Dong, Aniello Patrone, Otmar Scherzer, Ozan Oektem*

Alternating Direction Method of Multiplier for Euler's Elastica-based Denoising - *Maryam Yashtini, SungHa Kang*

Asymptotic behaviour of total generalised variation - *Konstantinos Papafitsoros, Tuomo Valkonen*

#### **Segmentation and Clustering:**

Interactive Multi-label Segmentation of RGB-D Images - *Julia Diebold, Nikolaus Demmel, Caner Hazirbas, Michael Moeller, Daniel Cremers*

Unsupervised Learning Using the Tensor Voting Graph - *Shay Deutsch, Gerard Medioni*

Fast Minimization of Region-based Active Contours using the Shape Hessian of the Energy - *Gunay Dogan*

### **Oral Session 9: Scale-space 2** (Wednesday June 3rd, 11H30-12H20)

Invertible Orientation Scores of 3D Images - *Michiel Janssen, Remco Duits, Marcel Breeuwer*

Scale-space theory for auditory signals. - *Tony Lindeberg, Anders Friberg*

## **Thursday June 4th**

### **Plenary Session 4: (9H00-10H00)**

*Jean-Michel Morel* - A review of image denoising methods

### **Oral Session 10: Segmentation 2 (10H30-11H20)**

Probabilistic Correlation Clustering and Image Partitioning Using Perturbed Multicuts - *Joerg Kappes, Paul Swoboda, Bogdan Savchynskyy, Tamir Hazan, Christoph Schnoerr*

Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation - *Caner Hazirbas, Julia Diebold, Daniel Cremers*

### **Oral Session 11 : Shape from X/3D Vision (11H30-12H20)**

Variational Perspective Shape from Shading - *Yong Chul Ju, Michael Breuss, Andres Bruhn*

Multiview Depth Parameterisation with Second Order Regularisation - *Christopher Schroers, David Hafner, Joachim Weickert*