

# Imaging inverse problems and generating models: sparsity and robustness versus expressivity

Monday 4 – Thursday 7 May 2026

*The programme is subject to change. All times are British Summer Time (BST).*

MONDAY 4 MAY	
09.00-09.25	Registration and refreshments
09.25-09.30	Welcome and housekeeping
09.30-10.00	Generative models: <b>Clarice Poon</b> , University of Warwick <i>Inverse optimal transport</i>
10.00-10.30	Generative models: <b>Johannes Hertrich</b> , Université Paris Dauphine <i>On the Relation between Rectified Flows and Optimal Transport</i>
10.30-11.00	Refreshments
11.00-11.30	Imaging with uncertainties: <b>Yiqiu Dong</b> , Technical University of Denmark <i>Promoting Sparsity via Conditional Priors in Bayesian Inference</i>
11.30-12.00	Imaging with uncertainties: <b>Martin Burger</b> , DESY/University of Hamburg <i>Diffusion models for x-ray imaging with large uncertainties</i>
12.00-14.00	Lunch
14.00-14.30	Optimization & learning: <b>Luca Calatroni</b> , Università degli studi di Genova <i>Blind image reconstruction: from LMMSE estimators to convergent plug and play approaches</i>
14.30-15.00	Optimization & learning: <b>Kristian Bredies</b> , University of Graz <i>Infinite Infimal Convolution Regularization: Concepts, Models and Optimization</i>
15.00-15.30	Optimization & learning: <b>Jean-Christophe Pesquet</b> , Paris-Saclay University <i>Some recent results on iterations based on cophyppomonotone operators</i>
15.30-16.00	Refreshments
16.00-16.40	Software talk: <b>Andrew Wang</b> , DeepInverse <i>Get started with DeepInverse for image reconstruction with deep learning</i>
16.40-18.30	Software hands on: <b>Andrew Wang</b> , DeepInverse Discussions & Collaborations
18.30-19.30	Welcome reception

TUESDAY 5 MAY	
09.30-10.00	Generative models: <b>Agnes Desolneux</b> , Paris-Saclay University <i>An analysis of discrete (categorical) diffusion models with few data</i>
10.00-10.30	Generative models: <b>Alain Oliviero-Durmus</b> , Ecole Polytechnique <i>A Mixture-based Framework for Guiding Diffusion Models</i>
10.30-11.00	Refreshments
11.00-11.30	Learning for Inverse problems: <b>Serena Morigi</b> , University of Bologna <i>A Guided Variational Network for Image Decomposition</i>
11.30-12.00	Learning for Inverse problems: <b>Matthias Ehrhardt</b> , University of Bath <i>A primal-dual algorithm for image reconstruction with input-convex neural network regularizers</i>
12.00-14.00	Lunch
14.00-15.30	Poster session
15.30-16.00	Refreshments
16.00-18.30	Discussions & Collaborations

WEDNESDAY 6 MAY	
09.30-10.00	Optimization & learning: <b>Nicolas Papadakis</b> , Institut de Mathématiques de Bordeaux, CNRS <i>Posterior Sampling with the Proximal Stochastic Gradient Langevin Algorithm</i>
10.00-10.30	Optimization & learning: <b>Rémi Gribonval</b> , INRIA <i>Training dynamics of ReLU Networks: a Path-lifting Perspective</i>
10.30-11.00	Refreshments
11.00-11.30	Generative models: <b>Sékolène Martin</b> , Inria Lyon <i>Flow Matching Meets Denoising</i>
11.30-12.00	Generative models: <b>Mathurin Massias</b> , INRIA <i>The generalization of flow matching and its temporal phases: why and when does it work?</i>
12.00-14.00	Lunch
14.00-14.30	Learning for Inverse problems: <b>Caroline Chaux</b> , CNRS, I2M <i>Learning through unrolling a weighted least squares data term to adapt to noise in image deconvolution</i>
14.30-15.00	Learning for Inverse problems: <b>Michael Davies</b> , University of Edinburgh <i>Self Supervised Learning in imaging inverse problems</i>
15.00-15.30	Learning for Inverse problems: <b>Tatiana Bubba</b> , University of Ferrara <i>Self-Supervised Deep Equilibrium models: learning from limited data</i>
15.30-16.00	Refreshments

16.00-16.40	Software talk: <b>Thomas Moreau</b> , Benchopt <i>Benchopt: reproducible, efficient, and collaborative ML and optimization benchmarks</i>
16.40-18.30	Software hands on: <b>Thomas Moreau</b> , Benchopt Discussions & Collaborations
19.30	Workshop dinner at Pizza Posto <i>16 Nicolson St, Edinburgh EH8 9DH</i>

THURSDAY 7 MAY	
09.30-10.00	Imaging applications: <b>Margaret Duff</b> , STFC - UKRI <i>Improving usability and accessibility of image reconstruction algorithms, with examples of stochastic optimisation for PET, MRI and CT</i>
10.00-10.30	Imaging applications: <b>Yves Wiaux</b> , Heriot-Watt University <i>The R2D2 deep neural network series paradigm for fast precision imaging in radio astronomy and MRI.</i>
10.30-11.00	Refreshments
11.00-11.30	Learning for Inverse problems: <b>Marcelo Pereyra</b> , Heriot-Watt University <i>Toward fast, modular and explainable physicsinformed generative AI for image restoration: a diffusion deep unfolding, distillation and Langevin sampling approach</i>
11.30-12.00	Learning for Inverse problems: <b>Sebastian Neumayer</b> , TU Chemnitz <i>Learning Regularization Functionals</i>
12.00-14.00	Lunch and end of workshop

Poster Presenters	
P1	<b>Sofia Agostoni</b> , University of Genoa <i>Automatic regularisation approaches for 2D/3D Image Scanning Microscopy</i>
P2	<b>Harshit Bajpai</b> , Indian Institute of Technology Roorkee (IIT Roorkee) <i>Graph Laplacian Assisted Iterative Regularization for Ill-Posed Problems with Applications to Medical Imaging</i>
P3	<b>Cristian Bonato</b> , Heriot-Watt University <i>Reconstructing magnetisation of complex magnetic textures</i>
P4	<b>Arwa Dabbech</b> , Heriot-Watt University <i>A deep-learning approach for joint calibration and imaging in radio astronomy</i>
P5	<b>Zeljko Kereta</b> , University College London <i>Trajectory Stitching for Solving Inverse Problems with Flow-Based Models</i>
P6	<b>Teresa Klatzer</b> , University of Edinburgh <i>Mirror Langevin Dynamics with Plug-and-Play Priors for Poisson Inverse Problems</i>
P7	<b>Arthur Leclaire</b> , Telecom Paris <i>Controllable Blind Deblurring with Diffusion Models</i>
P8	<b>Cristiano Parenti</b> , University of Modena and Reggio Emilia <i>An Inexact-Proximal Plug-and-Play Method with Line Search for Nonconvex Inverse Problems</i>
P9	<b>Gabriele Scrivanti</b> , MaLGa center, DIBRIS, Università di Genova <i>A self-supervised approach for quantitative parameter estimation in fluorescence microscopy for stable design of photovoltaic materials</i>
P10	<b>Jonathan Spence</b> , Heriot-Watt University <i>Deep Unfolding of MCMC Kernels</i>
P11	<b>Bernardin Tamo Amougou</b> , Heriot-Watt University <i>An Equivariant Self-Supervised VAE for Uncertainty Quantification in Bayesian Imaging Problems</i>
P12	<b>Pierre-Antoine Thouvenin</b> , Centrale Lille <i>CARDS: a Python library of Composable Algorithms for Reproducible Distributed Sampling</i>
P13	<b>Xiaoyu Wang</b> , Heriot-Watt University <i>Scalable training of stochastic spiking neural networks</i>
P14	<b>Lingyi Yang</b> , University of Nottingham <i>Distilling score-based diffusion models with path signatures</i>