

Research Activities

Research Visits (of at least one week length)

- Nov 15 **University of Michigan**. Ann Arbor (MI)
Invitation by Prof. Roman Vershynin (2 weeks)
- Mar 16 **Hausdorff Research Institute for Mathematics**. Bonn (Germany)
Trimester program “Mathematics of Signal Processing” (2 weeks)
- Jan 17 **University of Texas at Austin**. Austin (TX)
Invitation by Prof. Chandrajit Bajaj (1 week)
- Nov 17 **Technion – Israel Institute of Technology**. Haifa (Israel)
Invitation by Prof. Yonina Eldar (1 week)
- Feb 18 **University College London**. London (UK)
Invitation by Prof. Miguel Rodrigues (1 week)

Conferences, Workshops, etc.

- 2013 ▶ **Matheon Workshop “Compressed Sensing and its Applications”**. *Technische Universität Berlin*. December 9–13, 2013
- 2014 ▶ **Conference “Mathematical Image Analysis”**. *Institut Henri Poincaré*. Paris. January 13–15, 2014
 - ▶ **Joint GAMM ANLA-MSIP Workshop “Matrix Computations for Sparse Recovery”**. *Technische Universität Berlin*. April 9–11, 2014
 - ▶ **Conference “ICCHA”**. *Vanderbilt University*. Nashville (TN). May 19–23, 2014
- 2015 ▶ **Conference “SPARS”**. *University of Cambridge*. July 6–9, 2015
 - ▶ **Matheon Conference “Compressed Sensing and its Applications”**. *Technische Universität Berlin*. December 7–11, 2015
- 2016 ▶ **Conference “Mathematical Image Analysis”**. *Institut Henri Poincaré*. Paris. January 18–20, 2016
 - ▶ **Workshop “Harmonic Analysis, Graphs and Learning”**. *Hausdorff Research Institute for Mathematics*. Bonn (Germany). March 14–18, 2016
 - ▶ **Conference “Time-Frequency Analysis and Related Topics”**. Strobl (Austria). June 6–10, 2016
 - ▶ **GAMM Workshop “Applied and Numerical Linear Algebra”**. *Technische Universität Hamburg*. September 15–16, 2016
 - ▶ **Conference “NIPS”**. Barcelona (Spain). December 5–10, 2016
- 2017 ▶ **GAMM Annual Meeting**. Weimar (Germany). March 6–10, 2017
 - ▶ **Conference “Applied Inverse Problems”**. *Zhejiang University*. Hangzhou (China). May 29–June 2, 2017
 - ▶ **Conference “SPARS”**. *Instituto Superior Técnico*. Lisbon (Portugal). June 5–8, 2017
 - ▶ **GAMM Workshop “Mathematical Signal Processing and Data Analysis”**. *Universität Bremen*. September 18–20, 2017
 - ▶ **Matheon Conference “Compressed Sensing and its Applications”**. *Technische Universität Berlin*. December 4–8, 2017
- 2018 ▶ **GAMM Annual Meeting**. *Technische Universität München*. Munich (Germany). March 19–23, 2018

- ▶ **Workshop “Applied Harmonic Analysis and Data Processing”**. *Mathematisches Forschungsinstitut Oberwolfach*. Oberwolfach (Germany). March 26–30, 2018
- ▶ **Workshop “Optimization, Machine Learning, and Data Science”**. *Technische Universität Braunschweig*. Brunswick (Germany). April 12–13, 2018

Talks and Posters

- 2013 ▶ **AFG Oberseminar**. *Technische Universität Berlin*. October 17, 2013
Title: “Analysis of Inpainting via Hybrid Shearlets and Clustered Sparsity”
- ▶ **Dies Mathematicus**. *Technische Universität Berlin*. November 22, 2013
Title: “Rekonstruktion von zerstörten Bildern – Eine Analyse von Inpainting mittels Shearlets” (in german)
- 2014 ▶ **Conference “ICCHA”**. *Vanderbilt University*. Nashville (TN). May 22, 2014
Title: “Asymptotic Analysis of Inpainting via Universal Shearlet Systems and Clustered Sparsity” (talk and poster)
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. June 26, 2014
Title: “Sparse Proteomics Analysis: Feature Selection for Mass Spectrometry Data via 1-Bit Compressed Sensing”
- 2015 ▶ **AFG Oberseminar**. *Technische Universität Berlin*. January 29, 2015
Title: “1-Bit Compressed Sensing”
- ▶ **BIMoS Day**. *Technische Universität Berlin*. May 4, 2015
Title: “Sparse Proteomics Analysis”
- ▶ **Conference “SPARS”**. *University of Cambridge*. July 9, 2015
Title: “Sparse Proteomics Analysis” (poster)
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. August 25, 2015
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Mass Spectrometry Data”
- ▶ **Student AIM Seminar**. *University of Michigan*. Ann Arbor (MI). November 6, 2015
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Forward Models”
- ▶ **Dies Mathematicus**. *Technische Universität Berlin*. November 20, 2015
Title: “Sparse Proteomics Analysis: Wie Mathematik in der Krebsforschung helfen kann” (in german)
- ▶ **Winter School on Compressed Sensing**. *Technische Universität Berlin*. December 5, 2015
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Forward Models”
- ▶ **Matheon Conference “Compressed Sensing and its Applications”**. *Technische Universität Berlin*. December 8, 2015
Title: “Sparse Proteomics Analysis: Learning Forward Models via Compressed Sensing” (poster)
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. December 17, 2015
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Forward Models”

- 2016 ▶ **Forschungsseminar Diskrete Mathematik/Geometrie**. *Technische Universität Berlin*. March 2, 2016
Title: "Convex Recovery of Structured Signals From Non-Linear Observations"
- ▶ **Workshop "Harmonic Analysis, Graphs and Learning"**. *Hausdorff Research Institute for Mathematics*. Bonn (Germany). March 15, 2016
Title: "Sparse Proteomics Analysis: Learning Forward Models via Compressed Sensing" (poster)
- ▶ **Workshop "Harmonic Analysis, Graphs and Learning"**. *Hausdorff Research Institute for Mathematics*. Bonn (Germany). March 15, 2016
Title: "Recovery of Structured Signals From Non-Linear Observations With General Convex Loss Functions" (poster)
- ▶ **Matheon Center Days 2016**. *Technische Universität Berlin*. April 11, 2016
Title: "A-CH2: Sparse Compressed Sensing Based Classifiers for -omics Mass-Data"
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. May 26, 2016
Title: "Can Convex Estimators Fit Unknown Non-Linear Models?"
- ▶ **Conference "Time-Frequency Analysis and Related Topics"**. Strobl (Austria). June 7, 2016
Title: "Recovery of Structured Signals From Non-Linear Observations With General Convex Loss Functions" (poster)
- ▶ **AFG Reunion**. *Technische Universität Berlin*. August 26, 2016
Title: "Towards a Mathematical Framework for Feature Selection From Real-World Data"
- ▶ **GAMM Workshop "Applied and Numerical Linear Algebra"**. *Technische Universität Hamburg*. September 15, 2016
Title: "Towards a Mathematical Framework for Feature Selection From Real-World Data"
- ▶ **Analysis Oberseminar**. *RWTH Aachen*. November 29, 2016
Title: "Feature Selection From Real-World Data With Non-Linear Observations"
- 2017 ▶ **ICES Seminar**. *University of Texas at Austin*. Austin (TX). January 17, 2017
Title: "Feature Selection From Real-World Data With Non-Linear Observations"
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. February 9, 2017
Title: "Recovery Guarantees via Mendelson's Small Ball Method"
- ▶ **GAMM Annual Meeting**. Weimar (Germany). March 7, 2017
Title: "Feature Selection From Real-World Data With Non-Linear Observations" (poster)
- ▶ **Conference "Applied Inverse Problems"**. *Zhejiang University*. Hangzhou (China). May 29, 2017
Title: "Feature Selection From Real-World Data With Non-Linear Observations" (in Minisymposium "Deep Neural Networks: Theory and Application")
- ▶ **Conference "SPARS"**. *Instituto Superior Técnico*. Lisbon (Portugal). June 8, 2017
Title: "Sparse Recovery From Superimposed Non-Linear Sensor Measurements"
- ▶ **AFG Oberseminar**. *Technische Universität Berlin*. June 22, 2017
Title: "Sparse Recovery From Superimposed Non-Linear Sensor Measurements"
- ▶ **GAMM Workshop "Mathematical Signal Processing and Data Analysis"**. *Universität Bremen*. September 19, 2017
Title: "Sparse Recovery From Superimposed Non-Linear Measurements"
- ▶ **Matheon Conference "Compressed Sensing and its Applications"**. *Technische Universität Berlin*. December 5, 2017
Title: "Recovering Structured Data From Superimposed Non-Linear Measurements" (poster)

- ▶ **AFG Oberseminar.** *Technische Universität Berlin.* December 21, 2017
Title: "The Mismatch Principle: Can the Lasso Fit Arbitrary Observations?"
- 2018 ▶ **GAMM Annual Meeting.** *Technische Universität München.* Munich (Germany).
March 21, 2018
Title: " ℓ^1 -Analysis Minimization and Generalized (Co-)Sparsity" (poster)
- ▶ **GAMM Annual Meeting.** *Technische Universität München.* Munich (Germany).
March 23, 2018
Title: "Sparse Recovery From Superimposed Non-Linear Measurements" (in Contributed Session S21 "Mathematical Signal and Image Processing")
- ▶ **Workshop "Applied Harmonic Analysis and Data Processing".** *Mathematisches Forschungsinstitut Oberwolfach.* Oberwolfach (Germany). March 30, 2018
Title: "The Mismatch Principle: An Ignorant Approach to Non-Linear Compressed Sensing?"
- ▶ **Workshop "Optimization, Machine Learning, and Data Science".** *Technische Universität Braunschweig.* Brunswick (Germany). April 12, 2018
Title: "The Mismatch Principle: What Can the Lasso Learn About Non-Linear Observations?"