ESI Workshop on "Computational Inverse Problems"
April 23 - 27, 2012

Organized by: Peter Maass and Otmar Scherzer

- **Monday, April 23**
  08:30 – 09:00: Heinz Engl: Opening
  09:00 – 10:00: Mario Bertero
  Efficient optimization methods for imaging problems with Poisson data
  10:00 – 10:45: Ronny Ramlau
  Inverse Problems in Adaptive Optics
  10:45 – 11:15: coffee break
  11:15 – 12:00: Barbara Kaltenbacher
  Adaptive discretization of parameter identification problems in PDE's for variational and iterative regularization
  12:00 – 12:45: Ming Jiang
  2D Phase Unwrapping Problem
  12:45 – 14:30: lunch break
  14:30 – 15:15: Habib Ammari
  Resolution and cloaking enhancements
  15:15 – 16:00: Pierre Marechal
  A digression about ill-posed problems, intertwining relationships and spectral functions
  16:00 – 16:30: break
  16:30 – 17:15: Simon Arridge
  Quantitative PhotoAcoustic Tomography

- **Tuesday, April 24**
  09:00 – 10:00: Alfred Louis
  Feature Reconstruction in Inverse Problems
  10:00 – 10:45: Elena Beretta
  On the stability issue for some inverse boundary value problems
  10:45 – 11:15: coffee break
  11:15 – 12:00: Samuli Siltanen
  Electrical impedance imaging using nonlinear Fourier transform
  12:00 – 12:45: Gerd Teschke
  On sampling and sparse recovery
  12:45 – 14:30: lunch break

Young Researcher's Talks:
14:30 – 14:55: Robin Strehlow
Norm sensitivity of sparsity regularization with respect to p
14:55 – 15:20: Bernadette Hahn
Reconstruction of dynamic objects
15:20 – 15:30: break
15:30 – 15:55: Valeriya Naumova
Numerical differentiation by means of Legendre polynomials
15:55 – 16:20: Sivananthan Sampath
Multi-parameter regularization in Learning Theory
16:20 – 16:45: Roland Griesmaier
Source reconstruction using windowed Fourier transforms and the filtered backprojection
16:45 – 17:10: Patrick Dülk
Parameter identification problems for differential equations: analytic properties for sparsity reconstructions

- **Wednesday, April 25**
  09:00 – 10:00: Karl Kunisch
  PARAMETER LEARNING AS BILEVEL OPTIMIZATION PROBLEM (or: how to choose the regularization parameters)
  10:00 – 10:45: Arnd Rösch
  Regularization in Sobolev spaces with fractional order
  10:45 – 11:15: coffee break
  11:15 – 12:00: Maitine Bergounioux
  Tomographic reconstruction with few views
  12:00 – 12:45: Zakaria Belhachmi
  Control of the regularization for some ill-posed problems in computer vision
  12:45 – 14:30: lunch break

  Math. Colloquium: Room C209, Building UZA4, Nordbergstrasse 4, 1090 Wien
  15:00 – 15:45: Sung Ha Kang
  Unsupervised multiphase applications and infinite parameter model
  15:45 – 16:15: Coffee Break
  16:15 – 17:00: M. Zuhair Nashed
  Conductivity Imaging from Interior Data and Related Nonsmooth Optimization Problems

- **Thursday, April 26**
  09:00 – 10:00: Peter Elbau
  Modelling Photoacoustic Sectional Imaging
  10:00 – 10:45: Thorsten Hohage
  Nonlinear inverse problem with Poisson data
  10:45 – 11:15: coffee break
  11:15 – 12:00: Martin Hanke
  One shot inverse scattering methods
  12:00 – 12:45: Armin Lechleiter
  Inverse Medium Scattering and Sparsity Reconstruction
  12:45 – 14:30: lunch break
  14:30 – 15:15: Bernd Hofmann
  Smoothness concepts in regularization and the autoconvolution problem revisited
  15:15 – 16:00: Mourad Sini
  Reconstruction of interfaces using elastic waves

- **Friday, April 27**
  09:00 – 10:00: Anne Vanhems, Markus Grasmair
  Non-parametric Instrumental Regression with Non-convex Constraints: an Illustration of Consumer Demand Theory
  10:00 – 10:45: Kristian Bredies
  Inverse problems with measure-based regularization functionals
  10:45 – 11:15: coffee break
  11:15 – 12:00: Andreas Kirsch
  An Inverse Acoustic-Elastic Scattering Problem
  12:00 – 14:30: lunch break

  Young Researcher's Talks:
  14:30 – 14:55: Laurent Seppecher
  An acousto-optic imaging model for the reconstruction of the optical absorption parameter
  14:55 – 15:20: Jürgen Frikel
  Sparse regularization in limited angle tomography
  15:20 – 15:30: break
  15:30 – 15:55: Thanh Nguyen
  Inverse obstacle scattering problems using multifrequency measurements
  15:55 – 16:20: Manas Kar
  Reconstruction of interfaces using CGO solutions for the Maxwell equations
  16:20 – 16:45: Alessandro Benfenati
  Image restoration for Poisson data with iterative Bregman regularization precedure

All lectures take place in the ESI Boltzmann Lecture Hall