

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 – 16:55: break

16:55 – 17:20: Patrick Dülk

Parameter identification problems for differential equations: analytic properties for sparsity reconstructions

17:20 – 17:45: Benjamin Tremoulhéac

Decomposition into low-rank and sparse components in dynamic MR images

• **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 Friel

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 procedure

All lectures take place in the ESI Boltzmann Lecture Hall except for Wednesday afternoon