

Workshop *"Inverse Problems in the Alps"* Obergurgl, AT, 15 – 19 March 2016 <u>Scientific Program</u>

RICAM - JOHANN RADON INSTITUTE FOR COMPUTATIONAL AND APPLIED MATHEMATICS

Tuesday, 15 March 2016

18:00 - 19:00	Opening Dinner
19:00 – 19:30	Regularization methods for joint image reconstruction (S. Arridge, University College London)
19:30 – 20:00	Shape based reconstruction for inverse problems in imaging (O. Öktem, KTH Royal Institute of Technology)

Wednesday, 16 March 2016

08:30 - 09:00	<i>Hybrid imaging using X-rays and neutrons</i> (E. Klann, Technical University of Berlin)
09:00 – 09:30	Photoacoustic tomography model with varying material density and variab- le bulk modulus (K. Sadiq, RICAM Linz)
09:30 - 10:00	Image reconstruction with uncertainty quantification in photoacoustic to- mography (T. Tarvainen, University of Eastern Finland)
10:00 - 10:30	Coffee Break
10:30 - 11:00	Photoacoustic imaging in stratified media (F. Triki, la fédération IMAG)
11:00 - 11:30	Variational methods for accelerated photoacoustic imaging (M. Betcke, University College London)
11:30 – 12:00	Large noise in variational regularization (T. Helin, University of Helsinki)

Break, Dinner 18:00 – 19:00

19:00 – 19:30	- 19:30	On the capability of variational source conditions in Tikhonov and Lavren-
		<i>tiev regularization</i> (B. Hofmann, Technical University of Chemnitz)
10.20	20.00	

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19:30 – 20:00Verifications and characterizations of variational source conditions<br/>(T. Hohage, University of Göttingen)
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Thursday, 17 March 2016

08:30 – 09:00	<i>Optimal convergence rate results for linear inverse problems</i> (P. Elbau, University of Vienna)
09:00 – 09:30	PSF reconstruction for extremely large telescopes using atmospheric tomo- graphy (R. Wagner, RICAM Linz)
09:30 - 10:00	<i>On the reduction of reconstruction layers in atmospheric tomography</i> (D. Saxenhuber, University of Linz)
10:00 - 10:30	Coffee Break
10:30 - 11:00	<i>Far field splitting by iteratively reweighted</i> l^1 <i>minimization</i> (R. Griesmaier, University of Würzburg)
11:00 - 11:30	<i>Enhancement of flow measurements using fluid-dynamic constraints</i> (H. Egger, Technical University of Darmstadt)
11:30 – 12:00	Flexible sparse regularization (E. Resmerita, University of Klagenfurt)
	Break, Dinner 18:00 – 19:00
19:00 – 19:30	Targeted solutions to linear ill-posed problems: a generalization of mollica- tion (P. Maréchal, University of Toulouse)
19:30 – 20:00	Solving inverse problems in econometrics using a mollication approach (A. Vanhems, Toulouse Business School)

Friday, 18 March 2016

08:30 – 09:00 *The scattering problem of obliquely incident electromagnetic waves* (L. Mindrinos, University of Vienna)

09:00 – 09:30	Comparison of a CGO-based reconstruction method and an iterative Newton's method for electrical impedance tomography (E. Sherina, Techni- cal University of Denmark)
09:30 - 10:00	<i>Variations of the factorization method for indefinite and non-linear penet-rable media</i> (A. Lechleiter, University of Bremen)
10:00 - 10:30	Coffee Break
10:30 - 11:00	<i>A proximal-gradient algorithm fort he minimization of the sum of two non-convex functions</i> (R. Bot, University of Vienna)
11:00 - 11:30	<i>Reconstructions in magnetic particle imaging using realistic magnetic field topologies</i> (J. Frikel, Helmholtz Zentrum München)
11:30 - 12:00	<i>Inverse problems and MRAI - mapping the pulse wave velocity</i> (S. Hubmer, University of Linz)
	Break, Dinner 18:00 – 19:00
19:00 - 19:30	<i>Discontinuities detection using higher order topological gradients</i> (M. Muskieta, Wroclaw University of Technology)
19:30 - 20:00	<i>Finding Tensor Structure in an III-Posed Problem</i> (K. Soodhalter, University of Linz)
Saturday, 19 March 20	<u>16</u>
9:00 – 9:30	Accurate computation of view dependent derivatives in tomography (A. Faridani, Oregon State University)
9:30 – 10:00	<i>On the lifting of deterministic convergence rates for inverse problems with stochastic noise</i> (D. Gerth, Technical University of Chemnitz)
10:00 - 10:30	Coffee Break
10:30 - 11:00	Adaptive methods for geometry inpainting (Z. Belhachmi, Université de Haute-Alsace)
11:00 – 11:30	Vector- and tensor-valued total-generalized-variation regularization for joint reconstruction of medical images (K. Bredies, University of Graz)
11:30 - 12:30	Closing Lunch