Volume 24, Number 03 IPNet Digest February 28, 2017 Today's Editor: Patricia (Patti) K. Lamm, Michigan State University Today's Topics: Workshop: Variational Methods, New Optimisation Techniques, Fast Numerical algorithms Update: International Conference on Inverse Problems in Engineering Summer School: Inverse Problems and Imaging (Bremen) Summer School: Methods of Optimization and their Applications (Baikal) PhD Opportunity: Bayesian Computation in Imaging Inverse Problems w/ Partially Unknown Models PhD Position: Data Analysis for Brain Magnetic Resonance Imaging PostDoc position: Inverse Problems and Mathematical Imaging Professorship: W1-Professorship at Applied Mathematics Münster Table of Contents: Journal of Inverse and Ill-posed Problems Table of Contents: Inverse Problems Submissions for IPNet Digest: Mail to ipnet-digest@math.msu.edu Information about IPNet: http://ipnet.math.msu.edu From: Candy Smellie <communications@newton.ac.uk> Subject: Upcoming Workshop - Variational methods, new optimisation techniques and new fast numerical algorithm 4-8 September 2017 Date: February 24, 2017 Upcoming Workshop Variational methods, new optimisation techniques and new fast numerical algorithm 4-8 September 2017

Attend this workshop at the Isaac Newton Institute and interact and engage while working on the review, exchange and promoting of recent advances in variational models for imaging and vision, new theories, and fast algorithms as well as discuss the outstanding challenges in the fast growing field. Topics such as nonlinear PDEs, nonlinear, nons-mooth, non-convex or combinatorial optimization problems and their analysis and algorithms, as well as imaging and vision applications will be covered.

This is the first event and part of the activities for a long term programme on Variational methods and effective algorithms for imaging and vision (1 Sept-- 31 Dec 2017) organised by Ke Chen, Andrew Fitzgibbon, Michael Hintermüller, Carola-Bibiane Schönlieb, and Xue-Cheng Tai.

List of invited and confirmed speakers includes (to expand): J-F Aujol; M Berger; A Bruckstein; R H Chan; J Fadili; G Gilboa; T Goldstein; D Jerome; S H Kang; V

Kolmogorov; B Kristian; J Lellmann; M Ng; A Repetti; S Soatto; M Teboulle; P Weiss; H M Zhou.

This workshop is organised by:

- Antonin Chambolle (CNRS École Polytechnique),
- Ke Chen (University of Liverpool)
- Stan Osher (UCLA)
- Thomas Pock (Graz University of Technology)
- Christoph Schnoerr (Universität Heidelberg)
- Xue-Cheng Tai (Hong Kong Baptist University and University of Bergen)

This workshop is open for registration but closes shortly. Deadline for Oral/Poster presentation: 1 April 2017. Deadline for participation (only): 1 June 2017. Participation remotely is possible.

Apply today - http://www.newton.ac.uk/event/vmvw01

Submitted by: Candy Smellie, Information Coordinator Isaac Newton Institute for Mathematical Sciences 20 Clarkson Road Cambridge CB3 0EH Tel : 01223 335983

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From: Kyle Daun <kjdaun@uwaterloo.ca> Subject: International Conference on Inverse Problems in Engineering, Poster Abstract Deadline/Early registration March 31st Date: February 26, 2017

Dear Colleagues,

This is an update for the 9th International Conference on Inverse Problems in Engineering, held at the University of Waterloo, Canada. We are still accepting poster abstracts until March 31st, 2017, which is also the early bird registration deadline. Please visit icipe17.uwaterloo.ca for more information, registration, and abstract submission, and feel free to share this email with your colleagues.

We have an exciting program planned for you:

• Tuesday, May 23: Workshop on "Inverse Problems in the Bayesian Framework," by Dr. Aku Seppänen, University of Eastern Finland. This is a great opportunity for you and your students to brush up on your Bayes...

• Wednesday, May 24: Keynote speaker: Prof. Margaret Cheney, Colorado State University, "The Radar Inverse Problem."

• Wednesday, May 24: Poster session featuring local craft beer and artesian pizza. (Waterloo is the unofficial craft beer capital of Canada.)

• Thursday May 25: Conference banquet featuring noted author Malcolm Gladwell.

• Friday, May 26: Lunch banquet and reception in honor of Professor Graham Gladwell, FRSC, in recognition of Graham's pioneering contributions to inverse analysis and his outstanding mentorship and training.

Please contact us if you have any questions. On behalf of the organizing committee, we're looking forward to hosting you in Waterloo!

Sincerely,

Kyle J Daun, PhD, P. Eng. Chair, 9th International Conference on Inverse Problems in Engineering Icipe17.uwaterloo.ca

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From: Armin Lechleiter <lechleiter@uni-bremen.de> Subject: Summer school on Inverse Problems and Imaging, September 18-22, 2017 in Bremen, Germany Date: February 22, 2017

Franco-German Summer School on Inverse Problems and Imaging in Bremen, Germany, September 18-22, 2017

Dear Colleagues,

the Franco-German Summer School on Inverse Problems and Imaging takes place from September 18-22 at the University of Bremen, Germany. This event is generously supported by the Franco-German University, the University of Bremen, the DFG Research Training Center 2224, and INRIA.

This summer school considers the analytical and numerical treatment of inverse problems in the context of multi-modal and hybrid schemes as well as in imaging. A particular focus is set on adapted sparsity regularization and suitable numerical algorithms.

The courses are designed for advanced Master students, PhD students and PostDocs in mathematics. A limited number of participants will also have the opportunity to present their research in dedicated sessions.

More information on the summer school, a detailed program and an online registration for this event can be found at the web site

http://www.math.uni-bremen.de/zetem/ip-school2017

Best wishes,

Houssem Haddar and Armin Lechleiter

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From: Denis Sidorov <contact.dns@gmail.com>
Subject: Baikal summer school
Date: February 9, 2017 at 8:08:38 PM EST

I'm happy to inform you that Baikal 17th triannial school-seminar "Methods of Optimization and their Applications" site is already in service: http://isem.irk.ru/conferences/mopt2017/en/index.html The school-seminar has a long standing and successful track record since mid of XX century.

Sections: Discrete optimization Continuous optimization Optimal control Equilibrium and bilevel programming Applications of optimization methods in energy problems

Important Dates
15 March 2017 - Abstracts
15 March 2017 - Registration of participants
22 March 2017 - Notification of acceptance
26 March 2017 - Preliminary program
31th of July - 6th of August 2017 - Conference

15 March 2017 - Abstracts 15 March 2017 - Registration of participants 22 March 2017 - Notification of acceptance 26 March 2017 - Preliminary program 31th of July - 6th of August 2017 - Conference

The size of abstract is limited to one page. Text must be prepared by the Lecture Notes in Computer Science http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0 and submitted by EasyChair https://easychair.org/conferences/?conf=baikal2017. The submission deadline is March, 15, 2017.

New! Two special Issues will be dedicated to the School-Seminar:1. Journal of Global Optimization2. Optimization Methods and Software

Registration Fee: 100 USD (50 USD for PhD Students)

Best Regards, Denis Sidorov

P.S.

Please kindly forward this information to your colleagues and university site.

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From: "Pereyra, Marcelo" <m.pereyra@hw.ac.uk>
Subject: Fully funded PhD opportunity "Bayesian computation in imaging inverse
problems with partially unknown models", Maxwell Institute for Mathematical Sciences,
Heriot-Watt University, Edinburgh
Date: February 24, 2017

An exciting PhD opportunity is available at the Maxwell Institute for Mathematical Sciences, School of Mathematics and Computer Sciences, Heriot-Watt University.

Bayesian computation in imaging inverse problems with partially unknown models

This project will be fully funded for 3 years including stipend and fees. The deadline for applications is 19th March 2017. There are no nationality of citizenship restrictions. All enquires should be directed to Dr Marcelo Pereyra http://www.macs.hw.ac.uk/~mp71/phd\_opportunity\_March2017.html

Mathematical imaging is at the core of modern data science, with important applications in medicine, biology, defence, agriculture and environmental sciences. This active research field studies imaging inverse problems involving the estimation of an unobserved true image from measurements that are noisy, incomplete and resolution-limited. This project is related to an increasingly important and particularly challenging class of imaging inverse problems that, in addition to being ill-posed and ill-conditioned, are further complicated by inaccurate and partial knowledge of the observation system and of the properties of the underlying true image (which are essential to regularise the problem and deliver meaningful estimates). These so-called "semi-blind" and "unsupervised" problems are the focus of significant research efforts across a range of scientific communities, particularly Bayesian statistics, signal processing, and applied analysis, which have recently produced important developments in mathematical theory, methods, models and efficient algorithms. This project will focus on new Bayesian computation methodology for this challenging class of imaging inverse problems, with a focus on methods that tightly combine modern high-dimensional stochastic simulation and optimisation, and which support advanced Bayesian analyses.

## Application procedure:

To apply please use https://www.hw.ac.uk/study/apply/uk/postgraduate.htm
You will need to complete an application form and to submit a CV, cover letter, and
the contact information of two references. We will contact you if we need any
additional information.

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From: BCAM - Basque Center for Applied Mathematics <recruitment@bcamath.org> Subject: International Call for postdocs IC2016\_WINTER and Ikerbasque Fellows Date: February 3, 2017

International Call for postdocs IC2016\_WINTER and Ikerbasque Fellows

IC2016 \_WINTER International Call for postdocs

BCAM, the Basque Center for Applied Mathematics http://www.bcamath.org whose mission is to develop high quality interdisciplinary research in the frontiers of Applied Mathematics, has opened the following positions:

BCAM - BCBL Joint PhD Position in Data Analysis for Brain Magnetic Resonance Imaging

http://www.bcamath.org/documentos\_public/archivos/ofertas/BCAM17-PhD\_Profile\_Joint\_Position\_BCAM\_BCBL.pdf

http://www.bcamath.org/en/research/job/ic2016-winter-joint-phd-position-in-dataanalysis-for-brain-magnetic-resonance-imaging

Deadline: 30/MAY/17

All applications must be submitted on-line at: http://www.bcamath.org/en/research/job We kindly ask you to distribute this call among colleagues and potential candidates. Please, do not hesitate to contact us if you need further information: recruitment@bcamath.org

Ikerbasque Research Fellows 2017

Ikerbasque, the Basque Foundation for Science http://www.ikerbasque.net has launched its annual call for attracting researchers to the Research Institutions in the Basque Country.

This call offers 15 positions for Promising Researchers Ikerbasque Research Fellows within any of the Basque Research Institutions (Universities, BERC - Basque Excellence Research Centres, CIC - Cooperative Research Centres, Biomedical institutions and Technology Corporations, among others).

- 5 year contracts
- PhD degree between Jan 2006 Dec 2014
- Support letter from the host group is mandatory

BCAM – Basque Center for Applied Mathematics http://www.bcamath.org, is a BERC Excellence Research Centre and Host Institution in the Ikerbasque call, whose mission is to develop high quality interdisciplinary research in the frontiers of Applied Mathematics. Our research agenda is focussed in.

- COMPUTATIONAL MATHEMATICS (CM)
- MATHEMATICAL MODELLING WITH MULTIDISCIPLINARY APPLICATIONS (M3A)
- MATHEMATICAL PHYSICS (MP)
- ANALYSIS PARTIAL DIFFERENTIAL EQUATIONS (APDE)
- DATA SCIENCE (DS)

All applications must be submitted on line: http://www.ikerbasque.net/ deadline for submissions: March 30th, 2017 at 13:00 CET.

From: "Moser, Melanie (melanie.moser@uni-graz.at)"

Subject: PostDoc position, Inverse Problems and Mathematical Imaging, University of Graz

Date: February 21, 2017

The Institute of Mathematics and Scientific Computing at the University of Graz offers a two-year post-doctoral research position within the FWF/CDG "Partnership in research" project on Mathematical methods for motion-aware medical imaging.

The position is available immediately and the Application Deadline is March 31st, 2017.

Further information: https://static.uni-graz.at/fileadmin/nawi-institute/Mathematik/application\_form.pdf

-----From: Martin Burger <martin.burger@wwu.de> Subject: Job vacancy: W1-professorship at Applied Mathematics Münster Date: February 22, 2017

Job vacancy: W1-professorship at Applied Mathematics Münster

Applied Mathematics Münster at the Westfälische Wilhelms-Universität Münster invites applications for a W1-professorship in mathematical optimization starting in winter term 2017. The position is at the level of an assistant professorship and is appointed for three years plus another three years extension after a positive evaluation.

The successful candidate will have a strong background and research record in mathematical optimization (or a related field of applied mathematics such as calculus of variations and inverse problems), and he will have expertise in analysis as well as numerics.

The department is looking for a candidate who complements the different applied mathematics groups in Münster and expects a strong research activity, participation in the department's research projects, as well as contribution to teaching in applied mathematics.

Requirements for an application are a PhD and adequate subsequent further scientific qualification (for instance as a postdoc) as well as an adequate teaching experience. The Westfälische Wilhelms-Universität Münster is an equal opportunity employer and is committed to increasing the proportion of female academics. Consequently, we actively encourage applications by women. Female candidates with equivalent qualifications and academic achievements will be preferentially considered within the legal framework. We also welcome applications from candidates with severe disabilities. Disabled candidates with equivalent qualifications will be preferentially considered. To apply for this position, please send a letter of application (including a Curriculum Vitae, relevant certificates, a list of publications, a summary of the research and teaching experience) in a single PDF file to: Dekan des Fachbereichs Mathematik, WWU Münster mathdek@uni-muenster.de The application deadline is April 15th, 2017. Submitted by: Prof. Martin Burger Institut für Numerische und Angewandte Mathematik WWU Münster Einsteinstr. 62, 48149 Münster martin.burger@wwu.de http://imaging.uni-muenster.de From: <noreply@degruyter.com> Subject: eTOC Alert 'Journal of Inverse and Ill-posed Problems' Date: February 1, 2017 Journal of Inverse and Ill-posed Problems February 2017 Volume 25, Issue 1 Table of Contents On the reconstruction of obstacles and of rigid bodies immersed in a viscous incompressible fluid San Martín, Jorge / Schwindt, Erica L. / Takahashi, Takéo Reconstruction of the refractive index from transmission eigenvalues for spherically stratified media Xu, Xiao-Chuan / Yang, Chuan-Fu Error minimizing relaxation strategies in Landweber and Kaczmarz type iterations Nikazad, Touraj / Abbasi, Mokhtar / Elfving, Tommy Reciprocity gap method for an interior inverse scattering problem Zeng, Fang / Liu, Xiaodong / Sun, Jiguang / Xu, Liwei Feasibility of parameter estimation in hepatitis C viral dynamics models Arthur, Joseph G. / Tran, Hien T. / Aston, Philip Trusted frequency region of convergence for the enclosure method in thermal imaging Ikehata, Masaru / Kwon, Kiwoon Sequential subspace optimization for nonlinear inverse problems Wald, Anne / Schuster, Thomas Photoacoustic tomography with spatially varying compressibility and density Belhachmi, Zakaria / Glatz, Thomas / Scherzer, Otmar https://www.degruyter.com/view/j/jiip.2017.25.issue-1/issue-files/jiip.2017.25.issue-1 .xml

From: <noreply@iopscience.org> Subject: Inverse Problems, Volume 33, Number 3, March 2017 Date: February 20, 2017 Inverse Problems March 2017 Volume 33, Number 3 Table of Contents Fourier method for recovering acoustic sources from multi-frequency far-field data Xianchao Wang, Yukun Guo, Deyue Zhang, and Hongyu Liu Accurate and efficient velocity estimation using Transmission matrix formalism based on the domain decomposition method Benfeng Wang, Morten Jakobsen, Ru-Shan Wu, Wenkai Lu, and Xiaohong Chen An iterative method for 2D inverse scattering problems by alternating reconstruction of medium properties and wavefields: theory and application to the inversion of elastic waveforms G Rizzuti, and A Gisolf Shape-based image reconstruction using linearized deformations Ozan Öktem, Chong Chen, Nevzat Onur Domaniç, Pradeep Ravikumar, and Chandrajit Bajaj A new non-iterative reconstruction method for the electrical impedance tomography problem A D Ferreira, and A A Novotny Compensation for geometric modeling errors by positioning of electrodes in electrical impedance tomography N Hyvönen, H Majander, and S Staboulis An approximate factorization method for inverse medium scattering with unknown buried objects Fenglong Qu, Jiaqing Yang, and Bo Zhang Fractional diffusion: recovering the distributed fractional derivative from overposed data W Rundell, and Z Zhang An efficient numerical algorithm for computing densely distributed positive interior transmission eigenvalues Tiexiang Li, Tsung-Ming Huang, Wen-Wei Lin, and Jenn-Nan Wang A reconstruction algorithm based on topological gradient for an inverse problem related to a semilinear elliptic boundary value problem Elena Beretta, Andrea Manzoni, and Luca Ratti

Recovering an electromagnetic obstacle by a few phaseless backscattering measurements Jingzhi Li, Hongyu Liu, and Yuliang Wang

Reconstructing material properties by deconvolution of full-field measurement images: The conductivity case Cédric Bellis, Manel Trabelsi, and Flavien Frémy

Uniqueness and Lipschitz stability of an inverse boundary value problem for time-harmonic elastic waves Elena Beretta, Maarten V de Hoop, Elisa Francini, Sergio Vessella, and Jian Zhai

Conditional stability in determination of initial data for stochastic parabolic equations Ganghua Yuan

A multifrequency MUSIC algorithm for locating small inhomogeneities in inverse scattering Roland Griesmaier, and Christian Schmiedecke

A generalization of the Funk-Radon transform Michael Quellmal

http://iopscience.iop.org/issue/0266-5611/33/3;jsessionid= 2ACBDA99FB8771A6033D47A47E2C73D2.c4.iopscience.cld.iop.org ----- end -----