

Today's Editor: Patricia (Patti) K. Lamm, Michigan State University

Today's Topics:

Workshop: 15th Optimization and Inverse Problems in Electromagnetism (OIPE)

Symposium: 31st Inverse Problems Symposium (IPS)

Special Session: Modelling and Decision Making Under Uncertainty, at iEMSs 2018

Table of Contents: Inverse Problems

Table of Contents: Nonlinear Analysis: Modelling and Control

Table of Contents: Electronic Transactions on Numerical Analysis

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

<http://ipnet.math.msu.edu>

From: OIPE 2018 <notifications@exordo.com>

Subject: OIPE 2018 - Call for Papers

Date: December 6, 2017

OIPE 2018 - 15th International Workshop on Optimization and Inverse Problems in Electromagnetism

<http://www.oipe2018.at>

Dear colleagues,

it is with great pleasure that we announce that the 15th Workshop on Optimization and Inverse Problems in Electromagnetism, OIPE 2018, will be held on September 11 - 13, 2018, in Hall in Tirol, Austria.

We invite members of the scientific community in universities, research centers and industry to attend the workshop and present their recent achievements.

Please find the Call for Papers:

https://oipe2018.exordo.com/files/messages/23/OIPE2018_Call_of_Papers.pdf

More information about the workshop and the preceding doctoral course can be found on the website www.oipe2018.at

We are looking forward to meeting you all in Hall in Tirol at the OIPE 2018.

Prof. Dr. Daniel Baumgarten

Chairman OIPE 2018

From: "Dolan, Kirk" <dolank@anr.msu.edu>
Subject: 2018 IPS June 3-5, MSU
Date: December 31, 2017

2018 Inverse Problems Symposium June 3-5. Michigan State University

<https://inverseproblems2018.org/>

Abstract Submission is open!

We also welcome session organizers.

This is the 31st in the series of National and International meetings on Inverse Problems that were initiated at Michigan State University in 1988. Papers are solicited from all areas involving inverse methods and their applications. The symposium is organized in a single-session format to foster cross-disciplinary interaction. Solicited topics include:

A. Mathematical and Statistical Aspects of Inverse Problems

1. Theory and Methods of Inverse Problems
2. Stability and Error Analysis

B. Design of Experiments

1. Optimal Design of Experiments
2. Analysis of Actual Experimental Data

C. Applications

1. Heat Transfer, Applied Mechanics, Controls, Other Engineering Disciplines
2. Biology, Biochemistry, Genetics, and Medicine
3. Nondestructive Evaluation
4. Nanoengineering
5. Tomography and Inverse Scattering
6. Geology and Environmental Phenomena
7. Economics
8. Food and Bioprocessing
9. Bioengineering
10. Packaging

Contact Information:

Honorary Chairman: Dr. James V. Beck, Professor Emeritus, Michigan State University,
beck@msu.edu.

Conference Chairman: Kirk Dolan, Professor
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Department of Biosystems & Agricultural Engineering
Michigan State University East Lansing, MI 48224
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From: igwmc <igwmc@mines.edu>

Subject: iEMSs 2018 - Modelling and Decision Making Under Uncertainty

Date: January 30, 2018

Next summer (June 24-28 2018), the 9th International Congress on Environmental Modelling and Software will take place in Ft. Collins, Colorado, USA!

(<http://iemss2018.engr.colostate.edu/>)

We (Mary Hill , Holger Maier, Saman Razavi and Jiri Nossent) are organizing a broad session on “Modelling and Decision Making Under Uncertainty” (detailed description at the end of this e-mail) and invite you to consider a contribution to our session.

The abstract submission deadline is 1st February 2018 and the direct link for submitting abstracts is <http://iemss2018.engr.colostate.edu/call-for-abstracts/>

Looking forward to meeting you in Ft. Collins for this great event!

Best regards,

Mary Hill , Holger Maier, Saman Razavi and Jiri Nossent

Session description:

Uncertainty is an intrinsic part of environmental modelling and the legitimacy and utility of modelling for decision making is influenced by how different sources of uncertainty are addressed and propagated through the model. Therefore, this session aims to share information on advances in uncertainty and sensitivity analysis methods, approaches and case studies to promote explicit and reasoned consideration of uncertainty. We welcome both quantitative and qualitative contributions, in both management and research settings. Examples of quantitative techniques include (but are not limited to) those associated with:

- deep uncertainty
- scenario analysis
- multi-criteria analysis
- exploratory modelling
- expert elicitation
- use of multiple working hypotheses
- multi-model ensembles
- sensitivity analysis

Examples of qualitative techniques include (but are not limited to):

- discussion and communication of limitations
- assessment of model pedigree
- assessment and quantification of information requirements
- identification of future research needs

From: <noreply@iopsience.org>
Subject: Inverse Problems Tables of Contents
Date: December 1, 2017

Inverse Problems December 2017 Volume 33, Number 12
Table of Contents

Special Issue Papers

Numerical solvers based on the method of approximate inverse for 2D vector and 2-tensor tomography problems

E Yu Derevtsov, A K Louis, S V Maltseva, A P Polyakova, and I E Svetov

Joint reconstruction of the initial pressure and speed of sound distributions from combined photoacoustic and ultrasound tomography measurements

Thomas P Matthews, and Mark A Anastasio

Abel transforms with low regularity with applications to x-ray tomography on spherically symmetric manifolds

Maarten V de Hoop, and Joonas Ilmavirta

Identifying the stored energy of a hyperelastic structure by using an attenuated Landweber method

Julia Seydel, and Thomas Schuster

An iterative inversion of weighted Radon transforms along hyperplanes

F O Goncharov

Identification of heat transfer coefficient through linearization: explicit solution and approximation

F S V Bazán, and L Bedin

Solving ill-posed inverse problems using iterative deep neural networks

Jonas Adler, and Ozan Öktem

A variational reconstruction method for undersampled dynamic x-ray tomography based on physical motion models

Martin Burger, Hendrik Dirks, Lena Frerking, Andreas Hauptmann, Tapio Helin, and Samuli Siltanen

Parameter identification in ODE models with oscillatory dynamics: a Fourier regularization approach

Maria Chiara D'Autilia, Ivonne Sgura, and Benedetto Bozzini

Papers

Convergence analysis of surrogate-based methods for Bayesian inverse problems

Liang Yan, and Yuan-Xiang Zhang

Modified transmission eigenvalues in inverse scattering theory

S Cogar, D Colton, S Meng, and P Monk

Well-posedness of the Goursat problem and stability for point source inverse backscattering

Eemeli Blåsten

Boundary determination of the Lamé moduli for the isotropic elasticity system

Yi-Hsuan Lin, and Gen Nakamura

Fast myopic 2D-SIM super resolution microscopy with joint modulation pattern estimation

François Orieux, Vincent Loriette, Jean-Christophe Olivo-Marin, Eduardo Sepulveda, and Alexandra Fragola

Determining anisotropic conductivity using diffusion tensor imaging data in magneto-acoustic tomography with magnetic induction

Habib Ammari, Lingyun Qiu, Fadil Santosa, and Wenlong Zhang

Monotonicity based imaging method for time-domain eddy current problems

Z Su, S Ventre, L Udupa, and A Tamburrino

A TVSCAD approach for image deblurring with impulsive noise

Guoyong Gu, Suhong Jiang, and Junfeng Yang

Inversion of geophysical potential field data using the finite element method

Bishnu P Lamichhane, and Lutz Gross

A physiology-based parametric imaging method for FDG-PET data

Mara Scussolini, Sara Garbarino, Gianmario Sambuceti, Giacomo Caviglia, and Michele Piana

New sets of eigenvalues in inverse scattering for inhomogeneous media and their determination from scattering data

Lorenzo Audibert, Fioralba Cakoni, and Houssein Haddar

Preasymptotic convergence of randomized Kaczmarz method

Yuling Jiao, Bangti Jin, and Xiliang Lu

Uniqueness for the electrostatic inverse boundary value problem with piecewise constant anisotropic conductivities

Giovanni Alessandrini, Maarten V de Hoop, and Romina Gaburro

Carleman estimate and application to an inverse source problem for a viscoelasticity model in anisotropic case

Paola Loreti, Daniela Sforza, and Masahiro Yamamoto

Size estimates for the inverse boundary value problems of isotropic elasticity and complex conductivity in 3D

Cătălin Ion Cârstea, and Jenn-Nan Wang

A general approach to regularizing inverse problems with regional data using Slepian wavelets

Volker Michel, and Frederik J Simons

Approximation of full-boundary data from partial-boundary electrode measurements

Andreas Hauptmann

<http://iopscience.iop.org/issue/0266-5611/33/12>

Inverse Problems

January 2018

Volume 34, Number 1

Table of Contents

Special Issue Papers

Joint reconstruction via coupled Bregman iterations with applications to PET-MR imaging

Julian Rasch, Eva-Maria Brinkmann, and Martin Burger

Approximate inverse for the common offset acquisition geometry in 2D seismic imaging

Christine Grathwohl, Peer Kunstmann, Eric Todd Quinto, and Andreas Rieder

Local recovery of the compressional and shear speeds from the hyperbolic DN map

Plamen Stefanov, Gunther Uhlmann, and Andras Vasy

Stable architectures for deep neural networks

Eldad Haber, and Lars Ruthotto

Dynamic SPECT reconstruction with temporal edge correlation

Qiaoqiao Ding, Martin Burger, and Xiaoqun Zhang

Quantitative reconstructions in multi-modal photoacoustic and optical coherence tomography imaging

P Elbau, L Mindrinos, and O Scherzer

Curved version of Radon's inversion formula on the plane

Simon Gindikin

Papers

Lipschitz stability for an inverse hyperbolic problem of determining two coefficients by a finite number of observations

L Beilina, M Cristofol, S Li, and M Yamamoto

Recovering an elastic obstacle containing embedded objects by the acoustic far-field measurements

Fenglong Qu, Jiaqing Yang, and Bo Zhang

Inverse random source scattering for the Helmholtz equation in inhomogeneous media

Ming Li, Chuchu Chen, and Peijun Li

Wavefield reconstruction inversion with a multiplicative cost function

Nuno V da Silva, and Gang Yao

Global acoustic daylight imaging in a stratified Earth-like model

Maarten V de Hoop, Josselin Garnier, and Knut Sølna

Reconstruction formulas for photoacoustic imaging in attenuating media

Otmar Scherzer, and Cong Shi

Tikhonov regularization with oversmoothing penalty for non-linear ill-posed problems in Hilbert scales

Bernd Hofmann, and Peter Mathé

On a backward problem for multidimensional Ginzburg-Landau equation with random data

Mokhtar Kirane, Erkan Nane, and Nguyen Huy Tuan

Identification of multiple cracks in 2D elasticity by means of the reciprocity principle and cluster analysis

Efim I Shifrin, and Alexander V Kaptsov

<http://iopscience.iop.org/issue/0266-5611/34/1>

Inverse Problems

February 2018

Volume 34, Number 2

Table of Contents

Special Issue Papers

Propagation of singularities for linearised hybrid data impedance tomography

Guillaume Bal, Kristoffer Hoffmann, and Kim Knudsen

A spectral geometric model for Compton single scatter in PET based on the single scatter simulation approximation

I G Kazantsev, U L Olsen, H F Poulsen, and P C Hansen

Nonlocal low-rank and sparse matrix decomposition for spectral CT reconstruction

Shanzhou Niu, Gaohang Yu, Jianhua Ma, and Jing Wang

Automatic alignment for three-dimensional tomographic reconstruction

Tristan van Leeuwen, Simon Maretzke, and K Joost Batenburg

Efficient generalized Golub–Kahan based methods for dynamic inverse problems
Julianne Chung, Arvind K Saibaba, Matthew Brown, and Erik Westman

Efficient regularization with wavelet sparsity constraints in photoacoustic tomography
Jürgen Frikel, and Markus Haltmeier

Papers

Size estimates for fat inclusions in an isotropic Reissner–Mindlin plate
Antonino Morassi, Edi Rosset, and Sergio Vessella

A direct method for nonlinear ill-posed problems
A Lakhali

Coded aperture ptychography: uniqueness and reconstruction
Pengwen Chen, and Albert Fannjiang

Stability of stationary inverse transport equation in diffusion scaling
Ke Chen, Qin Li, and Li Wang

Variational Gaussian approximation for Poisson data
Simon R Arridge, Kazufumi Ito, Bangti Jin, and Chen Zhang

An inverse problem for Maxwell’s equations with Lipschitz parameters
Monika Pichler

Reconstruction of an order of derivative and a source term in a fractional diffusion equation from final measurements
Jaan Janno, and Nataliia Kinash

Iterative updating of model error for Bayesian inversion
Daniela Calvetti, Matthew Dunlop, Erkki Somersalo, and Andrew Stuart

<http://iopscience.iop.org/issue/0266-5611/34/2>

From: Romas Baronas <romas.baronas@mif.vu.lt>

Subject: Table of Contents, Nonlinear Analysis: Modelling and Control 23:1

Date: January 8, 2018

Nonlinear Analysis: Modelling and Control 2018 Volume 23, Number 1
Table of Contents

Controllability of nonlinear fractional delay dynamical systems with prescribed controls
Xiao-Li Ding, Juan J. Nieto

Prediction of composite indicators using locally weighted quantile regression
Jurga Rukšenaite, Pranas Vaitkus, Povilas Asijavicius

New uniqueness results for boundary value problem of fractional differential equation
Yujun Cui, Wenjie Ma, Qiao Sun, Xinwei Su

Impulsive control of nonlinear systems with impulse time window and bounded gain error
Limin Zou, Yang Peng, Yuming Feng, Zhengwen Tu

Numerical schemes for general Klein-Gordon equations with Dirichlet and nonlocal boundary conditions
Jesus Martin-Vaquero, Ascension Hernandez Encinas, Araceli Queiruga-Dios, Victor Gayoso-Martinez, Angel Martin del Rey

Impulsive mean square exponential synchronization of stochastic dynamical networks with hybrid time-varying delays
Fei Wang, Yongqing Yang

Improved synchronization analysis of competitive neural networks with time-varying delays
Adnene Arbi, Jinde Cao, Ahmed Alsaedi

Impulsive coupled systems with generalized jump conditions
Feliz Manuel Minhós, Robert de Sousa

Maximum likelihood estimation for Gaussian process with nonlinear drift
Yuliya Mishura, Kostiantyn Ralchenko, Sergiy Shklyar

<http://www.mii.lt/NA/>

From: Lothar Reichel <reichel@math.kent.edu>
Subject: ToC, ETNA, vol. 47
Date: January 10, 2018

Electronic Transactions on Numerical Analysis (ETNA) 2017 Volume 47
Table of Contents

Special Volume of the NL2A 2016 conference

Identifying the magnetic permeability in multi-frequency EM data inversion
G. P. Deidda, P. Díaz de Alba, and G. Rodriguez

A block Arnoldi based method for the solution of the Sylvester-observer equation
L. Elbouyahyaoui, M. Heyouni, K. Jbilou, and A. Messaoudi

Any admissible harmonic Ritz value set is possible for GMRES

K. Du, J. Duintjer Tebbens, and G. Meurant

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Incremental computation of block triangular matrix exponentials with application to option pricing

D. Kressner, R. Luce, and F. Statti

On generalized iterated Tikhonov regularization with operator-dependent seminorms

D. Bianchi and M. Donatelli

Block Krylov subspace methods for functions of matrices

A. Frommer, K. Lund, and D. B. Szyld

An optimal Q-OR Krylov subspace method for solving linear systems

G. Meurant

Weighted Golub-Kahan-Lanczos bidiagonalization algorithms

H.-X. Zhong and H. Xu

Vector estimates for $f(A)b$ via extrapolation

M. Mitrouli and P. Roupas

Enhanced matrix function approximation

N. Eshghi and L. Reichel

Varying the s in your s -step GMRES

D. Imberti and J. Erhel

<http://etna.mcs.kent.edu/volumes/2011-2020/vol47/>

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