Contents

IPNet Digest Volume 31, Number 2 29 February 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Conference department, Conferences@ima.org.uk
Sent: Thursday, 8 February, 2024
Subject: IPNet Submission

4th IMA Conference on Inverse Problems from Theory to Application
11-13 September 2024
University of Bath, 3 West North, Claverton Down, Bath BA2 7AY

https://ima.org.uk/23503/4th-ima-conference-on-inverse-problems-from-theory-to-application/

Best wishes,
Pam

……

From: Tuncay Aktosun, aktosun@uta.edu
Sent: Friday, 16 February, 2024
Subject: Analysis and Mathematical Physics

First announcement AMP 2024
Analysis and Mathematical Physics https://www.iimas.unam.mx/amp2024/

Analysis and Mathematical Physics is an online conference aiming to bring together leading experts and young researchers from all over the world who work or are interested in mathematical problems within the context of mathematical physics. AMP conference's purpose is also to facilitate the exchange of ideas and help develop existing and future scientific collaborations. There will be several lectures on the topics; there will be no charge to speakers or participants, but registration is required.

AMP conference will be an online event from August 5th to 17th, 2024, on a ZOOM webinar broadcast live on Facebook and YouTube IIMAS' institutional channels.

Scope

The conference will concentrate on the following topics in mathematical analysis within the context of mathematical physics:

Direct and inverse spectral and scattering theory for differential and difference equations and for systems of such equations
Differential operators on spatial networks
Differential operators on closed sets
Inverse problems for nonlocal operators
Orthogonal polynomials, Jacobi and CMV matrices
Quantum graphs
Applications of spectral and scattering theory to quantum mechanics and plasma physics

Invited Speakers

* to be confirmed.

Tuncay Aktosun
(University of Texas, Arlington, USA)
Sergei Avdonin
(University of Alaska, Fairbanks, USA)
Jussi Behrndt
(Graz University of Technology, Austria)
Natalia Bondarenko
(Samara University, Russia)
Anne Boutet de Monvel
(Université Paris Cité, France)
Sergey Buterin
(Saratov State University, Russia)
Abdon Choque-Rivero
(Universidad Michoacana de San Nicolás de Hidalgo, Mexico)
Jan Derezinski *
(University of Warsaw, Poland)
Bruno Després
(Sorbonne Université, France)
Ramazan Ercan
(California State University San Marcos, USA)
Pavel Exner *
(Nuclear Physics Institute - Academy of Sciences, Czechia)
Fritz Gesztesy
(Baylor University, USA)
Mikhail Ignatiev
(Saratov State University, Russia)
Martin Klaus
(Virginia Tech, USA)
Evgeny Korotyaev
(St. Petersburg State University, Russia)
Vladislav Kravchenko
(Centro de Investigación y de Estudios Avanzados - Instituto Politécnico Nacional, Mexico)
Pavel Kurasov
(Stockholm University, Sweden)
Maria Kuznetsova
(Saratov State University, Russia)
Vassilis Papanicolaou
(National Technical University of Athens, Greece)
Olaf Post
(University of Trier, Germany)
Christiane Tretter

(University of Bern, Switzerland)
Victor Rykhlov
(Saratov State University, Russia)
Paul Sacks
(Iowa State University, USA)
Mehmet Unlu
(Recep Tayyip Erdogan University, Turkey)
Ricardo Weder
(Universidad Nacional Autónoma de México, Mexico)
Dimitri Yafaev *
(Université de Rennes I, France)
Vjacheslav Yurko
(Saratov State University, Russia)

Organizing Committee
Tuncay Aktosun
(University of Texas, Arlington, USA)
Sergei Avdonin
(University of Alaska, Fairbanks, USA)
Ricardo Weder
(Universidad Nacional Autónoma de México, Mexico)
Vjacheslav Yurko
(Saratov State University, Russia)

For further information see the web page of the
conference https://www.iimas.unam.mx/amp2024/

Please send this announcement forward to your colleagues, your students, as well as to other people who could be interested.

On behalf of the organizing committee, Ricardo Weder
……

From: Henrik Garde, garde@math.au.dk
Sent: Sunday, 11 February, 2024
Subject: Postdoc position open in analysis for inverse problems at Department of Mathematics, Aarhus University

Dear all

Postdoc position open in analysis for inverse problems at Department of Mathematics, Aarhus University, Denmark (a top 100 university).

Duration: 3 years
Start date: September 1st, 2024 (or soon after)

Inverse problems and functional calculus of Neumann-to-Dirichlet maps

The project is on reconstruction in Calderón's inverse conductivity problem, with a specific focus on complex-valued coefficients and local boundary data. That is, based on a local Neumann-to-Dirichlet (ND) map on a subset of the domain boundary, to construct a coefficient for the PDE in the domain interior. The combination of complex coefficients and local data implies an open problem of high interest. The project will investigate transformations of such ND maps, and their properties, with the aim of satisfying certain nonlinearity estimates required for iterative methods to converge.

The work may also include short visits to Michael Vogelius of Rutgers U./Aarhus U., who will be one of the collaborators on the project.

For details on applying (must be done through the online system), salary, and additional details, see:

https://math.au.dk/en/about/vacancies/job/postdoctoral-positions-in-mathematics-1

Deadline for applying is **April 5th (Danish time)**.

The department is located on the main campus of Aarhus University and at walking distance to the city center of Aarhus, the second largest city of Denmark, located on the Jutland peninsula. The department has a flat hierarchy, friendly colleagues, and strong research environments. For more on the department, see the website:https://math.au.dk/en/

Best regards
Henrik Garde

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From: Marcello Carioni, m.c.carioni@utwente.nl
Sent: Friday 23 February, 2024
Subject: PhD Position in Optimization, Optimal Transport and Inverse Problems, University of Twente

We are looking for a talented, research-oriented PhD candidate to join the project "Curve Ensemble Gradient Descents for Sparse Dynamic Problems" at University of Twente. We offer a full-time position for four years in an active and stimulating research environment, bridging applied and pure mathematics.

The PhD candidate will work under the supervision of Dr. Marcello Carioni and will be part of the group Mathematics of Imaging and Artificial Intelligence (MIA) at the department of Applied Mathematics.

For more information about the position and the application procedure, you are welcome to visit

https://utwentecareers.nl/en/vacancies/1664/phd-position-in-optimization-optimal-transport-and-inverse-problems/

and contact Dr. Marcello Carioni (m.c.carioni@utwente.nl).

Deadline: 5 April 2024.

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From: noreply@iopscience.org
Sent: 28 January 2024
Subject: Inverse Problems, Volume 40, Number 2, February 2024

Papers

Quantitative parameter reconstruction from optical coherence tomographic data
Leopold Veselka, Peter Elbau, Leonidas Mindrinos, Lisa Krainz and Wolfgang Drexler

Solving inverse scattering problems via reduced-order model embedding procedures
Jörn Zimmerling, Vladimir Druskin, Murthy Guddati, Elena Cherkaev and Rob Remis

A Bayesian approach for CT reconstruction with defect detection for subsea pipelines
Silja L Christensen, Nicolai A B Riis, Marcelo Pereyra and Jakob S Jørgensen

Chilled sampling for uncertainty quantification: a motivation from a meteorological inverse problem
P Héas, F Cérou and M Rousset

Solution of the EEG inverse problem by random dipole sampling
L Della Cioppa, M Tartaglione, A Pascarella and F Pitolli

Stochastic linear regularization methods: random discrepancy principle and applications
Ye Zhang and Chuchu Chen

Numerical recovery of a time-dependent potential in subdiffusion
Bangti Jin, Kwancheol Shin and Zhi Zhou

Determining a parabolic system by boundary observation of its non-negative solutions with biological applications
Hongyu Liu and Catharine W K Lo

Regularization of the inverse Laplace transform by mollification
Pierre Maréchal, Faouzi Triki and Walter C Simo Tao Lee

Deep unfolding as iterative regularization for imaging inverse problems
Zhuo-Xu Cui, Qingyong Zhu, Jing Cheng, Bo Zhang and Dong Liang

https://iopscience.iop.org/issue/0266-5611/40/2

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From: noreply@iopscience.org
Sent: Thursday 22 February 2024
Subject: Inverse Problems, Volume 40, Number 3, March 2024

Papers

Assessing the potential of using a virtual Veselago lens in quantitative microwave imaging
Marzieh Eini Keleshteri, Vladimir Okhmatovski, Ian Jeffrey, Martina Teresa Bevacqua and Joe LoVetri

On inertial iterated Tikhonov methods for solving ill-posed problems
J C Rabelo, A Leitão and A L Madureira

V-line 2-tensor tomography in the plane
Gaik Ambartsoumian, Rohit Kumar Mishra and Indrani Zamindar

Fourier series-based approximation of time-varying parameters in ordinary differential equations

Anna Fitzpatrick, Molly Folino and Andrea Arnold

Multilevel dimension-independent likelihood-informed MCMC for large-scale inverse problems
Tiangang Cui, Gianluca Detommaso and Robert Scheichl

A novel epidemiologically informed particle filter for assessing epidemic phenomena. Application to the monkeypox outbreak of 2022
Vasileios E Papageorgiou and Pavlos Kolias

Imaging of nonlinear materials via the Monotonicity Principle
Vincenzo Mottola, Antonio Corbo Esposito, Gianpaolo Piscitelli and Antonello Tamburrino

https://iopscience.iop.org/issue/0266-5611/40/3

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From: Reichel Lothar, reichel@math.kent.edu
Sent: Tuesday, 6 February 2024
Subject: table of contents

Contents, Electronic Transactions on Numerical Analysis (ETNA), vol. 59, 2023.
This volume has been edited by Alessandro Buccini, Caterina Fenu, Luisa Fermo, and Giuseppe Rodriguez.

Note: ETNA accepts software publications as well as historical papers.

A. J. A. Schiavoni-Piazza and S. Serra-Capizzano, Distribution results for a special class of matrix sequences: Joining approximation theory and asymptotic linear algebra, pp. 1-8

L. Fermo, D. Mezzanotte, and D. Occorsio, On the numerical solution of Volterra integral equations on equispaced nodes, pp. 9-23

Y. Deng, B. Hofmann, and F. Werner, Deautoconvolution in the two-dimensional case, pp. 24-42

S. Noschese, The structured distance to singularity of a symmetric tridiagonal Toeplitz matrix, pp. 43-59

Y. Eidelman and I. Haimovici, The bisection eigenvalue method for unitary Hessenberg matrices via their quasiseparable structure, pp. 60-88

A. V. Pejcev, A note on "Error bounds of Gaussian quadrature formulae with Legendre weight function for analytic integrands" by M. M. Spalević et al., pp. 89-98

G. V. Milovanovic, Orthogonality on the semicircle: Old and new results, pp. 99-115

S. Hubmer, E. Sherina, and R. Ramlau, Characterizations of adjoint Sobolev embedding operators with applications in inverse problems, pp. 116-144

D. Lj. Djukic, R. M. Mutavdzic Djukic, L. Reichel, and M. M. Spalevic, Optimal averaged Pade'-type approximants, pp. 145-156

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IPNet Digest Volume 31, Number 3 28 March 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. Full Professor of Optimization University of Klagenfurt, Analysis and Mathematical Physics
2. Assistant/associate/full professor (tenure track) of applied mathematics
3. University assistant with doctorate, Graz, Austria
4. MaLGa Summer Schools 2024 in Genoa, Italy | DLCV, MLCC, AHAML | Application/Registration open
5. J Core Imaging Library Training Course, Online, April 2024
6. Table of Contents: (AIMS)

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Barbara Kaltenbacher, Barbara.Kaltenbacher@aau.at
Sent: Wednesday, 6 March, 2024
Subject: Full Professor of Optimization (all genders welcome), Univ. Klagenfurt

The University of Klagenfurt invites applications for a position as a Full Professor of Optimization (all genders welcome) at the Department of Mathematics.

This is a full-time position, available from 1 October 2024. Whether the position will be implemented in compliance with the provisions of Art. 98 (permanent) or Art. 99 of the Austrian Universities Act (limited to 5 years) will be decided in the course of the appointment procedure.

The professorship will be embedded within the new Area of Research Excellence "Multiple Perspectives in Optimization (MPOpt)" with its well-established Doctoral Programme in Mathematics at the Department of Mathematics and within the Faculty of Technical Sciences (https://www.aau.at/en/tewi/). The department provides a vivid, friendly, and research-oriented environment.

Details can be found at https://jobs.aau.at/en/job/full-professor-of-optimization-all-genders-welcome/

Application deadline: 17 April 2024

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From: Tapio Helin, Tapio.Helin@lut.fi
Sent: Friday, 8 March, 2024
Subject: Assistant/associate/full professor (tenure track) of applied mathematics

LUT School of Engineering Sciences is looking for a professor of applied mathematics. The professorship is located at the Department of Computational Engineering. The department concentrates on applied mathematics, computer vision and pattern recognition, computational spectroscopy, and atmospheric modelling. We have a globally unique cluster of expertise in uncertainty quantification and inverse problems. The department hosts the Research Council of Finland's Centre of

Excellence for Inverse Modelling and Imaging and the Flagship of Advanced Mathematics for Sensing, Imaging and Modelling (FAME).
The position is at the assistant/associate/full professor levels of the tenure track and will be filled through an open call for a fixed term of four years (assistant/associate professor) or permanently (full professor). The tenure track system offers researchers a possibility to advance to the next level, provided they meet the requirements in the promotion reviews.
The position is based in Lappeenranta, Finland and starts with a six-month trial period.
The candidates are expected to strengthen the research and activities in mathematical modelling related to the FAME. In addition, the candidate must be able to successfully build a dedicated independent research group alongside existing research lines, reinforcing the specialisation of the department in computational sciences. Candidates must have a strong research record in the field of applied mathematics. We expect evidence of both independent methodological development and numerical applications of methods.
Candidates are required to have a doctorate, high-level scientific qualifications, experience in heading scientific research, the ability to acquire funding, the ability to provide high-level instruction based on research, the ability to supervise final theses, proof of international cooperation in their field of research, and when relevant to the duties of the position, practical experience in the field of the professorship. Candidates must also have research and teaching merits, proof of effective research and the acquisition of external research funding, and international experience.
We value experience of successful project work and research collaboration. Evidence of activity in interdisciplinary and international collaboration will be considered an asset. In this position, spoken and written fluency in English is required.
The duties of the professorship includes bachelor's, master's and doctoral education in key areas of computational engineering. In line with the research strategy of the LUT School of Engineering Sciences, advanced teaching will focus on method development involving clean energy production, the circular economy, and spin-off business creation.
The duties of the professor will also include the following research-related tasks:

- design and delivery of bachelor's, master's and doctoral education
- supervision of theses and doctoral studies
- preparation of national and international research and education projects
- research with an international impact
- knowledge enhancement for the benefit of industry and the economy
- participating as an expert in the preparation of projects at other LUT units
- administrative tasks related to the activities of the university.

The appointment process description explains the qualification requirements and tenure track appointment criteria.
All application documents must be in English and in PDF format. The application must include:

- a curriculum vitae (max. 10 pages)
- a copy of the candidate's doctoral diploma
- a full list of publications including the candidate's Scopus and Google Scholar details: the Scopus ID and Google Scholar profile URL, the total number of publications, and total number of citations and h-indices
- a separate list of the 10 publications selected for expert evaluation

- the 10 publications mentioned above
- a teaching portfolio or an equivalent account of the candidate's teaching qualifications
- an account of the candidate's merits and activities of significance to the vacancy (max. 3 pages)
- an account of the candidate's vision on the development of education, research, and projects in the field of the professorship at LUT University (max. 3 pages).

Please specify the tenure track level applied to.
The salary is determined according to the salary system for university teaching and research personnel. The pay will include an individual pay component based on performance and competence. The annual gross salary for an assistant/associate professor amounts to 49 300 – 66 300 euros and full professor to 69 000 – 102 200 euros depending on the qualifications and experience of the candidate. In addition to a competitive salary, the wide range of benefits that come with this job include a holiday bonus, a generous holiday entitlement, research incentive scheme with personal rewards for high quality publications, flexible working hours, occupational health care, a collegial faculty environment and continued commitment for your support, learning, training and development.
The closing date for applications is 2 April at 15:00, Finnish local time (UTC + 3h). Please submit your application and all required attachments by filling out the online form.
For further information, please contact Lassi Roininen, professor of applied mathematics, +358 40 675 4885, lassi.roininen@lut.fi.
Read more about the Department of Computational Engineering.
Read more about the LUT School of Engineering Sciences
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From: Melanie Moser, melanie.moser@uni-graz.at
Sent: Tuesday, 26 March, 2024
Subject: University assistant with doctorate, Graz, Austria

At the University of Graz, researchers and students work across a broad disciplinary spectrum to enlarge our knowledge, and find strategies to deal with challenges our society is confronted with and to shape tomorrow's world. The University of Graz is a place which combines high quality academic research and teaching, where achievement is rewarded, careers are promoted, and social diversity is encouraged – all within a modern, award-winning working environment. Our motto: We work for tomorrow. Join us!

The Institute of Mathematics and Scientific Computing is looking for a
University assistant with doctorate (m/f/d)
https://jobs.uni-graz.at/en/jobs/133a4fcc-96f2-7db2-af05-65ef096097a1

40 hours a week fixed-term employment for 6 years; position to be filled as of now
Application deadline: 17.04.2024
Salary Category: B1 mit Doktorat; *Salary per Year (Full Time):* € 66,532.20
Inverse Problems and Mathematical Image Processing is one of the research areas at the Institute of Mathematics and Scientific Computing, which is represented in Graz by a dedicated team of international scientists. The associated research group covers a broad spectrum of current applications with a special focus on interdisciplinarity. It offers a friendly working environment, space for creativity and independent work, an appreciative attitude and family friendliness.
Your Responsibilities

- Research in the field of applied mathematics with emphasis on the analysis and the numerics of problems in mathematical imaging, inverse problems and data sciences
- Collaboration in interdisciplinary cooperation projects and third-party funded projects
- Independent teaching of courses in the field of applied mathematics, supervision of students and holding of examinations
- Participation in organizational and administrative matters

Your Profile

- Doctoral degree in a mathematical branch of study
- Solid knowledge of one of the following fields: mathematical methods, analysis and numerics in imaging, inverse problems or data sciences
- Ability for integration into the department's research profile and in particular into interdisciplinary cooperation projects
- Capacity for teamwork, organizational talent and ability to communicate
- Very good command of english
- Ability to teach in German (after a transition period of 2 years)

For further information or questions, please contact:
Univ.-Prof. Dipl.-Math. Dr. Kristian Bredies
kristian.bredies@uni-graz.at
03163805170
Please note that in order to comply with the applicable data protection regulations, we can only accept applications via our web-based applicant tool for this vacant position.
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From: Matteo Santacesaria, Matteo.Santacesaria@unige.it
Sent: Thursday, 7 March, 2024
Subject: MaLGa Summer Schools 2024 in Genoa, Italy | DLCV, MLCC, AHAML | Application/Registration open

MaLGa Summer Schools 2024 - DLCV, MLCC, AHAML

As part of the scientific activity and educational offer of MaLGa - Machine Learning Genoa Center, we are glad to announce that applications are open for the following PhD courses:

DLCV - Deep Learning and Computer Vision 2024, two crash courses, one school (course web page here), to be held **10-14 June 2024**
Instructors: Francesca Odone, Nicoletta Noceti
The third edition of the DLCV (Deep Learning and Computer Vision) School provides a hands-on introduction to basic principles of deep learning, computer vision, and their strong interconnection.
*Apply here by **April 1st 2024***

MLCC - Machine Learning Crash Course 2024 (course web page here) to be held **25-28 June 2024**
Instructors: Lorenzo Rosasco, Silvia Villa, Simone Di Marino, Matteo Santacesaria
MLCC (Machine Learning Crash Course) was held for the first time in 2014 and has evolved in different formats Ince then. It provides an introduction to the fundamental methods at the core of modern Machine Learning, covering theoretical foundations as well as essential algorithms.
*Apply here by **April 1st 2024***

AHAML - Applied Harmonic Analysis and Machine Learning 2024 (course web page here) to be held **2-6 September 2024**
Instructors: Irène Waldspurger, Alberto Setti, Davide Bianchi, Karlheinz Gröchenig
The school consists of three courses on applied harmonic analysis and machine learning.
*Register here by **July 31st 2024***

Our schools are open to students, researchers and professionals. The maximum number of participants for each school is 120.

Follow us on social media to stay up to date on the latest MaLGa Center news!
The Instructors

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From: Sauer Jørgensen jakj@dtu.dk
Sent: Tuesday, 19 March 2024
Subject: Core Imaging Library Training Course, Online, April 2024

Core Imaging Library Training Course, Online, April 2024

Dear all,

The team behind the Core Imaging Library (CIL) will be running an online training course on Monday 29th and Tuesday 30th April 2024. The course will introduce computed tomography, CIL and reconstruction using filtered back projection and optimization-based iterative methods.

More details and registration at https://ccpi.ac.uk/events/cil-online-training-april24/

The training will take place over two afternoons:

On Monday 29th April 1-5pm BST: getting started with CIL
- introduction to computed tomography and CIL
- how to use CIL readers to load different types of data
- guide to common pre-processing steps in CIL
- using filtered back projection for reconstruction

On Tuesday 30th April 1-5pm BST: advanced reconstruction with CIL
- introduction to optimization-based iterative reconstruction
- dealing with low-quality or incomplete data

Training will be delivered remotely, and material will be provided through the STFC cloud which you will access through a browser.

Follow up sessions will be available after the training course to provide specific help on installation of CIL on your own machines, downloading data from the Cloud and using CIL on your own data.

Limited places available, so please fill the registration form as soon as possible, and we will contact you with a confirmation.

Best wishes,
Jakob Sauer Jørgensen (DTU)

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From: Charley Denton, cdenton@aimsciences.org
Sent: Tuesday 5 March, 2024
Subject: IPNet Digest table of contents submission (IPI 18-2)

IPI April 2024 Vol. 18, No. 2 articles:

The fractional Laplacian based image inpainting
Xiangkai Lian, Qiang Fu, Weijie Su, Xinyu Zhang, Jia Li and Zheng-An Yao

Inverse parabolic problems by Carleman estimates with data taken at initial or final time moment of observation
Oleg Imanuvilov and Masahiro Yamamoto

Nonlinearity parameter imaging in the frequency domain
Barbara Kaltenbacher and William Rundell

Uniqueness and reconstruction method for inverse elastic wave scattering with phaseless data
Zhiyong Cheng and Heping Dong

On recovering the nonlinearity for generalized higher-order Schrödinger equations
Zachary Lee and Xueying Yu

Super-resolution surface reconstruction from few low-resolution slices
Yiyao Zhang, Ke Chen and Shang-Hua Yang

On trajectories of complex-valued interior transmission eigenvalues
Lukas Pieronek and Andreas Kleefeld

Error estimation to the direct sampling method for the inverse acoustic source problem with multi-frequency data
Xia Ji, Yuling Jiao, Xiliang Lu and Fengru Wang

Inverse Problems and Imaging

Best regards,
Charley Denton

Charley Denton
Communications Specialist
American Institute of Mathematical Sciences
Email: cdenton@aimsciences.org

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IPNet Digest Volume 31, Number 4 18 April 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. PhD student positions in Finland on inverse problems
2. Finland-Japan Workshop in Industrial and Applied Mathematics, Helsinki Finland
3. SSVM 2025 - 1st announcement & call for papers
4. Optimization techniques for Inverse Problems", Modena, September 4-6 2024
5. Jyväskylä Summer School in August 2024: Inverse problems
6. table of contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Tanja Tarvainen, tanja.tarvainen@uef.fi
Sent: Friday, 29 March, 2024
Subject: PhD student positions in Finland on inverse problems

PhD student positions in Finland on inverse problems

Doctoral Education Pilot for Mathematics of Sensing, Imaging and Modelling, DREAM, will be training 100 doctors in seven Finnish universities starting between August 1, 2024 and January 1, 2025. The doctoral researcher positions belong to the thematic field of the new Research Council of Finland's Flagship of Advanced Mathematics for Sensing, Imaging and Modelling, with topics including inverse problems, mathematical modelling, data processing and computational imaging. The first positions are now open in:

Aalto University:

- https://www.aalto.fi/en/open-positions/14-doctoral-researchers-for-the-doctoral-education-pilot-for-mathematics-of-sensing-imaging-and

University of Eastern Finland:

- https://uef.varbi.com/en/what:job/jobID:703040/type:job/where:4/apply:1
- https://uef.varbi.com/en/what:job/jobID:707845/type:job/where:4/apply:1

University of Helsinki:

- https://www.helsinki.fi/en/research/doctoral-school/doctoral-education-pilot/pilot-profiles/doctoral-education-pilot-mathematics-sensing-imaging-and-modelling

University of Jyväskylä:

- https://ats.talentadore.com/apply/doctoral-education-pilot-eight-8-doctoral-researchers-in-mathematics-of-sensing-imaging-and-modelling-dream/ZQXbJ2

University of Oulu:

- https://oulunyliopisto.varbi.com/en/what:job/jobID:709262/

Later, more positions will be opened in LUT University and Tampere University.

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From: finland.japan.workshop@helsinki.fi
Subject: Finland-Japan Workshop in Industrial and Applied Mathematics

Dear colleagues,

We warmly invite you to Finland-Japan workshop in Industrial and Applied Mathematics which will be held **in Helsinki, Finland between August 26-30, 2024**.

Registration is open https://elomake.helsinki.fi/lomakkeet/127841/lomake.html
Registration fee can be made using the this payment form. https://onlinepayments.it.helsinki.fi/product/finland-japan-workshop-in-industrial-and-applied-mathematics/

For further updates, including accommodation and other practical details, visit the workshop page https://www.helsinki.fi/en/conferences/finland-japan-workshop-industrial-and-applied-mathematics

Please forward this announcement to any of your colleagues and students who may be interested to participate.

Do not hesitate to contact us for further queries finland.japan.workshop@helsinki.fi

Kind regards,
local Organizers
……

From: Tatiana Bubba, tab73@bath.ac.uk
Sent: Wednesday,10 April, 2024
Subject: SSVM 2025 **-** 1st announcement & call for papers

Dear colleagues,

We warmly invite you to participate to the 10th International Conference on Scale Space and Variational Methods in Computer Vision (SSVM) which will be held at Dartington Hall, Totnes, Devon, UK in the period **May 18-22 2025**.

Do not hesitate to forward this announcement to any of your colleagues and students who may be interested to participate.

Call for papers

We kindly invite you to submit your contribution. Submitted contributions should be maximum 12 page long and formatted according to the LNCS Springer standards. Papers accepted for the conference will appear in the conference proceedings that will be published in Springer's Lecture Notes in Computer Science series.
Prospective authors are invited to submit their contribution electronically via the SSVM'25 Paper Submission Web Page (more details will be announced in due course). All papers will undergo a double-blind peer-review procedure.
Accepted papers will be presented at the conference either in the format of posters or talks.

Important dates
* Paper submission: **November 30, 2024**
* Notification of acceptance: **January 27, 2025**
* Camera-ready paper deadline: **February 17, 2025**
* Conference dates: **May 18 - May 22, 2025**

Best student paper award
The conference will award a best student paper prize.

!! Conference website !!
Please check regularly our conference website for updates on the conference details.
https://sites.google.com/view/ssvm-2025/home-page

We look forward to receive your contribution and we hope to see many of you at Dartington Hall next year!

The SSVM25 Organizing Committee,
Tatiana Bubba (University of Bath)
Romina Gaburro (University of Limerick)
Silvia Gazzola (University of Bath)
Kostas Papafitsoros (QMUL)
Marcelo Pereyra (Heriot-Watt University)
Carola Schönlieb (University of Cambridge)

Dr Tatiana A. Bubba

Lecturer (Assistant Professor) in Applied Mathematics
Department of Mathematical Sciences
University of Bath
Claverton Down, Bath BA2 7AY, UK
https://sites.google.com/view/tatianabubba/home
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From: Marco Prato marco.prato@unimore.it
Date: Friday 12 April, 2024
Subject: Optimization techniques for Inverse Problems", Modena, September 4-6 2024

WORKSHOP: OPTIMIZATION TECHNIQUES FOR INVERSE PROBLEMS V (OIP2024)
Modena, Italy, September, 4-6, 2024

The workshop aims at strengthening the interaction between inverse problems and optimization, providing space for exchanges of information and ideas from the two areas. Both theoretical and applied aspects of optimization techniques will be faced, with particular attention to related developments in specific inverse problems as machine learning and signal and image restoration.
The format of the fifth edition of the workshop is made up of a limited number of extended talks held by international experts in numerical optimization and inverse problems, and a poster session open to all the enrolled participants. A special session has been dedicated to the memory of Mario Bertero, who has brought invaluable contributions in these fields and in the previous editions of this event.

Speakers:
Alessandro Benfenati, Università di Milano
Federico Benvenuto, Università di Genova
Laure Blanc-Féraud, CNRS, Université Côte d'Azur, Inria Sophia Antipolis-Mediterranée
Tatiana A. Bubba, University of Bath
Luca Calatroni, CNRS, Université Côte d'Azur, Inria Sophia Antipolis-Mediterranée
Paola Causin, Università di Milano

Christine De Mol, Université libre de Bruxelles
Marco Donatelli, Università dell'Insubria
Matthias Ehrhardt, University of Bath
Erich Kobler, University Hospital Bonn
Natasa Krklec Jerinkic, University of Novi Sad
Greta Malaspina, Università di Firenze
Elena Morotti, Università di Bologna
Peter Ochs, University of Tübingen
Federica Porta, Università di Modena e Reggio Emilia
Antonio-José Silveti-Falls, CentraleSupélec, Paris
Tuomo Valkonen, University of Helsinki
Giuseppe Vicidomini, Istituto Italiano di Tecnologia
Silvia Villa, Università di Genova

All the information about the workshop can be found at the website
https://sites.google.com/view/oip2024/home

Contacts:
Marco Prato - Luca Zanni
Università di Modena e Reggio Emilia, Italy
Email: marco.prato@unimore.it - luca.zanni@unimore.it
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From: Tanja Tarvainen, tanja.tarvainen@uef.fi
Sent: Friday, 29 March, 2024
Subject: Jyväskylä Summer School in August 2024: Inverse problems

Two inverse problems courses are arranged as part of the Jyväskylä Summer School, Jyväskylä, Finland, 5-9 August, 2024:

- Ronny Ramlau (Johannes Kepler University, Linz): Integral Equations and Compact Operators
- Felix Lucka (Centrum Wiskunde & Informatica, Amsterdam): X-ray Computed Tomography Inside Out: Physics, Mathematics, Imaging and Applications

The courses are aimed for MSc and PhD students, and also postdocs are welcomed. In addition to these courses, Jyväskylä Summer School offers a variety of other courses. All courses are free of charge.

The deadline for registration is April 30, 2024. For registration and more information, see: http://www.jyu.fi/jss. If you have any questions, feel free to contact summer school organization (jss(at)jyu.fi) or Joonas Ilmavirta (joonas.ilmavirta(at)jyu.fi). Feel free to spread the information!

Welcome to Jyväskylä!
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From: noreply@iopscience.org
Sent: Thursday 21 March 2024
Subject: Inverse Problems, Volume 40, Number 4, April 2024

Papers

A deep learning enhanced inverse scattering framework for microwave imaging of piece-wise homogeneous targets
Álvaro Yago Ruiz, Maria Nikolic Stevanovic, Marta Cavagnaro and Lorenzo Crocco

The monotonicity method for inclusion detection and the time harmonic elastic wave equation
Sarah Eberle-Blick and Valter Pohjola

Generalized variational framework with minimax optimization for parametric blind deconvolution
Qichao Cao, Deren Han, Xiangfeng Wang and Wenxing Zhang

Bi-level iterative regularization for inverse problems in nonlinear PDEs
Tram Thi Ngoc Nguyen

Bayesian view on the training of invertible residual networks for solving linear inverse problems
Clemens Arndt, Sören Dittmer, Nick Heilenkötter, Meira Iske, Tobias Kluth and Judith Nickel

A structured L-BFGS method and its application to inverse problems
Florian Mannel, Hari Om Aggrawal and Jan Modersitzki

Recovering coefficients in a system of semilinear Helmholtz equations from internal data
Kui Ren and Nathan Soedjak

Adaptive tempered reversible jump algorithm for Bayesian curve fitting
Zhiyao Tian, Anthony Lee and Shunhua Zhou

Inversion of a restricted transverse ray transform with sources on a curve
Rohit Kumar Mishra and Chandni Thakkar

Shape and orientation classification of objects based on their electromagnetic signatures using convolutional neural networks
Yasmina Zaky, Nicolas Fortino, Benoit Miramond and Jean-Yves Dauvignac

Reconstruction of averaging indicators for highly heterogeneous media
Lorenzo Audibert, Houssem Haddar and Fabien Pourre
Nonconvex weighted variational metal artifacts removal via convergent primal-dual algorithms
Lianfang Wang, Zhangling Chen, Zhifang Liu, Yutong Li, Yunsong Zhao, Hongwei Li and Huibin Chang

Uniqueness results for inverse source problems for semilinear elliptic equations
Tony Liimatainen and Yi-Hsuan Lin

Quantifying predictive uncertainty in damage classification for nondestructive evaluation using Bayesian approximation and deep learning
Zi Li and Yiming Deng

Stability estimate for an inverse stochastic parabolic problem of determining unknown time-varying boundary
Zhonghua Liao and Qi Lü

Reconstruction of degenerate conductivity region for parabolic equations
Piermarco Cannarsa, Anna Doubova and Masahiro Yamamoto

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IPNet Digest Volume 31, Number 5 24 May 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. Finland-Japan Workshop in Industrial and Applied Mathematics, Helsinki Finland
2. Optimization techniques for Inverse Problems", Modena, September 4-6 2024
3. table of contents
4. table of contents: AIMS

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Tatiana Bubba, tab73@bath.ac.uk
Sent: Monday, 29 April, 2024
Subject: Workshop on "Machine Learning in Infinite Dimensions" - 5-9 August 2024 - Bath, UK

Dear Colleagues,

We would like to draw your attention to the workshop "**Machine Learning in Infinite Dimensions"** held at the University of Bath, UK, from **5th to 9th of August 2024**. The workshop aims at bringing together researchers that work on different aspects of infinite-dimensionality in machine learning. Topics include, but are not restricted to, operator learning, Gaussian process regression, function spaces of neural networks, and measure transport.

Attendance is free but we ask all attendees to apply before **5th June** 2024. Support for travel and/or accommodation is available for (a limited number of) PhD students and early career researchers - please apply before 5th June 2024.

The workshop is generously supported by the International Centre for Mathematical Sciences (ICMS), Edinburgh, and the London Mathematical Society, as well as the EPSRC programme grant Maths4DL.

More details (including links to apply for attendance and travel/accommodation support) can be found on the workshop's webpage: https://sites.google.com/view/machine-learning-workshop-bath

Best wishes,
Tatiana Bubba, Bamdad Hosseini, Yury Korolev and Matthew Thorpe (organisers)

Dr Tatiana A. Bubba

Lecturer (Assistant Professor) in Applied Mathematics
Department of Mathematical Sciences
University of Bath
Claverton Down, Bath BA2 7AY, UK
https://sites.google.com/view/tatianabubba/home

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From: Voichita Maxim voichita.maxim@creatis.insa-lyon.fr
Date: Tuesday, 14 May, 2024
Subject: Optimization techniques for Inverse Problems", Modena, September 4-6 2024

Join INSA Lyon and CREATIS in pioneering the future of medical imaging!
We invite applications for a tenure track position in "Reconstruction and simulation for novel imaging modalities in nuclear medicine and radiology" within the Tomoradio group at CREATIS, INSA Lyon.
This role presents a rare opportunity to shape the landscape of medical imaging through innovative approaches in inverse problems, Monte Carlo simulation, tomography, and deep learning. The appointed candidate will drive impactful research with direct applications in cancer imaging and radiotherapy.

Candidates are required to have a doctorate, a distinguished scientific track record, and a proven ability to secure funding. They will mentor PhD candidates to excel in their academic pursuits. As part of our tenure track system, successful candidate will have the prospect of advancement to a full Professor position within five years, subject to meeting predetermined criteria.
Read more about the qualification requirements and tenure track criteria on the following pages:
https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/cand_CPJ.htm
https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/ListesPostesPublies/Emplois_publies_CPJ_TrieParCorps.html
https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/ListesPostesPublies/FIDIS/0690192J/FOPC_0690192J_4402.pdf
The dead-line for application is June 17, 2024.
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From: noreply@iopscience.org
Sent: Tuesday, 30 April, 2024
Subject: Inverse Problems, Volume 40, Number 5, May 2024

Papers

Consistency of the Bayes method for the inverse scattering problem
Takashi Furuya, Pu-Zhao Kow and Jenn-Nan Wang

A single level set function approach for multiple material-phases applied to full-waveform inversion in the time domain
P B de Castro, E C N Silva and E A Fancello

Image analysis and resolution for detection-based synthetic-aperture passive source localization
Margaret Cheney, Louis Scharf, Matthew Rhilinger, Cole Moore and Andre Celestin

Local data inverse problem for the polyharmonic operator with anisotropic perturbations
Sombuddha Bhattacharyya and Pranav Kumar

Stable determination of an impedance obstacle by a single far-field measurement
Huaian Diao, Hongyu Liu and Longyue Tao

A stochastic ADMM algorithm for large-scale ptychography with weighted difference of anisotropic and isotropic total variation
Kevin Bui and Zichao (Wendy) Di

Towards optimal sensor placement for inverse problems in spaces of measures
Phuoc-Truong Huynh, Konstantin Pieper and Daniel Walter

Inverse spectral problem for the Schrödinger operator on the square lattice
Dongjie Wu, Chuan-Fu Yang and Natalia Pavlovna Bondarenko

Convergence of non-linear diagonal frame filtering for regularizing inverse problems
Andrea Ebner and Markus Haltmeier

Estimation of off-the grid sparse spikes with over-parametrized projected gradient descent: theory and application
Pierre-Jean Bénard, Yann Traonmilin, Jean-François Aujol and Emmanuel Soubies

Machine learning for structural design models of continuous beam systems via influence zones
Adrien Gallet, Andrew Liew, Iman Hajirasouliha and Danny Smyl

An inverse problem for a transmission wave equation with a flat interface in Rn
Alberto Mercado-Saucedo

Microtexture region segmentation of eddy current testing data using a structural prior
Laura Homa, Tyler Lesthaeghe, Matt Cherry and John Wertz

Deep unrolling networks with recurrent momentum acceleration for nonlinear inverse problems
Qingping Zhou, Jiayu Qian, Junqi Tang and Jinglai Li

L2SR: learning to sample and reconstruct for accelerated MRI via reinforcement learning
Pu Yang and Bin Dong

Contrast source inversion of sparse targets through multi-resolution Bayesian compressive sensing
Marco Salucci, Lorenzo Poli, Francesco Zardi, Luca Tosi, Samantha Lusa and Andrea Massa

Inverse Problems, Volume 40, Number 5, May 2024, May 2024 - IOPscience
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From: cdenton@aimsciences.org
Sent: Friday, 19 April, 2024
Subject: IPNet Digest table of contents submission (IPI 18-3)

IPI June 2024 Vol. 18, No. 3 articles:
Visibility, invisibility and unique recovery of inverse electromagnetic problems with conical singularities
Huaian Diao, Xiaoxu Fei, Hongyu Liu and Ke Yang

How to best combine demosaicing and denoising?
Yu Guo, Qiyu Jin, Jean-Michel Morel and Gabriele Facciolo

A Wasserstein distance and total variation regularized model for image reconstruction problems
Yiming Gao

Self-supervised multi-scale neural network for blind deblurring

Meina Zhang, Ying Yang, Guoxi Ni, Tingting Wu and Tieyong Zeng

Stability for the inverse source problem in a two-layered medium separated by rough interface
Guanghui Hu, Xiang Xu, Xiaokai Yuan and Yue Zhao

Inverse parabolic problem with initial data by a single measurement
Oleg Imanuvilov and Masahiro Yamamoto

Vision graph U-Net: Geometric learning enhanced encoder for medical image segmentation and restoration
Yuanhong Jiang, Qiaoqiao Ding, Yu Guang Wang, Pietro Liò and Xiaoqun Zhang

Recovering a function from spherical means in 3D using local data
Rafik Aramyan

Direct sampling method via Landweber iteration for an absorbing scatterer with a conductive boundary
Rafael Ceja Ayala, Isaac Harris and Andreas Kleefeld

Uniqueness in inverse scattering problems with phaseless near-field data generated by superpositions of two incident plane waves at a fixed frequency
Xiaoxu Xu

Inverse Problems and Imaging (aimsciences.org)

Best regards,
Charley Denton

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Charley Denton
Communications Specialist
American Institute of Mathematical Sciences
Email: cdenton@aimsciences.org

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IPNet Digest Volume 31, Number 6 26 June 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. IMA Conference on Inverse Problems from Theory to Application, Bath, 11-13 September 2024
2. Invitation to participate in the Helsinki Speech Challenge 2024
3. table of contents
4. table of contents: AIMS

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Yury Korolev ymk30@bath.ac.uk
Sent: Friday, 21 June, 2024
Subject: IMA Conference on Inverse Problems from Theory to Application, Bath, 11-13 September 2024

We would like to draw your attention to the 4th IMA Conference on Inverse Problems from Theory to Application taking place at the University of Bath on 11-13 September 2024.

The aim of this conference is to bring together the applied mathematics, statistics, machine learning, engineering, physics and industrial communities around the topic of inverse problems to discuss recent developments and open challenges in theory, methodology, computational algorithms, and applications. We welcome industrial representatives, doctoral students, early career and established academics working in this field to attend.

Topics of interest include, for example, • Inverse problems in mathematical and computational imaging.
• Inverse problems in science, medicine, engineering, and other fields.
• Model-based and data-driven methods for solving inverse • Optimisation, statistical, and machine learning methods for solving inverse problems.
• Mathematical theory for inverse problems.
• Deterministic and stochastic computational methods and algorithms.

More details can be found on the conference web page https://ima.org.uk/23503/4th-ima-conference-on-inverse-problems-from-theory-to-application/

Matthias Ehrhardt, Tatiana Bubba, Silvia Gazzola, and Yury Korolev
(organisers)

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From: Helsinki Speech Challenge 2024 Organisers hsc2024@helsinki.fi
Date: Tuesday, 10 June, 2024
Subject: Invitation to participate in the Helsinki Speech Challenge 2024

Fellow researchers,

We are inviting you and your collaborators to participate in the Helsinki Speech Challenge 2024 (HSC2024). This unique challenge is designed to foster innovation in the fields of speech enhancement and inverse problems through the application of advanced deconvolution and machine learning techniques.

To express your interest or to get more details about the dataset and participation guidelines, please visit our website.

About the Challenge:

HSC2024 offers an opportunity to work with a newly recorded dataset consisting of clean speech and corresponding recordings subjected to real-world disturbances, such as frequency attenuation and reverberation. The challenge is to develop methods that can effectively recover the clean audio from these corrupted recordings.
Participants will be tasked with showcasing their ability to create innovative solutions that not only advance the state of the art but are also quantifiable; the success of these methods will be measured using a speech recognition model.

Why Participate?

- Engage with Real-World Data: The HSC2024 dataset provides a platform to tackle real-world audio challenges, as opposed to traditional synthesized datasets.
- Cross-Disciplinary Collaboration: This challenge bridges the gap between inverse problems, with roots in abstract and applied mathematics, and speech enhancement, which in recent years has relied heavily on machine learning.
- Prize**:** The winner of the challenge will receive the Ultimate Noise Device, a vintage white noise machine. Furthermore, they will be invited to present their work at Inverse Days, 10.-13. December 2024 in Oulu, Finland

We believe that your expertise and research focus align well with the goals of this challenge, and we would be thrilled to see your group contribute to this innovative endeavor.

How to Participate:
Please visit our website.
The first important date is the sign-up deadline for the challenge, which is **1. September 2024.**
We look forward to your participation in making the Helsinki Speech Challenge 2024 a success.
Best regards,
HSC2024 Organisers
Martin Ludvigsen, Elli Karvonen, Markus Juvonen, Samuli Siltanen
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From: noreply@iopscience.org
Sent: Sunday, 9 June, 2024
Subject: Inverse Problems, Volume 40, Number 6, June 2024

Papers

Stability estimates for an inverse boundary value problem for biharmonic operators with first order perturbation from partial data
Boya Liu

Matrix recovery from nonconvex regularized least absolute deviations
Jiao Xu, Peng Li and Bing Zheng

A novel variational approach for multiphoton microscopy image restoration: from PSF estimation to 3D deconvolution
Julien Ajdenbaum, Emilie Chouzenoux, Claire Lefort, Ségolène Martin and Jean-Christophe Pesquet

Local near-field scattering data enables unique reconstruction of rough electric potentials
Manuel Cañizares

Bayesian model error method for the passive inverse scattering problem
Yunwen Yin and Liang Yan

A direct sampling method for time-fractional diffusion equation
Lingyun Qiu and Jiwoon Sim

Application of a mild data-driven technique to Lippmann–Schwinger inverse scattering in variable-exponent Lebesgue spaces for microwave imaging
Claudio Estatico, Valentina Schenone, Alessandro Fedeli and Andrea Randazzo

A residual fully convolutional network (Res-FCN) for electromagnetic inversion of high contrast scatterers at an arbitrary frequency within a wide frequency band
Hao-Jie Hu, Jiawen Li, Li-Ye Xiao, Yu Cheng and Qing Huo Liu

Reconstruction of the initial data from the trace of the solutions on an infinite time cylinder of damped wave equations
Seongyeon Kim, Sunghwan Moon and Ihyeok Seo

3D Poissonian image deblurring via patch-based tensor logarithmic Schatten-p minimization
Jian Lu, Lin Huang, Xiaoxia Liu, Ning Xie, Qingtang Jiang and Yuru Zou

Uniqueness of an inverse cavity scattering problem for the time-harmonic biharmonic wave equation
Heping Dong and Peijun Li

Cone-beam consistency conditions for planar trajectories with parallel and perpendicular detectors
Hung Nguyen, Rolf Clackdoyle and Laurent Desbat

Solving inverse obstacle scattering problem with latent surface representations
Junqing Chen, Bangti Jin and Haibo Liu

Inverse stable reconstruction of 3 coefficients for the heterogeneous Maxwell equations by finite number of partial interior observations
Michel Cristofol and Masahiro Yamamoto

Inverse Problems, Volume 40, Number 6, June 2024, June 2024 - IOPscience
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From: cdenton@aimsciences.org
Sent: Tuesday, 25 June, 2024
Subject: IPNet Digest table of contents submission (IPI 18-3)

IPI August 2024 Vol. 18, No. 4 articles:

1. Simultaneous identification of spatial load and external heat source in thermoelastic plate from final time measured displacement
Anjuna Dileep, Alemdar Hasanov and Sakthivel Kumarasamy

2. Numerical method for the inverse interior scattering problem from phaseless data
Shuxin Li, Junliang Lv and Yi Wang

3. Imaging an acoustic obstacle and its excitation sources from phaseless near-field data
Deyue Zhang, Yue Wu and Yukun Guo

4. Inverse problems of identifying the time-dependent source coefficient for subelliptic heat equations
Mansur I. Ismailov, Tohru Ozawa and Durvudkhan Suragan

5. Lipschitz stability for determination of states and inverse source problem for the mean field game equations
Oleg Imanuvilov, Hongyu Liu and Masahiro Yamamoto

6. A framework for EIT models
Josué D. Díaz-Avalos and Nelson Mugayar Kuhl

7. Iterative singular tube hard thresholding algorithms for tensor recovery
Rachel Grotheer, Shuang Li, Anna Ma, Deanna Needell and Jing Qin

8. The tensorial X-ray transform on asymptotically conic spaces
Qiuye Jia and András Vasy

9. An anisotropic variational pansharpening model with adaptive coefficients
Yaqun Zhang, Zhichang Guo, Dazhi Zhang and Boying Wu

10. Blind image deblurring using kernel error for p-shrinkage operator optimization model
Tingting Wu, Chenchen Feng and Zhi Li

11. Shower curtain effect and source imaging
Josselin Garnier and Knut Sølna

12. A preconditioned alternating minimization framework for nonconvex and half quadratic regularization
Shengxiang Deng, Ismail Ben Ayed and Hongpeng Sun

Inverse Problems and Imaging (aimsciences.org)

Best regards,
Charley Denton

Charley Denton
Communications Specialist
American Institute of Mathematical Sciences
Email: cdenton@aimsciences.org

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IPNet Digest Volume 31, Number 7 25 July 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. Five Doctoral Student Positions at LUT-University
2. table of contents
3. table of contents: AIMS

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Emilia Blåsten emilia.blasten@lut.fi
Date: Monday, 1 July, 2024
Subject: Five Doctoral Student Positions at LUT-University

Dear all,

We have 5 junior researcher (PhD student) positions in applied mathematics at LUT University in Finland. The positions are located in the cities of Lappeenranta and Lahti, and the first deadline for application is the end of this month, July 31st. The positions would ideally start between this fall and early 2025.

https://lut.rekrytointi.com/paikat/index.php?jid=1127&key=&o=A_RJ&rspvt=hlll6u5mkmosogo84k0ss00scgg4sk0

The topics are in applied mathematics, machine learning and computational statistics. We have positions from the very applied to theoretical. A typical gross annual salary for these positions is around 32500€ and there are bonuses for publications. Please spread the word, and encourage people to apply and ask for more information. Contact details for the positions are in the link above but you can also email me.

Best regards and have a nice July!

Emilia Blåsten

Associate Professor
LUT University
emilia.blasten@lut.fi

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From: noreply@iopscience.org
Sent: Friday, 5 July, 2024
Subject: Inverse Problems, Volume 40, Number 7, July 2024

Papers

Inverse problem of recovering a time-dependent nonlinearity appearing in third-order nonlinear

acoustic equations
Song-Ren Fu, Peng-Fei Yao and Yongyi Yu

Uniqueness and numerical inversion in bioluminescence tomography with time-dependent boundary measurement
Rongfang Gong, Xinran Liu, Jun Shen, Qin Huang, Chunlong Sun and Ye Zhang

Stability and statistical inversion of travel time tomography
Ashwin Tarikere and Hanming Zhou

Inversion of the attenuated momenta ray transform of planar symmetric tensors
Hiroshi Fujiwara, David Omogbhe, Kamran Sadiq and Alexandru Tamasan

Stability of the isotropic conductivity reconstruction using magnetic resonance electrical impedance tomography (MREIT)
Haiyang Wang and Yizhuang Song

On dynamical system modeling of learned primal-dual with a linear operator K: stability and convergence properties
Jinshu Huang, Yiming Gao and Chunlin Wu

Feasibility of acousto-electric tomography
Bjørn Jensen, Adrian Kirkeby and Kim Knudsen

Reconstruction of inhomogeneous media by an iteration algorithm with a learned projector
Kai Li, Bo Zhang and Haiwen Zhang

A novel Newton method for inverse elastic scattering problems
Yan Chang, Yukun Guo, Hongyu Liu and Deyue Zhang

Uncertainty quantification for goal-oriented inverse problems via variational encoder-decoder networks
Babak Maboudi Afkham, Julianne Chung and Matthias Chung

Direct inversion of the Longitudinal ray transform for 2D residual elastic strain fields
C M Wensrich, S Holman, M Courdurier, W R B Lionheart, A P Polyakova and I E Svetov

Issue 7 - Volume 40 - Inverse Problems - IOPscience

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From: cdenton@aimsciences.org
Sent: Tuesday, 09 July, 2024
Subject: IPNet Digest table of contents submission (IPI 18-5)

IPI October 2024 Vol. 18, No. 5 articles:

1. Estimating absorption and scattering in quantitative photoacoustic tomography with an adaptive Monte Carlo method for light transport
   Niko Hänninen, Aki Pulkkinen, Simon Arridge and Tanja Tarvainen

2. Quantitative analysis of the electric field in a two-layer mixed structure and its application
   Wanjing Tang, Youjun Deng, Juan Wang and Zaiyun Zhang

3. On the reconstruction of medium conductivity by integral equation method based on the Levi function
Qiang Zhang and Jijun Liu

4. Hopf's lemma and uniqueness of simultaneously determining source profile and Robin coefficient in a fractional diffusionequation by interior data
Daijun Jiang and Zhiyuan Li

5. Hyperspectral image denoising via weighted double sparsity total variation and low-rank representation
Jie Huang, Ke-Han Chen, Jin-Ju Wang and Wen Yan

6. An inverse source problem for convective Brinkman-Forchheimer equations with the final overdetermination
Pardeep Kumar and Manil T. Mohan

7. On forward and inverse problems for a DCIS model with free boundaries in mathematical biology
Hongyu Liu and Keji Liu

8. On a cylindrical scanning modality in three-dimensional Compton scatter tomography
James W. Webber

Inverse Problems and Imaging (aimsciences.org)

Best regards,
Charley Denton

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IPNet Digest Volume 31, Number 8 28 June 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Aretha Teckentrup, a.teckentrup@ed.ac.uk
Date: Tuesday, 13 August, 2024
Subject: Postdoc positions in foundations of AI, UK

Five three-year postdoc positions, one each at the Universities of Bristol, Edinburgh, Lancaster, Manchester and Warwick are now available to support the core research activities of the Prob AI (Probabilistic
AI) Hub. The Prob AI Hub is an £8.5 million multi-institution initiative funded by the EPSRC to progress research on the Mathematical and Computational Foundations of AI.

We are looking to put together a team of postdocs with broad expertise spanning Bayesian statistics, computational statistics, inverse problems, numerical analysis, probability, statistical machine learning, stochastic analysis and uncertainty quantification. Information about the open positions and the specific expertise required at each location can be found here:

https://www.probai.uk/pdra-positions

Applications for all five posts should be made via the same online portal hosted by the University of Lancaster:

https://hr-jobs.lancs.ac.uk/Vacancy.aspx?ref=0719-24

The deadline for applications is 2nd September, with interviews anticipated to take place on 13th September.

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Aretha Teckentrup
Reader in Mathematics of Data Science
School of Mathematics, University of Edinburgh

The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336. Is e buidheann carthannais a th' ann an Oilthigh Dhùn Èideann, clàraichte an Alba, àireamh clàraidh SC005336.

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From: Tuomo Valkonen tuomo.valkonen@helsinki.fi
Date: Wednesday, 14 August, 2024
Subject: Two postdoc positions at the university of Helsinki

Dear colleagues,

Due to unforeseen successes of researchers previously contracted to these positions, I have two postdoc positions available at the University of Helsinki, both to be filled ASAP. The focus of both positions can be adapted to both pure analysts and people with a more numerical focus.

1. The first, shorter one (roughly one year), involves online optimisation for dynamic process tomography. For a numerical focus, preferred skills include numerical PDEs and Julia programming, and, for a more theoretical focus, regularisation theory (inverse problems theory), or, even, geometric measure theory.

2. The second, longer one (funding available until July 2027) involves optimisation and inverse problems in spaces of measures. For a theoretical focus, knowledge of convex analysis and geometric measure theory are highly desirable. For a more numerical/applied focus, skills in numerical PDEs are required, and Rust programming skills or the capacity to learn are a huge advantage.

If a candidate's skills match both projects, other hiring combinations may also be possible.

If you know of possible candidates for these positions, please let them know. Enquiries and applications should be sent totuomo.valkonen@helsinki.fi. Initially, a CV and a publication list is enough, although some candidates may be asked to provide references. Applications will be processed constantly.

Best regards,

Tuomo Valkonen

……
From: Henrik Garde garde@math.au.dk
Date: Friday, 16 August, 2024
Subject: Postdoc position in analysis for inverse problems at Department of Mathematics, Aarhus University, Denmark

Dear all
Postdoc position open in analysis for inverse problems at Department of Mathematics, Aarhus University, Denmark.
Duration: 3 years
Start date: January 1st, 2025 (or soon after)
Deadline for applying: September 20th Danish time (the deadline must be respected for consideration)
Inverse problems and functional calculus of Neumann-to-Dirichlet maps
The project is on reconstruction in Calderón's inverse conductivity problem, with a specific focus on complex-valued coefficients and local boundary data. That is, based on a local Neumann-to-Dirichlet (ND) map on a subset of the domain boundary, to construct a coefficient for the PDE in the domain interior. The combination of complex coefficients and local data implies an open problem of high interest. The project will investigate transformations of such ND maps, and their properties, with the aim of satisfying certain nonlinearity estimates required for iterative methods to converge.

The work may also include short visits to Michael Vogelius at Rutgers, who will be one of the collaborators on the project.
For details on applying (must be done through the online system), salary, and additional details, see:
https://math.au.dk/en/about/vacancies/job/postdoctoral-positions-in-mathematics-statistics
The department is located on the main campus of Aarhus University and at walking distance to the city center of Aarhus, the second largest city of Denmark, located on the Jutland peninsula. The department has a flat hierarchy, friendly colleagues, and strong research environments. For more on the department, see the website: https://math.au.dk/en/
Best regards
Henrik Garde

……
From: Melanie Moser, melanie.moser@uni-graz.at
Date: Friday, 23 August, 2024
Subject University assistant with doctorate, Graz, Austria

At the University of Graz, researchers and students work across a broad disciplinary spectrum to enlarge our knowledge, and find strategies to deal with challenges our society is confronted with and to shape tomorrow's world.
The University of Graz is a place which combines high quality academic research and teaching, where achievement is rewarded, careers are promoted, and social diversity is encouraged – all within a modern, award-winning working environment.

The Department of Mathematics and Scientific Computing is looking for a

University assistant with doctorate (m/f/d)
https://jobs.uni-graz.at/en/jobs/133a4fcc-96f2-7db2-af05-65ef096097a1

• Application deadline: 03.10.2024
• Salary Category: B1 with PhD
• Salary per Year: € 66.532,20
• Employment Start: As soon as possible
• Hours per week: 40.00 h/w
• Duration of Contract: Temporary employment
• Temporary Employment: 6 years

Your Responsibilities
• Research in the field of applied mathematics with emphasis on the analysis and the numerics of problems in mathematical imaging, inverse problems and data sciences
• Collaboration in interdisciplinary cooperation projects and third-party funded projects
• Independent teaching of courses in the field of applied mathematics, supervision of students and holding of examinations
• Participation in organizational and administrative matters

Your Profile
• Doctoral degree in a mathematical branch of study
• Solid knowledge of one of the following fields: mathematical methods, analysis and numerics in imaging, inverse problems or data sciences
• Ability for integration into the department's research profile and in particular into interdisciplinary cooperation projects

• Capacity for teamwork, organizational talent and ability to communicate
• Very good command of english
• Ability to teach in German (after a transition period of 2 years)

We offer an annual gross salary of € 66,532.20 for a fulltime position.

Contact

Prof. Dr. Kristian Bredies | kristian.bredies(at)uni-graz.at

The University of Graz strives to increase the proportion of women in particular in management and faculty positions and therefore encourages qualified women to apply.
In the event of underrepresentation, women with equal qualifications are generally given priority for admission.
Especially with regard to academic staff, we welcome applications from persons with disabilities who meet the requirements of the advertised position.
We work for tomorrow. Join us!

Please note that in order to comply with the applicable data protection regulations, we can only accept applications via our web-based applicant tool for this vacant position:
https://jobs.uni-graz.at/en/jobs/133a4fcc-96f2-7db2-af05-65ef096097a1

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From: Jakob Sauer Jørgensen jakj@dtu.dk
Date: Monday, 12 August, 2024
Subject: 2nd annual Core Imaging Library User Meeting, Harwell, UK, Nov. 2024

Dear all,

We're extremely excited to announce the 2nd annual Core Imaging Library (CIL) User Meeting to be held on 4 – 7 Nov. 2024 at the Rutherford Appleton Laboratory in Harwell, UK.

Last year's event was great fun and the CIL team has worked hard to make this year even better. Reasons to attend:

- get hands-on CIL training – this year we have both introductory and advanced tracks

- hear about cool applications of CIL from users across a range of areas and facilities

- present your own CIL based work and exchange ideas with other users and developers

- influence future directions for CIL in townhall user community discussions

- and last but not least: participate in our Bring Your Own Data hackathon – a collaborative coding event to get your own data or problem set up in CIL with support from CIL developers – or work together to add cool new features to CIL and become an official contributor!

Whether experienced or new to CIL and whether working in X-ray CT or another imaging or computational area – do join us for this informal and fun event!

More information and registration at:
https://ccpi.ac.uk/events/cil-user-meeting-2024/

Feel free to reach out to me with any questions – and hope to see you there!

Best wishes, on behalf of the CIL team,
Jakob

Jakob Sauer Jørgensen
Senior Researcher
Dept. Applied Mathematics and Computer Science
Technical University of Denmark
jakj@dtu.dk

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From: noreply@iopscience.org
Sent: Thursday, 25 July, 2024
Subject: Inverse Problems, Volume 40, Number 8, August 2024

Papers

Piecewise nonlinear materials and Monotonicity Principle
Antonio Corbo Esposito, Luisa Faella, Vincenzo Mottola, Gianpaolo Piscitelli, Ravi Prakash and Antonello Tamburrino

Learning a stable approximation of an existing but unknown inverse mapping: application to the half-time circular Radon transform
Refik Mert Cam, Umberto Villa and Mark A Anastasio

Solving, tracking and stopping streaming linear inverse problems
Nathaniel Pritchard and Vivak Patel

Bayesian interface technique-based inverse estimation of closure coefficients of standard k−ϵ turbulence model by limiting the number of DNS data points for flow over a periodic hill
Nagendra Kumar Chaurasia and Shubhankar Chakraborty

Bayesian interface technique-based inverse estimation of closure coefficients of standard k−ϵ turbulence model by limiting the number of DNS data points for flow over a periodic hill
Nagendra Kumar Chaurasia and Shubhankar Chakraborty

Uniqueness and numerical method for phaseless inverse diffraction grating problem with known superposition of incident point sources
Tian Niu, Junliang Lv and Jiahui Gao

A unified approach to inversion formulae for vector and tensor ray and radon transforms and the Natterer inequality
Alfred K Louis

Ill-posedness of time-dependent inverse problems in Lebesgue-Bochner spaces
Martin Burger, Thomas Schuster and Anne Wald

Resolving full-wave through-wall transmission effects in multi-static synthetic aperture radar
F M Watson, D Andre and W R B Lionheart

Low-resolution prior equilibrium network for CT reconstruction

Yijie Yang, Qifeng Gao and Yuping Duan

An accelerated inexact Newton regularization scheme with a learned feature-selection rule for non-linear inverse problems
Haie Long, Ye Zhang and Guangyu Gao

Issue 8 - Volume 40 - Inverse Problems - IOPscience
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From: Charley Denton, cdenton@aimsciences.org
Sent: Saturday, 17 August, 2024
Subject: IPNet Digest table of contents submission (IPI 18-6)

IPI December 2024 Vol. 18, No. 6 articles:

1. Range characterization of ray transform on Sobolev spaces of symmetric tensor fields
   Venkateswaran P. Krishnan and Vladimir A. Sharafutdinov

2. Bayesian experimental design for linear elasticity
   Sarah Eberle-Blick and Nuutti Hyvönen

3. Spatially regularized Leaky ReLU in dual space for CNN based image segmentation
   Xiangyue Wang and Jun Liu

4. Reconstruction of obstacles in a Stokes flow as a shape-from-moments problem
   Alexandre Munnier

5. A novel ℓ0 minimization framework of tensor tubal rank and its multi-dimensional image completion application
   Jin-Liang Xiao, Ting-Zhu Huang, Liang-Jian Deng and Hong-Xia Dou

6. Superresolution with the zero-phase imaging condition
   Sarah Greer and Laurent Demanet

7. Unique determination by a single far-field measurement for an inverse elastic problem
   Huaian Diao, Ruixiang Tang, Hongyu Liu and Jiexin Tang

8. The boundary and scattering rigidity problems for simple MP-systems
   Sebastián Muñoz-Thon

9. The truncated variational model for image labeling and graph partitioning
   Yutong Li, Yijie Yang, Ke Yin, Yuping Duan and Jing Yuan

Inverse Problems and Imaging (aimsciences.org)

Best regards,
Charley Denton
Communications Specialist
American Institute of Mathematical Sciences
Email: cdenton@aimsciences.org
American Institute of Mathematical Sciences (aimsciences.org)

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IPNet Digest Volume 31, Number 9 25 August 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. SSVM 2025 open for submissions - Dartington Hall, Devon, UK, May 2025
2. Dynamic X-ray CT data collection: Input welcome
3. table of contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Tatiana Bubba tab73@bath.ac.uk
Date: Monday, 2 September, 2024
Subject: SSVM 2025 open for submissions - Dartington Hall, Devon, UK, May 2025

Dear Colleagues,

The 10th International Conference on Scale Space and Variational Methods in Computer Vision (SSVM2025) will take place from May 18 – May 22 2025, at Dartington Hall, Totnes, Devon, UK.

Topics of interest include, but are not limited to: 3D vision, Approximation methods in imaging, Optimization methods in imaging, Differential geometry and invariants, Image- and feature analysis, Inverse problems in imaging, Machine learning in imaging, Compressed sensing, Manifold-valued data processing, PDEs in data processing, Scale-space methods, Surface and shape modelling and analysis, Segmentation, Registration, Restoration and reconstruction, Medical imaging and other applications.

Invited Speakers: Panagiota Birmpa (Heriot-Watt University, UK), Tom Pock (TU Graz, Austria), Jean Ponce (Ecole normale supérieure-PSL, France) and Tanja Tarvainen (University of Eastern Finland, Finland).

Submissions are now open through the CMT system.
Submissions should be a maximum of 12 pages. All papers will undergo a double-blind peer-review procedure. Accepted papers will be presented at the conference either in the format of posters or talks and published in Springer's Lecture Notes in Computer Science series.

The conference will award a best student paper prize.

Submission of papers deadline: November 30, 2024.
Notification of acceptance: January 27, 2025.
Camera-ready papers: February 17, 2025.

For detailed information please see:
https://sites.google.com/view/ssvm-2025/

We hope to see many of you there! Feel free to distribute among your contacts.

Best wishes,

Tatiana Bubba

Dr Tatiana A. Bubba

Lecturer (Assistant Professor) in Applied Mathematics
Department of Mathematical Sciences
University of Bath
Claverton Down, Bath BA2 7AY, UK
https://sites.google.com/view/tatianabubba/home

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From: Felix Lucka Felix.Lucka@cwi.nl
Date: Sunday, 15 September, 2024
Subject: Dynamic X-ray CT data collection: Input welcome
Dear colleagues,
In a starting project on dynamic X-ray CT, we will collect and publish a big collection of 2D and 3D X-ray data that allows to evaluate and benchmark dynamic image reconstruction techniques (similar to what we did for 2D static CT: https://www.nature.com/articles/s41597-023-02484-6). The collection should include data from phantoms that allow to do "stop-motion"-style acquisitions (which has the advantage that for every time step, a full data set is available to compute a ground-truth reconstruction) as well as data from real dynamic objects (i.e., no static ground truth can be obtained). We will start with simple dynamics (e.g., affine transformations of simple objects) and work our way up to complex dynamics (e.g., elastic deformations, crack/crystal formation, fluid dynamics).
In order to design the experiments and to collect data that is as useful as possible for the imaging community, we welcome any input on which type of data you would find useful for your own work. Just drop me an email: Felix.Lucka@cwi.nl
Felix Lucka (he/him)
Centrum Wiskunde & Informatica

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Subject: Inverse Problems, Volume 40, Number 9, September 2024

Papers

Optimal design of large-scale nonlinear Bayesian inverse problems under model uncertainty
Alen Alexanderian, Ruanui Nicholson and Noemi Petra

On bias and its reduction via standardization in discretized electromagnetic source localization problems
Joonas Lahtinen

Joint sparse optimization: lower-order regularization method and application in cell fate conversion
Yaohua Hu, Xinlin Hu, Carisa Kwok Wai Yu and Jing Qin

Reconstructing the shape and material parameters of dissipative obstacles using an impedance model
Travis Askham and Carlos Borges

Inferring dynamical models from time-series biological data using an interpretable machine learning method based on weighted expression trees
Yu Zhou and Xiufen Zou

Adaptive Bregman–Kaczmarz: an approach to solve linear inverse problems with independent noise exactly
Lionel Tondji, Idriss Tondji and Dirk Lorenz

Shape and parameter identification by the linear sampling method for a restricted Fourier integral operator
Lorenzo Audibert and Shixu Meng

Solving Bayesian inverse problems with expensive likelihoods using constrained Gaussian processes and active learning
Maximilian Dinkel, Carolin M Geitner, Gil Robalo Rei, Jonas Nitzler and Wolfgang A Wall

On the ensemble Kalman inversion under inequality constraints
Matei Hanu and Simon Weissmann

Bayesian image segmentation under varying blur with triplet Markov random field
Sonia Ouali, Jean-Baptiste Courbot, Romain Pierron and Olivier Haeberlé

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IPNet Digest Volume 31, Number 10 5 November 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. PhD Position in Computational Inverse Problems, Uppsala, Sweden
2. Limited-Term Assistant Professorship in Applied Mathematics at Columbia University
3. table of contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Jörn Zimmerling jorn.zimmerling@it.uu.se
Date: Thursday, 26 September, 2024
Subject: PhD Position in Computational Inverse Problems, Uppsala, Sweden

PhD Position in Computational Inverse Problems, Uppsala, Sweden

We are searching for highly motivated candidates with a strong background in scientific computing (applied mathematics, physics, computer science). The PhD project will be on data-driven methods in inverse scattering.

The position is supervised by Jörn Zimmerling at the Division of Scientific Computing in Uppsala. This PhD position is part of the eSSENCE graduate school in data-intensive science. eSSENCE is a strategic collaborative research program in e-science between three Swedish universities with a strong tradition of excellent e-science research: Uppsala University, Lund University, and Umeå University.

The job posting can be found here: https://uu.varbi.com/en/what:job/jobID:757004/
You can reach out with questions to jorn.zimmerling@it.uu.se

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From: Kui Ren kr2002@columbia.edu
Date: Wednesday, 16 October, 2024
Subject: Limited-Term Assistant Professorship in Applied Mathematics at Columbia University

The Department of Applied Physics and Applied Mathematics (APAM) at Columbia University in the City of New York invites applications for a limited-term Assistant Professor faculty position in the area of applied and computational mathematics.

The position begins July 1, 2025 for a term of 3 years. Salary is competitive and the teaching load is relatively light. Basic responsibilities focus on teaching, research and service.

A recent PhD earned in the last 3 years and no later than the start date of the appointment, and extraordinary promise in research, are both required. A broad array of research groups is active in the department, with current research encompassing applied and computational mathematics, and their application to many areas of physics, materials science, biology, earth science, as well as imaging

and data science.

There is a strong cohort of activities on applied and computational mathematics within the Fu Foundation School of Engineering and Applied Sciences and the affiliated Data Science Institute. The Department is especially interested in qualified candidates who will contribute, through their research, teaching, and/or service, to the diversity and excellence of the academic community.

Application Instructions Applications must include: (a) curriculum vitae, (b) statement of research, (c) statement of teaching, and (d) at least three letters of recommendation.Please apply at: http://apply.interfolio.com/156656
Applications received by November 7, 2024 will be given full consideration. For questions concerning the position, please email apam@columbia.edu.
Applicants are encouraged to consult http://appliedmath.apam.columbia.edu for more information about the applied mathematics program,
and https://apam.columbia.edu/ for more information about the department.

Columbia University is an Equal Opportunity Employer / Disability / Veteran
The salary of the finalist selected for this role will be set based on a variety of factors, including but not limited to departmental budgets, qualifications, experience, education, licenses, specialty, and training.
Columbia University is an Equal Opportunity/Affirmative Action employer -- Race/Gender/Disability/Veteran

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Kui Ren
Professor of Applied Mathematics
Department of Applied Physics and Applied Mathematics and
Data Science Institute
Columbia University
http://www.columbia.edu/~kr2002

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Subject: Inverse Problems, Volume 40, Number 10, October 2024

Papers

An optimal Bayesian strategy for comparing Wiener–Hunt deconvolution models in the absence of ground truth
B Harroué, J-F Giovannelli and M Pereyra

Increasing stability of the acoustic and elastic inverse source problems in multi-layered media
Tianjiao Wang, Xiang Xu and Yue Zhao

Analysis of the monotonicity method for an anisotropic scatterer with a conductive boundary
Isaac Harris, Victor Hughes and Heejin Lee

Pseudo-differential integral autoencoder network for inverse PDE operators
Ke Chen, Jasen Lai and Chunmei Wang

Inverse source problem for discrete Helmholtz equation
Roman Novikov and Basant Lal Sharma

A Kirchhoff Migration scheme for elastic obstacle identification
Daniel Rabinovich and Dan Givoli

Phase retrieval and phaseless inverse scattering with background information
Thorsten Hohage, Roman G Novikov and Vladimir N Sivkin

Enhanced microscale hydrodynamic near-cloaking using electro-osmosis
Hongyu Liu, Zhi-Qiang Miao and Guang-Hui Zheng

Fourier method for inverse source problem using correlation of passive measurements
Faouzi Triki, Kristoffer Linder-Steinlein and Mirza Karamehmedović

Reconstructing a state-independent cost function in a mean-field game model
Kui Ren, Nathan Soedjak, Kewei Wang and Hongyu Zhai

Bouligand–Newton type methods for non-smooth ill-posed problems
Qinian Jin and Yun Zhang

Exact recovery of the support of piecewise constant images via total variation regularization
Yohann De Castro, Vincent Duval and Romain Petit

Bayesian inversion with Student's *t* priors based on Gaussian scale mixtures
Angelina Senchukova, Felipe Uribe and Lassi Roininen

fg-ORKA: fast and gridless reconstruction of moving and deforming objects in multidimensional data
Florian Bossmann, Jianwei Ma and Wenze Wu

Lipschitz stability of an inverse conductivity problem with two Cauchy data pairs
Martin Hanke

A bilevel optimization method for inverse mean-field games
Jiajia Yu, Quan Xiao, Tianyi Chen and Rongjie Lai

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IPNet Digest Volume 31, Number 11 28 November 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Roland Herzog roland.herzog@iwr.uni-heidelberg.de
Date: Wednesday, 6 November, 2024
Subject: Call for Minisymposia, ENUMATH 2025, Heidelberg, Sep 2025

The 15th ENUMATH Conference will take place
September 1-5, 2025 at Heidelberg University (Germany).

Started almost 30 years ago, the ENUMATH conference series has been one of the leading venues for presenting and discussing novel and fundamental advances in numerical mathematics and challenging scientific and industrial applications on the highest level of International expertise.
Among traditional themes such as *Advances in Discretisation Schemes* we also invite contributions in more recently established and growing fields such as *Hardware-Aware Scientific Computing* or *Scientific Machine Learning*. A full list of conference themes and further information can be found at https://enumath2025.eu/

The Call for Mini symposium Proposals is open!
We would like to invite you to submit your proposals on the webpage by January 15th, 2025.
We hope to welcome many of you in Heidelberg,

Robert Scheichl (Conference Chair)

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From: DE MOL Christine christine.de.mol@ulb.be
Date: Wednesday, 13 November, 2024
Subject: Announcing the ISCS 2025 Symposium and Workshop

Dear colleagues,

Here is a symposium that may be interest to you: the International Symposium on Computational Sensing (ISCS25) to be held in Luxembourg, 4 - 6 June 2025.
Topics of interest are:

- Light Imaging
- Electron and X-ray Imaging
- RADAR and Remote Sensing
- Astronomical Imaging
- Biomedical Imaging
- Signal Processing for Computational Sensing
- Deep Learning for Computational Sensing

Invited speakers will be: Angus Kirkland, Mike Davies, Petros Boufounos, Sylvain Gigan, Shiro Ikeda, and Liubov Amitonova.
There is also 2-day workshop (offering lectures and tutorials) organized before the Symposium with Nelly Pustelnik, Gail McConnell, Bradley Perry and Julian Tachella.
For more information and for the call for paper, see the
website: https://www.iscs2025.com/symposium

Best regards,
Christine De Mol

……
From: Antonio Leitao acgleitao@gmail.com
Date: Friday, 22 November, 2024
Subject: AIP 2025 Conference - Call for Mini symposium Proposals

The Applied Inverse Problems (AIP) conferences are organized biannually, the first one was held in Montecatini (2001). AIP have become the largest conference series in the field. The last meetings of this series took place in Helsinki (2015), Hangzhou (2017), Grenoble (2019), and Göttingen (2023).

The next AIP Conference will be held at FGV EMAp, Rio de Janeiro, Brazil from July 28 to August 1, 2025. https://eventos.fgv.br/aip2025/
We invite proposals for Mini symposia containing the following information:
• Title (up to 100 characters)
• Names and affiliations of organizers
• Brief description of the topic (about half a page)
• List of speakers including affiliations and links to webpages if available.

A Mini symposium may have either 4, 8 or 12 speakers, possibly including the organizers. Each talk is allocated 30 minutes, which includes time for discussion. Speakers should be contacted in advance.
Please keep in mind that every participant may give at most two talks, preferably only one.

Mini symposium proposals should be submitted via email to aip2025@fgv.br with the subject line: Mini symposium Proposal.
The submission deadline is January 31, 2025.

There is also an option to submit posters (a limited number of posters will be showcased during a single 90-minute poster section. Poster proposals (including title, abstract, name, affiliation and link to webpage) should be submitted via email to aip2025@fgv.br with the subject line: Poster Proposal.
Contact: aip2025@fgv.br
……
From: Andreas Rieder andreas.rieder@kit.edu
Date: Friday, 8 November, 2024
Subject: Tenure-track Professorship „Mathematics in Sciences, Engineering or Economics“ at Karlsruhe Institute of Technology

The Department of Mathematics at the Karlsruhe Institute of Technology
(KIT) invites applications for a tenure-track professor-ship (W1) „Mathematics in Sciences, Engineering or Economics“ beginning at the earliest possible date.

For detailed information see
https://www.pse.kit.edu/english/karriere/joboffer.php?id=164534

The application deadline is January 31, 2025.

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From: Jennifer Mueller mueller@math.colostate.edu
Date: Tuesday, 12 November, 2024
Subject: Submission: Postdoc ad

COLORADO STATE UNIVERSITY
DEPARTMENT OF MATHEMATICS
Postdoctoral Fellow – Inverse problems in medical imaging

The Department of Mathematics at Colorado State University invites applications for a postdoctoral fellow with an anticipated start in the 2025-2026 academic year. The successful candidate will work with a research team headed by Yates Endowment Chair, Jennifer Mueller, to conduct research on inverse problems in medical imaging, and specifically will have expertise in electrical impedance tomography or ultrasound computed tomography with experience working with, and preferably collecting, experimental data. The Fellow's activities will include producing relevant scholarly products, contributions to grant proposals, participation in seminars, mentoring students, and may include teaching one course per year. All individuals interested in applying for Postdoctoral Fellow or Research Scientist or Research Scholar positions in the Department of Mathematics must apply through our pool of interested applicants. For complete details and/or to apply, create an account at the website https://jobs.colostate.edu/hr/postings/145770. Applicants can also apply at mathjobs.org. If your research experience is related to inverse problems in medical imaging, in your cover letter be sure to mention that you are interested in working with Dr. Jennifer Mueller.

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From: Jennifer Mueller mueller@math.colostate.edu
Date: Wednesday, 20 November, 2024
Subject: Special issue announcement for IPNet

We are pleased to announce that the June 2025 issue of AMMC will be a special issue on EIT. Submissions are solicited with a deadline of March 15th for the Special Issue. Late submissions will receive full consideration for the regular September issue of AMMC. All aspects of EIT are welcome, but submissions must fit the journal description: Articles should include mathematics applied to practical problems with supporting examples that include real-world data. Several kinds of scientific novelty are appreciated in this journal. Novelty can be achieved through offering end-users with unprecedented mathematical solutions, even with tried-and-true methods. Or, novelty can be of a more traditional sort, producing new mathematics for a problem of contemporary interest.

The journal homepage is https://www.aimsciences.org/AMMC and articles should be submitted through EditFlow https://ef.msp.org/submit_new.php?j=aims_ammc, indicating that the submission is for the Special Issue on EIT. Guest editors for the special issue are Malena Espanol, Andreas Hauptmann, and Fernando Moura.

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From: Christian Gerhards Christian.Gerhards@geophysik.tu-freiberg.de

Date: Saturday, 23 November, 2024
Subject: PhD Position, Reconstruction Methods in Micromagnetic Tomography, TU Bergakademie Freiberg, Germany

Within the project "Reconstruction Methods in Micromagnetic Tomography", we currently have an open PhD position at the Geomathematics and Geoinformatics group (https://tu-freiberg.de/en/geophysics) at TU Bergakademie Freiberg.

We are seeking an applied mathematician with an interest in geoscientific problems and interdisciplinary research. The project aims at an inverse problem in paleomagnetism: obtaining information about the magnetization of rock samples at grain-size levels from scanning magnetic microscopy data and microCT data. The tasks include both the mathematical analysis of the problem as well as the development and application of novel numerical methods. There exists the opportunity for collaboration with the paleomagnetic laboratory at Utrecht University.

Questions and initial application material can be addressed to Prof. Christian Gerhards (Christian.gerhards@geophysik.tu-freiberg.de). The official posting and application instructions can be found at https://tu-freiberg.de/en/job-offers/scientific-employees, job reference number 202/2024. Feel free to forward this information to interested candidates.
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Thanks and best regards,
Christian Gerhards
Prof. Dr. Christian Gerhards
TU Bergakademie Freiberg
Institute for Geophysics and Geoinformatics - Geomathematics and Geoinformatics Group
Gustav-Zeuner-Strasse 12, 09599 Freiberg, Germany
phone +49 3731 39 2880
tu-freiberg.de/en/institut-fuer-geophysik-und-geoinformatik/ag-geomathematik-und-geoinformatik

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From: noreply@iopscience.org
Date: Tuesday, 5 November, 2024
Subject: Inverse Problems, Volume 40, Number 11, November 2024

A microlocal and visual comparison of 2D Kirchhoff migration formulas in seismic imaging
Kevin Ganster, Eric Todd Quinto and Andreas Rieder

Normalizing flow regularization for photoacoustic tomography
Chao Wang and Alexandre H Thiery

Carleman estimates for space semi-discrete approximations of one-dimensional stochastic parabolic equation and its applications
Bin Wu, Ying Wang and Zewen Wang

Reconstruction of the doping profile in Vlasov–Poisson system
Ru-Yu Lai, Qin Li and Weiran Sun

Stability and regularization for ill-posed Cauchy problem of a stochastic parabolic differential equation
Fangfang Dou, Peimin Lü and Yu Wang

Determination of a small elliptical anomaly in electrical impedance tomography using minimal

measurements
Gaoming Chen, Fadil Santosa and Aseel Titi

Diffraction tomography for incident Herglotz waves
Clemens Kirisits, Noemi Naujoks, Otmar Scherzer and Huidong Yang

Optimising seismic imaging design parameters via bilevel learning
Shaunagh Downing, Silvia Gazzola, Ivan G Graham and Euan A Spence

Kalman-based estimation of loading conditions from ultrasonic guided wave measurements
André Dalmora, Alexandre Imperiale, Sébastien Imperiale and Philippe Moireau

Far field operator splitting and completion in inverse medium scattering
Roland Griesmaier and Lisa Schätzle

Analysis and computation of an inverse source problem for the biharmonic wave equation
Yan Chang, Yukun Guo, Tao Yin and Yue Zhao

AdaTL1: an adaptive non-convex sparse solver with applications to CT reconstruction and image denoising
K Z Najiya and C S Sastry
Issue 11 - Volume 40 - Inverse Problems - IOPscience

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IPNet Digest Volume 31, Number 12 19 December 2024

Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. Workshop Advertisement for Newsletter
2. postdoc positions in inverse problems, Aarhus University, Denmark
3. Geilo Winter School 2025: Inverse Problems
4. 7th EUCCO and 4th AAIP 2025 in Klagenfur
5. PhD Position, Geomathematics, TU Bergakademie Freiberg, Germany
6. Table of contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Thorpe, Matthew <Matthew.Thorpe@warwick.ac.uk>
Date: Saturday, 16 November 2024
Subject: Workshop Advertisement for Newsletter

The LMS-Bath Symposium on **Inverse Problems and Artificial Intelligence in Medicine** will be held at the University of Bath (UK), 23rd June – 4th July 2025. This is a 2-week programme funded by the ICMS where the first week is a summer school and the second week is a workshop. More information here: https://bathsymposium.ac.uk/symposium/inverse-problems-and-artificial-intelligence-in-medicine/. There is funding for students/ECRs to attend with a 5th January 2025 deadline for application (the application form is here: https://forms.gle/PNjzrXpvpEsAx27j7 and can also be found on the webpage). Registration will open in January 2025. The week after the symposium there is a Maths4DL event on Inverse Problems and Deep Learning (https://maths4dl.ac.uk/newsevents/maths4dl-conference-on-inverse-problems-and-deep-learning).

Kind regards,
Matt

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From: Henrik Garde garde@math.au.dk
Date: Friday, 29 November, 2024
Subject: One or more postdoc positions in inverse problems, Aarhus University, Denmark

Dear all,

One or more postdoc positions are open on inverse problems research at Department of Mathematics, Aarhus University, Denmark.
The positions are mainly on theoretical questions for inverse coefficient problems, but can also be modified to a more computational direction.
The start date is flexible.

Duration: 2-3 years
Requirement from the funding agency: PhD degree obtained after March 2019
Deadline for applying: January 5th Danish time; the deadline must be respected for consideration

For more info, and for the online system where you must apply, see:
https://math.au.dk/om/ledige-stillinger/job/postdoctoral-positions-in-mathematics-stochastics

When applying, you must mention the project PD2 from this list:
https://math.au.dk/en/about/vacancies/postdoc/

If you have questions, you are very welcome to contact me.

Best regards
Henrik Garde

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From: Øystein Andersson Klemetsdal oystein.klemetsdal@sintef.no
Date: Tuesday, 3 December, 2024
Subject: Geilo Winter School 2025: Inverse Problems

Dear all,
Apologies if you receive multiple copies of this message.

We are excited to announce the program for the 2025 Geilo Winter School!

Key Information:
Topic: Inverse Problems
Dates: January 19-24, 2025
Location: Geilo, Norway

Lecturers:
Giovanni S. Alberti (University of Genoa): Machine Learning for Inverse Problems
Adrian Kirkeby (Simula Research Laboratory): Inverse Problems for Water Waves
Chris Rackauckas (JuliaHub): Solving Inverse Problems with Julia's SciML
Sergey Alyaev (NORCE): Real-Time Geological Inversion for Subsurface Decision-Making: From Theory to Practice

For the latest updates, follow us on LinkedIn and Facebook, or visit our website.
To register, please fill out the registration form: https://forms.office.com/e/rYqAdHVGAc

We would greatly appreciate it if you could forward this information to anyone who might be interested in attending.

Thank you!

On behalf of the organizing committee,
Øystein Klemetsdal

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Øystein Andersson Klemetsdal, PhD
Research Scientist, SINTEF Digital, Mathematics & Cybernetics, Oslo
Phone: +47 98 43 86 39 (mobile)

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From: Kaltenbacher, Barbara Barbara.Kaltenbacher@aau.at
Date: Wednesday, 4 December, 2024
Subject: 7th EUCCO and 4th AAIP 2025 in Klagenfurt

Dear Colleagues,

It is our great pleasure to announce that we are organizing the 7th European Conference on Computational Optimization (EUCCO) September 29 - October 1, 2025 https://eucco2025.aau.at as well

as the 4th Alps-Adriatic Inverse Problems Workshop (AAIP)October 2 - 3, 2025 https://aaip2025.aau.at at University of Klagenfurt, Austria.

Reduced rates are avaiable for persons participating in both events as well as for IPIA members and for students.
We hope to see you in Klagenfurt in September/October 2025!
Elena Resmerita, Angelika Wiegele and Barbara Kaltenbacher

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From: Christian Gerhards Christian.Gerhards@geophysik.tu-freiberg.de
Date: Tuesday, 17 December, 2024
Subject: PhD Position, Geomathematics, TU Bergakademie Freiberg, Germany

The Geomathematics and Geoinformatics Group at TU Bergakademie Freiberg is offering the following position:
PhD Student in Geomathematics (36 months)

TU Bergakademie Freiberg is a university with a strong profile in geo, environmental, energy, and material sciences. In this environment, we are a strongly mathematically oriented research group with a focus on the analysis of various problems in geophysics (often based on potential theoretic concepts) and the development of corresponding numerical methods. We offer the opportunity to work in a small interdisciplinary research group (consisting of mathematicians, computer scientists, and geophysicists) with international connections.

The announced position concerns the project Reconstruction Methods in Micromagnetic Tomography (MMT). It covers the mathematical analysis and development of new reconstruction methods for the inversion of scanning magnetic microscopy and microCT data. A particular focus is on enabling the extraction of magnetization parameters of a single grain within rock samples consisting of hundreds to thousands of known and unknown magnetized grains. We are seeking candidates interested both in thorough mathematical analysis as well as concrete interdisciplinary applications.

Your duties and possibilities:
- mathematical analysis and development of reconstruction methods for micromagnetic tomography (MMT)
- implementation and application of the developed methods
- presentation and publication of the results at relevant conferences and in corresponding journals (both in mathematics and geoscience)
- research stay at the paleomagnetic laboratory at Utrecht University

Your profile:
- very good master's degree in (applied) mathematics or related fields
- background and interest in at least one of the following areas: inverse problems, numerical analysis, (spatiospectral) approximation methods
- at least initial programming skills, such as Python
- good communication skills and interest in interdisciplinary research
- good English skills, German skills are an advantage but not mandatory

Inquiries and the typical application material (cover letter, transcript of records, certificates) can be addressed to Prof. Christian Gerhards (christian.gerhards@geophysik.tu-freiberg.de; https://tu-freiberg.de/en/geophysics/ag-geomathematik-und-geoinformatik). Applications are possible at any time until the position is filled.
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Thanks and best regards,
Christian Gerhards

Prof. Dr. Christian Gerhards
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tu-freiberg.de/en/institut-fuer-geophysik-und-geoinformatik/ag-geomathematik-und-geoinformatik

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From: noreply@iopscience.org
Date: Tuesday, 19 November, 2024
Subject: Inverse Problems, Volume 40, Number 12, December 2024

Papers

Oleh Melnyk, Michael Quellmalz, Gabriele Steidl, Noah Jaitner, Jakob Jordan and Ingolf Sack

Coercivity-based analysis and its application to an inverse source problem for a subdiffusion equation with time-dependent principal parts
Daijun Jiang, Zhiyuan Li and Masahiro Yamamoto

Statistical modelling and Bayesian inversion for a Compton imaging system: application to radioactive source localization
Cécilia Tarpau, Ming Fang, Konstantinos C Zygalakis, Marcelo Pereyra, Angela Di Fulvio and Yoann Altmann

Stability for a multi-frequency inverse random source problem
Tianjiao Wang, Xiang Xu and Yue Zhao

Wirtinger gradient descent methods for low-dose Poisson phase retrieval
Benedikt Diederichs, Frank Filbir and Patricia Römer

Linearized boundary control method for density reconstruction in acoustic wave equations
Lauri Oksanen, Tianyu Yang and Yang Yang

On direct and inverse obstacle scattering problems for biharmonic waves
Jun Guo, Yin Long, Qinghua Wu and Jin Li

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