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Today's Editor: Matti Lassas University of Helsinki

Today's Topics:

1. 4th IMA Conference on Inverse Problems from Theory to Application
2. Analysis and Mathematical Physics
3. Postdoc position open in analysis for inverse problems at Department of Mathematics, Aarhus University
4. PhD Position in Optimization, Optimal Transport and Inverse Problems, University of Twente
5. Table of Contents: February issue
6. Table of Contents: March issue
7. Table of Contents: ETNA Vol 59

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 Dereziński *

(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

M. Donatelli, P. Ferrari, and S. Gazzola, Symmetrization techniques in image deblurring, pp. 157-178

Z. Milovanovic Jeknic, B. Sredojevic, and D. Bojovic, On the numerical solution of an elliptic problem with nonlocal boundary conditions, pp. 179-201

A. Lanza, M. Pragliola, and F. Sgallari, Parameter-free restoration of piecewise smooth images, pp. 202-229

J. Tomanovic, Gauss-type quadrature rules with respect to external zeros of the integrand, pp. 230-249

T. DeLillo, J. Mears, and S. Sahraei, Computation of potential flow in multiply connected domains using conformal mapping, pp. 250-269

J. Chen, V. Dwarka, and C. Vuik, A matrix-free parallel solution method for the three-dimensional heterogeneous Helmholtz equation, pp. 270-294

D. Occorsio, G. Ramella, and W. Themistoclakis, Filtered polynomial interpolation for scaling 3D images, pp. 295-318

M. J. Gander, L. Jakabcin, and M. Outrata, Domain truncation, absorbing boundary conditions, Schur complements, and Pade' approximation, pp. 319-341

B. Sredojevic, Z. Milovanovic Jeknic, and D. Bojovic, A finite difference scheme for the approximation of the third initial boundary value parabolic problem, pp. 342-355

.....end:.....

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](tel: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 since 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

.....end.....

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-Méditerranée

Tatiana A. Bubba, University of Bath

Luca Calatroni, CNRS, Université Côte d'Azur, Inria Sophia Antipolis-Méditerranée

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](mailto:jss(at)jyu.fi)) or Joonas Ilmavirta ([joonas.ilmavirta\(at\)jyu.fi](mailto: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

[Geometric approach for determining stationary phase points in radar imaging](#)

Yixiang Luomei, Tiantian Yin, Kai Tan and Xudong Chen

[Increasing stability of a linearized inverse boundary value problem for a nonlinear Schrödinger equation on transversally anisotropic manifolds](#)

Shuai Lu and Jian Zhai

[A Bayesian approach for consistent reconstruction of inclusions](#)

B M Afkham, K Knudsen, A K Rasmussen and T Tarvainen

[Estimation of the Born data in inverse scattering of layered media](#)

Zekui Jia, Maokun Li, Fan Yang and Shenheng Xu

[Microwave time reversal for nondestructive testing of buried small damage in composite materials](#)

Kang An, Changyou Li, Guoqian Long and Jun Ding

[Efficient kernel canonical correlation analysis using Nyström approximation](#)

Qin Fang, Lei Shi, Min Xu and Ding-Xuan Zhou

[Adaptive anisotropic Bayesian meshing for inverse problems](#)

A Bocchinfuso, D Calvetti and E Somersalo

[CUQIpy: I. Computational uncertainty quantification for inverse problems in Python](#)

Nicolai A B Riis, Amal M A Alghamdi, Felipe Uribe, Silja L Christensen, Babak M Afkham, Per Christian Hansen and Jakob S Jørgensen

[CUQIpy: II. Computational uncertainty quantification for PDE-based inverse problems in Python](#)

Amal M A Alghamdi, Nicolai A B Riis, Babak M Afkham, Felipe Uribe, Silja L Christensen, Per Christian Hansen and Jakob S Jørgensen

[A posterior contraction for Bayesian inverse problems in Banach spaces](#)

De-Han Chen, Jingzhi Li and Ye Zhang

[Magnetic characterization of steel strips using transient field measurements: global sensitivity analysis and regression from a machine-learning perspective](#)

Anastassios Skarlatos, Roberto Miorelli, Christophe Reboud and Frenk Van Den Berg

[Inverse problem for Love waves in a layered, elastic half-space](#)

Maarten V de Hoop, Josselin Garnier, Alexei Iantchenko and Julien Ricaud

[Restoring the discontinuous heat equation source using sparse boundary data and dynamic sensors](#)

Guang Lin, Na Ou, Zecheng Zhang and Zhidong Zhang

[Image reconstruction based on nonlinear diffusion model for limited-angle computed tomography](#)

Xuying Zhao, Wenjin Jiang, Xinting Zhang, Wenxiu Guo, Yunsong Zhao and Xing Zhao

[Quantitative passive imaging by iterative holography: the example of helioseismic holography](#)

Björn Müller, Thorsten Hohage, Damien Fournier and Laurent Gizon

[MiPhDUO: microwave imaging via physics-informed deep unrolled optimization](#)

Sabrina Zumbo, Stefano Mandija, Tommaso Isernia and Martina T Bevacqua

[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, Houssein Haddar and Fabien Poudre

[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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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 Fanello

[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 Bénéard, 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 \$R^n\$](#)

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 Tiejong 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 \(aims sciences.org\)](#)

Best regards,
Charley Denton

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

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