IPNet Digest Volume 27, Number 06 May 27, 2020

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

Today's Topics:

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
http://ipnet.math.msu.edu

From: OIPE2020 <oipe2020@zut.edu.pl>
Date: Thursday, May 7, 2020
Subject: OIPE2020 Conference

Dear colleagues,

Due to the epidemiological situation of COVID-19, the International Steering Committee decided that the conference will be postponed to 2021. Consultations are currently ongoing to determine a specific date. We apologize for any inconvenience, but we believe that 2021 will be much more appropriate and safe for all participants. We will inform you as soon as we set a new conference date. Please also follow our website.

Jens Haueisen (chairman) Marcin Ziolkowski, 16th Workshop Chairman

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From: Alfio Borzi <alfio.borzi@mathematik.uni-wuerzburg.de>
Date: May 12, 2020
Subject: New Book - Modelling with ODEs: A Comprehensive Approach

Dear Colleagues,

It is my pleasure to tell you about the new book :

Modelling with Ordinary Differential Equations: A Comprehensive Approach

by Alfio Borzi

(Chapman and Hall/CRC Press, 2020
388 Pages - 57 B/W Illustrations
ISBN 9780815392613)

This book should represent a new paradigm in the usual understanding and teaching of modelling with ordinary differential equations (ODEs). In fact, in addition to addressing different topics ranging from the general theory of ODEs, stability properties of solutions, limit cycles and synchronisation, and the fundamental topic of the calculus of variation, the book discusses the solution of inverse problems with ODEs that appear in the calibration of differential models. Furthermore, assuming that an adequate model of a given phenomenon is available, the book provides an introduction to optimal control tools that are required to design control mechanisms for the model to perform a given task. These tools are further extended to address problems of competition and cooperation that are modelled in the framework of differential games. The book is completed with a chapter on different stochastic processes and stochastic differential equations, and a final chapter on neural networks to solve ODE problems and related parameter identification problems.

As far as possible, the book aims to be self-contained, presenting a large variety of topics related to modelling with ODEs together and in a unified manner. For this purpose, many theoretical results are proved, many illustrative examples complement the text, and numerical methods are discussed to solve problems arising in the different chapters (a suite of codes is available online).

Please, for more details, see

https://urldefense.com/v3/__https://www.routledge.com/Modelling-with-Ordinary-Differential-Equations-A-Comprehensive-Approach/Borzi/p/book/9780815392613?utm_source=crcpress.com&utm_medium=referral__;!!HXCxUKc!iQwkSkD4FjE1NgxGhkIRlt368JDLD2Qrl4dR5P5H5cMaWT60xDzDM98Og6nV8_mSR0vrRFc$

With my best regards and many thanks

Alfio

Contents:

From: Gerlind Plonka-Hoch plonka@math.uni-goettingen.de [via NADIGEST]

Date: May 07, 2020
Subject: PhD Positions, Applied Mathematics and Stochastics

The Research Training Group RTG 2088 "Discovering Structure in Complex Data" at the Georg- August-University Goettingen offers two positions for Ph.D. candidates beginning a soon as possible. The salary is in accordance with the German public service salary scale (E13 TV-L) with 75 % for up to three years.

The research projects in this RTG focus on new mathematical concepts in statistics, optimization, and inverse problems. Detailed information for the PhD positions can be found at

https://urldefense.com/v3/__https://www.uni-goettingen.de/de/305402.html?cid=100683__;!!HXCxUKc!hrYiWxaPRpUroLzEJFEnHsUpK5TuCqfcjbfwL1VEfy7R0phUjzFeCVsPiZbUhtFy$

From: Simon Arridge <S.Arridge@cs.ucl.ac.uk>
Date: Tuesday, May 12, 2020
Subject: PhD in Inverse Problems for Phase Contrast X-Ray CT at UCL

Project Description

A multidisciplinary consortium from UCL comprising the Advanced X-Ray Imaging group in the Department of Medical Physics and Biomedical Engineering, the Photonic Innovations Lab in the Department of Electronic and Electrical Engineering, and the Centre for Inverse Problems in Computer Science has received strategic funding from UKRI (Nikon-UCL Prosperity Partnership on Next-Generation X-Ray Imaging) to support a partnership tasked with developing disruptive approaches to the use of x-rays in science, industry, medicine and security.

Our prime industrial partner is Nikon X-Tek Systems and additional industrial partners include ISDI, Scintacor and Quantum Detectors. Other partners include the Swiss Federal Laboratories for Materials Science and Technology and three synchrotrons (Diamond, Elettra and the ESRF).

The Centre for Inverse Problems is leading the image reconstruction aspects of the consortium and we are looking a suitable PhD student to join our team. The student will develop innovative reconstruction algorithms involving phase retrieval, compressed sensing, deep learning, and large scale optimisation. The PhD project will involve detailed mathematical and computation development and will work closely with the experimental teams to ensure translation to real applications will be realised. Comprehensive training in the key elements of the research programme will be provided.

The partnership places a high priority in integrating all activities so appointed PhD candidates will be expected to work across multiple research groups, spend time both in academia and in industry, and participate in experiments at synchrotrons.

All studentships will be available for up to 4 years; candidates must have a UK first class or 2:1 honours degree, an MSc, or their international equivalent in physics, engineering, mathematics or a comparable subject. Studentships are available to UK and to all EU students regardless of whether they have resided in the UK in the previous 3

years.

Interested candidates should contact Prof Simon Arridge (s.arridge@ucl.ac.uk) to discuss the details of the project.

Details and application links at :

https://www.findaphd.com/phds/project/phd-position-in-image-reconstruction-for-next-generation-x-ray-tomography/?p121378

From: Giovanni S Alberti <giovanni.alberti@unige.it>
Date: Saturday, May 23, 2020
Subject: PhD and Postdoc positions in Applied Analysis at the University of Genoa

It is a pleasure to announce the call for one PhD student and one Postdoc in Applied Analysis at the Department of Mathematics of the University of Genoa, Italy. The main research themes will be inverse problems, PDE, applied harmonic analysis and machine learning. Candidates who are familiar with one or more of these topics are encouraged to apply.

The start of the positions is planned in Autumn 2020, and the duration of the contracts is 3 years. At this stage, perspective candidates are only asked to complete an expression of interest (link for PhD and link for postdoc). For more details visit https://ml.unige.it/jobs-posts.html.

All the research activities will be carried out at the University of Genoa within MaLGa, a newly established machine learning center at the University of Genoa. The center carries out research in different aspects of machine learning, from theoretical to applied aspects. Today the center counts 10 faculties and 30 PhD students/postdocs and provides a lively and dynamic work environment.

Please feel free to circulate this announcement.

Best wishes

Giovanni S. Alberti
Machine Learning Genoa (MaLGa) Center
Department of Mathematics
University of Genoa

From: "noreply@iopscience.org" <noreply@iopscience.org>
Date: May 6, 2020
Subject: Inverse Problems, Volume 36, Numbers 2 and 5, 2020

Inverse Problems February 2020 Volume 36, Number 2
Table of Contents

Preface:

https://iopscience.iop.org/issue/0266-5611/36/2

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Inverse Problems May 2020 Volume 36, Number 5

Table of Contents

Special Issue Papers:

Papers:

The quadratic Wasserstein metric for inverse data matching
Björn Engquist, Kui Ren and Yunan Yang

Projected Newton method for noise constrained Tikhonov regularization
J Cornelis, N Schenkels and W Vanroose

Solving phase retrieval via graph projection splitting
Ji Li and Hongkai Zhao

Global uniqueness in a passive inverse problem of helioseismology
A D Agaltsov, T Hohage and R G Novikov

One-bit compressed sensing via ℓ p (0 < p < 1)-minimization method
Jingyao Hou, Jianjun Wang, Feng Zhang and Jianwen Huang

Semivariogram methods for modeling Whittle–Matérn priors in Bayesian inverse problems
Richard D Brown, Johnathan M Bardsley and Tiangang Cui

Stability of the inverse source problem for the Helmholtz equation in R3
Adrian Kirkeby, Mads T R Henriksen and Mirza Karamehmedović

An inverse source problem for distributed order time-fractional diffusion equation
Chunlong Sun and Jijun Liu

ℓ 1 – αℓ 2 minimization methods for signal and image reconstruction with impulsive noise removal
Peng Li, Wengu Chen, Huanmin Ge and Michael K Ng

Reduced order models for spectral domain inversion: embedding into the continuous problem and generation of internal data
L Borcea, V Druskin, A Mamonov, S Moskow and M Zaslavsky

On existence and regularity of a terminal value problem for the time fractional diffusion equation
Nguyen Huy Tuan, Tran Bao Ngoc, Yong Zhou and Donal O’Regan

Data completion method for the Helmholtz equation via surface potentials for partial Cauchy data
Matthieu Aussal, Yosra Boukari and Houssem Haddar

A new class of accelerated regularization methods, with application to bioluminescence tomography
Rongfang Gong, Bernd Hofmann and Ye Zhang

A Bayesian filtering approach to layer stripping for electrical impedance tomography
D Calvetti, S Nakkireddy and E Somersalo

On the local Lipschitz stability of Bayesian inverse problems

Björn Sprungk

A partial data problem in linear elasticity
Moritz Doll, André Froehly and René Schulz

https://iopscience.iop.org/issue/0266-5611/36/5

From: "alerts@tandfonline.com" <alerts@tandfonline.com>
Date: Saturday, May 23, 2020
Subject: Inverse Problems in Science and Engineering, Volume 28, Issue 5, May 2020 is now available online on Taylor & Francis Online

Inverse Problems in Science and Engineering May 2020 Volume 28, Issue 5
Table of Contents

https://www.tandfonline.com/toc/gipe20/28/5
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