

# AIP 2015

Applied  
Inverse  
Problems

Conference in  
Helsinki, Finland  
May 25-29, 2015

Conference Programme







# Applied Inverse Problems 2015

Conference in Helsinki, Finland

May 25–29, 2015

## Scientific committee:

Samuli Siltanen (chair), *University of Helsinki, Finland*

Gang Bao, *Zhejiang University, China*

Martin Burger, *University of Münster, Germany*

Maarten de Hoop, *Purdue University, USA*

Hiroshi Isozaki, *University of Tsukuba, Japan*

Matti Lassas, *University of Helsinki, Finland*

Peter Maass, *University of Bremen, Germany*

Graeme Milton, *University of Utah, USA*

Jennifer Mueller, *Colorado State University, USA*

Carola-Bibiane Schönlieb, *University of Cambridge, UK*

Gunther Uhlmann, *University of Helsinki, Finland, and University of Washington, USA*

Jun Zou, *Chinese University of Hong Kong*

## Local organizing committee:

Finnish Inverse Problems Society (Suomen inversioseura ry)

**Address:** PL 68 (Gustaf Hällströmin katu 2b)  
Helsingin Yliopisto, 00014  
Finland

**Website:** <http://www.aip2015.fips.fi>



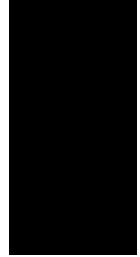


## Applied Inverse Problems 2015 conference programme

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## 1 Venue information and general schedule

## Venue information

The conference takes place at the central campus of the University of Helsinki in the very center of the city, about 500 metres from the Central Railway Station. Most of the program is concentrated in the Main Building of the University of Helsinki, situated in **Fabianinkatu 33**, but some minisymposia and contributed talks are given in **Fabianinkatu 26** that houses the Language Center of the University. The distance between Fabianinkatu 33 and 26 is about 150 metres.

**NOTE: Maps of the venue are found on pp. 90–93 of this book.**

### List of rooms used

#### Main Building, Fabianinkatu 33

The Main Building is situated between Fabianinkatu and the Senate Square and consists of the Old Side (entrance from the Senate Square, Unioninkatu 34) from the 1830s and the New Side (entrance from Fabianinkatu) from the 1930s. **Note that inside the building the sides are connected via the 2nd floor.** The rooms of the New Side are called *sali* (*hall*) and those of the Old Side are *auditoriums*. The special keynote address and plenary talks take place in the flamboyant *juhlasali* (*Great Hall*) of the Old Side. The IPIA meeting convenes in *pieni juhlasali* (*Small Festival Hall*) of the New Side on Monday.

The lobby of the 2nd floor of the New Side houses the conference registration, poster sessions, and coffee breaks. Coffee is served in the mornings at 10:40–11:10 (Mon–Wed) and in the afternoons (except on Wed) at 15:30–16:00.

ROOM	FLOOR	ABBREVIATION
Juhlasali	2nd	F33-JUHLASALI
Sali 3	2nd	SALI 3
Sali 6	3rd	SALI 6
Sali 7	3rd	SALI 7
Sali 8	3rd	SALI 8
Sali 10	3rd	SALI 10
Sali 12	3rd	SALI 12
Auditorium IV	2nd	AUD IV
Auditorium XII	3rd	AUD XII
Auditorium XIII	3rd	AUD XIII
Auditorium XIV	3rd	AUD XIV
Auditorium XV	4th	AUD XV
Pieni juhlasali	4th	F33-PIENI

#### Language Center, Fabianinkatu 26

Some of the program takes place here, either in *luentosali* (*lecture room*) of the 1st floor or in the great hall of the building.

ROOM	FLOOR	ABBREVIATION
Juhlasali	3rd	F26-JUHLASALI
Luentosali 115	1st	F26-LS115

## Lunch opportunities

The location being the city center, there are countless restaurants nearby offering lunch. The university canteen UniCafe offers lunch for 8 euros in the 1st floor of the Main Building (New Side) and in the nearby Porthania building (intersection of Yliopistonkatu and Fabianinkatu).

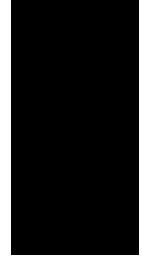
Two restaurants offer minor lunch discount for AIP participants. Restaurant Factory in Aleksanterinkatu 13, 5th floor, offers 0.20 euros off their lunch buffet of 9.50 euros or a salad bar of 10.50 euros with coffee or tea and a fruit included. Included are coupons required. Restaurant Sunn (<http://ravintolasunn.fi/home/>) in Aleksanterinkatu 26 offers their 13.50 euros lunch option for 12 euros for people with the AIP participant tag.



## General schedule

	Mon, May 25	Tue, May 26	Wed, May 27	Thu, May 28	Fri, May 29
08:00–09:00					
09:00–10:00	<b>Opening</b> 08:45–9:00 <b>Peter Markowich</b> 09:00–09:50	<b>Katya Krupchyk</b> 09:00–09:50	<b>Takashi Kako</b> 09:00–09:50	<b>Parallel Session 5</b> 09:00–11:00 M7-II M41-I M6-I M22 M47-I M36-I M10-II M42-I M49-I	<b>Contributed Talks</b> 08:30–10:00 CT5 CT6 CT7 CT8 CT9 CT10
10:00–11:00	<b>Xiaoqun Zhang</b> 09:50–10:40	<b>Peijun Li (Cald. Prize)</b> 09:50–10:40	<b>Thomas Schuster</b> 09:50–10:40		<b>Parallel Session 8</b> 10:10–12:10 M30-II M41-II M26 M45-II M24-II M27 M36-II M3 M49-II
11:00–12:00	<b>Gitta Kutyniok</b> 11:10–12:00	<b>Eero Saksman</b> 11:10–12:00	<b>Hongyu Liu</b> 11:10–12:00	<b>Armin Lechleiter</b> 11:10–12:00	
12:00–13:00	Lunch Break 12:00–13:30	Lunch Break 12:00–13:30	Lunch Break 12:00–13:30	Lunch Break 12:00–13:30	Lunch Break 12:10–13:30
13:00–14:00					
14:00–15:00	<b>Parallel Session 1</b> 13:30–15:30 M18-I M34-I M13-I M28-I M48-I M40-I M23 M12	<b>Parallel Session 3</b> 13:30–15:30 M2-II M34-II M11-II M13-II M20-II M48-II M43-I M46-I	Excursion to Porvoo/ Nuuksio/ Suomenlinna 13:30–18:00	<b>Parallel Session 6</b> 13:30–15:30 M16-I M19 M14-II M38-I M5-I M8-III M17 M40-III CT2	<b>Parallel Session 9</b> 13:30–15:30 M6-II M33 M21-II M38-II M16-II M39 M31 M47-II CT4
15:00–16:00	CT1	M8-II		Coffee 15:30–16:00	Coffee 15:30–16:00
16:00–17:00	<b>Parallel Session 2</b> 16:00–18:00 M2-I M37-I M11-I M20-I M44 M8-I M25 M32-I	<b>Parallel Session 4</b> 16:00–18:00 M37-II M32-II M14-I M28-II M40-II M1-I M10-I M7-I		<b>Parallel Session 7</b> 16:00–18:00 M24-I M30-I M45-I M15-I M46-II M21-I M1-II M43-II CT3	<b>Parallel Session 10</b> 16:00–18:00 M4 M9 M42-II M18-II M35 M5-II M15-II M29
17:00–18:00	IPIA Meeting 18:00–	Reception at City Hall 19:00–20:30		Conference Dinner 19:30–	Pörssitalo
	F33-PIENI	City Hall			





## 2 Keynote and plenary talks

The special keynote address and all plenary talks are given in Great Hall of Fabianinkatu 33 (F33-JUHLASALI).

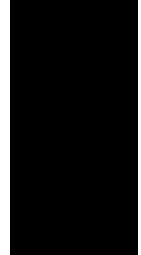
### Special keynote address

- ◆ **Three Forward PDE Problems with Urgent Need of Data Assimilation**  
Peter Markowich, *King Abdullah University of Science and Technology, Saudi Arabia*  
Monday, May 25 9:00–9:50

### Plenary talks

- ◆ **Computational methods for sparsity promoting in Inverse problems**  
Xiaoqun Zhang, *Shanghai Jiao Tong University, China*  
Monday, May 25 9:50–10:40
- ◆ **Anisotropic Structures and Regularization**  
Gitta Kutyniok, *Berlin Technical University, Germany*  
Monday, May 25 11:10–12:00
- ◆ **Spectral Estimates and Inverse Boundary Problems for Elliptic Operators**  
Katya Krupchyk, *University of California at Irvine, USA*  
Tuesday, May 26 9:00–9:50
- ◆ **Near-Field Imaging of Rough Surfaces (Calderón prize lecture)**  
Peijun Li, *Purdue University, USA*  
Tuesday, May 26 9:50–10:40
- ◆ **On adaptive Markov Chain Monte Carlo Methods**  
Eero Saksman, *University of Helsinki, Finland*  
Tuesday, May 26 11:10–12:00
- ◆ **Resonance and shape design/identification problem**  
Takashi Kako, *University of Electro-Communications, Chofu-Tokyo, Japan*  
Wednesday, May 27 9:00–9:50
- ◆ **Vector tomography in cone beam and inhomogeneous geometries**  
Thomas Schuster, *University of Saarland, Germany*  
Wednesday, May 27 9:50–10:40
- ◆ **Regularized partial and full cloaks of acoustic and electromagnetic waves**  
Hongyu Liu, *Hong Kong Baptist University*  
Wednesday, May 27 11:10–12:00
- ◆ **Inside-Outside Duality in Time-Harmonic Wave Scattering**  
Armin Lechleiter, *University of Bremen, Germany*  
Thursday, May 28 11:10–12:00





### 3 Chronological parallel sessions schedule

## Parallel Session 1 | Monday, May 25 13:30–15:30

### M18-I: Imaging through Complex Media (Part 1)

SALI 12

ORGANIZERS:	J. Garnier	K. Solna	
SPEAKERS:	L. Giovangigli	M. de Hoop	L. Borcea
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			M. Moscoso
			15:00–15:30

### M34-I: Recent Trends in Hybrid Tomography (Part 1)

F26-JUHLASALI

ORGANIZERS:	S. Arridge	M. Betcke	K. Knudsen
SPEAKERS:	A. Moradifam	F. Monard	T. Zhang
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			S. Powell
			15:00–15:30

### M13-I: Discretization of Inverse Problems in Banach spaces (Part 1)

F26-LS115

ORGANIZERS:	B. Kaltenbacher	C. Pöschl	
SPEAKERS:	A. Rieder	D. Wachsmuth	T. Helin
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			C. Pöschl
			15:00–15:30

### M28-I: On the stability issue for inverse boundary value problems and applications (Part 1)

SALI 6

ORGANIZERS:	E. Beretta	R. Gaburro	
SPEAKERS:	R. Novikov	R. Bosi	S. Vessella
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			D. Dos Santos Ferreira
			15:00–15:30

### M48-I: Recent developments on numerical inverse scattering problems (Part 1)

AUD XII

ORGANIZERS:	J. Li	H. Liu	J. Zou	
SPEAKERS:	H. Liu	X. Chen	N. Hyvönen	M. Klibanov
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	15:00–15:30

### M40-I: Optimising inversion models (Part 1)

AUD XIII

ORGANIZERS:	J. C. De Los Reyes	E. Haber	C. Schönlieb	
SPEAKERS:	M. Chung	L. Horesh	O. Ghattas	T. Valkonen
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	15:00–15:30

### M23: Sampling methods for high dimensional Bayesian inverse problems

SALI 3

ORGANIZERS:	H. Haario	K. Law		
SPEAKERS:	K. Law	Y. Marzouk	M. Iglesias	J. Bardsley
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	15:00–15:30

### M12: Inverse problems in space imaging

SALI 10

ORGANIZERS:	J. Delvit	G. Blanchet		
SPEAKERS:	J. Morel	L. Moisan	T. Buades	J. Delvit
TALK TIMES:	13:30–13:54	13:54–14:18	14:18–14:42	14:42–15:06
				H. Ikoma
				15:06–15:30

### CT1: Analysis and Geometry

SALI 8

ORGANIZER:	T. Brander		
SPEAKERS:	G. Vainikko	G. Eskin	T. Brander
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00

**Parallel Session 2 | Monday, May 25 16:00–18:00****M2-I: Models and Methods for Hyperspectral Imaging (Part 1)**

AUD XII

ORGANIZERS:	M. Burger	T. Schuster	
SPEAKERS:	A. Bartels	U. Mayer	C. Brune
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M37-I: Inverse Problems in Non-destructive Testing (Part 1)**

F26-JUHLASALI

ORGANIZERS:	H. Ammari	A. Seppänen	M. Soleimani
SPEAKERS:	A. Seppänen	M. Soleimani	T. Zhang
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M11-I: Analytical aspects of regularisation: Higher-order and curvature-based approaches and further topics (Part 1)**

F26-LS115

ORGANIZER:	T. Valkonen		
SPEAKERS:	B. Wirth	S. Masnou	K. Papafitsoros
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M20-I: Stability estimates for inverse problems (Part 1)**

SALI 6

ORGANIZERS:	V. Isakov	J. Wang	
SPEAKERS:	M. Di Cristo	E. Francini	P. Caro
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M44: Qualitative Methods for Solving Inverse Problems**

AUD XIII

ORGANIZERS:	F. Triki	E. Bonnetier	
SPEAKERS:	—	M. Courdurier	H. Nguyen
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M8-I: Current developments in tomography: from algorithms to applications (Part 1)**

SALI 12

ORGANIZERS:	J. Frikel	E. Klann	T. Quinto
SPEAKERS:	E. Klann	M. Storath	B. Hahn
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M25: Efficient Methods for Large-Scale Inverse Problems in Imaging**

SALI 3

ORGANIZERS:	J. Chung	S. Gazzola	
SPEAKERS:	S. Gazzola	L. Reichel	Y. Dong
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M32-I: Bayesian Computation**

SALI 10

ORGANIZER:	F. Lucka		
SPEAKERS:	F. Lucka	I. Sivak	Y. Marzouk
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

## Parallel Session 3 | Tuesday, May 26 13:30–15:30

### M2-II: Models and Methods for Hyperspectral Imaging (Part 2)

AUD XII

ORGANIZERS:	M. Burger	T. Schuster	
SPEAKERS:	P. Heins	K. Bredies	M. Möller
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			M. Montag 15:00–15:30

### M34-II: Recent Trends in Hybrid Tomography (Part 2)

F26-JUHLASALI

ORGANIZERS:	S. Arridge	M. Betcke	K. Knudsen
SPEAKERS:	C. Montaldo	O. Scherzer	P. Millien
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			J. Schotland 15:00–15:30

### M11-II: Analytical aspects of regularisation: Higher-order and curvature

SALI 8

#### -based approaches and further topics (Part 2)

ORGANIZER:	T. Valkonen		
SPEAKERS:	M. Benning	D. Lorenz	H. Kekkonen
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			P. Guidotti 15:00–15:30

### M13-II: Discretization of Inverse Problems in Banach spaces (Part 2)

F26-LS115

ORGANIZERS:	B. Kaltenbacher	C. Pöschl	
SPEAKERS:	U. Kangro	U. Hämarik	K. Bredies
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			K. Pieper 15:00–15:30

### M20-II: Stability estimates for inverse problems (Part 2)

SALI 6

ORGANIZERS:	V. Isakov	J. Wang	
SPEAKERS:	N. Valdivia	R. Lai	L. Rondi
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			F. Triki 15:00–15:30

### M48-II: Recent developments on numerical inverse scattering problems

SALI 10

#### (Part 2)

ORGANIZERS:	J. Li	H. Liu	J. Zou	
SPEAKERS:	J. Liu	Y. Xu	H. Wang	
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	

### M43-I: Inverse Problems in atmospheric remote sensing (Part 1)

AUD XIII

ORGANIZERS:	J. Tamminen	A. Hilboll	E. King	
SPEAKERS:	D. Posselt	J. Brynjarsdóttir	A. Solonen	A. Braverman
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	15:00–15:30

### M46-I: Learning Subspaces (Part 1)

SALI 3

ORGANIZERS:	M. Fornasier	V. Naumova		
SPEAKERS:	M. Maggioni	L. Rosasco	A. Maurer	C. De Mol
TALK TIMES:	13:30–13:54	13:54–14:18	14:18–14:42	14:42–15:06
				S. Pereverzyev 15:06–15:30

### M8-II: Current developments in tomography: from algorithms to

SALI 12

#### applications (Part 2)

ORGANIZERS:	J. Frikel	E. Klann	T. Quinto	
SPEAKERS:	A. Katsevich	J. Sauer Jørgensen	R. Ramlau	T. Lasser
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00	15:00–15:30

**Parallel Session 4 | Tuesday, May 26 16:00–18:00****M37-II: Inverse Problems in Non-destructive Testing (Part 2)**

F26-JUHLASALI

ORGANIZERS:	H. Ammari	A. Seppänen	M. Soleimani
SPEAKERS:	H. Lee	D. Castello	S. Götschel
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M32-II: Bayesian Computation**

SALI 3

ORGANIZER:	F. Lucka		
SPEAKERS:	T. Bui-Thanh	A. Pulkkinen	P. Varvia
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M14-I: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 1)**

F26-LS115

ORGANIZERS:	S. Pereverzyev	V. Michel	
SPEAKERS:	G. Kastis	S. Orzlowksi	K. Sigloch
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M28-II: On the stability issue for inverse boundary value problems and applications (Part 2)**

SALI 6

ORGANIZERS:	E. Beretta	R. Gaburro	
SPEAKERS:	E. Sincich	M. Cristofol	M. de Hoop
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M40-II: Optimising inversion models (Part 2)**

AUD XIII

ORGANIZERS:	J. C. De Los Reyes	E. Haber	C. Schönlieb
SPEAKERS:	J. C. De Los Reyes	T. Pock	E. Haber
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M1-I: Computation of Interior Transmission Eigenvalues (Part 1)**

AUD XII

ORGANIZERS:	A. Lechleiter	J. Sun	
SPEAKERS:	A. Kleefeld	D. Gintides	X. Ji
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M10-I: Stochastic methods in imaging (Part 1)**

SALI 10

ORGANIZERS:	C. Clason	K. Kazimierski Hentschel	
SPEAKERS:	C. Clason	D. Gerth	T. Hohage
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

**M7-I: Current developments in tomography: from theory to algorithms (Part 1)**

SALI 12

ORGANIZERS:	J. Frikel	E. Klann	T. Quinto
SPEAKERS:	R. Felea	V. Krishnan	L. Nguyen
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

## Parallel Session 5 | Thursday, May 28 09:00–11:00

### M7-II: Current developments in tomography: from theory to algorithms (Part 2)

SALI 12

ORGANIZERS:	J. Frikel	E. Klann	T. Quinto
SPEAKERS:	L. Kunyansky	B. Harrach	A. Rieder
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M41-I: Advances in Electrical Impedance Tomography imaging:

SALI 6

#### Algorithms and Experimental Results (Part 1)

ORGANIZER:	S. Hamilton		
SPEAKERS:	E. Malone	H. Garde	M. Dodd
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M6-I: Recent advances in the theory of regularization methods (Part 1)

AUD XII

ORGANIZERS:	O. Scherzer	B. Hofmann	
SPEAKERS:	D. Lorenz	M. Burger	B. Kaltenbacher
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M22: Quantitative estimates of unique continuation and applications to inverse problems

AUD XIV

ORGANIZERS:	M. Di Cristo	E. Francini	
SPEAKERS:	C. Cerutti	G. Nakamura	J. Wang
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M47-I: Inverse Problems in Optics (Part 1)

AUD XV

ORGANIZERS:	G. Bao	P. Li	J. Zou	
SPEAKERS:	P. Li	F. Cakoni	E. Chung	J. Liu
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30	10:30–11:00

### M36-I: Optimization methods for signal and image processing (Part 1)

F26-LS115

ORGANIZERS:	I. Loris	M. Prato	
SPEAKERS:	M. Yashtini	F. Porta	T. Pock
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M10-II: Stochastic methods in imaging (Part 2)

SALI 10

ORGANIZERS:	C. Clason	K. Kazimierski-Hentschel	
SPEAKERS:	H. Kekkonen	C. Louchet	C. Schönlieb
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M42-I: Inverse Problems in Life Sciences (Part 1)

AUD XIII

ORGANIZERS:	D. Calvetti	E. Somersalo	
SPEAKERS:	M. Y. Ou	H. T. Banks	S. Isaacson
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

### M49-I: Plasmonics and cloaking

F26-JUHLASALI

ORGANIZERS:	P. Ola	H. Kang	
SPEAKERS:	H. Kang	G. Milton	H. Nguyen
TALK TIMES:	09:00–09:30	09:30–10:00	10:00–10:30
			10:30–11:00

**Parallel Session 6 | Thursday, May 28 13:30–15:30**

<b>M16-I: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 1)</b>	AUD XII
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ORGANIZERS:	R. Griesmaier	N. Hyvönen	
SPEAKERS:	R. Griesmaier	A. Lechleiter	S. Hollborn
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
L. Audibert			15:00–15:30

<b>M19: Inverse Transport and Optical Tomography</b>	F26-JUHLASALI
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ORGANIZER:	M. Machida		
SPEAKERS:	S. Arridge	T. Tarvainen	J. Hoskins
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00

<b>M14-II: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 2)</b>	F26-LS115
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ORGANIZERS:	S. Pereverzyev	V. Michel	
SPEAKERS:	C. Gerhards	S. Pereverzyev Jr	P. Tkachenko
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>M38-I: Inverse Boundary Value Problems for Elliptic Systems (Part 1)</b>	AUD XIII
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ORGANIZERS:	F. Chung	M. Salo	
SPEAKERS:	P. Caro	M. Kar	R. Lai
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>M5-I: Autoconvolution and related nonlinear ill-posed problems (Part 1)</b>	SALI 10
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ORGANIZERS:	B. Hofmann	J. Flemming	
SPEAKERS:	G. Steinmeyer	E. Resmerita	J. Janno
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>M8-III: Current developments in tomography: from algorithms to applications (Part 3)</b>	SALI 12
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ORGANIZERS:	J. Frikel	E. Klann	T. Quinto
SPEAKERS:	P. C. Hansen	J. Ilmavirta	M. Romanov
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>M17: Inverse Source Problems in Engineering Applications</b>	AUD XIV
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ORGANIZERS:	B. Mukanova	A. Hasanoglu	
SPEAKERS:	B. Mukanova	A. Hasanoglu	L. Šeliga
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>M40-III: Optimising inversion models (Part 3)</b>	AUD XV
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ORGANIZERS:	J. C. De Los Reyes	E. Haber	C. Schönlieb
SPEAKERS:	M. Burger	V. Kolehmainen	N. Petra
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

<b>CT2: Applied Analysis</b>	SALI 6
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ORGANIZER:	M. Music		
SPEAKERS:	A. Kawano	D. Lesnic	T. Ohe
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00
			15:00–15:30

## Parallel Session 7 | Thursday, May 28 16:00–18:00

### M24-I: Multifaceted perspective on regularization theory and its applications (Part 1)

F26-LS115

ORGANIZERS:	E. Resmerita	S. Kindermann	
SPEAKERS:	F. Benvenuto	R. Boiger	A. Leitão
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			B. Jin 17:30–18:00

### M30-I: Imaging using light: from theory to application (Part 1)

AUD XV

ORGANIZERS:	T. Correia	T. Tarvainen	
SPEAKERS:	O. Scherzer	N. Ducros	J. Schotland
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			T. Correia 17:30–18:00

### M45-I: Integral Geometry (Part 1)

SALI 12

ORGANIZERS:	P. Stefanov	F. Monard	
SPEAKERS:	S. Holman	B. Lionheart	T. Quinto
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			P. Stefanov 17:30–18:00

### M15-I: Regularisation Techniques for Joint Image Reconstruction

SALI 10

#### Problems (Part 1)

ORGANIZERS:	S. Arridge	M. Burger	
SPEAKERS:	E. Haber	S. Pedemonte	F. Knoll
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			M. Soleimani 17:30–18:00

### M46-II: Learning Subspaces (Part 2)

SALI 6

ORGANIZERS:	M. Fornasier	V. Naumova	
SPEAKERS:	P. Constantine	M. Pontil	E. De Vito
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			K. Schnass 17:30–18:00

### M21-I: Reconstruction methods for inverse problems (Part 1)

F26-JUHLASALI

ORGANIZERS:	M. Ikehata	J. Wang	
SPEAKERS:	M. Ikehata	H. Itou	K. Kwon
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			Y. Lin 17:30–18:00

### M1-II: Computation of Interior Transmission Eigenvalues (Part 2)

AUD XII

ORGANIZERS:	A. Lechleiter	J. Sun	
SPEAKERS:	Z. Jiang	P. Monk	S. Peters
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			V. Selgas 17:30–18:00

### M43-II: Inverse Problems in atmospheric remote sensing (Part 2)

AUD XIII

ORGANIZERS:	J. Tamminen	A. Hilboll	E. King
SPEAKERS:	M. Laine	V. Sofieva	D. Saxenhuber
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			O. Dubovik 17:30–18:00

### CT3: Optimization and Regularization

AUD XIV

ORGANIZER:	S. Soltani		
SPEAKERS:	S. Soltani	M. Karamehmedović	R. Palm
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			T. Raus 17:30–18:00

**Contributed Talks | Friday, May 29 08:30–10:00****CT5: Imaging and Tomography**

AUD XIII

ORGANIZER:	A. Langer			
SPEAKERS:	A. Langer	A. De Cezaro	J. Qiu	L. Kong
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

**CT6: Engineering Applications**

F26-LS115

ORGANIZER:	C. Nittinger			
SPEAKERS:	F. Bozzoli	—	C. Nittinger	J. Schneiders
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

**CT7: Analysis**

SALI 12

ORGANIZER:	F. Caubet			
SPEAKERS:	—	R. K. Mishra	F. Caubet	T. Harutyunyan
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

**CT8: Numerics and Reconstruction (Part 1)**

SALI 3

ORGANIZER:	D. Garmatter			
SPEAKERS:	C. König	D. Garmatter	A. Rahimov	H. Montegranario
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

**CT9: Numerics and Reconstruction (Part 2)**

SALI 6

ORGANIZER:	D. Nguyen			
SPEAKERS:	A. Boumenir	G. Kriukova	B. T. Johansson	D. Nguyen
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

**CT10: Probability and Statistics**

SALI 10

ORGANIZER:	M. Kuusela			
SPEAKERS:	Y. Korolev	V. Ha Hoang	M. Kuusela	X. Luo
TALK TIMES:	08:30–08:52	08:52–09:15	09:15–09:37	09:37–10:00

## Parallel Session 8 | Friday, May 29 10:10–12:10

### M30-II: Imaging using light: from theory to application (Part 2)

AUD XV

ORGANIZERS:	T. Correia	T. Tarvainen	
SPEAKERS:	H. Egger	B. Cox	A. Zacharopoulos
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			M. Mozumder 11:40–12:10

### M41-II: Advances in Electrical Impedance Tomography imaging: Algorithms and Experimental Results (Part 2)

SALI 6

ORGANIZER:	S. Hamilton		
SPEAKERS:	E. Somersalo	S. Hamilton	C. Sebu
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			D. Isaacson 11:40–12:10

### M26: Theoretical perspectives in Bayesian inverse problems

SALI 10

ORGANIZER:	T. Helin		
SPEAKERS:	M. Dashti	S. Agapiou	P. Piiroinen
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			C. Schillings 11:40–12:10

### M45-II: Integral Geometry (Part 2)

SALI 12

ORGANIZERS:	P. Stefanov	F. Monard	
SPEAKERS:	F. Monard	L. Oksanen	H. Zhou
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			M. Salo 11:40–12:10

### M24-II: Multifaceted perspective on regularization theory and its applications (Part 2)

F26-LS115

ORGANIZERS:	E. Resmerita	S. Kindermann	
SPEAKERS:	M. Haltmeier	S. Lu	C. Schönlieb
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			S. Vaiter 11:40–12:10

### M27: Reconstruction methods for 4D computed tomography (CT)

AUD IV

ORGANIZERS:	D. Kazantsev	G. Van Eydhen	
SPEAKERS:	D. Kazantsev	G. Van Eydhen	V. Van Nieuwenhove
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			P. Elefante 11:40–12:10

### M36-II: Optimization methods for signal and image processing (Part 2)

AUD XIII

ORGANIZERS:	I. Loris	M. Prato	
SPEAKERS:	K. Bredies	I. Loris	F. Abboud
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			S. Villa 11:40–12:10

### M3: Statistical Inverse Problems and Applications

SALI 3

ORGANIZERS:	F. Werner	F. Dunker	
SPEAKERS:	F. Dunker	M. Sandbichler	H. Holzmann
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			K. Proksch 11:40–12:10

### M49-II: Plasmonics and cloaking

F26-JUHLASALI

ORGANIZERS:	P. Ola	H. Kang	
SPEAKERS:	H. Liu	H. Zhang	P. Ola
TALK TIMES:	10:10–10:40	10:40–11:10	11:10–11:40
			J. M. Reyes 11:40–12:10

**Parallel Session 9 | Friday, May 29 13:30–15:30****M6-II: Recent advances in the theory of regularization methods (Part 2)**

SALI 12

ORGANIZERS:	O. Scherzer	B. Hofmann	
SPEAKERS:	L. Qiu	P. Elbau	K. Kazimierski -Hentschel
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M33: Inverse problems with applications in biology**

SALI 3

ORGANIZERS:	J. Pietschmann	M. Schlottbom	
SPEAKERS:	J. Grah	G. Vitale	M. Doumic Jauffret
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M21-II: Reconstruction methods for inverse problems (Part 2)**

F26-JUHLASALI

ORGANIZERS:	M. Ikehata	J. Wang	
SPEAKERS:	D. P. Challa	R. Kuan	J. Sun
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M38-II: Inverse Boundary Value Problems for Elliptic Systems (Part 2)**

AUD XIII

ORGANIZERS:	F. Chung	M. Salo	
SPEAKERS:	G. Nakamura	P. Ola	E. Rosset
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00

**M16-II: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 2)**

SALI 6

ORGANIZERS:	R. Griesmaier	N. Hyvönen	
SPEAKERS:	L. Chesnel	M. N. Minh	H. Majander
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M39: Quantitative soft biological tissues imaging**

SALI 8

ORGANIZER:	L. Seppecher		
SPEAKERS:	L. Seppecher	D. Razansky	T. Chaigne
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M31: Spectral Tomography: Models, Methods, and Applications**

SALI 10

ORGANIZERS:	M. Andersen	P. C. Hansen	
SPEAKERS:	M. Andersen	J. Nagy	D. Riegler
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**M47-II: Inverse Problems in Optics (Part 2)**

AUD XV

ORGANIZERS:	G. Bao	P. Li	J. Zou
SPEAKERS:	R. Lui	S. Siltanen	F. Triki
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

**CT4: Imaging**

SALI 7

ORGANIZER:	F. Sciacchitano		
SPEAKERS:	D. Liu	F. Sciacchitano	C. Brandt
TALK TIMES:	13:30–14:00	14:00–14:30	14:30–15:00 15:00–15:30

## Parallel Session 10 | Friday, May 29 16:00–18:00

### M4: Optimization Approaches for Inverse Problems of Parameter Identification

SALI 8

ORGANIZERS:	A. Khan	C. Tammer	
SPEAKERS:	A. Khan	J. Gwinner	V. Kovtunenko
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

### M9: Inverse problems and big data

F26-JUHLASALI

ORGANIZER:	M. Kaasalainen		
SPEAKERS:	M. Kaasalainen	S. Pursiainen	P. Raumonen
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

### M42-II: Inverse Problems in Life Sciences (Part 2)

AUD XIII

ORGANIZERS:	D. Calvetti	E. Somersalo	
SPEAKERS:	M. Olufsen	J. Zubelli	L. Gerardo-Giorda
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

### M18-II: Imaging through Complex Media (Part 2)

AUD XV

ORGANIZERS:	J. Garnier	K. Solna	
SPEAKERS:	J. Garnier	H. Zhang	C. Tsogka
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30

### M35: Inverse problems for hyperbolic PDEs

SALI 6

ORGANIZER:	L. Oksanen		
SPEAKERS:	G. Eskin	R. Felea	Y. Yang
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

### M5-II: Autoconvolution and related nonlinear ill-posed problems (Part 2)

SALI 12

ORGANIZERS:	B. Hofmann	J. Flemming	
SPEAKERS:	S. Lu	S. Bürger	J. Flemming
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

### M15-II: Regularisation Techniques for Joint Image Reconstruction Problems (Part 2)

SALI 10

ORGANIZERS:	S. Arridge	M. Burger	
SPEAKERS:	T. Blumensath	M. Ehrhardt	E. Brinkmann
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00

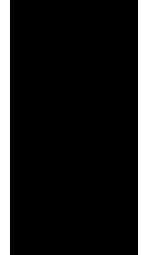
### M29: Priors and SPDEs

SALI 3

ORGANIZERS:	L. Roininen	S. Särkkä	
SPEAKERS:	L. Roininen	S. Särkkä	D. Simpson
TALK TIMES:	16:00–16:30	16:30–17:00	17:00–17:30
			17:30–18:00







## 4 Minisymposia and contributed talks

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### M1-I: Computation of Interior Transmission Eigenvalues (Part 1)

ORGANIZERS: Armin Lechleiter, *University of Bremen, Germany*  
Jiguang Sun, *Michigan Technological University, USA*

TALKS & SPEAKERS: 1. **A numerical method to compute transmission eigenvalues**  
Andreas Kleefeld, *Technical University of Cottbus, Germany*

2. **The Inverse ITE Problem for Discontinuous Refractive Index**

Drossos Gintides, *National Technical University of Athens, Greece*

3. **The  $C^0$  Interior Penalty Discontinuous Galerkin Method for the Transmission Eigenvalues**

Xia Ji, *Chinese Academy of Sciences, China*

4. **Boundary Integral Equations for the Transmission Eigenvalue Problem for Maxwell's Equations**

Fioralba Cakoni, *University of Delaware, USA*

SCHEDULED AT:

Parallel Session 4

Tuesday, May 26

16:00–18:00

AUD XII

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### M1-II: Computation of Interior Transmission Eigenvalues (Part 2)

ORGANIZERS: Armin Lechleiter, *University of Bremen, Germany*  
Jiguang Sun, *Michigan Technological University, USA*

TALKS & SPEAKERS: 1. **Computing Interior Eigenvalues from Far Field Data**  
Zixian Jiang, *INRIA Saclay, France*

2. **Error Estimates for the Finite Element Approximation of Transmission Eigenvalues**

Peter Monk, *University of Delaware, USA*

3. **On the Inside-Outside Duality for the Computation of Interior Transmission Eigenvalues for Anisotropic Media**

Stefan Peters, *University of Bremen, Germany*

4. **A transmission eigenvalue problem with mixed boundary conditions for Maxwell's equations in half space**

Virginia Selgas, *University of Oviedo, Spain*

SCHEDULED AT:

Parallel Session 7

Thursday, May 28

16:00–18:00

AUD XII

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**M2-I: Models and Methods for Hyperspectral Imaging (Part 1)**

ORGANIZERS: Martin Burger, *University of Münster, Germany*  
 Thomas Schuster, *University of Saarbrücken, Germany*

TALKS & SPEAKERS: 1. Compressed sensing in mass spectrometry imaging  
 Andreas Bartels, *University of Bremen, Germany*

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| SCHEDULED AT:      |
| Parallel Session 2 |
| Monday, May 25     |
| 16:00–18:00        |
| AUD XII            |
- 2. Statistical estimation in a parametric regression model for hyperspectral images  
 Ulrike Mayer, *University of Saarbrücken, Germany*
  - 3. Cancer ID - inverse problems for the multidimensional analysis of tumor cells  
 Christoph Brune, *University of Twente, The Netherlands*
  - 4. Minimizing the regularized  $\ell_1$ -norm via Bregman projections and subspace methods  
 Frederik Heber, *University of Saarbrücken, Germany*

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**M2-II: Models and Methods for Hyperspectral Imaging (Part 2)**

ORGANIZERS: Martin Burger, *University of Münster, Germany*  
 Thomas Schuster, *University of Saarbrücken, Germany*

TALKS & SPEAKERS: 1. Using local sparsity in hyperspectral imaging  
 Pia Heins, *University of Münster, Germany*

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| SCHEDULED AT:      |
| Parallel Session 3 |
| Tuesday, May 26    |
| 13:30–15:30        |
| AUD XII            |
- 2. Total generalized variation for vector- and tensor-valued data and applications in medical imaging  
 Kristian Bredies, *University of Graz, Austria*
  - 3. Coupled hyperspectral total variation regularization  
 Michael Möller, *Technical University Munich, Germany*
  - 4. Application of preprocessing methods on hyperspectral images from different spectral ranges  
 Martin Montag, *Fraunhofer ITWM Kaiserslautern, Germany*

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### M3: Statistical Inverse Problems and Applications

ORGANIZERS: Frank Werner, *MPIBPC, Göttingen, Germany*  
Fabian Dunker, *Ruhr-University Bochum, Germany*

TALKS & SPEAKERS:

1. **On parameter identification in stochastic differential equations by penalized maximum likelihood**  
Fabian Dunker, *Ruhr-University Bochum, Germany*
2. **A novel compressed sensing scheme for photoacoustic tomography**  
Michael Sandbichler, *Insbruck University, Austria*
3. **Weighted angle Radon transform: Convergence rates and efficient estimation**  
Hajo Holzmann, *Marburg University, Germany*
4. **Simultaneous confidence bands in nonparametric inverse and direct regression**  
Katharina Proksch, *Bochum University, Germany*

SCHEDULED AT:

Parallel Session 8  
Friday, May 29  
10:10–12:10  
SALI 3

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### M4: Optimization Approaches for Inverse Problems of Parameter Identification

ORGANIZERS: Akhtar Khan, *Rochester Institute of Technology, USA*  
Christiane Tammer, *University Halle-Wittenberg, Germany*

TALKS & SPEAKERS:

1. **Stability of Elastography Inverse Problem**  
Akhtar Khan, *Rochester Institute of Technology, USA*
2. **An Optimization Regularization Approach to Parameter Identification in Contact Problems**  
Joachim Gwinner, *Bundeswehr University Munich, Germany*
3. **Optimization methods for Helmholtz problem**  
Victor Kovtunenko, *University of Graz, Austria*
4. **Inverse Problems and Multiobjective Approximation**  
Christiane Tammer, *University Halle-Wittenberg, Germany*

SCHEDULED AT:

Parallel Session 10  
Friday, May 29  
16:00–18:00  
SALI 8

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**M5-I: Autoconvolution and related nonlinear ill-posed problems (Part 1)**

ORGANIZERS: Bernd Hofmann, *Technical University Chemnitz, Germany*  
 Jens Flemming, *Technical University Chemnitz, Germany*

TALKS & SPEAKERS: 1. **Deconvolution and decorrelation problems in the physics of femtosecond lasers**

Günter Steinmeyer, *Max Born Institute for Nonlinear Optics Berlin, Germany*

**SCHEDULED AT:**

Parallel Session 6  
 Thursday, May 28  
 13:30–15:30  
 SALI 10

2. **Revisiting the Lavrentiev method for nonlinear ill-posed problems**

Elena Resmerita, *Alpen-Adria University Klagenfurt, Austria*

3. **An inverse problem for fractional diffusion equation with integral over-determination**

Jaan Janno, *Tallinn University of Technology, Estonia*

4. **On a nonstationary Iterative Method for solving Inverse Problems in Hilbert Spaces**

Qinian Jin, *Australian National University Canberra, Australia*

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**M5-II: Autoconvolution and related nonlinear ill-posed problems (Part 2)**

ORGANIZERS: Bernd Hofmann, *Technical University Chemnitz, Germany*  
 Jens Flemming, *Technical University Chemnitz, Germany*

TALKS & SPEAKERS: 1. **Multiscale support vector approach for solving integral equations**

Shuai Lu, *Fudan University Shanghai, China*

**SCHEDULED AT:**

Parallel Session 10  
 Friday, May 29  
 16:00–18:00  
 SALI 12

2. **New results in SD-SPIDER reconstruction via autoconvolution**

Steven Bürger, *Technical University Chemnitz, Germany*

3. **The quadratic structure of autoconvolution problems**

Jens Flemming, *Technical University Chemnitz, Germany*

4. **A stochastic convergence analysis for nonlinear operator equations with emphasis on the Autoconvolution problem**

Daniel Gerth, *Johannes Kepler University Linz, Austria*

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### M6-I: Recent advances in the theory of regularization methods (Part 1)

ORGANIZERS: Otmar Scherzer, *University of Vienna, Austria*  
Bernd Hofmann, *University Chemnitz, Germany*

TALKS & SPEAKERS:

1. **Necessary Conditions for Variational Regularization**  
Dirk Lorenz, *Technical University Braunschweig, Germany*
2. **Singular Vectors for Nonlinear Regularization**  
Martin Burger, *University of Münster, Germany*
3. **Regularization based on all-at-once formulations of inverse problems for PDEs**  
Barbara Kaltenbacher, *University Klagenfurt, Austria*
4. **Source conditions for non-smooth sparse regularisation**  
Markus Grasmair, *University of Trondheim, Norway*

SCHEDULED AT:

Parallel Session 5  
Thursday, May 28  
09:00–11:00  
AUD XII

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### M6-II: Recent advances in the theory of regularization methods (Part 2)

ORGANIZERS: Otmar Scherzer, *University of Vienna, Austria*  
Bernd Hofmann, *University Chemnitz, Germany*

TALKS & SPEAKERS:

1. **Effects of parameterization on the parameter estimation problems**  
Lingyun Qiu, *University of Minnesota, USA*
2. **Generalized Convergence Rates Results for Linear Inverse Problems in Hilbert Spaces**  
Peter Elbau, *University of Vienna, Austria*
3. **Reconstruction methods for the Inverse Medium Scattering Problem**  
Kamil Kazimierski-Hentschel, *University Graz, Austria*
4. **Autoconvolution in the characterization of ultrashort laser pulses with SD-SPIDER**  
Stephan Anzengruber, *Johann Radon Institute, Austria*

SCHEDULED AT:

Parallel Session 9  
Friday, May 29  
13:30–15:30  
SALI 12

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**M7-I: Current developments in tomography: from theory to algorithms (Part 1)**

ORGANIZERS: Jürgen Frikel, *Helmholtz Zentrum München, Germany*  
Esther Klann, *Johannes Kepler University Linz, Austria*  
Todd Quinto, *Tufts University, USA*

TALKS & SPEAKERS: 1. **The microlocal analysis of SAR with inflection points**  
Raluca Felea, *Rochester Institute of Technology, USA*

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| SCHEDULED AT: | <p>Parallel Session 4<br/>Tuesday, May 26<br/>16:00–18:00<br/>SALI 12</p> |
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2. **Inversion of circular, elliptical and spherical Radon transforms with partial radial data: Theory and Numerics**  
Venky Krishnan, *TIFR, India*
3. **On the artifacts in a limited data spherical mean transform**  
Linh Nguyen, *University of Idaho, USA*
4. **Fourier-based operator evaluation in tomographic algorithms**  
Holger Kohn, *KTH Royal Institute of Technology, Sweden*

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**M7-II: Current developments in tomography: from theory to algorithms (Part 2)**

ORGANIZERS: Jürgen Frikel, *Helmholtz Zentrum München, Germany*  
Esther Klann, *Johannes Kepler University Linz, Austria*  
Todd Quinto, *Tufts University, USA*

TALKS & SPEAKERS: 1. **Inversion of the spherical means transform with centers lying on corner-like surfaces by reduction to the classical Radon transform**  
Leonid Kunyansky, *University of Arizona, USA*

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| SCHEDULED AT: | <p>Parallel Session 5<br/>Thursday, May 28<br/>09:00–11:00<br/>SALI 12</p> |
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2. **Combining frequency-difference and ultrasound-modulated electrical impedance tomography**  
Bastian Harrach, *University of Stuttgart, Germany*
3. **Model-aware Newton-type regularization in electrical impedance tomography**  
Andreas Rieder, *Karlsruhe Institute of Technology, Germany*
4. **3D Image Reconstruction Algorithm for EIT Data Collected on Planar Electrode Arrays**  
Cristiana Sebu, *Oxford Brookes University, UK*

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## M8-I: Current developments in tomography: from algorithms to applications (Part 1)

ORGANIZERS: Jürgen Frikel, *Helmholtz Zentrum München, Germany*  
Esther Klann, *Johannes Kepler University Linz, Austria*  
Todd Quinto, *Tufts University, USA*

TALKS & SPEAKERS: 1. **A weighted wavelet method for region of interest tomography**  
Esther Klann, *Technical University Berlin, Germany*

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| SCHEDULED AT:<br>Parallel Session 2<br>Monday, May 25<br>16:00–18:00<br>SALI 12 | <p>2. <b>Joint reconstruction and segmentation of tomographic data using the Potts model</b><br/>Martin Storath, <i>EPFL Lausanne, Switzerland</i></p> <p>3. <b>Detectable singularities in time-dependent tomographic imaging</b><br/>Bernadette Hahn, <i>Saarland University, Germany</i></p> <p>4. <b>X-ray tomography of dynamic objects using level sets</b><br/>Samuli Siltanen, <i>University of Helsinki, Finland</i></p> |
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## M8-II: Current developments in tomography: from algorithms to applications (Part 2)

ORGANIZERS: Jürgen Frikel, *Helmholtz Zentrum München, Germany*  
Esther Klann, *Johannes Kepler University Linz, Austria*  
Todd Quinto, *Tufts University, USA*

TALKS & SPEAKERS: 1. **Inversion of the Broken Ray transform**  
Alexander Katsevich, *University of Central Florida, USA*

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| SCHEDULED AT:<br>Parallel Session 3<br>Tuesday, May 26<br>13:30–15:30<br>SALI 12 | <p>2. <b>Assessing undersampling levels in sparsity-regularized X-ray CT</b><br/>Jakob Sauer Jørgensen, <i>Technical University of Denmark</i></p> <p>3. <b>Reconstruction methods for atmospheric tomography</b><br/>Ronny Ramlau, <i>Johann Radon Institute, Austria</i></p> <p>4. <b>X-ray Tensor Tomography: reconstructing sub-pixel X-ray scattering data</b><br/>Tobias Lasser, <i>Technical University Munich, Germany</i></p> |
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**M8-III: Current developments in tomography: from algorithms to applications (Part 3)**

ORGANIZERS: Jürgen Frikel, *Helmholtz Zentrum München, Germany*  
Esther Klann, *Johannes Kepler University Linz, Austria*  
Todd Quinto, *Tufts University, USA*

TALKS & SPEAKERS: **1. ART Performance**  
Per Christian Hansen, *Technical University of Denmark*

**2. Broken ray tomography**  
Joonas Ilmavirta, *University of Jyväskylä, Finland*

**3. Incorporating Material-Specific Priors in a CT Reconstruction-Segmentation Algorithm**  
Mikhail Romanov, *Technical University of Denmark*

**4. Reconstruction in quantitative photoacoustic tomography by using sparse representations**  
Giovanni Alberti, *École Normale Supérieure, France*

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**M9: Inverse problems and big data**

ORGANIZER: Mikko Kaasalainen, *Tampere University of Technology, Finland*

TALKS & SPEAKERS: **1. Big data in space**  
Mikko Kaasalainen, *Tampere University of Technology, Finland*

**2. Radio tomography and experiment design**  
Sampsaa Pursiainen, *Aalto University, Finland*

**3. Next-generation forest models from ubiquitous laser scanning data**  
Pasi Raumanen, *Tampere University of Technology, Finland*

**4. Data assimilation for weather – and further**  
Heikki Haario, *Lappeenranta University of Technology, Finland*

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### M10-I: Stochastic methods in imaging (Part 1)

ORGANIZERS: Christian Clason, *University Duisburg-Essen, Germany*  
Kamil Kazimierski-Hentschel, *University of Graz, Austria*

TALKS & SPEAKERS: 1. **Stochastic inverse problems with impulsive noise**  
Christian Clason, *University Duisburg-Essen, Germany*

2. **On Fractional Tikhonov Regularization**

Daniel Gerth, *Johannes Kepler University Linz, Austria*

3. **On parameter identification in stochastic differential equations**

Thorsten Hohage, *Georg-August-University Göttingen, Germany*

4. **A variational inference method for EIT imaging**

Bangti Jin, *University College London, UK*

SCHEDULED AT:

Parallel Session 4

Tuesday, May 26

16:00–18:00

SALI 10

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### M10-II: Stochastic methods in imaging (Part 2)

ORGANIZERS: Christian Clason, *University Duisburg-Essen, Germany*  
Kamil Kazimierski-Hentschel, *University of Graz, Austria*

TALKS & SPEAKERS: 1. **Posterior Consistency and Convergence Rates for Bayesian Inversion with Hypoelliptic Operators**  
Hanne Kekkonen, *University of Helsinki, Finland*

2. **Total variation image restoration with iterated conditional expectations**

Cécile Louchet, *University of Orléans, France*

3. **Mixed noise models and their adaption to image data**

Carola Schönlieb, *University of Cambridge, UK*

4. **What is the spatial resolution of a microscope?**

Frank Werner, *Max-Planck-Institute for Biophysical Chemistry Göttingen, Germany*

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**M11-I: Analytical aspects of regularisation: Higher-order and curvature-based approaches and further topics (Part 1)**ORGANIZER: Tuomo Valkonen, *DAMTP, University of Cambridge, UK*

TALKS &amp; SPEAKERS:

- 1. Convex approximation of Euler's elastica via functional lifting: More feasible than expected?**  
Benedikt Wirth, *University of Münster, Germany*
- 2. Some regularity questions regarding a generalized Willmore functional**  
Simon Masnou, *Institut Camille Jordan, University Lyon 1, France*
- 3. Structure of solutions of the TGV regularisation problem**  
Kostas Papafitsoros, *CCA, University of Cambridge, UK*
- 4. The jump set under geometric regularisation**  
Tuomo Valkonen, *DAMTP, University of Cambridge, UK*

**SCHEDULED AT:**

Parallel Session 2  
 Monday, May 25  
 16:00–18:00  
 F26-LS115

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**M11-II: Analytical aspects of regularisation: Higher-order and curvature-based approaches and further topics (Part 2)**ORGANIZER: Tuomo Valkonen, *DAMTP, University of Cambridge, UK*

TALKS &amp; SPEAKERS:

- 1. How generalised singular vectors can help to develop new regularisation methods**  
Martin Benning, *MIC, University of Lubeck, Germany*
- 2. Imaging with Kantorovich-Rubinstein discrepancy**  
Dirk Lorenz, *University of Braunschweig, Germany*
- 3. Resolving the white noise paradox in the regularisation of inverse problems**  
Hanne Kekkonen, *University of Helsinki, Finland*
- 4. Nonlinear Diffusions of Image Processing and Their Analysis**  
Patrick Guidotti, *University of California at Irvine, USA*

**SCHEDULED AT:**

Parallel Session 3  
 Tuesday, May 26  
 13:30–15:30  
 SALI 8

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## M12: Inverse problems in space imaging

ORGANIZERS: Jean-Marc Delvit, *French Space Agency, France*  
Gwendoline Blanchet, *CNES - French Space Center*

TALKS & SPEAKERS:

1. **Stabilization improvements using optical flows**  
Jean-Michel Morel, *CMLA - École Normale Supérieure de Cachan, France*
2. **Blind deblurring**  
Lionel Moisan, *Paris Descartes University, France*
3. **A pansharpening image fusion model applied to satellite images**  
Toni Buades, *UIB - University of the Balearic Islands, Spain*
4. **Active optics for Earth observation telescopes**  
Jean-Marc Delvit, *French Space Agency, France*
5. **Phase diversity for extended landscape**  
Hayato Ikoma, *École Normale Supérieure de Cachan, France*

SCHEDULED AT:

Parallel Session 1  
Monday, May 25  
13:30–15:30  
SALI 10

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## M13-I: Discretization of Inverse Problems in Banach spaces (Part 1)

ORGANIZERS: Barbara Kaltenbacher, *Alpen-Adria-Universität Klagenfurt, Austria*  
Christiane Pöschl, *Alpen-Adria-Universität Klagenfurt, Austria*

TALKS & SPEAKERS:

1. **Semi-discrete equations in Banach spaces: The approximate inverse approach**  
Andreas Rieder, *Karlsruhe Institute of Technology, Germany*
2. **Iterative Tikhonov regularization for bang-bang control problems**  
Daniel Wachsmuth, *University of Würzburg, Germany*
3. **Bregman-distance in Bayesian inverse problems**  
Timo Helin, *University of Helsinki, Finland*
4. **Finite dimensional approximation of convex regularization via hexagonal pixel grids**  
Christiane Pöschl, *Alpen-Adria-Universität Klagenfurt, Austria*

SCHEDULED AT:

Parallel Session 1  
Monday, May 25  
13:30–15:30  
F26-LS115

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**M13-II: Discretization of Inverse Problems in Banach spaces (Part 2)**

ORGANIZERS: Barbara Kaltenbacher, *Alpen-Adria-Universität Klagenfurt, Austria*  
 Christiane Pöschl, *Alpen-Adria-Universität Klagenfurt, Austria*

TALKS & SPEAKERS: 1. On self-regularization of illposed problems in Banach spaces by least squares and least error method  
 Urve Kangro, *University of Tartu, Estonia*

**SCHEDULED AT:**

Parallel Session 3  
 Tuesday, May 26  
 13:30–15:30  
 F26-LS115

2. A posteriori choice of the dimension in self-regularization of ill-posed problems by the collocation method  
 Uno Hämarik, *University of Tartu, Estonia*
3. Recovering delta-peak solutions for inverse problems by image-side discretization in Radon space  
 Kristian Bredies, *University of Graz, Austria*
4. Mesh adaptivity for the discretization of sparse elliptic control problems  
 Konstantin Pieper, *Technical University Munich, Germany*

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**M14-I: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 1)**

ORGANIZERS: Sergei Pereverzyev, *Johann Radon Institute, Austria*  
 Volker Michel, *University of Siegen, Germany*

TALKS & SPEAKERS: 1. Analytic reconstructions for PET, SPECT, MEG and EEG  
 George Kastis, *Academy of Athens, Greece*

**SCHEDULED AT:**

Parallel Session 4  
 Tuesday, May 26  
 16:00–18:00  
 F26-LS115

2. A regularized joint inversion of electric and magnetic data by means of a best basis algorithm  
 Sarah Orzlowksi, *University of Siegen, Germany*
4. Fully probabilistic inversion for earthquake source parameters in the context of seismic tomography  
 Karin Sigloch, *University of Munich, Germany*
5. Two-parameter discrepancy principle for regularization of discrete ill-posed problems  
 Teresa Regińska, *Institute of Mathematics of the Polish Academy of Sciences*

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**M14-II: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 2)**

ORGANIZERS:    Sergei Pereverzyev, *Johann Radon Institute, Austria*  
                    Volker Michel, *University of Siegen, Germany*

TALKS & SPEAKERS:    1. **Combining Downward Continuation and Local Approximation for Harmonic Potentials**  
                            Christian Gerhards, *University of Vienna, Austria*

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| SCHEDULED AT:  | 2. <b>On the adaptive polynomial approximation from globally and locally available data</b><br>Sergiy Pereverzyev Jr, <i>University of Innsbruck, Austria</i>         |
| Parallel Session 6<br>Thursday, May 28<br>13:30–15:30<br>F26-LS115 | 3. <b>Aggregation of Regularized Solutions from Multiple Observation Models</b><br>Jieyang Chen, <i>Sun Yat-sen University, China</i> CANCELLED                       |
|  | 4. <b>Two-parameter regularization of ill-posed spherical pseudo-differential equations in the C-space</b><br>Pavlo Tkachenko, <i>Johann Radon Institute, Austria</i> |
|  | 5. <b>The Regularized Orthogonal Functional Matching Pursuit for Ill-Posed Inverse Problems</b><br>Roger Telschow, <i>University of Siegen, Germany</i>               |

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**M15-I: Regularisation Techniques for Joint Image Reconstruction Problems (Part 1)**

ORGANIZERS:    Simon Arridge, *University College London, UK*  
                    Martin Burger, *University of Münster, Germany*

TALKS & SPEAKERS:    1. **Joint inversion using structural priors**  
                            Eldad Haber, *University of British Columbia, Canada*

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| SCHEDULED AT:  | 2. <b>Information Tomography</b><br>Stefano Pedemonte, <i>Massachusetts General Hospital, USA and Aalto University, Finland</i>                              |
| Parallel Session 7<br>Thursday, May 28<br>16:00–18:00<br>SALI 10 | 3. <b>In-vivo multi-contrast joint MR-PET image reconstruction: Initial findings in a clinical setting</b><br>Florian Knoll, <i>New York University, USA</i> |
|  | 4. <b>Sparsity in data and image an experimental prospect</b><br>Manuchehr Soleimani, <i>University of Bath, UK</i>  |

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**M15-II: Regularisation Techniques for Joint Image Reconstruction Problems (Part 2)**

ORGANIZERS: Simon Arridge, *University College London, UK*  
 Martin Burger, *University of Münster, Germany*

TALKS & SPEAKERS: 1. Laminar CT reconstruction via sparsity constrained deblurring  
 Thomas Blumensath, *University of Southampton, UK*

SCHEDULED AT:  
 Parallel Session 10  
 Friday, May 29  
 16:00–18:00

SALI 10

2. Joint reconstruction of PET-MRI by exploiting structural similarity

Matthias Ehrhardt, *University College London, UK*

3. Exploiting Joint Gradient Sparsity in Multi-Channel Image Reconstruction

Eva-Maria Brinkmann, *University of Münster, Germany*

4. Bi-modal image reconstruction using the Mumford-Shah model with an application to PET-MRI

Thomas Page, *University of Bremen, Germany*

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**M16-I: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 1)**

ORGANIZERS: Roland Griesmaier, *Universität Würzburg, Germany*  
 Nuutti Hyvönen, *Aalto University, Finland*

TALKS & SPEAKERS: 1. Multi-frequency MUSIC for electrical impedance tomography

Roland Griesmaier, *Universität Würzburg, Germany*

SCHEDULED AT:  
 Parallel Session 6  
 Thursday, May 28  
 13:30–15:30

AUD XII

2. Sampling Methods and Interior Eigenvalues

Armin Lechleiter, *University of Bremen, Germany*

3. Two-electrode-measurements in EIT

Stefanie Hollborn, *Universität Mainz, Germany*

4. A generalized linear sampling method for identifying cracks in unknown background

Lorenzo Audibert, *Inria Saclay Ile de France & École Polytechnique, France*

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## M16-II: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 2)

ORGANIZERS:    Roland Griesmaier, *Universität Würzburg, Germany*  
                    Nuutti Hyvönen, *Aalto University, Finland*

TALKS & SPEAKERS:    1. **Construction of invisible conductivity perturbations for the point electrode model in EIT**  
                            Lucas Chesnel, *École Polytechnique, France*

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| SCHEDULED AT:<br>Parallel Session 9<br>Friday, May 29<br>13:30–15:30<br>SALI 6 | <p>2. <b>Enhancing residual-based techniques with shape reconstruction features in EIT</b><br/>                            Mach Nguyet Minh, <i>Universität Stuttgart, Germany</i></p> <p>3. <b>Edge-enhancing reconstruction algorithm for three-dimensional electrical impedance tomography</b><br/>                            Helle Majander, <i>Aalto University, Finland</i></p> <p>4. <b>Exterior approach to inclusion detection in a parabolic inverse boundary value problem</b><br/>                            Jérémie Dardé, <i>Université Toulouse III - Paul Sabatier, France</i></p> |
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## M17: Inverse Source Problems in Engineering Applications

ORGANIZERS:    Balgaisha Mukanova, *Eurasian National University, Kazakhstan*  
                    Alemdar Hasanoglu, *Izmir University, Turkey*

TALKS & SPEAKERS:    1. **Nonlinear inverse problem for a filtration model: numerical recovery of parameters**  
                            Balgaisha Mukanova, *Eurasian National University, Astana, Kazakhstan*

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| SCHEDULED AT:<br>Parallel Session 6<br>Thursday, May 28<br>13:30–15:30<br>AUD XIV | <p>2. <b>Inverse Source Problems for Euler-Bernoulli Beam Equation</b><br/>                            Alemdar Hasanoglu, <i>Izmir University, Turkey</i></p> <p>3. <b>Identification of a convolution kernel in a nonlinear wave equation</b><br/>                            Lukáš Šeligá, <i>Ghent University, Belgium</i></p> <p>4. <b>An inverse source problem in parabolic partial differential equations</b><br/>                            Marian Slodička, <i>Ghent University, Belgium</i></p> |
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**M18-I: Imaging through Complex Media (Part 1)**

ORGANIZERS: Josselin Garnier, *Université Paris 7, France*  
 Knut Solna, *UC Irvine, USA*

TALKS & SPEAKERS: 1. Spectroscopic imaging of a cell suspension

Laure Giovangigli, *UC Irvine, USA*

2. Semiclassical analysis of seismic surface waves and an inverse problem using boundary (virtual) point-source data  
 Maarten de Hoop, *Purdue University, USA*

3. Transport based imaging in random waveguides

Liliana Borcea, *University of Michigan, USA*

4. Active array imaging without phase information

Miguel Moscoso, *Universidad Carlos III de Madrid, Spain*

SCHEDULED AT:

Parallel Session 1  
 Monday, May 25  
 13:30–15:30  
 SALI 12

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**M18-II: Imaging through Complex Media (Part 2)**

ORGANIZERS: Josselin Garnier, *Université Paris 7, France*  
 Knut Solna, *UC Irvine, USA*

TALKS & SPEAKERS: 1. Waves and imaging in random media  
 Josselin Garnier, *Université Paris 7, France*

2. A mathematical theory of super-resolution by using Helmholtz resonators

Hai Zhang, *École Normale Supérieure, France*

3. Signal to Noise Ratio analysis in virtual source array imaging

Chrysoula Tsogka, *University of Crete, Greece*

SCHEDULED AT:

Parallel Session 10  
 Friday, May 29  
 16:00–18:00  
 AUD XV

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### M19: Inverse Transport and Optical Tomography

ORGANIZER: Manabu Machida, *University of Michigan, USA* (CHAIR: Tanja Tarvainen, *University of Eastern Finland*)

TALKS & SPEAKERS:

1. **Quantitative PhotoAcoustic Tomography using the Radiative Transfer Equation**  
Simon Arridge, *University College London, UK*
2. **Truncated Fourier-series approximation of the time-dependent radiative transfer equation**  
Tanja Tarvainen, *University of Eastern Finland*
3. **Combinatorial Inverse Problems**  
Jeremy Hoskins, *University of Michigan, USA*
4. **Optical tomography with three-dimensional singular eigenfunctions**  
Manabu Machida, *University of Michigan, USA* CANCELLED

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### M20-I: Stability estimates for inverse problems (Part 1)

ORGANIZERS: Victor Isakov, *Wichita State University, USA*  
Jenn-Nan Wang, *National Taiwan University, Taiwan*

TALKS & SPEAKERS:

1. **Size estimates in inverse problems**  
Michele Di Cristo, *Politechnico di Milano, Italy*
2. **A stability result for quantitative photoacoustic tomography**  
Elisa Francini, *Università degli Studi di Firenze, Italy*
3. **Stability of the Calderón problem in admissible geometries**  
Pedro Caro, *ICMAT, Spain*
4. **The stability for the inverse source problem with multi-frequency**  
Jin Cheng, *Fudan University, China*

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**M20-II: Stability estimates for inverse problems (Part 2)**

ORGANIZERS: Victor Isakov, *Wichita State University, USA*  
 Jenn-Nan Wang, *National Taiwan University, Taiwan*

TALKS & SPEAKERS: 1. The stable reconstruction of acoustic and electromagnetic radiation regions at the radiating structure

Nicolas Valdivia, *Naval Research Laboratory Code 7130, USA*

SCHEDULED AT:
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Parallel Session 3  
 Tuesday, May 26  
 13:30–15:30  
 SALI 6

2. Increasing stability phenomena for the Maxwell equations

Ru-Yu Lai, *University of Washington, USA*

3. Obstacle scattering problems in the high frequency asymptotics

Luca Rondi, *Università degli Studi di Trieste, Italy*

4. Stability estimates for multi-frequency inverse scattering problems

Faouzi Triki, *Laboratoire Jean Kuntzmann, France*

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**M21-I: Reconstruction methods for inverse problems (Part 1)**

ORGANIZERS: Masaru Ikehata, *Hiroshima University, Japan*  
 Jenn-Nan Wang, *National Taiwan University, Taiwan*

TALKS & SPEAKERS: 1. The enclosure method for inverse obstacle scattering using a single electromagnetic wave in time domain

Masaru Ikehata, *Hiroshima University, Japan*

SCHEDULED AT:
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Parallel Session 7  
 Thursday, May 28  
 16:00–18:00  
 F26-JUHLASALI

2. On reconstruction of a welding area by means of the enclosure method using a single measurement

Hiromichi Itou, *Tokyo University of Science, Japan*

3. Numerical analysis of the enclosure method for the heat equation in one-space dimension

Kiwoon Kwon, *Dongguk University, Korea*

4. Reconstruction of penetrable obstacles in the anisotropic acoustic scattering

Yi-Hsuan Lin, *National Taiwan University, Taiwan*

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## M21-II: Reconstruction methods for inverse problems (Part 2)

ORGANIZERS: Masaru Ikehata, *Hiroshima University, Japan*  
Jenn-Nan Wang, *National Taiwan University, Taiwan*

TALKS & SPEAKERS:

1. **The equivalent mass density for the elastic scattering by many obstacles with error estimates and applications**  
Durga Prasad Challa, *Tallinn University of Technology, Estonia*
2. **CGO solutions of anisotropic Maxwell's equations**  
Rulin Kuan, *National Taiwan University, Taiwan*
3. **An efficient finite element method for grating profile reconstruction**  
Jiguang Sun, *Michigan Technological University, USA*
4. **Subspace reconstruction algorithms for some severely ill-posed inverse problems**  
Kui Ren, *University of Texas Austin, USA*

SCHEDULED AT:

Parallel Session 9  
Friday, May 29  
13:30–15:30  
F26-JUHLASALI

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## M22: Quantitative estimates of unique continuation and applications to inverse problems

ORGANIZERS: Michele Di Cristo, *Politecnico di Milano, Italy*  
Elisa Francini, *Università di Firenze, Italy*

TALKS & SPEAKERS:

1. **On a semilinear elliptic boundary value problem arising in cardiac electrophysiology**  
Cristina Cerutti, *Politecnico di Milano, Italy*
2. **Unique continuation for viscoelasticity equations**  
Gen Nakamura, *Inha University, Korea*
3. **Positive and negative results of the unique continuation property for the general second order elliptic system**  
Jenn-Nan Wang, *National Taiwan University, Taiwan*
4. **Inverse boundary-value problems in an infinite slab with partial data**  
Kaloyan Marinov, *Technical University of Denmark*

SCHEDULED AT:

Parallel Session 5  
Thursday, May 28  
09:00–11:00  
AUD XIV

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**M23: Sampling methods for high dimensional Bayesian inverse problems**

ORGANIZERS: Heikki Haario, *Lappeenranta University of Technology, Finland*  
 Kody Law, *KAUST, Saudi Arabia*

- TALKS & SPEAKERS:
1. Dimension-independent likelihood-informed MCMC samplers for Bayesian inverse problems  
Kody Law, *KAUST, Saudi Arabia*
  2. High-dimensional non-Gaussian Bayesian inference using transport maps  
Youssef Marzouk, *MIT, USA*
  3. A Bayesian level-set approach for large-scale geometric inverse problems  
Marco Iglesias, *University of Nottingham, UK*
  4. Randomize-Then-Optimize: a Method for Sampling from Posterior Distributions in Nonlinear Inverse Problems  
Johnathan Bardsley, *University of Montana, USA*

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**M24-I: Multifaceted perspective on regularization theory and its applications (Part 1)**

ORGANIZERS: Elena Resmerita, *Alps-Adria University of Klagenfurt, Austria*  
 Stefan Kindermann, *Johannes Kepler University of Linz, Austria*

- TALKS & SPEAKERS:
1. Regularization of operators with Poisson data  
Federico Benvenuto, *École Polytechnique, France*
  2. An Online Parameter Identification Method for time-dependent problems  
Romana Boiger, *Alps-Adria University of Klagenfurt, Austria*
  3. Projective iterative methods for solving ill-posed problems under the tangential cone condition  
Antonio Leitão, *Federal University of Santa Catarina, Brazil*
  4. Regularization for inverse problems in anomalous diffusion  
Bangti Jin, *University of California, USA*

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## M24-II: Multifaceted perspective on regularization theory and its applications (Part 2)

ORGANIZERS: Elena Resmerita, *Alps-Adria University of Klagenfurt, Austria*  
Stefan Kindermann, *Johannes Kepler University of Linz, Austria*

TALKS & SPEAKERS: 1. Inversion of conical Radon transforms and applications

Markus Haltmeier, *University of Innsbruck, Austria*

2. Filter based regularization methods for linear inverse problems

Shuai Lu, *Fudan University, China*

3. Regularisation in image and data space for tomographic inversion

Carola Schönlieb, *University of Cambridge, UK*

4. Low complexity regularizations: A “localization” result

Samuel Vaiter, *Université Paris-Dauphine, France*

SCHEDULED AT:

Parallel Session 8

Friday, May 29

10:10–12:10

F26-LS115

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## M25: Efficient Methods for Large-Scale Inverse Problems in Imaging

ORGANIZERS: Julianne Chung, *Virginia Tech, USA*  
Silvia Gazzola, *Università degli Studi di Padova, Italy*

TALKS & SPEAKERS: 1. Sparse reconstruction by flexible Krylov methods

Silvia Gazzola, *Università degli Studi di Padova, Italy*

2. Generalized Krylov Subspace Methods for  $l_p-l_q$  Minimization

Lothar Reichel, *Kent State University, USA*

3. Total variation based exact two-phase method for impulse noise removal

Yiqiu Dong, *Technical University of Denmark*

4. Regularization methods for image reconstruction in 3D limited angle tomography

Elena Piccolomini, *University of Bologna, Italy*

SCHEDULED AT:

Parallel Session 2

Monday, May 25

16:00–18:00

SALI 3

**M26: Theoretical perspectives in Bayesian inverse problems**ORGANIZER: Tapio Helin, *University of Helsinki, Finland*

TALKS &amp; SPEAKERS:

1. **MAP estimators and their consistency in Bayesian inverse problems for functions**  
Masoumeh Dashti, *University of Sussex, UK*
2. **Preconditioning the prior to overcome saturation in Bayesian inverse problems**  
Sergios Agapiou, *University of Warwick, UK*
3. **Fractional Brownian motion and asymptotic Bayesian estimation**  
Petteri Piiroinen, *University of Helsinki, Finland*
4. **Analysis of the Ensemble Kalman Filter for Inverse Problems**  
Claudia Schillings, *University of Warwick, UK*

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**M27: Reconstruction methods for 4D computed tomography (CT)**ORGANIZERS: Daniil Kazantsev, *University of Manchester, UK*Geert Van Eyndhoven, *University of Antwerp, Belgium*

TALKS &amp; SPEAKERS:

1. **Employing non-local temporal self-similarity across the entire time domain in 4D CT reconstruction**  
Daniil Kazantsev, *University of Manchester, UK*
2. **A 4D CT reconstruction algorithm for fast liquid flow imaging**  
Geert Van Eyndhoven, *University of Antwerp, Belgium*
3. **A fast 4D CT reconstruction algorithm for affine deforming objects**  
Vincent Van Nieuwenhove, *University of Antwerp, Belgium*
4. **Four-dimensional tomography based on a level set method**  
Paola Elefante, *University of Helsinki, Finland*

SCHEDULED AT:

Parallel Session 8  
Friday, May 29  
10:10–12:10  
AUD IV

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**M28-I: On the stability issue for inverse boundary value problems and applications (Part 1)**

ORGANIZERS: Elena Beretta, *Politecnico di Milano, Italy*  
Romina Gaburro, *University of Limerick, Ireland*

TALKS & SPEAKERS: 1. Global stability estimates for the Gel'fand-Calderón inverse problem  
Roman Novikov, *École Polytechnique, France*

SCHEDULED AT:

Parallel Session 1

Monday, May 25

13:30–15:30

SALI 6

2. On the stability of the hyperbolic Gel'fand problem  
Roberta Bosi, *University of Helsinki, Finland*
3. Stability estimates for inverse problems for PDE with unknown boundaries – the case of wave equation.  
Sergio Vessella, *Università degli Studi di Firenze, Italy*
4. Stability estimates for the Calderón problem with partial data  
David Dos Santos Ferreira, *Université de Lorraine, France*

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**M28-II: On the stability issue for inverse boundary value problems and applications (Part 2)**

ORGANIZERS: Elena Beretta, *Politecnico di Milano, Italy*  
Romina Gaburro, *University of Limerick, Ireland*

TALKS & SPEAKERS: 1. The stability issue for the inverse conductivity problem  
Eva Sincich, *University of Nova Gorica, Slovenia*

SCHEDULED AT:

Parallel Session 4

Tuesday, May 26

16:00–18:00

SALI 6

2. Determination of the conductivity in an infinite wave guide from a single boundary measurement  
Michel Cristofol, *Université d'Aix-Marseille, France*
3. Inverse problem of electroseismic conversion  
Maarten de Hoop, *Purdue University, USA*
4. Stability estimates for the inverse medium problem with internal data  
Faouzi Triki, *Joseph Fourier University, France*

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**M29: Priors and SPDEs**

ORGANIZERS: Lassi Roininen, *Sodankylä Geophysical Observatory, Finland*  
 Simo Särkkä, *Aalto University, Finland*

TALKS & SPEAKERS: 1. **Levy alpha-stable priors for Bayesian inversion**  
 Lassi Roininen, *Sodankylä Geophysical Observatory, Finland*

2. **Evolution equation representation of regularization in dynamic inverse problems**

Simo Särkkä, *Aalto University, Finland*

3. **Meshes, hyperparameters and priors: Practical aspects of Bayesian inverse problems with SPDE priors**

Daniel Simpson, *Norwegian University of Science and Technology*

4. **Probabilistic parcellation of whole-brain fMRI using Chinese restaurant and Gaussian process priors**

Pasi Jylänki, *Radboud University Nijmegen, The Netherlands*

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**M30-I: Imaging using light: from theory to application (Part 1)**

ORGANIZERS: Teresa Correia, *University College London, UK*  
 Tanja Tarvainen, *University of Eastern Finland*

TALKS & SPEAKERS: 1. **Mathematical modeling of OCT and PAT**  
 Otmar Scherzer, *University of Vienna, Austria*

2. **Fast acquisition and reconstruction for fluorescence molecular tomography**

Nicolas Ducros, *University of Lyon, France*

3. **Topological reduction of the inverse Born series**

John Schotland, *University of Michigan, USA*

4. **Recent advances in fluorescence molecular tomography image reconstruction**

Teresa Correia, *University College London, UK*

SCHEDULED AT:
Parallel Session 7
Thursday, May 28
16:00–18:00
AUD XV

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## M30-II: Imaging using light: from theory to application (Part 2)

ORGANIZERS: Teresa Correia, *University College London, UK*  
Tanja Tarvainen, *University of Eastern Finland*

TALKS & SPEAKERS:

1. **On numerical methods for parameter identification in radiative transfer**  
Herbert Egger, *Darmstadt University of Technology, Germany*
2. **Estimating blood oxygenation from photoacoustic images**  
Ben Cox, *University College London, UK*
3. **Fast inversion for quantitative photoacoustic tomography in isotropic media**  
Kui Ren, *University of Texas at Austin, USA* CANCELLED
3. **Fluorescence Diffuse Optical Tomography (fDOT) prior information for Brain imaging**  
Athanasios Zacharopoulos, *FORTH, Greece*
4. **Approximate marginalization of measurement uncertainties in diffuse optical tomography**  
Meghdoot Mozumder, *University of Eastern Finland*

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## M31: Spectral Tomography: Models, Methods, and Applications

ORGANIZERS: Martin Andersen, *Technical University of Denmark*  
Per Christian Hansen, *Technical University of Denmark*

TALKS & SPEAKERS:

SCHEDULED AT:

Parallel Session 9  
Friday, May 29  
13:30–15:30  
SALI 10

1. **Iterative Algorithms for Spectral Tomography**  
Martin Andersen, *Technical University of Denmark*
2. **Spectral Tomography for Breast Imaging**  
James Nagy, *Emory University, USA*
3. **Joint Reconstruction of Spectral CT Data via Constrained Total Nuclear Variation Minimization**  
David Rigie, *University of Chicago, USA*
4. **Forward Model of Scatter Data Formation in Positron Emission Tomography and its Inversion**  
Ivan Kazantsev, *Institute of Numerical Mathematics and Computational Geophysics, Novosibirsk, Russia*

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**M32-I: Bayesian Computation**ORGANIZER: Felix Lucka, *University College London, UK*

TALKS &amp; SPEAKERS:

- 1. Recent Advances in Bayesian Inference for Inverse Problems**  
Felix Lucka, *University College London, UK*
- 2. Bayesian Framework for the Detection of Sharp Transitions**  
Iryna Sivak, *University of Warwick, UK*
- 3. Likelihood-informed Dimension Reduction in Nonlinear Inverse Problems**  
Youssef Marzouk, *MIT, USA*
- 4. Where Bayes meets Krylov: Bayesian iterative linear solvers for inverse problems**  
Daniela Calvetti, *Case Western Reserve University, USA*

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**M32-II: Bayesian Computation**ORGANIZER: Felix Lucka, *University College London, UK*

TALKS &amp; SPEAKERS:

- 1. Recent advances in solution of large-scale Bayesian inverse problems**  
Tan Bui-Thanh, *University of Texas at Austin*
- 2. Spectral quantitative photoacoustic tomography: parameter estimation using a Bayesian approach**  
Aki Pulkkinen, *University of Eastern Finland*
- 3. A Bayesian Approach to Hyperspectral Remote Sensing of Canopy LAI**  
Petri Varvia, *University of Eastern Finland*
- 4. Bayesian approach to the inverse problem of option pricing and detection of financial bubbles**  
Martin Simon, *Deka Investment, Germany*

SCHEDULED AT:

Parallel Session 2  
Monday, May 25  
16:00–18:00  
SALI 10

SCHEDULED AT:

Parallel Session 4  
Tuesday, May 26  
16:00–18:00  
SALI 3

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### M33: Inverse problems with applications in biology

ORGANIZERS: Jan-Frederik Pietschmann, *TU Darmstadt, Germany*  
Matthias Schlottbom, *University of Münster, Germany*

TALKS & SPEAKERS:

1. **Methods for Automatic Mitosis Detection and Tracking in Phase Contrast Images**  
Joana Grah, *University of Münster, Germany*
2. **Cellular Force and Stress Reconstruction**  
Guido Vitale, *Université Joseph Fourier de Grenoble, France*
3. **Model selection for bacterial growth and division process**  
Marie Doumic Jauffret, *INRIA Paris-Rocquencourt, France*
4. **Inverse Problems in Chemotaxis**  
Jan-Frederik Pietschmann, *TU Darmstadt, Germany*

SCHEDULED AT:

Parallel Session 9  
Friday, May 29  
13:30–15:30  
SALI 3

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### M34-I: Recent Trends in Hybrid Tomography (Part 1)

ORGANIZERS: Simon Arridge, *University College London, UK*  
Marta Betcke, *University College London, UK*  
Kim Knudsen, *Technical University of Denmark*

TALKS & SPEAKERS:

1. **Conductivity Imaging from Minimal Interior Measurements**  
Amir Moradifam, *University of California, USA*
2. **Coupled-Physics Inverse Problems for Systems**  
Gunther Uhlmann, *University of Washington, USA* CANCELLED
2. **Coupled-Physics Inverse Problems for the System of Elasticity**  
Francois Monard, *University of Washington, USA*
3. **Dynamic lung ventilation monitoring by using electrical impedance tomography (EIT): reduction of ghost artifacts**  
Tingting Zhang, *Yonsei University, Seoul*
4. **Quantitative Ultrasound-modulated Optical Numerical Tomography (QUONT)**  
Sam Powell, *University College London, UK*

SCHEDULED AT:

Parallel Session 1  
Monday, May 25  
13:30–15:30  
F26-JUHLASALI

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**M34-II: Recent Trends in Hybrid Tomography (Part 2)**

ORGANIZERS: Simon Arridge, *University College London, UK*  
 Marta Betcke, *University College London, UK*  
 Kim Knudsen, *Technical University of Denmark*

TALKS & SPEAKERS: 1. **Stability for Current Density Impedance Imaging**  
 Carlos Montalto, *University of Washington, USA*

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| SCHEDULED AT: | 2. <b>Reconstructions in Photoacoustics with Variable Sound Speed</b><br>Otmar Scherzer, <i>University of Vienna, Austria</i><br><br>3. <b>Mathematical Modeling in Full Field Optical Coherence Elastography</b><br>Pierre Millien, <i>École Normale Supérieure, France</i><br><br>4. <b>Inverse Transport and Acousto-Optic Imaging</b><br>John Schotland, <i>University of Michigan, USA</i> |
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**M35: Inverse problems for hyperbolic PDEs**

ORGANIZER: Lauri Oksanen, *University College London, UK*

TALKS & SPEAKERS: 1. **The determination of the black hole by boundary measurements**  
 Gregory Eskin, *University of California, USA*

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| SCHEDULED AT: | 2. <b>Inverse problems in bistatic SAR with different speeds</b><br>Raluca Felea, <i>Rochester Institute of Technology, USA</i><br><br>3. <b>Graph Laplacian on metric-measure spaces: spectral continuity</b><br>Yaroslav Kurylev, <i>University College London, UK</i><br><br>4. <b>Multiwave Tomography in closed domains</b><br>Plamen Stefanov, <i>Purdue University, USA</i> |
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### M36-I: Optimization methods for signal and image processing (Part 1)

ORGANIZERS: Ignace Loris, *Université Libre de Bruxelles, Belgium*  
Marco Prato, *Università di Modena e Reggio Emilia, Italy*

TALKS & SPEAKERS:

1. **Alternating Direction Approximate Newton Algorithm for Ill-conditioned inverse Problems**  
Maryam Yashtini, *Georgia Institute of Technology, USA*
2. **A convergent alternating-block iterative scheme for least-squares regularized blind deconvolution**  
Federica Porta, *Università di Modena e Reggio Emilia, Italy*
3. **On the ergodic convergence rates of a first-order primal-dual algorithm**  
Thomas Pock, *Graz University of Technology, Austria*
4. **Scaled gradient projection method for linear system identification**  
Riccardo Zanella, *Università di Ferrara, Italy*

SCHEDULED AT:

Parallel Session 5  
Thursday, May 28  
09:00–11:00  
F26-LS115

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### M36-II: Optimization methods for signal and image processing (Part 2)

ORGANIZERS: Ignace Loris, *Université Libre de Bruxelles, Belgium*  
Marco Prato, *Università di Modena e Reggio Emilia, Italy*

TALKS & SPEAKERS:

1. **Preconditioned Douglas-Rachford algorithms for the solution of inverse problems in imaging**  
Kristian Bredies, *University of Graz, Austria*
2. **Numerical algorithms for non-smooth optimization and applications**  
Ignace Loris, *Université Libre de Bruxelles, Belgium*
3. **Alternating proximal method for blind video restoration involving various regularization strategies**  
Feriel Abboud, *Université Paris-Est, France*
4. **Stochastic proximal methods for machine learning**  
Silvia Villa, *Italian Institute of Technology*

SCHEDULED AT:

Parallel Session 8  
Friday, May 29  
10:10–12:10  
AUD XIII

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**M37-I: Inverse Problems in Non-destructive Testing (Part 1)**

ORGANIZERS: Habib Ammari, *École Normale Supérieure, France*  
 Aku Seppänen, *University of Eastern Finland*  
 Manuchehr Soleimani, *University of Bath, UK*

TALKS & SPEAKERS: 1. Electrical impedance tomography for detection of damage and monitoring moisture flow in Concrete  
 Aku Seppänen, *University of Eastern Finland*

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| SCHEDULED AT:      |
| Parallel Session 2 |
| Monday, May 25     |
| 16:00–18:00        |
| F26-JUHLASALI      |
- 2. Electrical and Electromagnetic Tomography Methods for NDE  
     Manuchehr Soleimani, *University of Bath, UK*
  - 3. Electrical impedance spectroscopic imaging for detecting cracks and reinforcing bars in concrete structures  
     Tingting Zhang, *Yonsei University, Korea*
  - 4. Detection and identification of targets from eddy current data  
     Darko Volkov, *Worcester Polytechnic Institute, USA*

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**M37-II: Inverse Problems in Non-destructive Testing (Part 2)**

ORGANIZERS: Habib Ammari, *École Normale Supérieure, France*  
 Aku Seppänen, *University of Eastern Finland*  
 Manuchehr Soleimani, *University of Bath, UK*

TALKS & SPEAKERS: 1. Size estimate of inclusions from boundary measurements for complex conductivity  
 Hyundae Lee, *Inha university, Korea*

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| SCHEDULED AT:      |
| Parallel Session 4 |
| Tuesday, May 26    |
| 16:00–18:00        |
| F26-JUHLASALI      |
- 2. Damage Identification under Modelling Uncertainties  
     Daniel Castello, *Federal University of Rio de Janeiro, Brazil*
  - 3. Determination of wall thickness and defect parameters of metallic and non-metallic structures using active thermography  
     Sebastian Götschel, *Zuse Institute Berlin, Germany*
  - 4. Boundary element method for shape reconstruction in EIT  
     Yaoyuan Xu, *Hebei University of Technology, China* CANCELLED
  - 4. A couple of approaches to multiscale inverse problems  
     Ruanui Nicholson, *University of Auckland, New Zealand*

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### M38-I: Inverse Boundary Value Problems for Elliptic Systems (Part 1)

ORGANIZERS: Francis Chung, *University of Michigan, USA*  
Mikko Salo, *University of Jyväskylä, Finland*

TALKS & SPEAKERS:

SCHEDULED AT:

Parallel Session 6  
Thursday, May 28  
13:30–15:30  
AUD XIII

1. On the determination of finitely many parameters in some elliptic systems of elasticity from boundary measurements  
Elena Beretta, *Politecnico di Milano, Italy* CANCELLED
1. On uniqueness of an inverse problem for the time harmonic Maxwell equations  
Pedro Caro, *ICMAT, Spain*
2. An  $H_0^{s,p}(\text{curl}; \Omega)$  estimate for the Maxwell system  
Manas Kar, *University of Jyväskylä, Finland*
3. An inverse boundary problem for the Stokes equations in the plane  
Ru-Yu Lai, *University of Washington, USA*
4. An inverse problem for the Hodge Laplacian  
Francis Chung, *University of Michigan, USA*

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### M38-II: Inverse Boundary Value Problems for Elliptic Systems (Part 2)

ORGANIZERS: Francis Chung, *University of Michigan, USA*  
Mikko Salo, *University of Jyväskylä, Finland*

TALKS & SPEAKERS:

SCHEDULED AT:

Parallel Session 9  
Friday, May 29  
13:30–15:30  
AUD XIII

1. Coefficients identification problem for elasticity systems  
Gen Nakamura, *Inha University, Korea*
2. On partial data inverse problems for Maxwell equations  
Petri Ola, *University of Helsinki, Finland*
3. Stable determination of an elastic inclusion by boundary measurements  
Edi Rosset, *Università Trieste, Italy*
4. On uniqueness of an inverse problem for the time harmonic Maxwell equations  
Ting Zhou, *Northeastern University, USA* CANCELLED

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**M39: Quantitative soft biological tissues imaging**ORGANIZER: Laurent Seppecher, *MIT, USA*TALKS & SPEAKERS: **1. Hybrid soft tissues imaging by mechanical perturbations**  
Laurent Seppecher, *MIT, USA*

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| SCHEDULED AT:      |
| Parallel Session 9 |
| Friday, May 29     |
| 13:30–15:30        |
| SALI 8             |
- 2. Computational and quantification challenges in high performance optoacoustic imaging**  
Daniel Razansky, *Technische Universität München, Germany*
  - 3. Photoacoustic imaging with speckle illumination**  
Thomas Chaigne, *ESPCI ParisTech, France*
  - 4. Spectroscopic imaging of biological tissues**  
Laure Giovangigli, *UC Irvine, USA*

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**M40-I: Optimising inversion models (Part 1)**ORGANIZERS: Juan Carlos De Los Reyes, *Escuela Politecnica National de Quito, Ecuador*  
Eldad Haber, *University of British Columbia, Canada*  
Carola Schönlieb, *University of Cambridge, UK*TALKS & SPEAKERS: **1. Optimal Inversion Matrices for Inverse Problems**  
Matthias Chung, *Virginia Tech, USA*

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| SCHEDULED AT:      |
| Parallel Session 1 |
| Monday, May 25     |
| 13:30–15:30        |
| AUD XIII           |
- 2. Structural Model Re-Specification: Hybrid First-Principle and Data-Driven Model Correction for Inversion**  
Lior Horesh, *IBM Watson Research Center, USA*
  - 3. Optimal Experimental Design for Large-Scale Bayesian Nonlinear Inverse Problems**  
Omar Ghattas, *The University of Texas at Austin, USA*
  - 4. The parameterisation of higher-order regularisers**  
Tuomo Valkonen, *DAMTP, University of Cambridge, UK*

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## M40-II: Optimising inversion models (Part 2)

ORGANIZERS: Juan Carlos De Los Reyes, *Escuela Politecnica National de Quito, Ecuador*  
Eldad Haber, *University of British Columbia, Canada*  
Carola Schönlieb, *University of Cambridge, UK*

TALKS & SPEAKERS:

### 1. Optimization-based learning methods in imaging

Juan Carlos De Los Reyes, *Escuela Politecnica National de Quito, Ecuador*

### 2. Learning optimal anisotropic reaction-diffusion models for efficient image restoration

Thomas Pock, *Technical University Graz, Austria*

### 3. Design for dynamical systems with the applications to imaging of flow in porous media

Eldad Haber, *University of British Columbia, Canada*

### 4. Seismic waveform inversion

Hansruedi Maurer, *ETH Zurich, Switzerland*

SCHEDULED AT:

Parallel Session 4

Tuesday, May 26

16:00–18:00

AUD XIII

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## M40-III: Optimising inversion models (Part 3)

ORGANIZERS: Juan Carlos De Los Reyes, *Escuela Politecnica National de Quito, Ecuador*  
Eldad Haber, *University of British Columbia, Canada*  
Carola Schönlieb, *University of Cambridge, UK*

TALKS & SPEAKERS:

### 1. Pitfalls in Bayesian inversion

Martin Burger, *University of Münster, Germany*

### 2. Approximate marginalization of absorption and scattering in fluorescence diffuse optical tomography

Ville Kolehmainen, *University of Eastern Finland*

### 3. Large-scale Bayesian inference for nonlinear inverse problems

Noemi Petra, *The University of Texas at Austin, USA*

### 4. Wavefield-reconstruction inversion

Bas Peters, *University of British Columbia, Canada*

SCHEDULED AT:

Parallel Session 6

Thursday, May 28

13:30–15:30

AUD XV

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**M41-I: Advances in Electrical Impedance Tomography imaging: Algorithms and Experimental Results (Part 1)**ORGANIZER: Sarah Hamilton, *Marquette University, USA*

TALKS &amp; SPEAKERS:

1. Multispectral imaging methods for EIT

Emma Malone, *University College London, UK*

2. Utilizing depth dependency in iterative EIT reconstruction

Henrik Garde, *Technical University of Denmark*

3. A D-bar algorithm with a priori information for 2-D electrical impedance imaging

Melody Dodd, *Colorado State University, USA***SCHEDULED AT:**

Parallel Session 5

Thursday, May 28

09:00–11:00

SALI 6

4. 3-D Electrical Impedance Imaging

Peter Muller, *Colorado State University, USA*

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**M41-II: Advances in Electrical Impedance Tomography imaging: Algorithms and Experimental Results (Part 2)**ORGANIZER: Sarah Hamilton, *Marquette University, USA*

TALKS &amp; SPEAKERS:

1. Priorconditioned Krylov subspace solvers for EIT

Erkki Somersalo, *Case Western Reserve University, USA*

2. Direct D-bar Reconstructions for Experimental EIT Data with Boundary Shape Determination

Sarah Hamilton, *Marquette University, USA*

3. Shape identification for Complex Electrical Impedance Tomography

Cristiana Sebu, *Oxford Brookes University, UK*

4. Lessons learned about EIT

David Isaacson, *Rensselaer Polytechnic Institute, USA***SCHEDULED AT:**

Parallel Session 8

Friday, May 29

10:10–12:10

SALI 6

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### M42-I: Inverse Problems in Life Sciences (Part 1)

ORGANIZERS: Daniela Calvetti, *Case Western Reserve University, USA*  
Erkki Somersalo, *Case Western Reserve University, USA*

TALKS & SPEAKERS:

1. **On reconstruction of the dynamic tortuosity functions of poroelastic materials**  
Miao-Jung Yvonne Ou, *University of Delaware, USA*
2. **Optimal Design of Non-equilibrium Experiments for Inverse Problems: Genetic Network Interrogation**  
H. Thomas Banks, *North Carolina State University, USA*
3. **Stochastic Reaction-Diffusion Modeling of Cellular Processes**  
Samuel Isaacson, *Boston University, USA*
4. **A Bayesian method for identifying periods of latency in the phylogenetic history of HIV-1 within a host**  
Taina Immonen, *Los Alamos National Laboratory, USA*

SCHEDULED AT:

Parallel Session 5  
Thursday, May 28  
09:00–11:00  
AUD XIII

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### M42-II: Inverse Problems in Life Sciences (Part 2)

ORGANIZERS: Daniela Calvetti, *Case Western Reserve University, USA*  
Erkki Somersalo, *Case Western Reserve University, USA*

TALKS & SPEAKERS:

1. **Parameter Estimation in Cardiovascular Modeling**  
Mette Olufsen, *North Carolina State University, USA*
2. **Inverse Problems for Structured Population Models**  
Jorge Zubelli, *Institute for Pure and Applied Mathematics, Brazil*
3. **Hierarchical methods for parameter estimation in SPDE dynamics with application to disease Ecology**  
Luca Gerardo-Giorda, *Basque Center for Applied Mathematics, Spain*
4. **Model and solution reduction techniques for patient-specific parameter estimation in cardiovascular mathematics: failure and success**  
Huanhuan Yang, *Emory University, USA*

SCHEDULED AT:

Parallel Session 10  
Friday, May 29  
16:00–18:00  
AUD XIII

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**M43-I: Inverse Problems in atmospheric remote sensing (Part 1)**

ORGANIZERS: Johanna Tamminen, *Finnish Meteorological Institute*  
 Andreas Hilboll, *University of Bremen, Germany*  
 Emily King, *University of Bremen, Germany*

TALKS & SPEAKERS: 1. **Observational Requirements for Next-Generation Cloud Remote Sensing Systems: A Bayesian Perspective**  
 Derek Posselt, *University of Michigan, USA*

**SCHEDULED AT:**

Parallel Session 3  
 Tuesday, May 26  
 13:30–15:30  
 AUD XIII

2. **CO2 Retrievals for the OCO-2 Instrument: Full MCMC Exploration Using a Surrogate Forward-Model**  
 Jenný Brynjarsdóttir, *Case Western Reserve University, USA*
3. **Dimension Reduction in Bayesian Inverse Problems Applied to Atmospheric Remote Sensing**  
 Antti Solonen, *Lappeenranta University of Technology, Finland*
4. **Data Fusion for Massive, Remote Sensing Data Sets**  
 Amy Braverman, *Jet Propulsion Laboratory, NASA, USA*

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**M43-II: Inverse Problems in atmospheric remote sensing (Part 2)**

ORGANIZERS: Johanna Tamminen, *Finnish Meteorological Institute*  
 Andreas Hilboll, *University of Bremen, Germany*  
 Emily King, *University of Bremen, Germany*

TALKS & SPEAKERS: 1. **Markov Chain Monte Carlo Methods for Greenhouse Gas Measurements**  
 Marko Laine, *Finnish Meteorological Institute, Finland*

**SCHEDULED AT:**

Parallel Session 7  
 Thursday, May 28  
 16:00–18:00  
 AUD XIII

2. **GOMOS satellite instrument: inverse problems and measurement highlights**  
 Viktoria Sofieva, *Finnish Meteorological Institute, Finland*
3. **A Gradient-Based Reconstruction Method for Complex AO Systems**  
 Daniela Saxenhuber, *Johannes Kepler University Linz, Austria*
4. **Enhancement of Atmospheric Remote Sensing Retrievals by Applying Multiple A Priori Constraints Using Multi-Term LSM Concept**  
 Oleg Dubovik, *University Lille-1, France*

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### M44: Qualitative Methods for Solving Inverse Problems

ORGANIZERS: Faouzi Triki, *Université Joseph Fourier, Laboratoire Jean Kuntzmann, France*  
Eric Bonnetier, *Université Joseph Fourier, Laboratoire Jean Kuntzmann, France*

TALKS & SPEAKERS:

SCHEDULED AT:

Parallel Session 2  
Monday, May 25  
16:00–18:00  
AUD XIII

1. How to use tools from control theory to solve some inverse problems?  
Mourad Choulli, *Université de Metz, France* CANCELLED
2. An Inverse Problem for the Helmholtz Equation in a Layered Media  
Matias Courdurier, *Pontificia Universidad Católica de Chile*
3. Well-posedness and limiting absorption principle for the Helmholtz equation with sign changing coefficients  
Hoai-Minh Nguyen, *École polytechnique de Lausanne, Switzerland*
4. New numerical results for the Gel'fand-Calderón problem  
Matteo Santacesaria, *University of Helsinki, Finland*

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### M45-I: Integral Geometry (Part 1)

ORGANIZERS: Plamen Stefanov, *Purdue University, USA*  
Francois Monard, *Purdue University, USA*

TALKS & SPEAKERS:

SCHEDULED AT:

Parallel Session 7  
Thursday, May 28  
16:00–18:00  
SALI 12

1. On the stability of the geodesic ray transform  
Sean Holman, *University of Manchester, UK*
2. Applications of tensor and non-Abelian ray transforms  
Bill Lionheart, *University of Manchester, UK*
3. Artifacts in Limited Data Tomography with General Filters  
Todd Quinto, *Tufts University, USA*
4. The geodesic X-ray transform on Riemannian surfaces with conjugate points  
Plamen Stefanov, *Purdue University, USA*

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**M45-II: Integral Geometry (Part 2)**

ORGANIZERS: Plamen Stefanov, *Purdue University, USA*  
 Francois Monard, *Purdue University, USA*

TALKS & SPEAKERS: 1. **Inversion of the attenuated geodesic X-ray transform on surfaces**

Francois Monard, *University of Washington, USA*

SCHEDULED AT:
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Parallel Session 8  
 Friday, May 29  
 10:10–12:10  
 SALI 12

2. **X-ray transform restricted on light rays and cosmic microwave background**

Lauri Oksanen, *University College London, UK*

3. **Injectivity and stability for a generic class of generalized Radon Transforms**

Hanming Zhou, *University of Washington, USA*

4. **Energy estimates for attenuated geodesic ray transforms**

Mikko Salo, *University of Jyväskylä, Finland*

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**M46-I: Learning Subspaces (Part 1)**

ORGANIZERS: Massimo Fornasier, *Technical University of Munich, Germany*  
 Valeriya Naumova, *Simula Research Laboratory AS, Norway*

TALKS & SPEAKERS: 1. **Geometric Methods for the Approximation of High-dimensional Dynamical Systems**

Mauro Maggioni, *Duke University, USA*

SCHEDULED AT:
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Parallel Session 3  
 Tuesday, May 26  
 13:30–15:30  
 SALI 3

2. **Piecewise Data Representation to Learn Manifold and Measures**

Lorenzo Rosasco, *University of Genova, Italy, and MIT, USA*

3. **Generalization Performance of Multi-Task Subspace Learning**

Andreas Maurer, *Technical University Munich, Germany*

4. **Factor Models for High-dimensional Time Series**

Christine De Mol, *ULB, Belgium*

5. **On the Convergence Rate and Some Applications of Regularised Ranking Algorithms**

Sergei Pereverzyev, *Johann Radon Institute, Austria*

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## M46-II: Learning Subspaces (Part 2)

ORGANIZERS: Massimo Fornasier, *Technical University of Munich, Germany*  
Valeriya Naumova, *Simula Research Laboratory AS, Norway*

- TALKS & SPEAKERS:
- 1. **Active Subspaces in Theory and Practice**  
Paul Constantine, *Colorado School of Mines, USA*
  - 2. **Spectral  $k$ -Support Norm Regularization**  
Massimiliano Pontil, *University College London, UK*
  - 3. **Learning a Set by Kernel Methods**  
Ernesto De Vito, *Università degli Studi di Genova, Italy*
  - 4. **Local Dictionary Identification via Iterative Thresholding and K-means**  
Karin Schnass, *University of Sassari, Italy*

SCHEDULED AT:

Parallel Session 7  
Thursday, May 28  
16:00–18:00  
SALI 6

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## M47-I: Inverse Problems in Optics (Part 1)

ORGANIZERS: Gang Bao, *Zhejiang University, China*  
Peijun Li, *Purdue University, USA*  
Jun Zou, *Chinese University of Hong Kong*

- TALKS & SPEAKERS:
- 1. **Near-Field Imaging via Inverse Scattering**  
Gang Bao, *Michigan State University, USA* CANCELLED
  - 2. **Inverse Surface Scattering for Elastic Waves**  
Peijun Li, *Purdue University, USA*
  - 3. **Inverse Problem for Period Media**  
Fioralba Cakoni, *University of Delaware, USA*
  - 4. **A multiscale model reduction method for wave propagation and its applications**  
Eric Chung, *Chinese University of Hong Kong, China*
  - 5. **The two-dimensional direct and inverse scattering problems with generalized oblique derivative boundary condition**  
Jijun Liu, *Southeast University, China*

SCHEDULED AT:

Parallel Session 5  
Thursday, May 28  
09:00–11:00  
AUD XV

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**M47-II: Inverse Problems in Optics (Part 2)**

ORGANIZERS: Gang Bao, *Zhejiang University, China*  
 Peijun Li, *Purdue University, USA*  
 Jun Zou, *Chinese University of Hong Kong*

TALKS & SPEAKERS: 1. Quasi-conformal registration for multi-modality image reconstruction  
 Ronald Lui, *Chinese University of Hong Kong*

**SCHEDULED AT:**

Parallel Session 9  
 Friday, May 29  
 13:30–15:30  
 AUD XV

2. Four-dimensional X-ray tomography for moving objects  
 Samuli Siltanen, *University of Helsinki, Finland*
3. Biosensing with metallic nanoparticles  
 Faouzi Triki, *University of Grenoble, France*
4. Travel Time Tomography with Partial Data  
 Gunther Uhlmann, *University of Washington, USA*

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**M48-I: Recent developments on numerical inverse scattering problems (Part 1)**

ORGANIZERS: Jingzhi Li, *South University of Science and Technology, China*  
 Hongyu Liu, *Hong Kong Baptist University*  
 Jun Zou, *Chinese University of Hong Kong*

TALKS & SPEAKERS: 1. Recent developments on numerical inverse scattering problems: An Introduction  
 Hongyu Liu, *Hong Kong Baptist University, China*

**SCHEDULED AT:**

Parallel Session 1  
 Monday, May 25  
 13:30–15:30  
 AUD XII

2. Solving inverse scattering problems with strong scatterers  
 Xudong Chen, *National University of Singapore*
3. Optimization of electrode positions in electrical impedance tomography  
 Nuutti Hyvönen, *Aalto University, Finland*
4. Inverse Problems of Wave Propagation with Experimental Data: Global Convergence  
 Michael Klibanov, *University of North Carolina, USA*

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## M48-II: Recent developments on numerical inverse scattering problems (Part 2)

ORGANIZERS: Jingzhi Li, *South University of Science and Technology, China*  
Hongyu Liu, *Hong Kong Baptist University*  
Jun Zou, *Chinese University of Hong Kong*

TALKS & SPEAKERS: 1. **On Spectral Analysis and A Novel Algorithm for Transmission Eigenvalue Problems**  
Jijun Liu, *Southeast University, China*

- |   |   |  |
|---|---|--|
| SCHEDULED AT:   | 2. Theory and numerics of wave-luminescence tomography<br>Kui Ren, <i>University of Texas at Austin, USA</i> CANCELLED                      |  |
| Parallel Session 3<br>Tuesday, May 26<br>13:30–15:30<br>SALI 10 | 3. An Adaptive Finite Element Method for Reconstruction of the Robin Coefficient<br>Yifeng Xu, <i>Shanghai Normal University, China</i>     |  |
|   | 3. Reconstruction of an impedance cylinder at oblique incidence from the far-field data<br>Haibing Wang, <i>Southeast University, China</i> |  |

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## M49-I: Plasmonics and cloaking

ORGANIZERS: Petri Ola, *University of Helsinki, Finland*  
Hyeonbae Kang, *Inha University, Korea*

TALKS & SPEAKERS: 1. **Spectral theory of Neumann-Poincaré operator and applications**  
Hyeonbae Kang, *Inha University, Korea*

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|--|--|--|
| SCHEDULED AT:  | 2. <b>Anomalous resonance and cloaking: a review</b><br>Graeme Milton, <i>University of Utah, USA</i>  |  |
| Parallel Session 5<br>Thursday, May 28<br>09:00–11:00<br>F26-JUHLASALI | 3. <b>Cloaking via anomalous localized resonance for doubly complementary media in the quasistatic regime</b><br>Hoai-Minh Nguyen, <i>École polytechnique de Lausanne, Switzerland</i> |  |
|  | 4. <b>Plasmon resonances of nanoparticles</b><br>Eric Bonnetier, <i>Grenoble, France</i>   |  |

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**M49-II: Plasmonics and cloaking**

ORGANIZERS: Petri Ola, *University of Helsinki, Finland*  
 Hyeonbae Kang, *Inha University, Korea*

TALKS & SPEAKERS: **1. Quasi-static Cloaking Due to Anomalous Localized Resonance in  $\mathbb{R}^3$**

Hongyu Liu, *Hong Kong Baptist University*

SCHEDULED AT:
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Parallel Session 8  
 Friday, May 29  
 10:10–12:10  
 F26-JUHLASALI

**2. Mathematical modeling and analysis of plasmonic nanoparticles**

Hai Zhang, *École Normale Supérieure, France*

**3. On absence and existence of ALR without the quasistatic approximation**

Petri Ola, *University of Helsinki, Finland*

**4. A determination result for an inverse problem in electromagnetism**

Juan Manuel Reyes, *Cardiff University, UK*

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**CT1: Analysis and Geometry**

ORGANIZER: Tommi Brander, *University of Jyväskylä, Finland*

TALKS & SPEAKERS:

**1. Inversion of Riemann-Liouville operator**  
 Gennadi Vainikko, *University of Tartu, Estonia*

**2. Aharonov-Bohm effect revisited**

Gregory Eskin, *UCLA, USA*

**3. Calderón problem for the p-Laplace equation**

Tommi Brander, *University of Jyväskylä, Finland*

**4. Anisotropic Edge Detection On Sphere**

Yizhi Sun, *Technical University of Berlin, Germany* CANCELLED

SCHEDULED AT:
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Parallel Session 1  
 Monday, May 25  
 13:30–15:30  
 SALI 8

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## CT2: Applied Analysis

ORGANIZER: Michael Music, *University of Kentucky, USA*

TALKS & SPEAKERS:

1. **Uniqueness in the identification of damage in vibrating beams and plates**  
Alexandre Kawano, *University of Sao Paulo, Brazil*
2. **Multiple time-dependent coefficient identification thermal problems**  
Daniel Lesnic, *University of Leeds, UK*
3. **Reconstruction of slowly-moving dipoles in an inverse source problem for a three dimensional scalar wave equation**  
Takashi Ohe, *Okayama University of Science, Japan*
4. **Solutions to the Novikov-Veselov equation via the inverse scattering method**  
Michael Music, *University of Kentucky, USA*

SCHEDULED AT:

Parallel Session 6

Thursday, May 28

13:30–15:30

SALI 6

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## CT3: Optimization and Regularization

ORGANIZER: Sara Soltani, *Technical University of Denmark*

TALKS & SPEAKERS:

1. **Tomographic Image Reconstruction Using Dictionary Priors**  
Sara Soltani, *Technical University of Denmark*
2. **Fast voxel scoring for 6D X-ray Diffraction Tomography**  
Mirza Karamehmedović, *Technical University of Denmark*
3. **Numerical comparison of parameter choice rules using a new web toolbox**  
Reimo Palm, *University of Tartu, Estonia*
4. **A new heuristic rule for choosing regularization parameter**  
Toomas Raus, *University of Tartu, Estonia*

SCHEDULED AT:

Parallel Session 7

Thursday, May 28

16:00–18:00

AUD XIV

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**CT4: Imaging**ORGANIZER: Federica Sciacchitano, *Technical University of Denmark*

TALKS &amp; SPEAKERS:

- 1. Non-linear difference imaging approach to electrical impedance tomography with modeling errors**  
Dong Liu, *University of Eastern Finland*
- 2. Convex variational approach for restoring blurred images with Cauchy noise**  
Federica Sciacchitano, *Technical University of Denmark*
- 3. Fluorescence Microscopy: Deconvolution with Phase Retrieved Point Spread Function**  
Christina Brandt, *University of Osnabrück, Germany*
- 4. Finite propagation speed in viscoelastic media**  
Jeong-Rock Yoon, *Clemson University, USA*

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**CT5: Imaging and Tomography**ORGANIZER: Andreas Langer, *University of Stuttgart, Germany*

TALKS &amp; SPEAKERS:

- 1. Adaptive Regularization in Image Processing**  
Andreas Langer, *University of Stuttgart, Germany*
- 2. Regularization approaches for quantitative Photoacoustic tomography using the radiative transfer equation**  
Adriano De Cezaro, *Federal University of Rio Grande, Brazil*
- 3. Reconstructed Point Based Discretization Method for Image Reconstruction**  
Jun Qiu, *Beijing Information Science & Technology University, China*
- 4. A new alternating minimization algorithm for tomographic reconstruction in hydrokinetics experiments**  
Linghai Kong, *Institute of Applied Physics and Computational Mathematics, China*

SCHEDULED AT:

Parallel Session 9  
 Friday, May 29  
 13:30–15:30  
 SALI 7

SCHEDULED AT:

Contributed Talks  
 Friday, May 29  
 08:30–10:00  
 AUD XIII

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## CT6: Engineering Applications

ORGANIZER: Christian Nittinger, *University of Münster, Germany*

TALKS & SPEAKERS:

1. **Experimental estimation of local heat-transfer coefficient in coiled tubes with corrugated wall**  
Fabio Bozzoli, *University of Parma, Italy*

SCHEDULED AT:

Contributed Talks

Friday, May 29

08:30–10:00

F26-LS115

2. **Analysis and numerical solution of the nonlinear evolutional inverse problem related to elastoplastic torsional equation**  
Salih Tatar, *Zirve University, Turkey* CANCELLED

3. **Magnetotelluric inversion with wavelet sparsity regularization**

Christian Nittinger, *Institute of Geophysics, University of Münster*

4. **Physics-based reconstruction of 3d instantaneous flow-fields from sparse velocity measurements**

Jan Schneiders, *TU Delft, Netherlands*

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## CT7: Analysis

ORGANIZER: Fabien Caubet, *Institut de Mathématiques de Toulouse, France*

TALKS & SPEAKERS:

1. Inverse problems related to space-time fractional diffusion equations  
Suleyman Ulusoy, *Zirve University, Gaziantep, Turkey* CANCELLED

SCHEDULED AT:

Contributed Talks

Friday, May 29

08:30–10:00

SALI 12

2. **Microlocal analysis of restricted X-ray transforms of symmetric tensor fields in 3D Euclidean space**

Rohit Kumar Mishra, *Tata Institute of Fundamental Research, India*

3. **Shape optimization methods for the Inverse Obstacle Problem**

Fabien Caubet, *Institut de Mathématiques de Toulouse, France*

4. **The eigenvalues function and the inverse Sturm-Liouville problems**

Tigran Harutyunyan, *Yerevan State University, Armenia*

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**CT8: Numerics and Reconstruction (Part 1)**ORGANIZER: Dominik Garmatter, *University of Stuttgart, Germany*

TALKS &amp; SPEAKERS: 1. Error estimates for exponentially ill-posed problems with impulsive noise

Claudia König, *University of Göttingen, Germany***SCHEDULED AT:**

Contributed Talks

Friday, May 29

08:30–10:00

SALI 3

2. Coupling reduced basis methods and the Landweber method to solve inverse problems

Dominik Garmatter, *University of Stuttgart, Germany*

3. On an inverse coefficient problem for hyperbolic equation with nonlocal conditions

Anar Rahimov, *Institut Fresnel, France*

4. A Meshless Framework for Full Wave Inversion

Hebert Montegranario, *Universidad de Antioquia, Colombia*

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**CT9: Numerics and Reconstruction (Part 2)**ORGANIZER: Dinh-Liem Nguyen, *University of Michigan, USA*

TALKS &amp; SPEAKERS:

1. Recovery by finite number of measurements

Amin Boumenir, *University of West Georgia, USA*

2. Prediction of nocturnal hypoglycemia by means of regularized ranking and collaborative filtration

Galyna Kriukova, *Johann Radon Institute, Austria*

3. On the numerical solution of a Cauchy problem for the Laplace equation in 3-dimensional annular domains by an integral equation method

B. Tomas Johansson, *Aston University, UK*

4. Imaging of inhomogeneities in an electromagnetic waveguide

Dinh-Liem Nguyen, *University of Michigan, USA***SCHEDULED AT:**

Contributed Talks

Friday, May 29

08:30–10:00

SALI 6

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## CT10: Probability and Statistics

ORGANIZER: Mikael Kuusela, *École Polytechnique Fédérale de Lausanne, Switzerland*

TALKS & SPEAKERS:

1. **Regularization of Linear Ill-Posed Problems in Banach Lattices and its Applications to Diffusion Tensor Imaging**  
Yury Korolev, *Queen Mary University of London, UK*
2. **Determining White Noise Forcing From Eulerian Observations in the Navier-Stokes Equation**  
Viet Ha Hoang, *Nanyang Technological University, Singapore*
3. **Statistical Methods for Unfolding Elementary Particle Spectra at the Large Hadron Collider**  
Mikael Kuusela, *École Polytechnique Fédérale de Lausanne, Switzerland*
4. **A Sparse Coding Approach for Inverse Problem in Imaging via Self-Adaptive Probability Distribution**  
Xiaoyue Luo, *Linfield College, USA*

SCHEDULED AT:

Contributed Talks

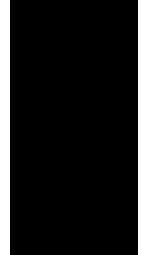
Friday, May 29

08:30–10:00

SALI 10







## 5 Posters

The Poster Sessions are held in the 2nd floor lobby at the New Side of the Main Building in Fabianinkatu 33. All posters are on view during the whole conference. However, two specific Poster Sessions are held simultaneously to the coffee breaks on Tuesday and Wednesday mornings, where chosen speakers are expected to be present for discussing their posters with the audience. The coffee is served during the sessions in the same lobby.

**Poster Session 1****TITLES & AUTHORS:****SCHEDULED AT:**

Tuesday, May 26

10:40–11:10

2nd floor lobby of  
Main Building

- ◆ **Comparison of Reconstruction Methods for Phase Contrast Tomography**  
Rasmus Dalgas Rasmussen, *Technical University of Denmark, Denmark*
- ◆ **A Sparse Coding Approach for Inverse Problem in Imaging via Self-Adaptive Probability Distribution**  
Xiaoyue Luo, *Linfield College, USA*
- ◆ **Parameters identification for Abrasive WaterJet Milling process**  
Vladimir Groza
- ◆ **Tracking boundary movement and exterior shape modelling in lung EIT imaging**  
Ander Biguri, *University of Bath, UK*
- ◆ **An inverse source problem for a variable speed wave equation with sources along a path**  
Justin Tittelfitz, *Purdue University, USA*
- ◆ **Asymptotic Expansion of the Solution of a Neumann Problem for Harmonic Functions in the Half-Space with a Small Cavity**  
Andrea Aspri, *Sapienza, Università di Roma, Italy*
- ◆ **Uncertainty quantification in satellite aerosol retrieval**  
Anu Määttä, *Finnish Meteorological Institute, Finland*
- ◆ **SWIRLAB — a simulator and retrieval code for short-wavelength infrared measurements**  
Jesse Railo, *University of Jyväskylä, Finland*
- ◆ **Regularization methods for flow fields with smooth transitions and sharp edges**  
Lena Frerking, *University of Münster, Germany*
- ◆ **Uniform Penalty inversion of two-dimensional NMR Relaxation data**  
Fabiana Zama, *University of Bologna, Italy*
- ◆ **Geometric theory for the nonlinear problem in quantitative elastography**  
Thomas Widlak, *University of Vienna, Austria*
- ◆ **The integrated system of MIT and ECT**  
Fang Li

- ◆ **Tomographic imaging of forward-scattering objects**  
Gregory Samelsohn, *Center for Advanced Imaging Systems, SCE, Ash-dod, Israel*
- ◆ **Spread Option Pricing and Model Calibration in Commodity Market**  
Shih-Hau Tan, *University of Greenwich, UK*
- ◆ **Inverse Problem with Applications in Computational Biology**  
Yang Hai, *University of Greenwich, UK*

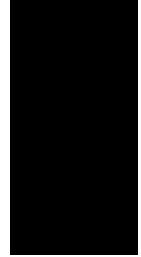
**Poster Session 2****TITLES & AUTHORS:****SCHEDULED AT:**

Wednesday, May  
27 10:40–11:10  
2nd floor lobby of  
Main Building

- ◆ **Automated Non-destructive evaluation using adjoint techniques**  
Steven Vandekerckhove, *KU Leuven, Belgium*
- ◆ **Recovery of second order perturbations of a biharmonic operator from boundary measurements**  
Sombuddha Bhattacharyya, *Tata Institute of Fundamental Research (CAM), India*
- ◆ **Underwater source detection and localization via an incoherent model**  
Eftychia Karasmani, *IACM FORTH and University of Crete, Greece*
- ◆ **Regularization method for solving a parametric identification problem for self-test measuring device**  
Natalia Yarapova, *South Ural State University (National Research University), Russia*
- ◆ **Data filtering for imaging in strongly scattering media**  
Michael Apostopoulos, *IACM FORTH and University of Crete, Greece*
- ◆ **Numerical assessment of the ROI-CT problem in fan-beam geometries**  
Tatiana A. Bubba, *University of Ferrara, Italy*
- ◆ **Quantitative simulation and density reconstruction in high-energy X-ray radiography**  
Haibo Xu, *Institute of Applied Physics and Computational Mathematics, Beijing, PR China*
- ◆ **Bayesian inversion approach using surrogate model: application to eddy-current non-destructive inspection method**  
Anis Ben Abdessalem, *French Atomic Energy Commission, France*
- ◆ **Reconstruction of defects via multifrequency topological derivatives**  
Maria Luisa Rapun Banzo, *Universidad Politécnica de Madrid, Spain*
- ◆ **A nonconvex approach to Robust Face Recognition**  
Damiana Lazzaro, *University of Bologna, Italy*
- ◆ **Inverse method for calculating the temperature dependent thermal conductivity of nuclear materials**  
Tsvetoslav Pavlov, *Imperial College London, UK*
- ◆ **Comparative study of a CGO-based reconstruction method and an iterative Newton-Raphson method for Electrical Impedance Tomography**  
Ekaterina Sherina, *Technical University of Denmark, Denmark*

- ◆ Identification of a spacewise dependent source in advection-diffusion equation from boundary measured data  
Balgaisha Mukanova, *Eurasian National University, Kazakhstan*
- ◆ Verification of a variational source condition for inverse medium scattering problems  
Frederic Weidling, *University of Göttingen, Germany*
- ◆ Propagation-based phase contrast imaging with X-rays — from uniqueness theory to nano-scale reconstructions  
Simon Maretzke, *University of Göttingen, Germany*





## 6 Classification of minisymposia by topic

## Optimization

M4: Optimization Approaches for Inverse Problems of Parameter Identification
M36-I: Optimization methods for signal and image processing (Part 1)
M36-II: Optimization methods for signal and image processing (Part 2)
M40-I: Optimising inversion models (Part 1)
M40-II: Optimising inversion models (Part 2)
M40-III: Optimising inversion models (Part 3)

## Analysis and geometry

M20-I: Stability estimates for inverse problems (Part 1)
M20-II: Stability estimates for inverse problems (Part 2)
M22: Quantitative estimates of unique continuation and applications to inverse problems
M28-I: On the stability issue for inverse boundary value problems and applications (Part 1)
M28-II: On the stability issue for inverse boundary value problems and applications (Part 2)
M35: Inverse problems for hyperbolic PDEs
M38-I: Inverse Boundary Value Problems for Elliptic Systems (Part 1)
M38-II: Inverse Boundary Value Problems for Elliptic Systems (Part 2)
M45-I: Integral Geometry (Part 1)
M45-II: Integral Geometry (Part 2)
CT1: Analysis and Geometry
CT7: Analysis

## Stochastics and Bayesian statistics

M3: Statistical Inverse Problems and Applications
M10-I: Stochastic methods in imaging (Part 1)
M10-II: Stochastic methods in imaging (Part 2)
M23: Sampling methods for high dimensional Bayesian inverse problems
M26: Theoretical perspectives in Bayesian inverse problems
M29: Priors and SPDEs
M32-I: Bayesian Computation
M32-II: Bayesian Computation
M46-I: Learning Subspaces (Part 1)
M46-II: Learning Subspaces (Part 2)
CT10: Probability and Statistics

## Applied analysis with numerics

M1-I: Computation of Interior Transmission Eigenvalues (Part 1)
M1-II: Computation of Interior Transmission Eigenvalues (Part 2)
M5-I: Autoconvolution and related nonlinear ill-posed problems (Part 1)
M5-II: Autoconvolution and related nonlinear ill-posed problems (Part 2)
M21-I: Reconstruction methods for inverse problems (Part 1)
M21-II: Reconstruction methods for inverse problems (Part 2)
M25: Efficient Methods for Large-Scale Inverse Problems in Imaging
M44: Qualitative Methods for Solving Inverse Problems
M47-I: Inverse Problems in Optics (Part 1)
M47-II: Inverse Problems in Optics (Part 2)
M48-I: Recent developments on numerical inverse scattering problems (Part 1)
M48-II: Recent developments on numerical inverse scattering problems (Part 2)
M49-I: Plasmonics and cloaking
M49-II: Plasmonics and cloaking
CT2: Applied Analysis
CT8: Numerics and Reconstruction (Part 1)
CT9: Numerics and Reconstruction (Part 2)

## Space, atmospheric, engineering, and life sciences

M9: Inverse problems and big data
M12: Inverse problems in space imaging
M17: Inverse Source Problems in Engineering Applications
M33: Inverse problems with applications in biology
M42-I: Inverse Problems in Life Sciences (Part 1)
M42-II: Inverse Problems in Life Sciences (Part 2)
M43-I: Inverse Problems in atmospheric remote sensing (Part 1)
M43-II: Inverse Problems in atmospheric remote sensing (Part 2)
CT6: Engineering Applications

## Imaging

M2-I: Models and Methods for Hyperspectral Imaging (Part 1)
M2-II: Models and Methods for Hyperspectral Imaging (Part 2)
M7-II: Current developments in tomography: from theory to algorithms (Part 2)
M15-I: Regularisation Techniques for Joint Image Reconstruction Problems (Part 1)
M15-II: Regularisation Techniques for Joint Image Reconstruction Problems (Part 2)
M16-I: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 1)
M16-II: Efficient Reconstruction Methods for Electrical Impedance Tomography and Inverse Scattering (Part 2)
M18-I: Imaging through Complex Media (Part 1)
M18-II: Imaging through Complex Media (Part 2)
M19: Inverse Transport and Optical Tomography
M30-I: Imaging using light: from theory to application (Part 1)
M30-II: Imaging using light: from theory to application (Part 2)
M34-I: Recent Trends in Hybrid Tomography (Part 1)
M34-II: Recent Trends in Hybrid Tomography (Part 2)
M37-I: Inverse Problems in Non-destructive Testing (Part 1)
M37-II: Inverse Problems in Non-destructive Testing (Part 2)
M39: Quantitative soft biological tissues imaging
M41-I: Advances in Electrical Impedance Tomography imaging: Algorithms and Experimental Results (Part 1)
M41-II: Advances in Electrical Impedance Tomography imaging: Algorithms and Experimental Results (Part 2)
CT4: Imaging

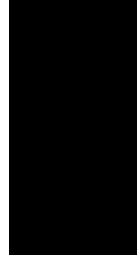
## Computed tomography

M7-I: Current developments in tomography: from theory to algorithms (Part 1)
M8-I: Current developments in tomography: from algorithms to applications (Part 1)
M8-II: Current developments in tomography: from algorithms to applications (Part 2)
M8-III: Current developments in tomography: from algorithms to applications (Part 3)
M27: Reconstruction methods for 4D computed tomography (CT)
M31: Spectral Tomography: Models, Methods, and Applications
CT5: Imaging and Tomography

## Regularization

M6-I: Recent advances in the theory of regularization methods (Part 1)
M6-II: Recent advances in the theory of regularization methods (Part 2)
M11-I: Analytical aspects of regularisation: Higher-order and curvature-based approaches and further topics (Part 1)
M11-II: Analytical aspects of regularisation: Higher-order and curvature-based approaches and further topics (Part 2)
M13-I: Discretization of Inverse Problems in Banach spaces (Part 1)
M13-II: Discretization of Inverse Problems in Banach spaces (Part 2)
M14-I: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 1)
M14-II: Aggregation and Joint Inversion. Challenges for Numerical Regularization Methods (Part 2)
M24-I: Multifaceted perspective on regularization theory and its applications (Part 1)
M24-II: Multifaceted perspective on regularization theory and its applications (Part 2)
CT3: Optimization and Regularization





## 7 Maps and room charts

The University District

/\* Maps available in the paper version \*/

Fabianinkatu 33, 2nd floor

/\* Maps available in the paper version \*/

Fabianinkatu 33, 3rd floor

/\* Maps available in the paper version \*/

Fabianinkatu 33, 4th floor

/\* Maps available in the paper version \*/



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