

CONFERENCE GUIDE



11th Applied Inverse Problems
Conference in Göttingen
SEPTEMBER 4-8, 2023

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WELCOME TO AIP 2023

DEAR FRIENDS AND COLLEAGUES,

We cordially welcome you on the campus of the University of Göttingen for the **11th Applied Inverse Problems conference**. We are excited to hear your presentations on the newest trends in the field and look forward to discussions on all aspects of Inverse Problems ranging from classical topics such as inverse problems in partial differential equations and regularization theory to themes like uncertainty quantification and machine learning, covering imaging techniques in astrophysics, geophysics, radiology, histology, and solid-state physics, to name just a few, but also applications in fields like econometrics, nuclear power safety, and many others. There will be about 525 oral and 25 poster presentations by 550 registered participants.

The organization of this conference would have been impossible without the dedication and hard work of numerous people. I wish to mention Jennifer Mathias, Eva Hetzel, and Diana Sieber on the administrative side, but also all colleagues and co-workers in the local organizing committee as well as the staff of the Institute of Numerical and Applied Mathematics, which are too many to list here.

This conference guide will help you find your way through the scientific and social program and the locations. We hope you will have an enjoyable stay in Göttingen and have the opportunity to discover some parts of the city, its surroundings, or its past or present scientific activities.

On behalf of the local organizing committee

Thorsten Hohage

GENERAL INFORMATION

ORGANIZING TEAM

SCIENTIFIC COMMITTEE

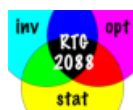
H. Ammari, ETH Zurich
S. Arridge, UCL London
E. Beretta, NYU Abu Dhabi
F. Cakoni, Rutgers U./USA
J. Cheng, Fudan U. Shanghai
T. Hohage, U. Göttingen
K. Krupchyk, U. California/Irvine
G. Nakamura, Hokkaido U.
L. Oksanen, U. Helsinki
G. Uhlmann, U. Washington
A. Yagola, Lomonosov Moscow State U
T. Zhou, Zhejiang U

LOCAL COMMITTEE

T. Hohage (Chair)
C. Aarset
D. Fournier
M. Halla
B. Harrach, U. Frankfurt
E. Hetzel
S. Huckemann
J. Mathias
T. Nguyen
G. Plonka-Hoch
D. Sieber
M. Uecker, TU Graz
A. Wald
F. Werner, U. Würzburg



CRC 1456
MATHEMATICS
OF EXPERIMENT



DFG Deutsche
Forschungsgemeinschaft

VENUE

Georg-August-Universität
Zentrales Hörsaalgebäude (ZHG)
Platz der Göttinger Sieben
37073 Göttingen



REGISTRATION

SAW Tagungsmanagement
78269 Volkertshausen
© SAW Tagungsmanagement



www.aip2023.de

VENUE INFORMATION



The **conference** will be held on the central campus of the University of Göttingen (**Platz der Göttinger Sieben**), in the center of the city, about a 15 minutes walk from the train station. The talks and sessions will take place in two main buildings:

The **plenary talks** in the morning will take place in the **Zentrales Hörsaalgebäude (ZHG)** of the University of Göttingen.

The **parallel sessions** will take place at the **Verfügungsgebäude (VG)**. The distance between the two buildings is about 100 meters. You can find the locations on the map below.

The **posters** will be presented in the **foyer at the Zentrales Hörsaalgebäude (ZHG)**. All posters will be on display throughout the conference. The poster session will take place on Wednesday from 12:15 – 13:15. The author(s) will be present to discuss their posters with the audience.

LUNCHTIME

The conference fee includes **daily lunch** at the **Central University Canteen (Zentralmensa)** - **opening hours**: Monday - Friday: 11:30 - 14:30. Lunch includes a main dish, free choice of 2 side dishes and a complementary cup of water.

PAYMENT AT THE UNIVERSITY CANTEEN

No cash or check/visa card payments will be accepted in the **Central University Canteen**.

Please use the **vouchers** included in your conference package. The vouchers can be handed in at the **cash canteen desks 3 to 6**.

WIFI CONNECTION ON CAMPUS

If you have an eduroam account, you can access internet with your username and password. Otherwise, WLAN vouchers will be available at the conference desk.

PUBLIC TRANSPORTATION

GöVB is the public transportation service in Göttingen: <https://www.goevb.de> (only available in German).

If you plan to use public transportation during your stay in Göttingen, we recommend the **Fairtiq** app. This is an easy way to purchase public transport tickets without having to plan your trips in advance. Once you have registered, you can pay cashless and receive your ticket via the app.



Program

MONDAY, 4 SEPT 2023

08:00	Registration	ZHG Foyer
09:00	OPENING	ZHG 011
09:50	Plenary Talk ON THE SAMPLE COMPLEXITY OF INVERSE PROBLEMS Giovanni Alberti, University of Genoa, Italy	ZHG 011
10:40	Coffee Break	ZHG Foyer
11:10	Plenary Talk AN UNEXPECTED ROLE OF TRANSMISSION EIGENVALUES IN IMAGING ALGORITHMS Houssem Haddar, INRIA Paris, France	ZHG 011
12:00	Lunch Break	Mensa
13:30	PARALLEL SESSION 1	
	MS 03-1 Compressed Sensing meets Statistical Inverse Learning Chairs: T. A. Bubba, L. Ratti, M. Santacesaria A. Felisi • W. Zellinger • H. Kekkonen	VG2.103
	MS 12-1 Fast optimization-based methods for inverse problems Chair: T. Valkonen S. Leveque • J. M. Everink • X. Liu • B. C. J. Jensen	VG2.102
	MS 14-1 Inverse Modelling with Applications Chairs: D. Lesnic, K. Van Bockstal D. Lesnic • K. Van Bockstal • F. Maes	VG1.104
	MS 15-1 Experimental and Algorithmic Progress in Photoemission Orbital Imaging Chairs: R. Luke, S. Mathias B. Stadtmüller • F. S. Tautz • U. Höfer • G. S. M. Jansen	VG1.102
	MS 18-1 Inverse problems for fractional and nonlocal equations Chairs: Y. Lin, J. Railo, M. Salo B. Kaltenbacher • G. Uhlmann • P. Zimmermann • G. Covi	VG1.103
	MS 25-1 Hyperparameter estimation in imaging inverse problems: recent advances on optimisation-based, learning and statistical approaches Chairs: L. Calatroni, M. Pragliola P. Ochs • K. Papafitsoros • A. Sebastiani • F. Bevilacqua	VG0.111
	MS 29-1 Eigenvalues in inverse scattering Chairs: M. Halla, P. Monk A. Kleefeld • V. Selgas • F. Monteghetti • J. Sun	VG3.104

MONDAY, 4 SEPT 2023

	MS 34-1 Learned reconstructions for nonlinear inverse problems Chairs: S. R. Arridge, A. S. Hauptmann M. Santacesaria • J. Grohl • M. Lassas • J. Nickel	VG3.103
	MS 39 Statistical inverse problems: regularization, learning and guarantees Chair: K. Knudsen S. Pereverzyev • A. Abhishake • Y. Ying • K. Mosegaard	VG2.105
	MS 43-1 Inverse Problems in radiation protection and nuclear safety Chairs: L. Kuger, S. Siltanen R. Virta • C. Tarpau • P. Dendooven • F. Terzioglu	VG1.108
	MS 44-1 Modelling in Earth and planetary sciences by data inversion at various scales Chairs: C. Gerhards, V. Michel, F. J. Simons C. Gerhards • X. Huang • N. Schneider • V. Michel	VG2.104
	MS 52-1 Integral geometry, rigidity and geometric inverse problems Chairs: F. S. Monard, P. Stefanov L. Oksanen • P. Stefanov • Y. Wang • S. P. Flynn	VG1.105
	MS 54-1 The x-ray transform and its generalizations: Theory, methods, and applications Chair: S. K. Sahoo P. Kow • S. K. Sahoo • G. Ambartsoumian • D. Agrawal	VG1.101
	MS 55-1 Nonlinear Inverse Scattering and Related Topics Chair: Y. Yang T. Zhou • Y. Heng • F. Dou • X. Liu	VG3.101
	MS 56-1 Inverse Problems of Transport Equations and Related Topics Chairs: R.-Y. Lai, H. Zhou K. Hellmuth • B. Palacios • H. Zhou	VG2.106
	MS 57-1 Inverse Problems in Time-Domain Imaging at the Small Scales Chairs: E. Bonnetier, X. Cao, M. Sini A. Posilicano • H. Wang • A. Ghandriche • A. Mantile	VG3.102
15:30	Coffee Break	ZHG Foyer
16:00	PARALLEL SESSION 2	
	MS 03-2 Compressed Sensing meets Statistical Inverse Learning Chairs: T. A. Bubba, L. Ratti, M. Santacesaria A. Abhishake • T. Helin • C. Poon • M. Nguyen	VG2.103
	MS 12-2 Fast optimization-based methods for inverse problems Chair: B. C. S. Jensen A. Buccini • L. Afraites • A. Schiela • R. Baraldi	VG2.102
	MS 14-2 Inverse Modelling with Applications Chairs: D. Lesnic, K. Van Bockstal O. Baysal • C. Sebu • D. Serikbaev • E. Soccorsi	VG1.104

Program MONDAY, 4 SEPT 2023

MS 15-2 Experimental and Algorithmic Progress in Photoemission Orbital Imaging Chairs: R. Luke, S. Mathias T. L. Dinh • W. Bennecke • H.-J. Elmers • P. Puschnig	VG1.102
MS 18-2 Inverse problems for fractional and nonlocal equations Chairs: Y.-H. Lin, J. Railo, M. Salo M. A. Garcia-Ferrero • R.-Y. Lai • G. Nakamura • K. Krupchy	VG1.103
MS 25-2 Hyperparameter estimation in imaging inverse problems: recent advances on optimisation-based, learning and statistical approaches Chairs: L. Calatroni, M. Pragliola L. Ratti • M. Zach • M. Pragliola • E. Somersalo	VG0.111
MS 29-2 Eigenvalues in inverse scattering Chairs: M. Halla, P. Monk F. Cakoni • S. Meng • E. L. K. Blasten • K. Stratouras	VG3.104
MS 34-2 Learned reconstructions for nonlinear inverse problems Chairs: S. R. Arridge, A. S. Hauptmann A. Manninen • O. Mickelin • A. Hauptmann	VG3.103
MS 35 Edge-preserving uncertainty quantification for imaging Chairs: A. M. A. Alghamdi, J. S. Jørgensen S. Melidonis • N. Chada • H. Kekkonen • J. S. Jørgensen	VG2.105
MS 43-2 Inverse Problems in radiation protection and nuclear safety Chairs: L. Kuger, S. Siltanen M. Bruch • L. Kuger • S. Petrak	VG1.108
MS 44-2 Modelling in Earth and planetary sciences by data inversion at various scales Chairs: C. Gerhards, V. Michel, F. J. Simons F. J. Simons • C. Finlay • W. Szwillus • K. Fabian	VG2.104
MS 52-2 Integral geometry, rigidity and geometric inverse problems Chairs: F. S. Monard, P. Stefanov M. Cekic • J. Ilmavirta • Y. Zou • J. Bohr	VG1.105
MS 54-2 The x-ray transform and its generalizations: Theory, methods, and applications Chair: S. K. Sahoo K. Sadiq • S. Holman • R. K. Mishra • J. Railo	VG1.101
MS 55-2 Nonlinear Inverse Scattering and Related Topics Chair: Y. Yang Y. Zhong • Z. Li	VG3.101
MS 56-2 Inverse Problems of Transport Equations and Related Topics Chairs: R.-Y. Lai, H. Zhou W. Sun • F. S. Monard • K. Ren • Y. Zhong	VG2.106
MS 57-2 Inverse Problems in Time-Domain Imaging at the Small Scales Chairs: E. Bonnetier, X. Cao, M. Sinil P. Liu • A. Mukherjee • S. Senapati • M. Kar	VG3.102

Program TUESDAY, 5 SEPT 2023

09:00	CALDERÓN PRIZES	ZHG 011
10:00	Plenary Talk ON THE FRACTIONAL CALDERON PROBLEM Angkana Rüland, University of Bonn, Germany	ZHG 011
10:50	Coffee Break	ZHG Foyer
11:10	Plenary Talk MICROLOCAL APPLICATIONS TO THE STUDY OF MARKED LENGTH SPECTRUM RIGIDITY AND LENS RIGIDITY IN CHAOTIC SETTINGS Colin Guillarmou, University Paris-Saclay, France	ZHG 011
12:00	Lunch Break	Mensa
13:30	PARALLEL SESSION 3	
	MS 02-1 Advances in regularization for some classes of nonlinear inverse problems Chairs: B. Hofmann, R. Plato Y. Deng • S. Hubmer • S. Kindermann • C. Klinkhammer	VG1.102
	MS 04-1 Statistical and computational aspects of non-linear inverse problems Chairs: R. Nickl, S. Wang A. Lang • C. Strauch • J. Bohr • K. Ray	VG2.102
	MS 14-3 Inverse Modelling with Applications Chairs: D. Lesnic, K. Van Bockstal N. Kinash • A. Rahimov • P. D. Ledger	VG1.104
	MS 18-3 Inverse problems for fractional and nonlocal equations Chairs: Y.-H. Lin, J. Railo, M. Salo B. Jin • V. Krishnan • P.-Z. Kow	VG1.103
	MS 19-1 Theory and algorithms of super-resolution in imaging and inverse problems Chairs: H. Ammari, P. Liu W. Li • P. Liu • V. Duval • B. Laville	VG3.103
	MS 21-1 Prior Information in Inverse Problems Chairs: A. Horst, J. Lemvig T. A. Bubba • S. Siltanen • A. Horst • J. Frikel	VG2.103

Program TUESDAY, 5 SEPT 2023

	MS 22-1 Imaging with Non-Linear Measurements: Tomography and Reconstruction from Phaseless or Folded Data Chairs: M. Beckmann, R. Beinert, M. Quellmalz O. Melnyk • M. Beckmann • L. Liehr • R. Beinert	VG1.101
	MS 28-1 Modelling and optimisation in non-Euclidean settings for inverse problems Chairs: L. Calatroni, C. Estatico, D. Lorenz M. Benning • Z. Kereta • M. Winkler • C. Estatico	VG1.108
	MS 29-3 Eigenvalues in inverse scattering Chairs: M. Halla, P. Monk M. Halla • H. Haddar • H. Liu • R. Novikov	VG3.104
	MS 38-1 Inverse eigenvalue problems in astrophysics Chairs: C. Gehan, D. Fournier J. W. Dewberry • D. R. Reese • F. Debras • F. Ahlborn	VG2.105
	MS 40 Dynamic Imaging Chair: P. Elbau B. Hahn • S. Fanzon • A. Wald • C. Brandt	VG2.106
	MS 47-1 Scattering and spectral imaging: inverse problems and algorithms Chairs: E. T. Quinto, G. Rigaud E. T. Quinto • M. Quellmalz • G. Rigaud • R. Schmähel	VG3.101
	MS 49-1 Applied parameter identification in physics Chairs: T. Nguyen, A. Wald O. Scherzer • S. Arridge • B. Kaltenbacher • U. Schwarz	VG3.102
	MS 52-3 Integral geometry, rigidity and geometric inverse problems Chairs: F. S. Monard, P. Stefanov T. Lefeuvre • N. Eptaminitis	VG1.105
	MS 58-1 Shape Optimization and Inverse Problems Chairs: L. Afraites, A. Laurain, J. F. T. Rabago R. von Rickenbach • J. S. H. Simon • J. F. T. Rabago	VG2.104
15:30	Coffee Break	ZHG Foyer
16:00	PARALLEL SESSION 4	
	MS 02-2 Advances in regularization for some classes of nonlinear inverse problems Chairs: B. Hofmann, R. Plato Q. Jin • P. Mahale • A. Khan • R. Plato	VG1.102
	MS 04-2 Statistical and computational aspects of non-linear inverse problems Chairs: R. Nickl, S. Wang F. Seitzles • M. Giordano • S. Wang • G. Hastermann	VG2.102
	MS 17 Machine Learning Techniques for Bayesian Inverse Problems Chair: A. Senchukova J. Hertrich • R. Laumont • A. Senchukova • M. Mollenhauer	VG1.104

Program TUESDAY, 5 SEPT 2023

	MS 19-2 Theory and algorithms of super-resolution in imaging and inverse problems Chairs: H. Ammari, P. Liu Z. Fei • K. Wei • C. Poon • R. Petit	VG3.103
	MS 21-2 Prior Information in Inverse Problems Chairs: A. Horst, J. Lemvig J. Leuschner • V. Kolehmainen • T. Soto • F. Voigtlaender	VG2.103
	MS 22-2 Imaging with Non-Linear Measurements: Tomography and Reconstruction from Phaseless or Folded Data Chairs: M. Beckmann, R. Beinert, M. Quellmalz A. Fannjiang • B. Diederichs • D. Florescu • M. Rathmair	VG1.101
	MS 23-1 Recent developments in reconstruction methods for inverse scattering and electrical impedance tomography Chairs: R. Griesmaier, N. Hyvönen L. Fink • L. Schätzle • A. Brojatsch • A. O. Autio	VG1.103
	MS 28-2 Modelling and optimisation in non-Euclidean settings for inverse problems Chairs: L. Calatroni, C. Estatico, D. Lorenz M. Lazzaretti • E. Resmerita • E. Naldi • K. Bredies	VG1.108
	MS 38-2 Inverse eigenvalue problems in astrophysics Chairs: C. Gehan, D. Fournier G. M. Mirouh • E. Bellinger • S. G. Kashyap • J. Philidet	VG2.105
	MS 42 Inverse Problems with Anisotropy Chair: K. Knudsen C. I. Carstea • H. A. Schlüter • B. Jin • R. Gaburro	VG3.104
	MS 45-1 Optimal Transport meets Inverse Problems Chairs: M. Carioni, J.-F. Pietschmann, M. Schlottbom S. Mukherjee • J.-F. Pietschmann • Y. Yang • D. Lorenz	VG0.111
	MS 47-2 Scattering and spectral imaging: inverse problems and algorithms Chairs: E. T. Quinto, G. Rigaud G. Ambartsoumian • F. Terzioglu • L. Kuger • L. Neumann	VG3.101
	MS 49-2 Applied parameter identification in physics Chairs: T. Nguyen, A. Wald V. Nikolic • D. Fournier • T. Kluth • A. Aspri	VG3.102
	MS 54-3 The x-ray transform and its generalizations: Theory, methods, and applications Chair: S. K. Sahoo S. Senapati • W. Lionheart • R. Alaifari • S. R. Jathar	VG1.105
	MS 57-3 Inverse Problems in Time-Domain Imaging at the Small Scales Chairs: E. Bonnetier, X. Cao, M. Sini X. Cao • M. Kachanovska • S. Tordeux	VG2.106
	MS 58-2 Shape Optimization and Inverse Problems Chairs: L. Afraites, A. Laurain, J. F. T. Rabago V. Calisti • L. Afraites • A. Laurain	VG2.104

GENERAL SCHEDULE

SUN, SEPT 3	MON, SEPT 4	TUE, SEPT 5	WED, SEPT 6	THU, SEPT 7	FRI, SEPT 8
	Registration 08:00 – 09:00				
	Opening 09:00 – 09:50	CALDERÓN PRIZES 09:00 – 10:00	PARALLEL SESSION 5 09:00 – 11:00	LAURENT GIZON 09:00 – 09:50	ALI FEIZMOHAMMADI 09:00 – 09:50
	GIOVANNI ALBERTI 09:50 – 10:40	ANGKANA RÜLAND 10:00 – 10:50		JINGNI XIAO 09:50 – 10:40	XIANG XU 09:50 – 10:40
	Coffee Break 10:40 – 11:10	Coffee Break 10:50 – 11:10	Coffee Break 11:00 – 11:20	Coffee Break 10:40 – 11:10	Coffee Break 10:40 – 11:10
	HOUSSEM HADDAR 11:10 – 12:00	COLIN GUILLARMOU 11:10 – 12:00	GABRIEL PATERNAIN 11:20 – 12:10	RICHARD NICKL 11:10 – 12:00	YIRAN WANG 11:10 – 12:00
	Lunch Break 12:00 – 13:30	Lunch Break 12:00 – 13:30	POSTER SESSION 12:15 – 13:15	Lunch Break 12:00 – 13:30	Lunch Break 12:00 – 13:30
	PARALLEL SESSION 1 13:30 – 15:30	PARALLEL SESSION 3 13:30 – 15:30	Lunch Break 13:15 – 14:00	PARALLEL SESSION 6 13:30 – 15:30	PARALLEL SESSION 8 13:30 – 15:30
	Coffee Break 15:30 – 16:00	Coffee Break 15:30 – 16:00	SOCIAL EVENTS 14:00 – 18:00	Coffee Break 15:30 – 16:00	Coffee Break 15:30 – 16:00
	PARALLEL SESSION 2 16:00 – 18:00	PARALLEL SESSION 4 16:00 – 18:00		PARALLEL SESSION 7 16:00 – 18:00	PARALLEL SESSION 9 16:00 – 18:00
Registration & Icebreaker 18:00 – 21:00			18:00 – 22:00 CONFERENCE DINNER		

Program WEDNESDAY, 6 SEPT 2023

09:00

PARALLEL SESSION 5

CT 01 Contributed talks

Chair: P. R. Micken
M. Klibanov • D.-L. Duong • M. Karimi

VG2.104

CT 02 Contributed talks

Chair: R. Novikov
S. Zheng • J. Rönsch • V. Sivkin

VG2.105

CT 03 Contributed talks

Chair: M. Halla
D. Gangadaraiah • D. McMahon • J. Nurminen

VG2.106

MS 01 Machine Learning for Inverse Problems in Medical Imaging

Chairs: C. Fiedler, J. Flemming
J. Flemming • C. Fiedler • P.-P. Jacobs • M. Wittig

VG1.102

MS 05-1 Numerical meet statistical methods in inverse problems

Chairs: M. Hanke, M. Reiß, F. Werner
S. Pereverzyev • F. M. Frommer • B. Stankewitz • L. Hucker

VG2.102

MS 06-1 Inverse Acoustic and Electromagnetic Scattering Theory - 30 years later

Chairs: F. Cakoni, H. Haddar
F. Cakoni • T. Hohage • P. Monk • R. Potthast

VG2.101

MS 11 "Defying the Curse of Dimensionality – Theory and Algorithms for Large Dimensional Bayesian Inversion

Chairs: R. Flock, Y. Dong
J. Nitzler • J. Chung • Q. Chen • R. Flock

VG1.108

MS 19-3 Theory and algorithms of super-resolution in imaging and inverse problems

Chairs: H. Ammari, P. Liu
M. Ferreira da Costa • X. Liu • P. Millien • D. Batenkov

VG3.103

MS 22-3 Imaging with Non-Linear Measurements: Tomography and Reconstruction from Phaseless or Folded Data

Chairs: M. Beckmann, R. Beinert, M. Quellmalz
R. Alaifari • A. Bhandari • J. Hagemann • J. N. Ahlers

VG1.101

MS 23-2 Recent developments in reconstruction methods for inverse scattering and electrical impedance tomography

Chairs: R. Griesmaier, N. Hyvönen
R. Griesmaier • N. Hyvönen • R. R. Maity • N. Nasr

VG1.103

MS 26-1 Trends and open problems in cryo electron microscopy

Chairs: C. Esteve-Yague, J. Schwab
V. Debarnot • W. Diepeveen • J. Kileel

VG3.102

MS 30-1 Inverse Problems on Graphs and Machine Learning

Chairs: E. L. K. Blasten, M. Lassas, J. Lu
H. Isozaki • L. Ylinen • J. Lu • D. Sanz-Alonso

VG2.103

Program WEDNESDAY, 6 SEPT 2023

MS 32-1 Parameter identification in time dependent partial differential equations

Chairs: B. Kaltenbacher, W. Rundell
L. Oksanen • L. Pieronek • P. T. Huynh • T. Nguyen

VG1.104

MS 33-1 Quantifying uncertainty for learned Bayesian models

Chairs: M. M. Betcke, M. Holler
N. Heilenkötter • G. Luo • T. Sahlström • T. I. Liaudat

VG1.105

MS 45-2 Optimal Transport meets Inverse Problems

Chairs: M. Carioni, J.-F. Pietschmann, M. Schlottbom
J. Karlsson • D. Bon • R. Assereto • M. Bonafini

VG0.111

MS 47-3 Scattering and spectral imaging: inverse problems and algorithms

Chairs: E. T. Quinto, G. Rigaud
M. K. Nguyen • J. Webber

VG3.101

MS 53 Uniqueness and stability in inverse problems for partial differential equations

Chairs: S. Foschiatti, E. Francini, E. Sincich
S. Foschiatti • J.-N. Wang • J. Railo • R. Gaburro

VG3.104

11:00

Coffee Break

ZHG Foyer

11:20

Plenary Talk

GEOMETRIC INVERSE PROBLEMS IN 2D: A TRANSPORT TWISTOR PERSPECTIVE

Gabriel Paternain, University of Cambridge, United Kingdom

ZHG 011

12:15

POSTER SESSION

ZHG Foyer

13:15

Lunch Break

Mensa

14:15

SOCIAL EVENTS

18:00

CONFERENCE DINNER

"Alte Mensa"

Program THURSDAY, 7 SEPT 2023

09:00	Plenary Talk CORRELATION-BASED IMAGING AND INVERSE PROBLEMS IN HELIOSEISMOLOGY Laurent Gizon, Max Planck Institute for Solar System Research, Göttingen, Germany	ZHG 011
09:50	Plenary Talk ALWAYS-SCATTERING, NON-SCATTERING, AND INVERSE SCATTERING Jingni Xiao, Drexel University, United States of America	ZHG 011
10:40	Coffee Break	ZHG Foyer
11:10	Plenary Talk HIGH-DIMENSIONAL NON-LINEAR BAYESIAN INVERSE PROBLEMS Richard Nickl, University of Cambridge, United Kingdom	ZHG 011
12:00	Lunch Break	Mensa
13:30	PARALLEL SESSION 6	
	CT 04 Contributed talks Chair: C. Aarset B. F. Nielsen • H. Takase • P. R. Micken • C. H. Wolters	VG2.104
	CT 05 Contributed talks Chair: T. Nguyen L. Girometti • U. Hämarik • T. Raus • K. Raik	VG2.105
	CT 06 Contributed talks Chair: M. Karimi K. Meth • M. Klibanov • R. Kuess • E. Ibayev	VG2.106
	MS 05-2 Numerical meet statistical methods in inverse problems Chairs: M. Hanke, M. Reiß, F. Werner T. Tarvainen • T. Jahn • N. H. Nelsen • H. Li	VG2.102
	MS 06-2 Inverse Acoustic and Electromagnetic Scattering Theory - 30 years later Chairs: F. Cakoni, H. Haddar W. Rundell • S. Moskow • J. Sun • M. Bonnet	VG3.103
	MS 10-1 Optimization in Inverse Scattering: from Acoustics to X-rays Chairs: R. I. Bot, R. Luke O. Scherzer • R. Luke • D.-K. Nguyen • R. I. Bot	VG1.103
	MS 16-1 Wave propagation and quantitative tomography Chairs: L. Mindrinos, L. Veselka S. Hubmer • N. Naujoks • F. Hinterer • F. Parzer	VG0.111

Program THURSDAY, 7 SEPT 2023

	MS 20-1 Recent advances in inverse problems for elliptic and hyperbolic equations Chair: R.-Y. Lai Y. Zhang • Y.-H. Lin • G. Covi • M. Cekic	VG3.104
	MS 24-1 Learned Regularization for Solving Inverse Problems Chairs: J. Hertrich, S. Neumayer F. Altekürger • M. Benning • A. Ebner • S. Mukherjee	VG1.101
	MS 26-2 Trends and open problems in cryo electron microscopy Chairs: C. Esteve-Yague, J. Schwab M. A. Gilles • M. Habeck • R. R. Lederman • A. Moscovich	VG3.102
	MS 30-2 Inverse Problems on Graphs and Machine Learning Chairs: E. L. K. Blåsten, M. Lassas, J. Lu M. Puthawala • F. Guevara Vasquez • E. L. K. Blåsten • I. Dokmanic	VG2.103
	MS 32-2 Parameter identification in time dependent partial differential equations Chairs: B. Kaltenbacher, W. Rundell E. Beretta • É. Soccorsi • W. Rundell	VG1.104
	MS 33-2 Quantifying uncertainty for learned Bayesian models Chairs: M. M. Betcke, M. Holler M. Zach • M. Holler • B. Maboudi Afkham • R. Barbano	VG1.105
	MS 36-1 Advances in limited-data X-ray tomography Chairs: J. S. Jørgensen, S. Siltanen T. A. Bubba • E. K. K. Karvonen • J. Friel • F. Bevilacqua	VG3.101
	MS 37-1 Passive imaging in terrestrial and extra-terrestrial seismology Chairs: F. Faucher, D. Fournier F. Faucher • B. Militzer • F. J. Simons • M. Campillo	VG1.102
	MS 51-1 Analysis, numerical computation, and uncertainty quantification for stochastic PDE-based inverse problems Chairs: M. Karamehmedovic, F. Triki D. Nganyu Tanyu • K. Linder-Steinlein • A. Kirkeby • U. H. Thygesen	VG1.108
15:30	Coffee Break	ZHG Foyer
16:00	PARALLEL SESSION 7	
	CT 07 Contributed talks Chair: C. Aarset T. Klatzer • V. Kaarioja • C. Kemajou Mbakam • N. Cvetkovic	VG1.105
	CT 08 Contributed talks Chair: S. F. Huckemann X. Xie • J. Glaubitz • P. Mi • S. Aleotti	VG2.105
	CT 09 Contributed talks Chair: M. Halla B. Meiri • F. Lucka • M. Suhonen • N. Donlon	VG2.106

Program THURSDAY, 7 SEPT 2023

MS 05-3 Numerical meet statistical methods in inverse problems Chairs: M. Hanke, M. Reiß, F. Werner R. Kretschmann • F. Benvenuto • A. Wald • N. Mücke	VG2.102
MS 06-3 Inverse Acoustic and Electromagnetic Scattering Theory - 30 years later Chairs: F. Cakoni, H. Haddar D. Gintides • I. Harris • L. Audibert	VG3.103
MS 10-2 Optimization in Inverse Scattering: from Acoustics to X-rays Chairs: R. I. Bož, R. Luke P. Ochs • R. Nenov • P. Balazs • D. Lorenz	VG1.103
MS 16-2 Wave propagation and quantitative tomography Chairs: L. Mindrinos, L. Veselka K. Sadiq • L. Mindrinos • L. Veselka • N. E. Protonotarios	VG0.111
MS 20-2 Recent advances in inverse problems for elliptic and hyperbolic equations Chair: R.-Y. Lai R. Rakesh • I. Harris • T. Zhou	VG3.104
MS 24-2 Learned Regularization for Solving Inverse Problems Chairs: J. Hertrich, S. Neumayer S. Neumayer • A. Effland • S. Hurault	VG1.101
MS 26-3 Trends and open problems in cryo electron microscopy Chairs: C. Esteve-Yague, J. Schwab B. Toader • Y. Shi • J. Schwab • C. Esteve-Yague	VG3.102
MS 30-3 Inverse Problems on Graphs and Machine Learning Chairs: E. L. K. Blåsten, M. Lassas, J. Lu S. R. Arridge	VG2.103
MS 36-2 Advances in limited-data X-ray tomography Chairs: J. S. Jørgensen, S. Siltanen C. Arndt • E. Pasca • M. Pasha • T. Uelwer	VG3.101
MS 37-2 Passive imaging in terrestrial and extra-terrestrial seismology Chairs: F. Faucher, D. Fournier J. Garnier • M. V. de Hoop • J. C. Neo • B. Müller	VG1.102
MS 46-1 Inverse problems for nonlinear equations Chairs: L. Oksanen, T. K. Tyni P. Stefanov • Y. Wang • M. Lassas • G. Uhlmann	VG1.104
MS 48 Robustness and reliability of Deep Learning for noisy medical imaging Chairs: A. Benfenati, E. Morotti D. Bianchi • P. Causin • A. Benfenati • D. Evangelista	VG2.104
MS 51-2 Analysis, numerical computation, and uncertainty quantification for stochastic PDE-based inverse problems Chairs: M. Karamehmedovic, F. Triki M. Karamehmedovic • A. Alghamdi • K. Knudsen • K. Ren	VG1.108

Program FRIDAY, 8 SEPT 2023

09:00	Plenary Talk INVERSE PROBLEMS FOR WAVE EQUATIONS Ali Feizmohammadi, University of Toronto, Canada	ZHG 011
09:50	Plenary Talk ON INVERSE PROBLEMS FOR PIEZOELECTRIC EQUATIONS Xiang Xu, Zhejiang University, China	ZHG 011
10:40	Coffee Break	ZHG Foyer
11:10	Plenary Talk RECONSTRUCTION OF SPACETIME STRUCTURES IN GENERAL RELATIVITY AND LORENTZIAN GEOMETRY Yiran Wang, Emory University, USA	ZHG 011
12:00	Lunch Break	Mensa
13:30	PARALLEL SESSION 8	
	CT 10 Contributed talks Chair: G. Plonka-Hoch E. Morina • F. Dunker • M. Pricop-Jeckstadt • R. Huber	VG3.102
	CT 11 Contributed talks Chair: H. Li S. Panathale Bheemaiah • C. Aarset • M. Boussâa	VG1.108
	CT 12 Contributed talks Chair: F. Werner P. Römer • A. Fannjiang • I. Loris • J. Dora	VG2.104
	MS 06-4 Inverse Acoustic and Electromagnetic Scattering Theory - 30 years later Chairs: F. Cakoni, H. Haddar O. Ivanyshyn Yaman • L. Bourgeois • P. Serranho • S. Meng	VG3.103
	MS 07-1 Regularization for Learning from Limited Data: From Theory to Medical Applications Chairs: M. Holzleitner, S. Pereverzyev, W. Zellinger D. H. Nguyen • M. Holzleitner • M.-C. Dinu • L. Ratti	VG1.101
	MS 08-1 Integral Operators in Potential Theory and Applications Chairs: D. Choi, M. Lim, S. Shipman W.-K. Park • D. Choi • H. Lee • M. Lim	VG2.102

Program FRIDAY, 8 SEPT 2023

MS 09 Forward and inverse domain uncertainty quantification Chairs: V. Kaarnioja, C. Schillings J. Dölz • A. Lang • J. Zech • L. Scarabosio	VG1.102
MS 10-3 Optimization in Inverse Scattering: from Acoustics to X-rays Chairs: R. I. Bož, R. Luke P. Giselsson • M. Haltmeier • T. Wolf • R. Kenis	VG1.103
MS 13-1 Stochastic iterative methods for inverse problems Chairs: L. Bungert, T. Jahn Z. Zhou • T. Jahn • Q. Jin • A. Celisse	VG0.111
MS 31-1 Inverse Problems in Elastic Media Chairs: A. Aspri, E. Sherina A. Waters • F. Faucher • E. Sherina • E. Beretta	VG3.104
MS 41-1 Geomathematics Chair: J. Ilmavirta A. K. Kykkänen • H. A. Schlüter • J. Ilmavirta • A. Varilly-Alvarado	VG3.101
MS 46-2 Inverse problems for nonlinear equations Chairs: L. Oksanen, T. K. Tyni Y.-H. Lin • T. Tyni • T. Balehowsky • M. Nursultanov	VG1.104
MS 50-1 Mathematics and Magnetic Resonance Imaging Chairs: K. Bredies, C. Clason, M. Uecker F. Knoll • A. Gossard • H. Liu • A. Kofler	VG1.105
MS 59-1 Advanced Reconstruction and Phase Retrieval in Nano X-ray Tomography Chairs: T. Salditt, A. Wald A. Katsevich • A. Oberacker • J. Leuschner • K. S. Morgan	VG2.103

15:30 Coffee Break ZHG Foyer

PARALLEL SESSION 9	
CT 13 Contributed talks Chair: M. Halla T. van Leeuwen • M. A. Boukreev • L. Buchele • J. A. Ramoz Leon	VG2.105
CT 14 Contributed talks Chair: H. Li N. M. Gottschling • O. Krivorotko • A. Abdeljawad	VG2.106
MS 07-2 Regularization for Learning from Limited Data: From Theory to Medical Applications Chairs: M. Holzeitner, S. Pereverzyev, W. Zellinger S. Pereverzyev Jr. • P. Roy • L. Frischaut • W. Zellinger	VG1.101

Program FRIDAY, 8 SEPT 2023

MS 08-2 Integral Operators in Potential Theory and Applications Chairs: D. Choi, M. Lim, S. Shipman D. Cho • S. Shipman • K. Ando • H. Liu	VG2.102
MS 10-4 Optimization in Inverse Scattering: from Acoustics to X-rays Chairs: R. I. Bož, R. Luke O. A. Soloviev • K. Bredies • C. Molinari	VG1.103
MS 13-2 Stochastic iterative methods for inverse problems Chairs: L. Bungert, T. Jahn B. Stankewitz • M. Wahl • N. Mücke • Z. Kereta	VG0.111
MS 31-2 Inverse Problems in Elastic Media Chairs: A. Aspri, E. Sherina C. I. Carstea • A. Niclas • P. E. Barbone • L. Seppecher	VG3.104
MS 41-2 Geomathematics Chair: J. Ilmavirta E. Cherkaev • Y. Zou • E. Francini	VG3.101
MS 46-3 Inverse problems for nonlinear equations Chairs: L. Oksanen, T. K. Tyni T. Liimatainen • K. Krupchyk	VG1.104
MS 50-2 Mathematics and Magnetic Resonance Imaging Chairs: K. Bredies, C. Clason, M. Uecker C. Clason • M. Haltmeier • M. Blumenthal • B. Kocurov	VG1.105
MS 59-2 Advanced Reconstruction and Phase Retrieval in Nano X-ray Tomography Chairs: T. Salditt, A. Wald J. Shi • M. Langer • R. Mokso • T. Salditt	VG2.103

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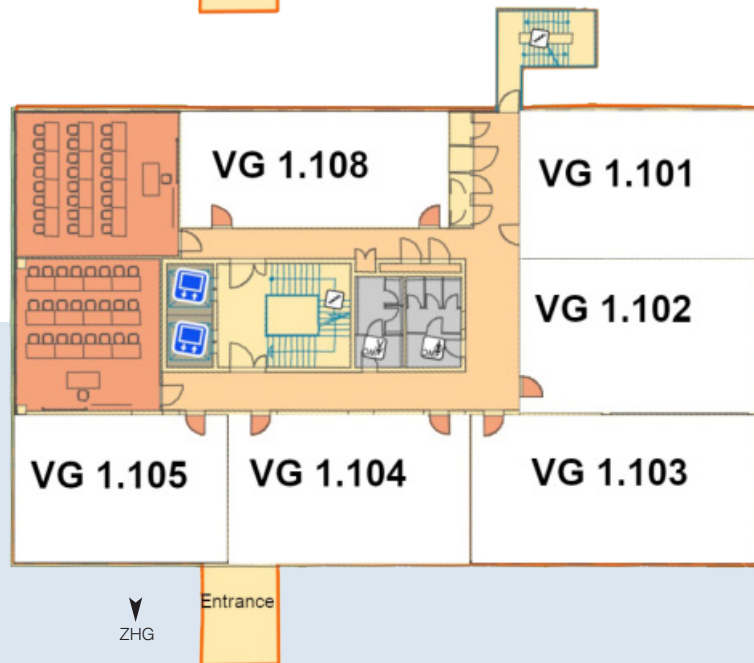
OVERVIEW OF THE ROOM PLANS

VERFÜGUNGSGEBÄUDE (VG)

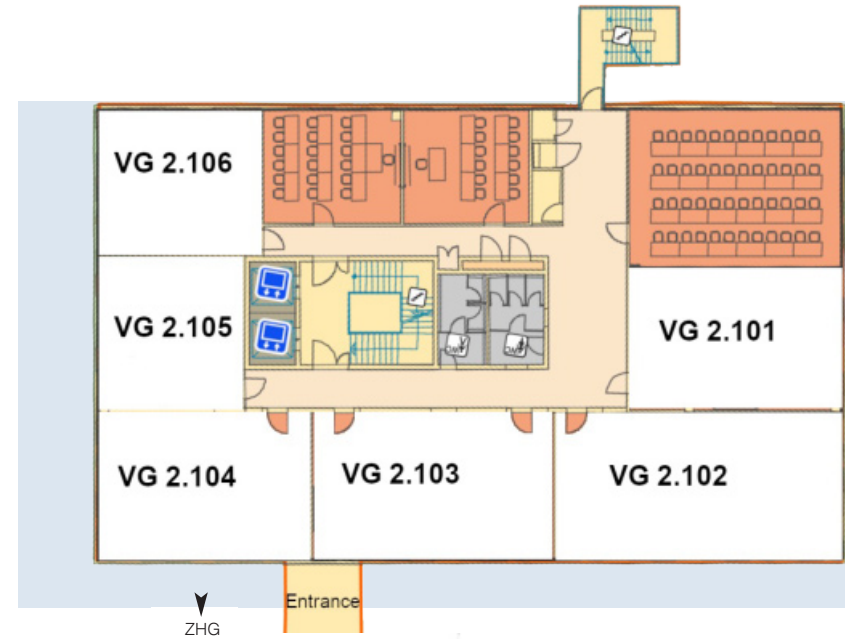
LEVEL 0



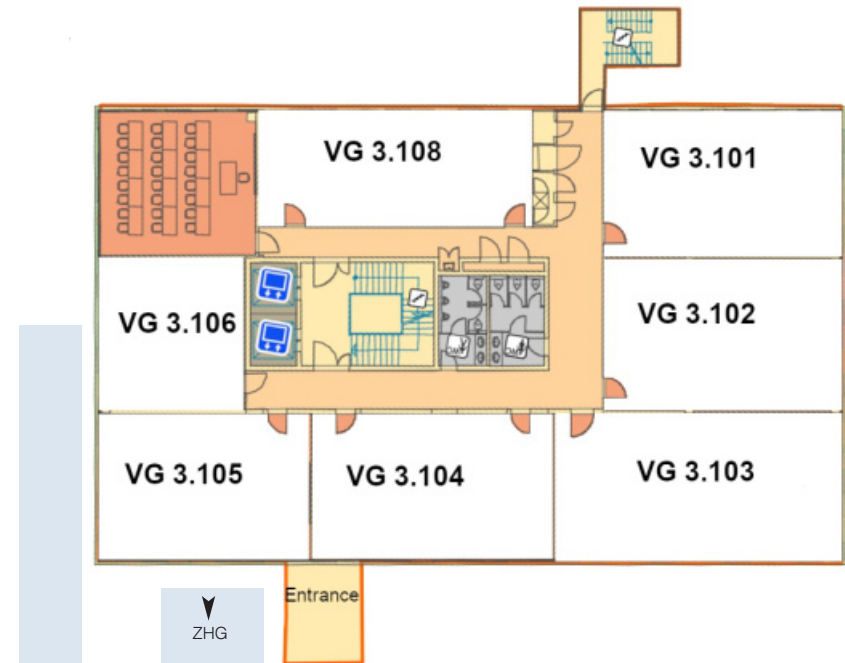
LEVEL 1



LEVEL 2



LEVEL 3



SOCIAL PROGRAM

WEDNESDAY AFTERNOON: DETAILS AND MEETING POINTS



On Wednesday afternoon, we will take a break from the scientific program. The different tours and activities start at different times and have different meeting points, so please check your conftool account to see which event you signed up for.

All locations/starting points for the activities can be found on the map on page 26.
For the following tours, **please make your own way to the meeting point:**

FORUM WISSEN
Berliner Straße 28
Near the train station

Start of the tour: **15:00**
Duration: **Approx. 60 min**

**GÖTTINGEN AND
ITS MATHEMATICIANS**
ZHG – Platz der Göttinger 7

Start of the tour: **14:30**
Duration: **Approx. 90 min**

GAUSS IN GÖTTINGEN
Tourist Info, Markt 8
Next to Gänseliesel

Start of the tour: **15:00**
Duration: **Approx. 120 min**

HISTORY OF SCIENCE
Tourist Info, Markt 8
Next to Gänseliesel

Start of the tour: **15:00**
Duration: **Approx. 120 min**

**WALK THROUGH GÖTTINGEN'S
UNDERWORLD**

Tourist Info, Markt 8 / Next to Gänseliesel

Start of the tour: **15:00**
Duration: **Approx. 120 min**

AROUND THE "GÄNSELIESEL"

Tourist Info, Markt 8
Next to Gänseliesel

Start of the tour: **15:00**
Duration: **Approx. 120 min**

HISTORICAL OBSERVATORY
Hist. Sternwarte, Geismar Landstr. 11
Inner courtyard, direction Keplerstr.

Start of the tour: **15:00**
Duration: **Approx. 45 min**

**MANUSCRIPTS AND NOTES OF
CARL FRIEDRICH GAUSS**
Hist. building SUB, Papendiek 14 / Foyer

Start of the tour: **15:00**
Duration: **Approx. 60 min**

**GÖTTINGEN COLLECTION OF MATHEMATICAL
MODELS AND INSTRUMENTS**
Mathematical Institute, Bunsenstr. 3-5

Start of the tour: **15:00**
Duration: **Approx. 60 min**

BIKE TOUR
"marcobike.", Bahnhofsplatz 3
Near the train station

Start of the tour: **15:00**
Duration: **Approx. 120 min**

Tours, including a shuttle bus

- Physical Cabinet (on north campus, 2.6 km from central campus)
- Max Planck Institute for Solar System Research (also on north campus, 2.6 km from central campus)
- Bouldering hall (about 3 km from central campus).

The bus shuttles leave from the "Blauer Turm" bus stop on Kreuzberggring, close to the ZHG with the bus company "Der Fahrdienst". Please follow the signs from ZHG foyer.

The shuttle buses for the Physical Cabinet and the Max Planck Institute will make a return trip to the ZHG.

BOULDERING

BiG-Bouldern in Göttingen, Levinstr. 13
At the corner of Stresemannstraße
Bus stop „Blauer Turm“ (Kreuzberggring)
14:15

Start : **14:45**
Duration: **open end**

The shuttle to the bouldering hall is only one way, please make your own return arrangements.

PHYSICAL CABINET
Friedrich-Hund-Platz 1

Bus stop „Blauer Turm“ (Kreuzberggring)
15:00: group 1 (A-K)
16:00: group 2 (L-Z))

Start of the tour (A-K): **15:15**
Start of the tour (L-Z): **16:15**
Approx. 60 min

**MAX PLANCK INSTITUTE
FOR SOLAR SYSTEM RESEARCH**
Justus-von-Liebig-Weg 3

Bus stop „Blauer Turm“ (Kreuzberggring)
14:00: group 1 (A-L)
15:30: group 2 (M-Z)

Start of the tour (A-L): **14:15**
Start of the tour (M-Z): **15:45**
Approx. 90 min

CONFERENCE DINNER

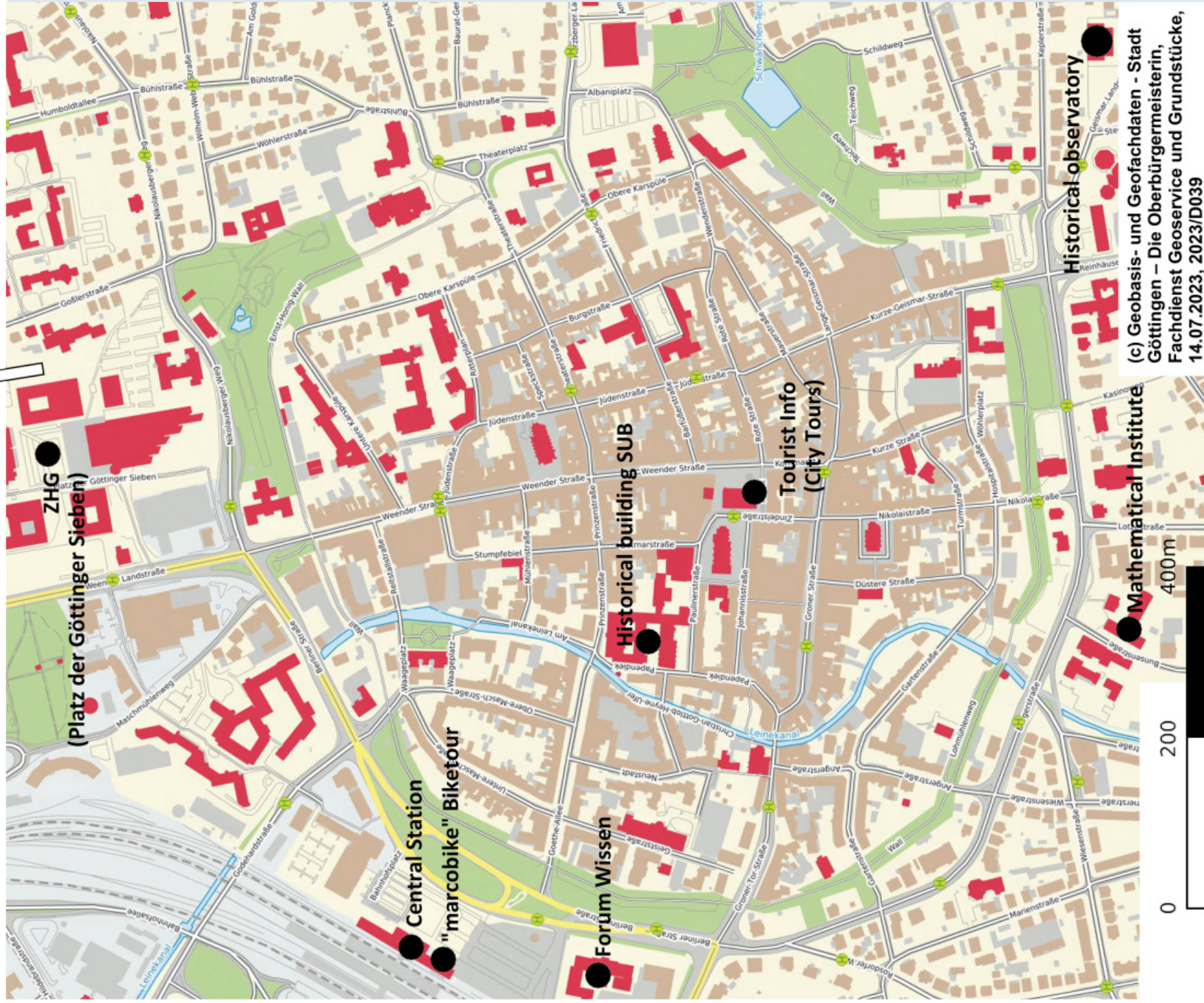
The conference dinner **on Wednesday** is not included in the conference fee. If you have booked this special event, please do not forget to bring your conference badge.

Our President Metin Tolan will give an interesting presentation on "Shaken, not Stirred! – James Bond in the Spotlight of Physics".

This event will take place in the center of Göttingen at the **Alte Mensa, Wilhelmsplatz 3, 18:00**

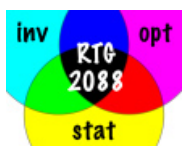


Shuttle





CRC 1456
MATHEMATICS
OF EXPERIMENT



DFG Deutsche
Forschungsgemeinschaft

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