95TH ANNUAL MEETING

POZNAN UNIVERSITY OF TECHNOLOGY

of the International Association of Applied Mathematics and Mechanics

April 7th – 11th, 2025
Poznań (Poland)

General Information & Daily Program

Bildnachweis: Jakub Pindych

GESELLSCHAFT für
ANGEWANDTE MATHEMATIK und MECHANIK e.V.
INTERNATIONAL ASSOCIATION of APPLIED MATHEMATICS and MECHANICS

jahrestagung.gamm.org

GAMM 2025 Conference Schedule

	Monday 7.4.2025	Tuesday 8.4.2025	Wednesday 9.4.2025	Thursday 10.4.2025	Friday 11.4.2025
08:30 – 09:00	*Registration* (LCC)	Contributed Sessions	Contributed Sessions	Contributed Sessions	Contributed Sessions
09:00 – 09:30					
09:30 – 10:00					
10:00 – 10:30			*Coffee Break* + Poster Session		
10:30 – 11:00		*Coffee Break*		*Coffee Break*	*Coffee Break*
11:00 – 11:30	Pre-GAMM Seminar "How to Conference" 11:00-12:30 (LCC 7)	PL 2 Karen Veroy-Grepl	R. v. Mises Lecture	PL 5 Katharina Schratz	PL 7 Marie-Therese Wolfram
11:30 – 12:00			GAMM General Assembly (Magna)		
12:00 – 12:30		PL 3 Lars Grüne		PL 6 Utz von Wagner	PL 8 Andreas Menzel
12:30 – 13:00					
13:00 – 13:30	Opening GAMM Juniors	*Lunch Break* (LCC)	[1), 2)] *Lunch Break* (LCC) + *YAMM Lunch* (A30)	*Lunch Break* (LCC)	Closing (Magna)
13:30 – 14:00					
14:00 – 14:30	Prandtl Lecture Cord-Christian Rossow	Minisymposia + DFG-PP Sessions	Ceremony: dhc of PUT to Leszek Demkowicz + PL 4	Contributed Sessions	*Lunch* (LCC)
14:30 – 15:00					
15:00 – 15:30	PL 1 Łukasz Madej				
15:30 – 16:00					
16:00 – 16:30	*Coffee Break*	*Coffee Break*	*Coffee Break*	*Coffee Break*	
16:30 – 17:00	Young Researchers' Minisymposia	Contributed Sessions	Contributed Sessions	Contributed Sessions	
17:00 – 17:30					
17:30 – 18:00					
18:00 – 18:30					
18:30 – 19:00	Welcome Reception (LCC)		Networking event for women at GAMM 2025 (A30)		The Grand Theater: The Magic Flute (Die Zauberflöte)
19:00 – 19:30					
19:30 – 20:00		Public Lecture Andrzej Dragan		Conference Dinner (Earth Hall, PCC)	
20:00 – 20:30					
20:30 – 21:00					
21:00 – 21:30					
21:30 – 22:00					

All conference activities at LCC (PUT's Campus Warta), only Conference Dinner at Earth Hall, PCC (MTP).

- Plenary, Prandtl & Public Lectures in Magna + streaming to rooms 1,2,3 (+7,8,9) at LCC

[1)] DEKOMECH (LCC, Room 13)

[2)] NIAM (LCC, Room 12)

- Lunch and coffee breaks will be provided at the conference venue (LCC)
- LCC (= A23) = Lecture and Conference Centre of PUT contains Aula Magna
- PCC = Poznań Congress Center at Poznań International Fair (MPT)

Welcome from the local organizers

Dear Participants,

we are very pleased to welcome you personally to the 95th GAMM Annual Meeting, held at the Poznań University of Technology. We look forward to exciting presentations, inspiring discussions, and meaningful interactions with our guests.

We are deeply grateful to our colleagues on the program committee and the organizers of the sections, young researcher minisymposia, minisymposia, and DFG Priority Program minisymposia for their dedication in ensuring the highest quality of the scientific program.

We would like to express our deep gratitude to the Rector of Poznań University of Technology, Prof. Teofil Jesionowski and the staff of PUT for their invaluable support. We would like to thank the Minister of Science of the Republic of Poland, the Voivode of the Wielkopolska Region, the Marshal of the Wielkopolska Region, the Mayor of the City of Poznań, and the Rector of PUT for their patronage of GAMM 2025 and their support of the conference. We also thank the Polish Academy of Sciences (Committee on Mechanics, Committee on Informatics), the Polish Society of Theoretical and Applied Mechanics, the Polish Mathematical Society for their support. We are also grateful to the Springer Publishing House, TVP3 Poznań, Radio Afera, the Konstantynowo Forest District, the Kon-Bet Plant, and Solaris Bus & Couch for their contributions.

We also express our sincere thanks to our organizing team of GAMM 2025 in Poznań, the GAMM Office in Dresden, the Foundation for the Development of Poznan University of Technology, the Poznan Congress Center, the Poznan Convention Bureau, the Poznan Supercomputing and Networking Center for their engagement and contributions, which were of key importance for the successful preparation

of the conference. Our special thanks go to all of them, to the numerous colleagues and students who have actively supported us in the preparation and in the running of the conference.

We wish you a fruitful conference and an enjoyable stay in Poznań!

Mieczysław Kuczma

Tomasz Łodygowski

Wojciech Sumelka

Welcome from the President and Secretary

Dear Participants,

the International Association of Applied Mathematics and Mechanics (GAMM) welcomes you at its 95th Annual Meeting, held in Poznań, Poland, from April 7 - April 11, 2025. We are extremely grateful to GAMM's national section in Poland and to the local organizing committee chaired by the Professors Kuczma, Łodygowski and Sumelka for the opportunity of holding our Annual Meeting in Poznań.

On behalf of the DGLR and the GAMM, we invite you to the 67th Ludwig Prandtl Memorial Lecture to be held on Monday, April 7, 2025 at 1pm.

Furthermore, we invite all GAMM members to the General Assembly of the GAMM on Wednesday, April 9, 2025 at 11:30am. Listening guests are welcome.

We hope that you will enjoy the scientific program as well as the beautiful city of Poznań.

Witamy w Poznaniu!

Karsten Urban
President

Michael Kaliske
Secretary

Conference Office and Organization

Mieczysław Kuczma (chair)	Solid Mechanics and Applied Mathematics
Magdalena Łasecka-Plura	Solid Mechanics
Tomasz Łodygowski	Solid Mechanics
Wojciech Sumelka	Solid Mechanics

Local organizing Committee

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Bartosz Ciszek
Monika Chuda-Kowalska
Katarzyna Ciesielczyk
Beata Czerkas
Michał Demby
Mateusz Fabisiak
Teresa Grabiec-Mizera
Jakub Grabski
Justyna Grzymisławska
Anna Knitter-Piątkowska
Bożena Kuczma
Magdalena Łasecka-Plura – secretary
Grzegorz Musioł
Maria Ratajczak
Paulina Rewers
Katarzyna Rzeszut – ombudsperson
Piotr Sawicki – ombudsperson
Paulina Stempin
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Jörg Schumacher, Ilmenau
Jörn Sesterhenn, Bayreuth
Benjamin Stamm, Stuttgart
Martin Stoll, Chemnitz
Wojciech Sumelka, Poznań
Karsten Urban (Chair), Ulm
Andrea Walther, Berlin
Kerstin Weinberg, Siegen

Special Events

Mon., April 7

Opening Ceremony
13:00 – 14:00, A23 (Aula Magna)
Prandtl Lecture
14:00 – 15:00, A23 (Aula Magna)
Welcome Reception
18:30 – 22:00, A23 (Aula Magna)

Tue., April 8

Public Lecture
19:30 – 20:30, A23 (Magna) live broadcast in A23 to Rooms 1, 2, 3, 7, 8, 9 next to Magna and to Room 001 in A30

Wed., April 9

Poster Sessions
10:00 – 11:00, A23 (Aula Magna)
Richard-von-Mises award lecture
11:00 – 11:30, A23
GAMM General Assembly
11:30 – 13:00, A23
DEKOMECH Assembly
13:00 – 14:00, A23 (Room 13)
NIAM Assembly
13:00 – 14:00, A23 (Room 12)
YAMM lunch Young Academics Meet Mentors
13:00 – 14:00, A30 (Room 001)
Networking event for women
18:30 – 21:00, A30 (Room 001)

Thu., April 10

Conference Dinner
19:30 – 22:00, (Earth Hall, PCC at MTP)

Fri., April 11

Closing Ceremony
13:00 – 14:00, A23 (Aula Magna)
Opera performance: The Magic Flute (Die Zauberflöte)
19:00 – 22:00, The Grand Theatre (Opera)

Plenary Lectures

Mon., April 7, 15:00 – 16:00

Łukasz Madej
AGH University of Krakow, Poland

Chaired by:
Wojciech Sumelka

Computational microstructure design: harnessing the synergy of numerical and experimental investigations

Tue., April 8, 11:00 – 12:00, 12:00 – 13:00

Karen Veroy-Grepl
Eindhoven University of Technology, Department of Mathematics and Computer Science, Netherlands

Chaired by:
Kerstin Weinberg

Physics-Based Model Order Reduction in Digital Twins: Challenges and Opportunities in the Multi-Scale Material Setting

Lars Grüne
University of Bayreuth, Mathematical Institute, Germany

Chaired by:
Tadeusz Burczyński

Optimization-Based Control for Large-Scale and Complex Systems: When and Why Does It Work?

Wed., April 9, 14:00 - 16:00 (D.H.C. and Lecture)

Leszek Demkowicz
The University of Texas at Austin,
Oden Institute, Austin, Texas, USA

Chaired by:
Teofil Jesionowski

DPG Method on a New Road to Nonlinear Problems

Thu.,April 10, 11:00 - 12:00, 12:00 - 13:00

Katharina Schratz
Sorbonne Université, Laboratoire Jacques-Louis Lions, France

Chaired by:
Jörg Schröder

Resonances as a computational tool

Utz von Wagner
Technische Universität Berlin, Germany

Chaired by:
Jerzy Warmiński

On Nonlinear Oscillations

Fri., April 11, 11:00 - 12:00, 12:00 - 13:00

Marie-Therese Wolfram
University of Warwick, Warwick Mathematics Institute,
United Kingdom

Chaired by:
Andrea Walther

Large interacting particle systems in the social and data sciences

Andreas Menzel
Lund University, Division of Solid Mechanics,
Sweden

TU Dortmund,
Mechanical Engineering, Institute of Mechanics,
Germany

Chaired by:
Błażej Skoczeń

A multiscale perspective on electrical conductivity

Ludwig Prandtl Memorial Lecture

Mon., April 7, 14:00 – 15:00

Cord-Christian Rossow

DLR, Institute of Aerodynamics and Flow technology, Germany

Laudator:
Martin Oberlack

100 years of Prandtl's Mixing Length: falling short for aerodynamic analysis?

In aerodynamic flows, viscous effects are concentrated in thin boundary layers along solid surfaces. Numerical simulation at high Reynolds numbers requires the turbulent boundary layer to be correctly described, and the modelling of turbulence is still an indispensable prerequisite. Modern turbulence modelling involves one to seven additional equations with deliberately formulated source terms. As a consequence, the resulting stiff system of flow and turbulence equations leads to severe challenges with respect to an efficient integration towards steady state.

Despite decades-long efforts, up to now no "universal" turbulence model has evolved which can be applied with reasonable reliability to various types of flows, with respect to numerical robustness and efficiency as well as to predictive quality. However, concerning zero-equation or algebraic turbulence models, since about the 1990s there is unanimous consensus that such models are not sufficiently accurate, and these models are not in use anymore. On the other hand, algebraic turbulence models are very efficient, since no

additional equations with source terms are introduced. Thus, the objective of the present contribution is to make the predictive capabilities of algebraic models comparable to modern equation-based models.

Algebraic turbulence models mainly rely on the “Mixing Length” hypothesis, which Ludwig Prandtl first proposed 100 years ago at the 1925 GAMM conference in Dresden. Based on this Mixing Length hypothesis and further modifications, algebraic turbulence models like the Cebeci-Smith and the Baldwin-Lomax model were derived, and extensively used in the aircraft industry until the 1990s. Algebraic turbulence models were numerically robust, but for more complex airfoil and wing flows with shock-boundary layer interaction and/or flows being close to separation, these turbulence models proved to be inadequate by predicting shock locations too far downstream and/or too large regions of attached flow.

In the present contribution, an algebraic turbulence model is derived with a predictive quality comparable to contemporary one- and two-equation turbulence models. Here, the classical Baldwin-Lomax model is revised with a formulation very close to the original approach of Ludwig Prandtl. Experimental evidence and a shear stress sensor function are used to enhance the prediction of flows with shocks and close to separation. Flow computations around airfoils and wings show that the resulting model provides predictive properties similar to the most advanced modern one- and two-equation turbulence models. This convincingly confirms that the now 100 years old Mixing Length hypothesis of Ludwig Prandtl is still of high relevance for today’s aerodynamic problems.

Richard von Mises Lecture

Wed., April 9, 11:00 – 11:30

The lecture will be held by the winner of the Richard von Mises Prize 2025. The awardee(s) will be announced on Wednesday, April 9, 2025.

Laudator of the Richard von Mises Lecture: Christian Cyron

Public Lecture Andrzej Dragan

Tue., April 8, 19:30 – 20:30

Andrzej Dragan

Warsaw University, Faculty of Physics, Warsaw, Poland
and
National University of Singapore, Singapore

Chaired by:
Mieczysław Kuczma

Do quantum measurements affect the past?

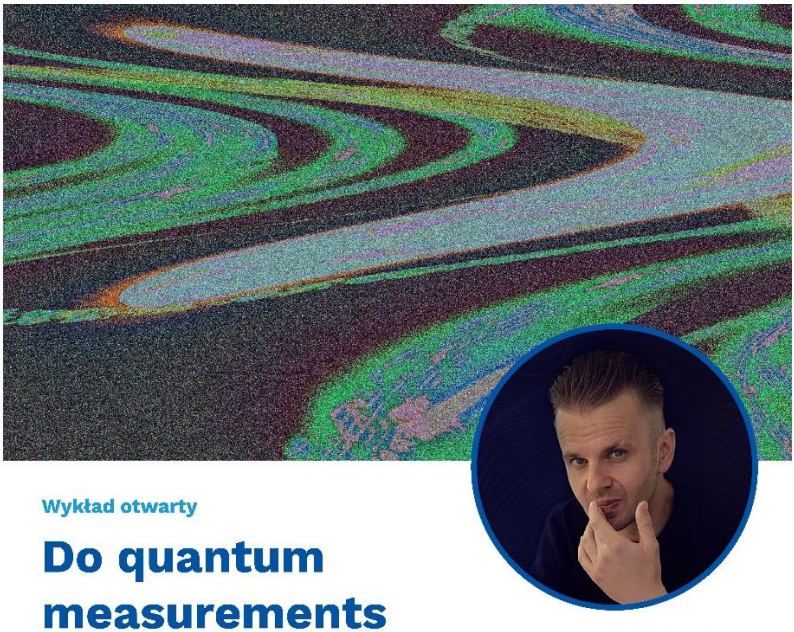
Professor Andrzej Dragan is a Polish theoretical physicist, photographer, composer, filmmaker, and science popularizer. He earned his Ph.D. with distinction from the University of Warsaw in 2006 and is now a professor there, as well as a visiting professor at the National University of Singapore. Specializing in relativistic quantum information—having habilitated in 2014 and obtained his professorship in 2023—he has also worked at Imperial College London and the University of Nottingham, focusing on quantum optics, quantum information theory, and quantum field theory in curved spacetimes.

Dragan has authored 50 scientific papers and books, earning awards from the Polish Physical Society and the Foundation for Polish Science, and has twice been a Oxford scholar. He actively promotes science through TEDx talks and interviews.

As an artist, he developed a unique portrait style known as the Dragan effect. His photographs have been exhibited internationally and featured on magazine covers, and he has also produced music, films, commercials, and music videos.

In this public lecture he will explore the question "Do quantum measurements affect the past?". His short answer is "Probably not...".

We would be grateful if you could use the QR code below or on the GAMM 2025 website to confirm your attendance.



Poster Session

Wed., April 9, 10:00 – 11:00

Organizer: **Andreas Warkentin**

During this poster session, GAMM Juniors share highlights of their ongoing research during the coffee breaks between sessions. These emerging scholars in applied mathematics and mechanics engage in a variety of activities including organizing summer schools and interdisciplinary workshops to promote the interests of young academics both within GAMM and in the broader scientific community.

Technical Sessions

The Technical Sessions feature two dynamic blocks where esteemed experts present innovative solutions and current research challenges:

Wed., April 9, 8:30 – 10:30

TS1: Tutorial on Quantum Computing in Applied Mathematics and Mechanics – Participants explore the fundamentals and applications of quantum computing in applied mathematics and mechanics through an interactive tutorial that delves into revolutionary concepts and simulation tools.

Thursday, April 10, 14:00 – 16:00

TS2: Innovative Technical Solutions and Challenges in Building Engineering and Transport – Experts discuss modern technical solutions and challenges in building engineering and transport, showcasing practical implementations and innovations shaping the future of the construction and transport sectors.

Both sessions provide an excellent opportunity for knowledge exchange, networking, and engaging discussions on the latest trends in advanced technology and engineering.

YAMM Lunch

Young Academics Meet Mentors provides a forum for early career researchers to engage with seasoned mentors. The discussion will unfold in a relaxed "World Café" atmosphere, with food and drinks provided. Pre-registration is required. The YAMM Lunch will take place in Room 001 of A30 on Wednesday, 9th April at 13:00.

Prof. Dr.-Ing. Michael Beitelschmidt
TU Dresden
Institute of Solid Mechanics

- Dynamics and Vibration
- Robotics and Aerial Manipulation
- Digital Twins

Prof. Dr. Michael Hinze
University of Koblenz
Mathematical Institute

- MSO of Complex Systems
- Shape and Topology Optimization
- Complexity Reduction

Prof. Dr.-Ing. Sandra Klinge
TU Berlin
Institute of Mechanics

- Multiscale Material Modeling
- Soft Materials
- Machine Learning

Jun.-Prof. Dr. Roland Maier
Karlsruhe Institute of Technology
Department of Mathematics

- Discretizations of (Time-Dependent) PDEs
- Numerical Analysis
- Multiscale Methods

Prof. Dr. Katharina Schratz
Sorbonne University
Laboratoire Jacques-Louis Lions

- Numerics for Nonlinear PDEs
- Structure Preserving Algorithms
- Rough Data

Prof. Dr.-Ing. Jörg Schröder
University of Duisburg-Essen
Institute of Mechanics

- Direct Two-scale Homogenization of Coupled Problems – FE2
- Constitutive Modeling of Anisotropic Material Behavior
- Advanced Finite-Element-Methods

Prof. Dr. Martin Stoll
TU Chemnitz
Faculty of Mathematics

- Numerical Linear Algebra
- (Scientific) Machine Learning
- Complex Networks

Prof. Dr. Christina Völlmecke
TU Berlin
Institute of Mechanics

- Structural Mechanics, esp. Geometrically Nonlinear Analysis
- 3D Printing and Testing
- Sustainability, Gender Equality, Science Communication

Prof. Dr. Andrea Walther
HU Berlin
Department of Mathematics

- Nonsmooth Optimization
- Scientific Computing
- Algorithmic Differentiation

Prof. Dr.-Ing. Kerstin Weinberg
University of Siegen
Department of Mechanical Engineering

- Nonlinear Structural and Continuum Mechanics
- Phase-field Fracture and Peridynamic Simulations
- Hopkinson Bar Experiments

Young Researcher`s Minisymposia

1	**New Perspectives on Classical Iterative Solvers in Numerical Linear Algebra**	
	Organizers:	**Eda Oktay** (Max Planck Institute, Magdeburg, Germany) **Kathryn Lund** (STFC Rutherford Appleton Laboratory, Didcot, United Kingdom)
2	**Neural network-based constitutive modeling of elastic and inelastic materials**	
	Organizers:	**Dominik Klein** (TU Darmstadt, Germany) **Karl Kalina** (Dresden UT, Germany)
3	**Discretization of (port-)Hamiltonian systems**	
	Organizers:	**Dorothea Hinsen** (TU Berlin, Germany) **Philipp Lothar Kinon** (KIT, Germany)
4	**Multi-scale phenomena in magnetic and elastic materials**	
	Organizers:	**Annika Bach** (Eindhoven UT, Netherlands) **Leonard Kreutz** (TU Munich, Germany)

5	**Mathematical analysis for systems of interacting particles**	
	Organizers:	**Iulia Cristian** (U Bonn, Germany) **Florian Oschmann** (CAS, Czech Republic)

6	**Phase-Field Modeling of Multi-Physics Problems**	
	Organizers:	**Martha Kalina** (Dresden UT, Germany) **Vincent von Oertzen** (TU Bergakademie Freiberg, Germany)

Minisymposia

1	**Hybrid algorithms by combining machine learning with multilevel and domain decomposition methods**	
	Organizers:	**Alena Kopanicakova** (Brown U, USA) **Janine Weber** (U Cologne, Germany)

2	**Experimental Solid Mechanics**	
	Organizers:	**Stefan Hartmann** (Clausthal UT, Germany) **Zbigniew Kowalewski** (PAS, Poland)

3	**Topological Data Analysis**	
	Organizers:	**Paweł Dłotko** (PAS, Poland) **Bartosz Naskręcki** (Adam Mickiewicz U, Poland)

4	**Data Driven Dynamics**	
	Organizers:	**Ulrich Römer** (TU Bergakademie Freiberg, Germany) **Alexander Henkes** (ETH Zürich, Switzerland)

DFG Priority Programmes

1	**SPP 2353: Daring More Intelligence – Design Assistants in Mechanics and Dynamics**	
	Organizer:	**Peter Eberhard** (U Stuttgart, Germany)
2	**SPP 2298: Theoretical Foundations of Deep Learning**	
	Organizers:	**Gitta Kutyniok** (LMU München, Germany) **Christopher Bülte** (LMU München, Germany)
3	**SPP 2256: Variational Methods for Predicting Complex Phenomena in Engineering Structures and Materials**	
	Organizers:	**Klaus Hackl** (RU Bochum, Germany) **Dorothee Knees** (U Kassel, Germany)
4	**SPP 2311: Robust coupling of continuum-biomechanical in silico models to establish active biological system models for later use in clinical applications – Co-design of modeling, numerics and usability**	
	Organizer:	**Tim Ricken** (U Stuttgart, Germany)
5	**SPP 2410: Hyperbolic Balance Laws in Fluid Mechanics: Complexity, Scales, Randomness**	
	Organizer:	**Christian Rohde** (U Stuttgart, Germany)

Sections

S01	Multi-body dynamics and robotics	
	Organizers:	**Henrik Ebel** (LUT University, Finland) **Paweł Malczyk** (Warsaw UT, Poland)

S02	Biomechanics	
	Organizers:	**Tim Ricken** (U Stuttgart, Germany) **Seyed Morteza Seyedpour** (U Stuttgart, Germany)

S03	Damage and fracture mechanics	
	Organizers:	**Fadi Aldakheel** (LUH, Germany) **Markus Kästner** (Dresden UT, Germany) **Artur Ganczarski** (Cracow UT, Poland)

S04	Structural mechanics	
	Organizers:	**Josef Kiendl** (UniBw Munich, Germany) **Wolfgang Dornisch** (U Kaiserslautern-Landau, Germany) **Roger Sauer** (Gdansk UT, Poland)

S05	Nonlinear oscillations	
	Organizers:	**Ulrich Römer** (TU Bergakademie Freiberg, Germany) **Roman Starosta** (Poznan UT, Poland)

S06.1	Material modelling with metals	
	Organizers:	**Björn Kiefer** (TU Bergakademie Freiberg, Germany) **Stanisław Stupkiewicz** (PAS, Poland)

S06.2	Material modelling with non-metals	
	Organizers:	**Daniel Juhre** (OVGU, Germany) **Vu Ngoc Khiêm** (RWTH Aachen, Germany)

S07	Coupled problems	
	Organizers:	**Bernd Markert** (RWTH Aachen, Germany) **Yousef Heider** (LUH, Germany)

S08	Multiscales and homogenization	
	Organizers:	**Stephan Wulfinghoff** (Kiel U, Germany) **Mohsen Rezaee Hajidehi** (PAS, Poland)

S09	Laminar flows and transition	
	Organizers:	**Marek Behr** (RWTH Aachen, Germany) **Ryszard Białecki** (Silesian UT, Poland) **Krzysztof Jóźwik** (Łódź UT, Poland)

S10	Turbulence and reactive flows	
	Organizers:	**Ewa Tuliszka-Sznitko** (Poznan UT, Poland) **Marta Wacławczyk** (U Warsaw, Poland)

S11	Interfacial flows	
	Organizers:	**Jacek Pozorski** (PAS, Poland) **Dirk Lucas** (HZDR, Germany)

S12	Waves and acoustics	
	Organizers:	**Michael Beitelschmidt** (Dresden UT, Germany) **Michał Guminiak** (Poznan UT, Poland) **Anna Sygulska** (Poznan UT, Poland)

S13	Flow control	
	Organizers:	**Witold Elsner** (Czestochowa UT, Poland) **Paweł Flaszyński** (PAS, Poland) **Philipp Schlatter** (FAU, Germany)

S14	Applied analysis	
	Organizers:	**Katharina Hopf** (WIAS, Germany) **Sebastian Hensel** (U Bonn, Germany) **Tomasz Dębiec** (U Warsaw, Poland)

S15	Uncertainty quantification	
	Organizers:	**Roland Pulch** (U Greifswald, Germany) **Ulrich Römer** (TU Braunschweig, Germany) **Magdalena Łasecka-Plura** (Poznan UT, Poland)

S16	Optimization	
	Organizers:	**Tomasz Lewiński** (Warsaw UT, Poland) **Michael Stingl** (FAU EAM, Germany)

S17	Applied and numerical linear algebra	
	Organizers:	**Agnieszka Międlar** (Virginia Tech, USA) **Michał Wojtylak** (Jagiellonian U, Kraków, Poland) **Michal Outrata,** Charles University, Prague

S18	Numerical methods for differential equations	
	Organizers:	**Robert Altmann** (OVGU, Germany) **Roland Maier** (KIT, Germany) **Piotr Krzyżanowski** (Warsaw U, Poland)

S19	Optimization of differential equations	
	Organizers:	**Daniel Walter** (HU Berlin, Germany) **Philipp A. Guth** (RICAM, Austria)

S20	Dynamics and control	
	Organizers:	**Lukas Lanza** (Ilmenau UT, Germany) **Sofya Maslovskaya** (U Paderborn, Germany)

S21	Mathematical signal and image processing	
	Organizers:	**Stefania Petra** (U Augsburg, Germany)

		Oleh Melnyk (Ludwig-Maximilians-Universität München)
S22	**Scientific computing**	
	Organizers:	**Silke Glas** (U Twente, Netherlands) **Benjamin Unger** (U Stuttgart, Germany) **Melina Merkel** (TU Darmstadt, Germany)
S23	**More design assistents**	
	Organizer:	**Peter Eberhard** (U Stuttgart, Germany)
S24	**History of applied mathematics and mechanics**	
	Organizers:	**Holm Altenbach** (OVGU, Germany) **Janusz Badur** (PAS, Poland)
S25	**Machine Learning and Data Science in Applied Mathematics and Mechanics**	
	Organizers:	**Benjamin Klusemann** (Leuphana U, Germany) **Martin Stoll** (Chemnitz UT, Germany)
S26	**Modelling, analysis and simulation of molecular systems**	
	Organizers:	**Caroline Lasser** (TU Munich, Germany)

		Karolina Kropielnicka (PAS, Poland)
S27	**Modern Teaching and Didactics in Mathematics and Mechanics**	
	Organizers:	**Thorsten Bartel** (TU Dortmund, Germany) **Jaan-Willem Simon** (U Wuppertal, Germany)

Conference Desk | Check in

The conference desk is situated at A23 and will operate during the following hours. Please note that check-in and registration are available exclusively within these operating times.

Date	Opening hours
Monday, April 7	08:00–18:30 – LCC (A23)
Tuesday, April 8	08:00–18:30 – LCC (A23)
Wednesday, April 9	08:00–18:30 – LCC (A23)
Thursday, April 10	08:00–18:30 – LCC (A23)
Friday, April 11	08:00–14:30 – LCC (A23)

WiFi Access

WiFi access is available across the entire Campus Warta of Poznan UT through Eduroam, and via the PUT-events-WiFi.

Guest Network Login – PUT-events-WiFi

1. Connect to the Wi-Fi network PUT-events-WiFi using the password: politechnika.

2. Open web browser and navigate to URL http://www.put.poznan.pl . After login page shows up, enter the following login details:
   Username: GAMM25
   Password: 7rePA6de8fa

3. Once logged in, your internet access should be active. If not please reconnect to PUT-events-WiFi network.

GAMM 2025 delegates can also use stationary computers and wired internet access in Room 43 on the ground floor of the LCC (A23).

Information for Presenters

• Verify the schedule and location for your presentation using the daily program.

• Every lecture room is supported by technical staff and includes a computer along with a projector. Prepare your slides in a 16:9 format; however, a 4:3 format is also acceptable.

• Upload your presentation to the room's computer no later than the break immediately preceding your session.

• Please arrive at least 10 minutes before your session starts and notify the session chair of your presence.

• Presentation times are set at 20 minutes (including discussion) for regular sessions (Contributed Sessions, MS, YRM, DFG-PP) and 40 minutes (including discussion) for Topical Speakers in Contributed Sessions.

Information for Chairs

You are kindly asked to switch between presentations by simply announcing the name of the next presenter and the title of the presentation. Due to the tight schedule, there will not be sufficient time for introducing individual lecturers in a more detailed manner. Please do your best to strictly limit the duration of each presentation and discussion to the allotted time.

If a lecturer is missing, please stick to the original program, i.e., extend the discussion time of the preceding presentation or allow a break for the duration of the missing lecture(s). This enables participants to move in between sessions and to listen to chosen individual lectures according to the announced sequence.

Conference App

The **Conference4me** smartphone app is your ultimate tool for planning your GAMM 2025 experience. With the app, you can explore the entire program and quickly build your personalized agenda right from your phone or tablet. Simply search for GAMM2025 and click the download button on the right. The app is available for Android, iOS, and Windows Phone.

Scan for downloading

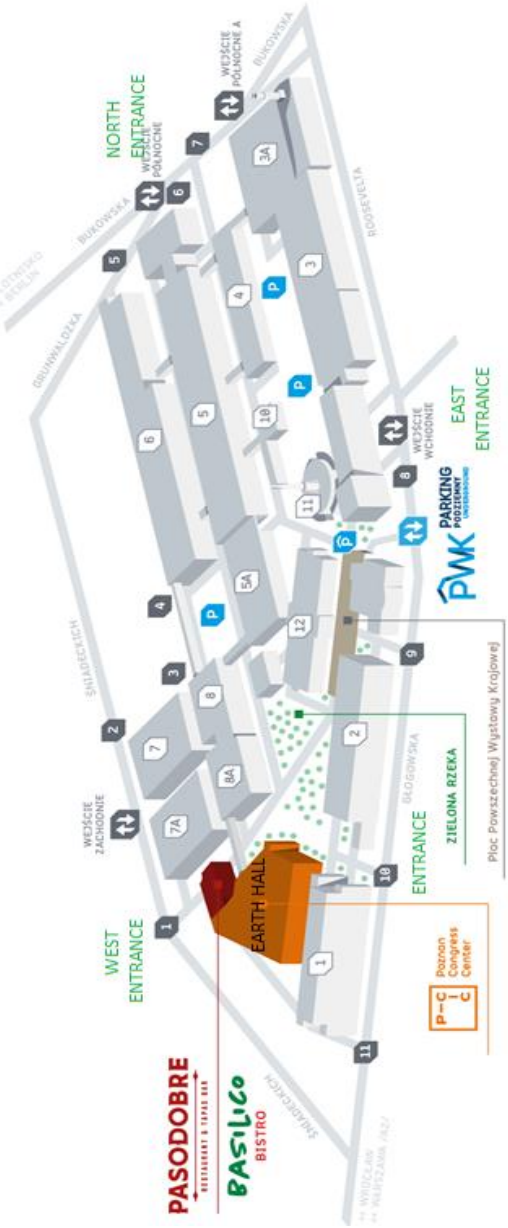
Conference dinner

Thu., April 10, 19:30 – 23:00

The conference dinner will take place in the extraordinary Earth Hall, located in the Poznań Congress Centre (PCC) on the premises of the Poznań International Fair (MTP) in the heart of Poznań, next to the Poznań Główny railway station. The venue is easily accessible by public transportation, with a quick and convenient connection from the Poznań University of Technology campus. Participants will enjoy not only the modern and elegant setting but also the opportunity to continue networking in a comfortable and welcoming atmosphere.

Comprehensive catering services will be provided by PCC's in-house GARDENcity Restaurants and Catering.

The conference dinner will be in the Earth Hall (PCC, MTP), Głogowska Str.10, Poznań.



Public transportation in Poznań

Poznań offers a well-developed public transportation network, including trams and buses, providing convenient connections to all parts of the city. Poznań University of Technology (Politechnika Poznańska) is easily accessible via several tram and bus lines:

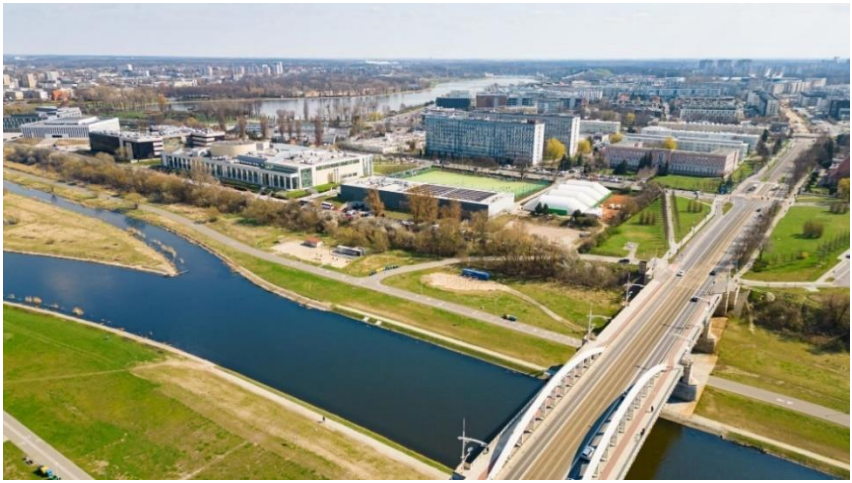
- Main tram stops near the university:
  Baraniaka: Tram lines 5, 6, 7, and 17
  Kórnicka: Tram lines 5, 6, 7, 10, 12, 13, and 18
  Politechnika: Tram lines 5, 13, and 17
- Travel times:
  Poznań Główny (Main Station): ~15 minutes by tram
  Old Market Square (Stary Rynek): ~10 minutes by tram
  Poznań Congress Center (PCC, MTP): ~15 minutes by tram

Public transport operates from early morning until late evening, with night buses ensuring 24-hour connectivity.

Free Public Transport for GAMM 2025 Participants:

All registered participants of GAMM 2025 will receive a free public transport pass (coded in their badge), valid for the duration of the conference. The conference badge entitles you to unlimited travel on all trams and buses in the city of Poznań.

Conference Venue



Poznań, with its over 1000-year history, is one of Poland's oldest cities. As the birthplace of the Polish state, Poznań combines rich historical heritage with a forward-thinking approach, making it a vibrant hub of business, education, culture, and research.

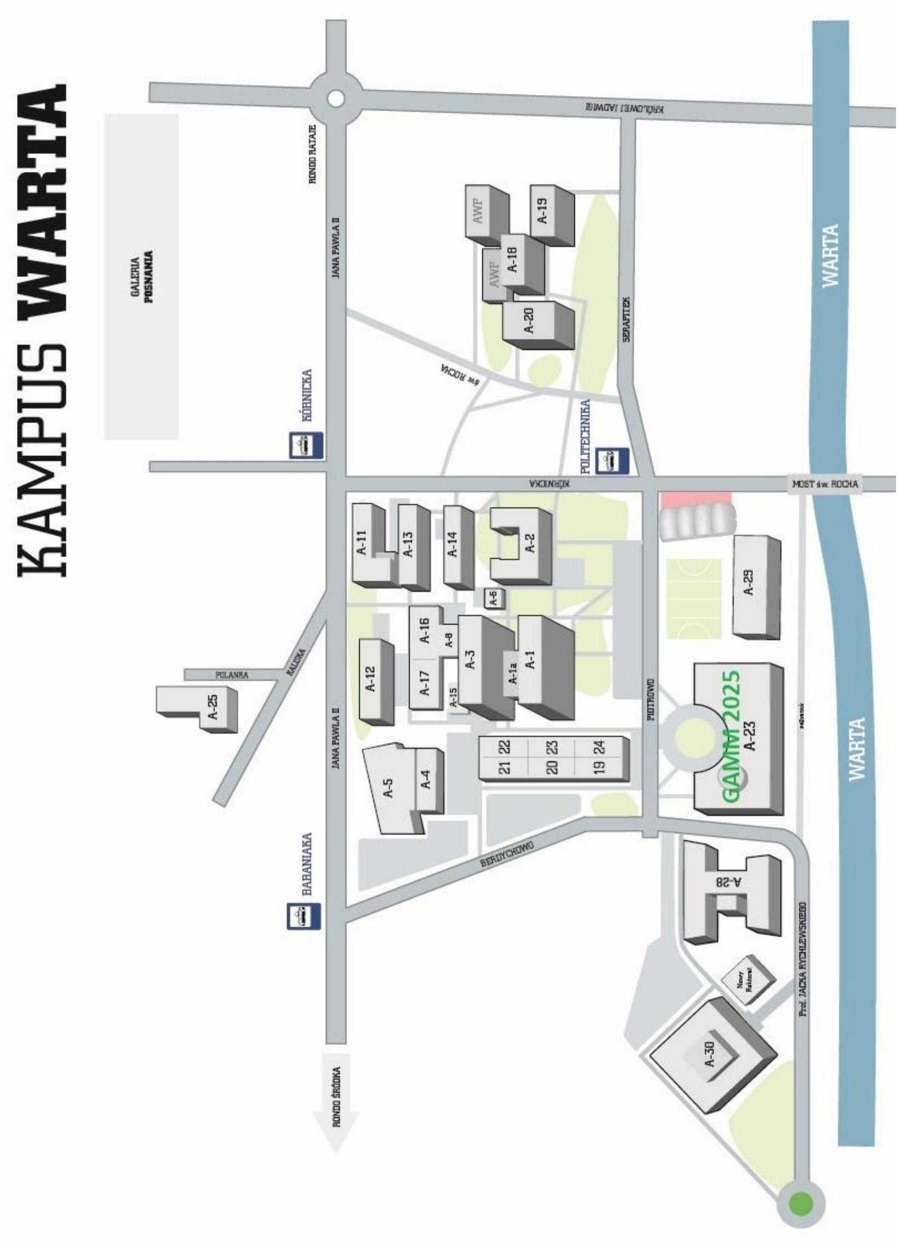
Poznań is established as a major economic and academic centre, hosting numerous international fairs, conferences, and congresses. The city is home to around 540,000 residents and more than 120,000 students, including many international scholars, contributing to its diverse and vibrant atmosphere.

The Poznań University of Technology (PUT) is a leading academic institution in Poland, renowned for its high-quality education, cutting-edge research, and strong connections with industry. The university campus (called Campus Warta) is located on the banks of the Warta River in the heart of the city. It offers modern facilities and a welcoming environment for learning and working.

Poznań's unique blend of tradition and modernity is reflected in its charming Old Market Square, historic landmarks, green parks, and dynamic cultural scene. With excellent public transport, numerous cultural and recreational opportunities, and a warm, welcoming spirit, Poznań offers conference participants an inspiring setting to exchange knowledge and build connections.

A23 = LCC (Lecture and Conference Centre)

In Building A23, nearly all conference events will be held: Opening, Registration, Prandtl Memorial Lecture, Plenary Lecture, Public Lecture, Contributed Sessions, Lunches, Welcome Reception, and Coffee Breaks. Only the YAMM Lunch and Women's Networking Event will take place in Room 001, Building A30.


KAMPUS WARTA
GALERIA POSNANIA
RONDO RATAJE
JANA PAWŁA II
KRÓLOWEJ JADWIGI
KÓRNICKA
św. ROCHA
SERAFITEK
POLITECHNIKA
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POLANKA
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A-25
21 22
20 23
19 24
A-5
A-4
PIOTROWO
A-29
GAMM 2025
A-23
BERDYCHOWO
BARANIAKA
A-28
Prof. JACKA RYCHLEWSKIEGO
A-30
RONDO ŚRÓDKA

Floor plans of the lecture rooms in A23 (LCC)

The notation used for lecture rooms in the detailed schedule below is shown in the floor plan of the lecture rooms on the next two pages. It should be noted that the number of rooms in the left, library section (Biblioteka) of A23 is preceded by a zero and a dot (0.) on the ground floor and by a one and a dot (1.) on the first floor.

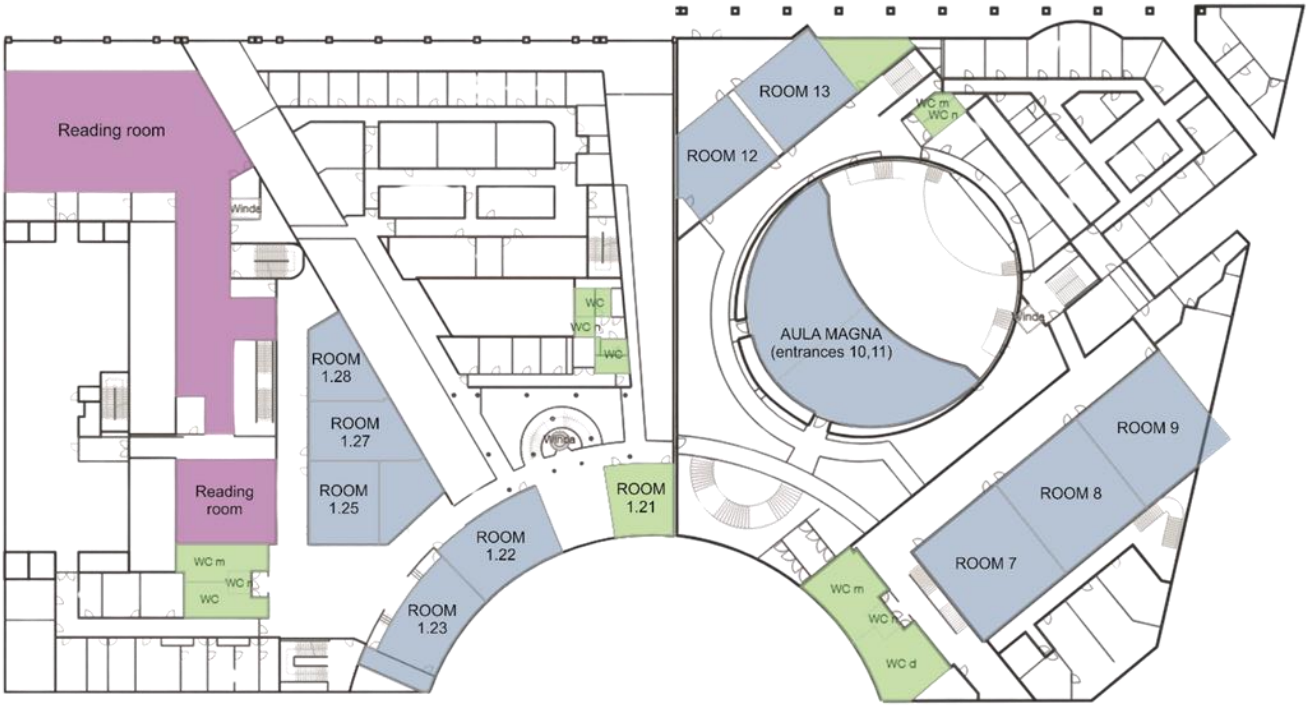
Lecture room 22 on the **ground floor** in the library section of A23.

Lecture room 22 on the **first floor** in the library section of A23.

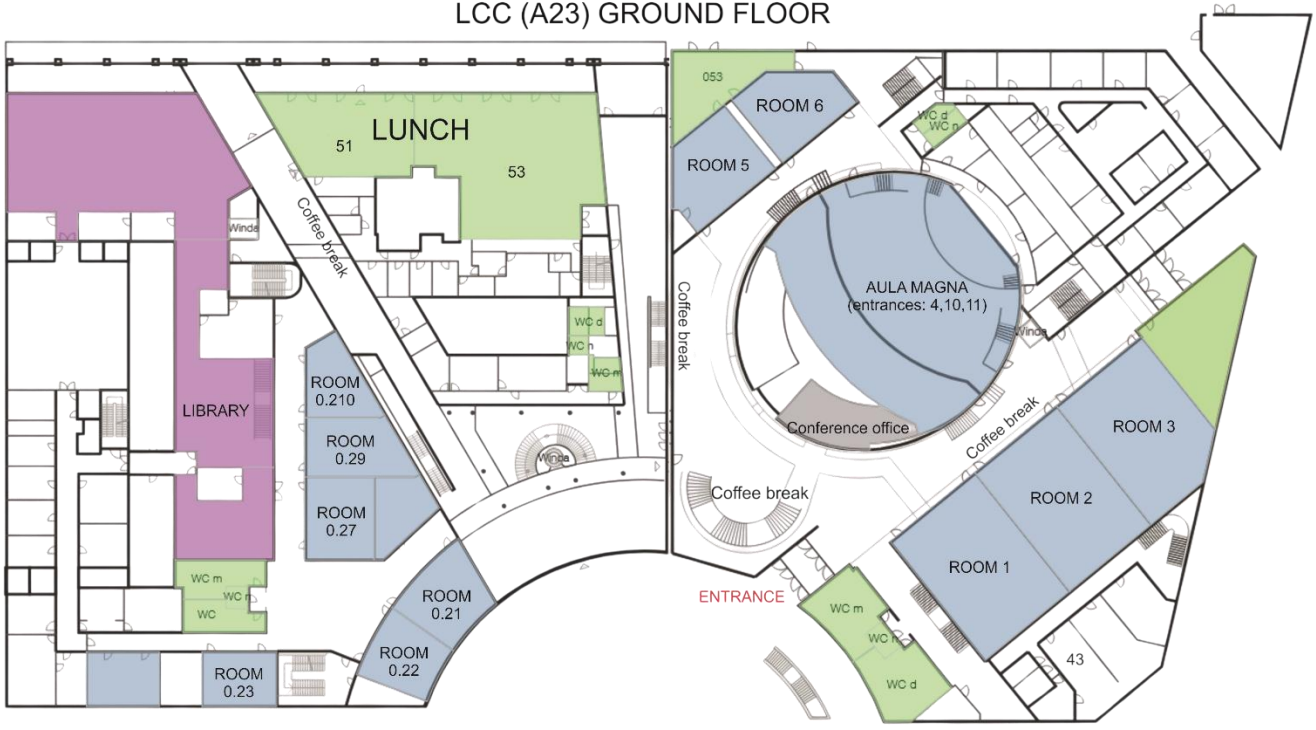
Lunch

Lunch will be served at the conference venue in Rooms 51 and 53 in A23 for a pre-purchased voucher.

LCC (A23) FIRST FLOOR



LCC (A23) GROUND FLOOR



Social Programme

Conference participants can take advantage of free tours around Poznań on Thursday, April 10, and paid tours around Poznań and the surrounding area on Saturday, April 12. At a special stand at the conference venue, you can sign up and/or confirm, if previously registered, your participation in the proposed trip(s).

A performance at the Grand Theatre of Moniuszko in Poznañ has been prepared for the participants of the GAMM 2025 conference. The performance, entitled The Magic Flute, will take place on Friday 11 April at 19:00 - 22:00. The Grand Theatre of Moniuszko (Opera) is located at Fredry 9 Street, 61-701 Poznań.

Sustainability

Sustainability is not a fad, it is here to stay because it is a real necessity and our responsibility to future generations and our planet.

In the organisation of the conference, we have made great efforts to follow as closely as possible the recommendations and requirements of sustainable development, taking into account the three key dimensions of sustainability: (1) environmental sustainability, (2) social sustainability and (3) economic sustainability.

In order to reduce the environmental impact of the conference materials, the "Book of Abstracts" is not printed but is available as a pdf-file (e-paper). The booklet "General Information and Daily Programme" is available as a pdf-file and in the electronic system Conference4me and was printed only on request of the participants, reducing the number of printed copies by 65%.

As a small compensation for the environmental impact of the 95th Annual Meeting of GAMM, 95 trees will be planted: 25 trees on the premises of Poznan University of Technology and 70 trees (oak) will be planted by the Forest District in Konstantynowo (Wielkopolska Region). These 7 out of 25 trees will be planted here on the Warta Campus on Tuesday 8 April at 13:00.

Inclusivity, diversity and fair treatment of all conference participants and their needs are at the heart of all stages of our preparation and implementation of the conference.

We have done our best to reduce the cost of the conference while maintaining a suitable environment for fruitful scientific discussions and inspiring, memorable encounters between people, young and old. GAMM 2025 participants will be offered a freshly prepared hot lunch at the conference venue. Catering during coffee breaks and the Welcome Reception will focus on local and regional products. Free public transport will be provided for GAMM 2025 participants.

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Detailed Schedule

Monday, April 7

Monday, April 7, 14:00 - 18:30

	14:00
Prandtl Lecture Magna	**100 years of Prandtl's Mixing Length: falling short for aerodynamic analysis?** *Rossow, Cord-Christian*

	15:00
PL 1 Magna	**Computational microstructure design: harnessing the synergy of numerical and experimental investigations** *Madej, Łukasz*

	16:30	16:50	17:10	17:30	17:50	18:10
YRMS1 A23/1	**Mixed precision preconditioning strategies for GMRES** *Vieublé, Bastien*	**Mixed Precision Iterative Refinement for Linear Inverse Problems** *Onisk, Lucas*	**Inner product free Krylov methods for large-scale inverse problems** *Sabaté Landman, Malena*	**A stable one-synchronization variant of reorthogonalized BCGS and its application in s-step GMRES** *Ma, Yuxin*		
YRMS2 A23/2	**Constitutive Kolmogorov–Arnold Networks (CKANs): Combining Accuracy and Interpretability in Data-Driven Material Modeling** *Abdolazizi, Kian*	**Physics-augmented neural networks meet data-driven identificaton – A dual-stage constitutive modeling framework** *Linden, Lennart*	**Material Model Discovery from Physics-Enforced Neural Networks** *Meyer, Knut Andreas*	**Application of Plasticity Theory in Automated Model Discovery** *Boes, Birte*	**Physics-augmented neural networks for efficient multiscale beam simulations** *Schommartz, Jasper o.*	**Effective material modeling of complex viscoelastic shell structures with artificial neural networks** *Geiger, Jeremy*

Monday, April 7, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
YRMS3 A23/3	**Structure-preserving splitting methods for closed port-Hamiltonian systems** *Mönch, Marius*	**Discrete gradient methods for semi-explicit port-Hamiltonian DAEs** *Morandin, Riccardo*	**Structure-preserving finite element method for port-Hamiltonian systems with implicit or differential constitutive relations** *Bendimerad-Hohl, Antoine*	**Structure-preserving discretization of geometrically exact beams in the framework of Lie group variational integrators** *Herrmann, Maximilian*	**Determination of ISS gain functions leveraging finite-dimensional approximations with applications to dissipative systems** *Hillebrecht, Birgit*	**Learning of Hamiltonians, variational principles, and symmetries from data** *Offen, Christian*
YRMS4 A23/7	**Local boundary conditions in nonlocal hyperelasticity via heterogeneous horizons** *Schönberger, Hidde*	**Three dimensional gradient plasticity, a Gamma-Convergence approach** *Fortuna, Martino*	**Variational methods applied to discrete models in brittle damage** *Bonhomme, Elise*	**On Scaling Properties For A Class Of Two-Well Problems For Higher Order Homogeneous Linear Differential Operators** *Tissot, Camillo*	**Pattern Formation in Biomembranes: from Interpolation Inequalities to a Scaling Law result** *Pešić, Anastasija*	**Energy barriers for boundary nucleation in solid solid phase transitions** *Zemas, Konstantinos*
YRMS5 A23/8	**Derivation of the Vlasov-Stokes equation** *Höfer, Richard*	**Homogenization of the compressible Navier–Stokes equations in critically perforated domains** *Lemming, Friederike*	**Non-existence of mean-field models for particle orientations in suspensions** *Schubert, Richard*	**Understanding the Phase Transition in the 2D Becker-Döring Model** *Scholten, Jens*	**Sharp interface dynamics in viscous two-phase flows: stability and long-time behavior** *Salguero, Elena*	

YRMS6 A23/9	**Towards a multi-phasefield model to analyze residual stresses** *Hellebrand, Sonja*	**A Phase-Field Framework for the Modeling of Rate-(In)Dependent Hysteretic Behavior of Phase-Transforming Solids** *El khatib, Omar*	**Phase-field modeling of deformation twinning and its interaction with plastic slip in magnesium during nano-indentation** *Rezaee-Hajidehi, Mohsen*	**A Geometrical Approach to Modeling Wetting on Structured Surfaces** *Kunz, Jana*	**On the energy decomposition in variational phase-field models for brittle fracture under multi-axial stress states** *Vicentini, Francesco*	**Neural networks meet fracture phase-field: Hybrid modelling of crack propagation** *Dammaß, Franz*

Tuesday, April 8

Tuesday, April 8, 8:00 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S03.01 A23/0.27	**Sideways Cracks in Elastomers: Experimental Insights & Phase-Field Modelling** *Moreno-Mateos, Miguel Angel*	**Uncertainties in phase-field fracture simulations of simple experiments** *Zhang, Silu*	**A geometrically exact phase field approximation of cohesive fracture** *Lammen, Henning*	**A phase-field fracture model of nearly incompressible hyperelastic material based on a mixed formulation** *Zhang, Le*	**Phase-field modeling for failure behavior of polymer fiber-reinforced high-performance concrete using the Schapery viscoelastic model** *Margalho de Barros, Marcos Andre*	**An extended phase-field method for the efficient simulation of fracture processes** *Löhnert, Stefan*
S04.01 A23/1	**Sliding contact of two flexible rods: the role of configurational forces** *Vetyukov, Yury*		**A Finite Swelling Beam Model with Axial and Radial Diffusion** *Alzate cobo, Juan c.*	**Twisted Wire Strands under Coupled Bending and Torsion** *Hawwash, Muhannad*	**Finite element modal analysis of moving bandsaw blades using incremental rod theory with consideration of the pre-stress distribution in the cross section** *Scheidl, Jakob*	**The effect of boundary rotations and kinematic imperfections on clamped column buckling** *Hedvard, Michelle*
S06.1.01 A23/1.27	**A novel algorithm for crystal plasticity based on an augmented Lagrangian formulation** *Niehüser, Alexander*	**Analysis and comparison of interior-point methods for rate-independent single-crystal plasticity** *Steinmetz, Felix*	**Numerical Investigation and Validation of a Riveted Connection with LPBF AlSi10Mg Components based on a Thermomechanical Coupled Chaboche-GTN Approach** *Richter, Lukas*	**A novel procedure for identification of material parameters in advanced creep-fatigue constitutive model based on artificial neural networks** *Jahnke, Alexander*	**Hybrid data-driven and physics-informed regularized learning of cyclic plasticity with neural networks** *Hilderbrand, Stefan*	**On Unifying Tensor and Matrix Approaches in Material Modeling** *Schlebusch, Rainer*

Tuesday, April 8, 8:00 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S07.01 A23/8	**Steady vibration problems in the theory of Moore-Gibson-Thompson thermoelasticity for materials with voids** *Svanadze, Merab*	**Modelling and simulation of experiments for fractured and fracturing porous media** *Wagner, Arndt*	**Modelling of resuspension and sedimentation of solid particles in fractured and fracturing porous media using a TPM-phase-field approach with mass production terms** *Rivas, Yann*	**Coupling phase-field fracture with non-isothermal fluid-structure interaction problems** *von Wahl, Henry*	**A phase field model to describe the behavior of volcanic crystals** *Haddenhorst, Hendrik Holger*	**Modeling of hydrogen-embrittlement using a monolithically coupled, nonlocal Gurson-Tvergaard-Needleman damage model** *Prüger, Stefan*
S08.01 A23/12	**Micromechanical modelling of void growth in metals and alloys deforming by slip and twinning** *Virupakshi, Saketh*		**On the efficient solution of cell problems by means of wavelet-enhanced FFT-approaches** *Kaiser, Tobias*	**Analysis of an X-FFT solver for two-dimensional thermal homogenization problems** *Gehrig, Flavia*	**Modeling of porous materials on multiple length scales using FE and FFT approaches** *Dahler, Julian*	**Thermo-mechanically coupled FE-FFT-based simulation of polycrystalline materials** *Gierden, Christian*
S10.01 A23/1.23	**Progress in high-moment turbulent scaling laws of wall-bounded shear flows** *Oberlack, Martin*		**Momentum Transfer of Riblets in the Drag Increasing Regime** *Rapp, Natalie*	**Unsteady turbulent energy dissipation in an axisymmetric turbulent wake** *Obligado, Martin*	**Inverse energy cascade within atmospheric convective structures** *Jędrejko, Paweł*	**Heat transfer in thermally developing, inhomogeneously heated turbulent pipe flows** *Bürk, Leo*
S12.01 A23/0.22	**Analysis of the formation of caustic by a concave reflector in a geometric and wave field** *Kulowski, Andrzej*		**Numerical Study on Enhanced Impedance Matching for Symmetric Lamb Waves in FML with Integrated Sensors** *Rottmann, Max*	**Acoustic black holes in the Rayleigh-Lamb Theory** *Schoenebeck, David*	**Wave propagation in non uniform media by linear expansion of the refraction law** *Bassetti, Alessandro*	**One-way wave equation** *Bschorr, Oskar*

Tuesday, April 8, 8:00 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S15.01 A23/7	**On significance of probabilistic entropy and distance in elasto-plasticity problems** *Kamiński, Marcin*		**Random vibrations of internally supported plates by the Boundary Element Method** *Guminiak, Michał*	**Combining first-order second-moment method and internal numerical differentiation for efficient uncertainty quantification** *Tröger, Jendrik-Alexander*	**On modeling of porous-media wetting with randomly distributed hydrophobic defects** *Gossel, Lisanne*	**Estimates of errors generated by uncertain data in a coupled pieso-electric problem** *Samrowski, Tatiana*
S17.01 A23/0.21	**Accelerating operator Sinkhorn iteration with overrelaxation** *Uschmajew, André*		**Mixed-Precision Parallel Tensor Train Operations** *Oktay, Eda*	**Mixed-precision techniques for the low-rank Lyapunov ADI** *Schulze, Jonas*	**A hybrid Chebyshev-Tucker tensor format with applications to multi-particle modelling** *Sun, Bonan*	**Mixed-precision iterative refinement for low-rank Lyapunov equations** *Liu, Xiaobo*
S18.01 A23/13	**Lattice Boltzmann for 2D linear elastodynamics with Dirichlet and Neumann boundary conditions** *Boolakee, Oliver*	**Lattice Boltzmann Method for linear elastodynamics in 3D** *Weverbergh, Julie*	**Numerical solution of the fractional Euler-Bernoulli equation for a beam with fixed-supported and fixed-free ends** *Nowak, Anna*	**Numerical approximation of fractional compositions of differential operators with fixed memory length and its application to the problem of fractional continuum mechanics** *Kustal, Dominika*	**Analysis of a fractional-order model for diabetes mellitus incorporating education and media awareness campaigns using the Two-step Newtonian Polynomial approach** *Prajapati, Vishalkumar*	
S19.01 A23/1.25	**A Riemannian View on PDE-constrained Shape Optimisation** *Romero, Estefania Loayza*		**A least-squares space-time approach to parabolic shape optimization** *Stahl, Michael*	**A combined phase field - sharp interface approach for PDE constrained shape optimization** *Hinze, Michael*	**Incorporating strain decomposition into fracture propagation simulations using shape optimization algorithms** *Suchan, Tim*	

Tuesday, April 8, 8:00 - 12:00

	8:30	8:50	9:10	9:30	9:50	10:10
S22.01 A23/0.29	**Rational Surrogate Modeling of Parametric Dynamical Systems** *Römer, Ulrich*		**A parallel batch greedy algorithm in reduced basis methods** *Reich, Niklas*	**Towards an efficient shifted Cholesky-QR for applications in model order reduction** *Bindhak, Maximilian*	**Stability and Error Analysis of Reduced-Order Methods Based on POD with Finite Element Solutions for Nonlocal Diffusion Problems** *Nie, Yufeng*	**Discontinuous Galerkin and Trefftz methods for Model Reduction** *Born, Tobias*
S24.01 A23/6	**Fritz Noether - a great mathematician and victim of various political dictatorships** *Altenbach, Holm*	**Investigation on the rolling sphere on a rotational surface – in memory of Fritz Nöther** *Ziegenhorn, Matthias*		**The quest for explicit formulas for conformal mappings onto the unit circle: Mertens, Schwarz, and Christoffel** *Ullrich, Peter*	**A graphical method for the synthesis of a container emptying mechanism** *Buśkiewicz, Jacek*	
S25.01 A23/1.22	**On uniqueness in structured model learning** *Morina, Erion*	**Genetic column generation for adversarial multi-class classification** *Penka, Maximilian*	**Kernel-based Greedy Approximation of Parametric Elliptic Boundary Value Problems** *Haasdonk, Bernard*	**Data analysis of architected structural geometries with persistent homology** *Milor, Abel Henri Guillaume*	**Centralities in urban multilayer networks** *Stoll, Martin*	**Data-Driven Prediction of Dynamic Systems based on Sparse Reconstruction and Neural Networks** *Du, Lin*

	11:00
PL 2 Magna	**Physics-Based Model Order Reduction in Digital Twins: Challenges and Opportunities in the Multi-Scale Material Setting** *Veroy-Grepl, Karen*

Tuesday, April 8, 12:00 - 16:30

	12:00
PL 3 Magna	**Optimization-Based Control for Large-Scale and Complex Systems: When and Why Does It Work?** *Grüne, Lars*

	14:00	14:30	15:00	15:30	16:00	16:30
MS1 A23/1	**Divide, Learn, and Conquer in Image Classification** *Klawonn, Axel*	**Additively Preconditioned Trust Region Strategies for Machine Learning** *Krause, Rolf*	**Domain Decomposition for Randomized Neural Networks** *Heinlein, Alexander*	**Multilevel and parallel approaches to enhance the training of Transformers** *Salvadó Benasco, Marc*		

	14:00	14:20	14:40	15:00	15:20	15:40
MS2 A23/2	**Precise strain analyses in the small deformation range using DIC measurement data and approximation-based smoothing** *Lehmann, Thomas*	**Damage analysis of power engineering steels supported by DIC/ESPI techniques** *Kowalewski, Zbigniew*	**Determination of fatigue characteristics in the normal stress-fatigue life system** *Łagoda, Tadeusz*	**Challenges and solutions in optical measurement methods for experimental mechanics applications** *Kujawinska, Małgorzata*	**Deformation and temperature determination using DIC/TG measurement** *Hartmann, Stefan*	

MS4 **A23/3**	**On Neural network-enhanced integrators for dynamical systems** *Othmane, Amine*	**Error bounds for Koopman-based predictors and their application in control** *Philipp, Friedrich M.*	**An experimental comparison of data-driven virtual sensing methods for predictive maintenance** *Heindel, Leonhard*	**Ocean Wave Dynamics: Data and Evolution Equations** *Hoffmann, Norbert*	**Data Driven Dynamics using Recurrent Neural Networks - Stabilization, Prediction & Uncertainty Quantification** *Hetzler, Hartmut*	

Tuesday, April 8, 14:00 - 16:00

	14:00	14:20	14:40	15:00	15:20	15:40
PP01 Magna	**Design Optimization of Soft Robots Based on Workspace Constraints** *Schindler, Leon*	**Koopman Based Trajectory Optimization with Periodic Boundaries for Co-Design** *Raff, Maximilian*	**Surrogate-based Robust Tracking Controller for a Lambda Robot** *Hajipour Talkouei, Sanam*	**A constraint-satisfying neural network architecture for the generation of Grashof fulfilling four-bar linkages** *Röder, Benedict*	**Model Predictive Path-Following Control of a Quadrotor** *Leprich, David*	**Optimization-based design assistance for planning of stereotactic surgeries with curved cannulae** *Flaßkamp, Kathrin*
PP02 A23/7	**Representation of control Lyapunov functions with neural networks** *Sperl, Mario*	**Adaptive Step Sizes for Stochastic Gradient Descent** *Köhne, Frederik*	**Generalisation Error for Semi-Supervised Learning Using Graph Neural Networks** *Ayday, Nil*	**Data-Driven Spatial Adaptivity for Regularising Inverse Problems** *Neumayer, Sebastian*	**Neural Sampling from Boltzmann Densities** *Chemseddine, Jannis*	**Algebraic structures and invariants of Gradient Flow for Linear Neural Networks** *Torres, Angelica*
PP03 A23/8	**Material Design for Multiple Loads** *Sommella, Lorenzo*	**Predicting plastic activity in disordered solids via geometric measures** *Shekh Alshabab, Somar*	**A dimensionally reduced capillary problem and its phase-field approximation** *Sciaraffia, Luciano, Wang, Yizhen*	**Arclength methods and dissipative processes – Analysis and numerical experiments** *Rörentrop, Felix*	**Towards dynamic phase-field fracture in finite strains** *Tornquist, Sven*	**Computational Semi-convexification for Relaxation in Isotropic Damage** *Neumeier, Timo*
PP04 A23/9	**From Injury to Full Recovery: Monitoring Patient Progress Through Advanced Sensor and Motion Capture Technology** *Andres, Annchristin*	**Investigation of the influence of screw position and screw insertion on the local micro-mechanics of the fracture gap and the interfragmentary movement** *Roland, Michael*	**Cell seeding dynamics in a porous scaffold material with applied sensitivity analysis** *Jäger, Henry*	**Flexible macro-micro coupling for liver applications** *Gerhäusser, Steffen Uekermann, Benjamin*	**Enriched and Discontinuous Galerkin Discretizations for a Cardiac Mechanics Benchmark Problem** *Stengel, Laura*	**Advancing Endovascular Treatment: Simulating Thrombus Formation in Patient-Specific Aneurysms** *Holzberger, Fabian*

PP05
A23/13

Anomalous dissipation in compressible and incompressible flow
Zinchenko, Georgy

Multi-point probability density hierarchy for homogeneous isotropic turbulence
Görtz, Simon

Statistical conservation laws for the scalar and Navier-Stokes equations
Huang, Qian

Toward machine-learned implicit large-eddy simulations of compressible turbulence
Bezgin, Deniz A.

Tuesday, April 8, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S01.01 A23/6	**Trajectory scaling for redundant manipulators—evolution of selected algorithms** *Wojtyra, Marek*		**Optimal control of a pendulum driven via a frictional clutch: Challenges and solution approaches** *Capobianco, Giuseppe*	**Data-Driven Inverse Dynamics Control for a Five-bar Parallel Robot** *Malczyk, Paweł*	**Improving the accuracy of a generalized-α method for multibody system models with large rotations** *Arnold, Martin*	
S03.02 A23/0.27	**Three-dimensional simulation of crack initiation in ice shelves at pinning points** *Sondershaus, Rabea*	**A 2D Approach to Predict the High-Cycle Fatigue Life of Clinched Joints** *Chen, Chin*	**Dynamic fracture with thin structures and bond-associated peridynamics** *Partmann, Kai*	**Assessment of the debonding failure in multilayer structures using a closed-form analytical model** *Becker, Wilfried*	**An explicit finite element solver for a dynamic formulation of gradient-enhanced damage** *Sobisch, Lennart*	**Simulation of crack surface friction within the phase-field method** *Koch, Leonie*
S04.02 A23/1	**A novel mixed-hybrid, higher-order accurate formulation for Kirchhoff–Love shells** *Neumeyer, Jonas*	**Material reconstruction of heterogeneous isogeometric Kirchhoff-Love shells under various load conditions** *Łazorczyk, Bartłomiej*	**Be negative: topology optimization of an existing FE-Model by subtracting the thickness of a shell** *Berendes, Philipp*	**A polygonal Reissner-Mindlin plate formulation based on the scaled boundary finite element method considering locking effects** *Hellers, Anna*	**The role of fiber orientation in the analysis and simulation of toroidal hoses under internal pressure** *Hoesch, Quirin*	**An efficient geometrically-exact nonlinear shell formulation based on Rodrigues parameters** *Sousa, Cinthia*
S06.1.02 A23/1.27	**Stress partitioning in thermoelastoplastic materials** *Lalović, Nikola*	**Different aspects of modelling propagative instabilities in aluminum** *Mucha, Marzena*	**On The Blow-Up Solutions In Nonlinear Elasticity Theory** *Gawinecki, Jerzy*	**Smoothed Particle Hydrodynamics Modeling of Solid-state Deposition Process Friction Surfacing** *Elbossily, Ahmed*		

Tuesday, April 8, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S07.02 A23/8	**Smoothed Particle Hydrodynamics as a Tool for Improving Deep-Hole Drilling** *Baumann, Andreas*	**An approach to model the influence of hydrodynamics on wet grinding** *Thunich, Paul*	**Periodic self-propulsion of a swimmer** *Edelmann, Joris*	**Seamless Simulation Across Regimes – Uniformly Stable DG Discretization for Coupled Stokes-Darcy Flow** *Kowalski, Julia*	**Coupled CFD-DEM numerical analysis of reactive flow in a porous zone** *Wardach-Święcicka, Izabela*	**Space-Time Block-structured Meshing in Coupled Problems with Moving Domains** *Schwentner, Teresa*
S08.02 A23/12	**Generalized Criteria for Hyperintegration in Reduced-Order Multiscale Simulation** *Hütter, Geralf*		**Statistically compatible hyper-reduction for variationally consistent homogenization and its application to diffusion** *Hauck, Jan*	**Nonlinear reduced order modeling for computational homogenization using manifold learning and hyperreduction techniques** *Faust, Erik*	**An efficient multi-scale finite element approach for ferro-electric continua** *Wakili, Reschad*	**Hyper-reduction through empirically corrected clustering** *Wulfinghoff, Stephan*
S10.02 A23/1.23	**Error decomposition of large-eddy simulation applied to turbulent combustion** *Geurts, Bernard*		**Application of Extended Large-Eddy Simualtion (XLES) to turbulent channel flow** *Marinković, Pavle*	**Investigating the Impact of Forcing Mechanisms on Passive Scalar Mixing Using Stochastic One-Dimensional Turbulence** *Joshi, Abhishek*	**Formulation of an improved wall model for turbulent concentric coaxial pipe flows** *Yap, Li Toong*	**Reconstruction of inhomogeneous turbulence based on stochastic Fourier-type integrals** *Lindner, Felix*
S11.01 A23/1.28	**Arbitrary Lagrangian-Eulerian surface discretizations for self-evolving Navier-Stokes manifolds** *Sauer, Roger*	**Two-Phase Flow Simulations Using Adaptive Time Refinement for Injection Molding Applications** *Fabón, Blanca Ferrer*	**Advanced modelling of fibre dynamics in a transparent substitute liquid using the Jeffrey equation and PIV analysis** *Vaupel, Tim*	**Diffuse interface method for two-phase flows: development and validation, towards phase change modelling** *Pozorski, Jacek*	**Phase-field modeling and computation of N-phase mixture flows** *ten Eikelder, Marco*	

Tuesday, April 8, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S12.02 A23/0.22	**Acoustic Waves at Very Low Frequency: Propagation and Building Insulation** *Mastino, Costantino Carlo*	**Stretch ceilings in church acoustics design** *Sygulska, Anna*	**Can one hear the shape of a crack in a drum? - An analytical and data-based approach** *Zilk, Philipp*	**Time-Domain Simulation of Brass Instruments with the Method of Characteristics** *Aurich, Daniel*		
S14.01 A23/3	**From compressible to incompressible, MHD with non-conservative boundary condition** *Wróblewska-Kamińska, Aneta*		**Existence and weak-strong uniqueness of suitable weak solutions to an anisotropic electrokinetic flow model** *Plato, Luisa*	**Long-time asymptotics of the damped Euler equations by parabolic scaling** *Eiter, Thomas*	**Analysis of a viscoplastic Burgers equation** *Thomas, Marita*	**Darcy's law for inhomogeneous incompressible flows** *Oschmann, Florian*
S15.02 A23/7	**Deep learning methods for stochastic Galerkin approximations of ranodm PDEs** *Barth, Andrea*	**Stochastic Galerkin method for delay differential equations with random parameters** *Pulch, Roland*	**Markov chain Monte Carlo with particle-solver-based likelihoods** *Løvbak, Emil*	**An adaptive Quasi Monte Carlo approach for concentrated distributions** *Zhou, Jinyi*	**Earthquake-induced multimodal non-linear stochastic response of the guy line in the guyed tower** *Weber, Hanna*	
S16.01 A23/9	**Gradient type numerical methods of shape and topological optimization** *Sokolowski, Jan*		**Numerical solutions of gradient flow dynamical system for shape optimization in elasticity** *Tan, Yixin*	**IGA Topology optimization based on topological derivatives** *Teixeira, Guilherme Henrique*	**Biomimetic Regularization of the Structural Optimization Method - Numerical Aspects** *Nowak, Michał*	**Optimizing Printing Nozzle Design for Fused Deposition Modeling** *Tillmann, Steffen*

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	16:30	16:50	17:10	17:30	17:50	18:10
S17.02 A23/0.21	**Structured rational matrices and their linearizations** *Dopico, Froilán*		**System representation of rational functions with poles outside an annulus** *Wojtylak, Michał*	**The closure of the bundle of a matrix pencil** *Pagacz, Patryk*	**Regularization and stabilization of port-Hamiltonian descriptor systems via output feedback** *Mehrmann, Volker*	**On port-Hamiltonian partial differential algebraic equations** *Preuster, Till*
S18.02 A23/13	**Fluid-Structure Interactions in ALE coordinates** *Hergl, Chiara*	**A monolithic space-time temporal multirate finite element framework for interface and volume coupled problems** *Wick, Thomas*	**A Local hp Space-Time Multigrid Approach for Tensor-Product Finite Element Discretizations of the Stokes Equations** *Margenberg, Nils*	**Space-time least-squares FEM for convection-diffusion problems** *Köthe, Christian*	**Projection Methods in the Context of Nematic Crystal Flow** *Reiter, Maximilian*	
S19.02 A23/1.25	**Continuation methods for higher-order topology optimization** *Winkler, Michael*	**Goal-oriented optimal sensor placement for PDE-constrained inverse problems** *Mattuschka, Marco*	**Material Law Identification in Boundary Value Problems for Fiber Spinning** *Kannengießer, Lukas*	**New results on optimal control problems with total variaton penalty** *Haaf, Nico*	**Conditional gradient methods for total variation regularization with PDE constraints** *Iglesias, José A.*	**Optimal control of a Fokker-Planck/transport equation with BV-drift using renormalized solutions** *Lange, Christian*
S20.01 A23/2	**Model predictive control for uncertain systems - robust and data-driven designs** *Köhler, Johannes*		**Near-optimal performance of stochastic economic MPC** *Schießl, Jonas*	**Vertical Vibration Reduction of Maglev Vehicles using Nonlinear Model Predictive Control** *Hermle, Mario*	**Model hierarchy for the design of a MPC controller in gas networks** *Ortegón-Villacorte, Andrés*	

Tuesday, April 8, 16:30 - 18:30

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S22.02 A23/0.29	**The Fast Newton Transform: Interpolation in downward closed spaces reaching the optimal geometric approximation rates for Bos-Levenberg-Trefethen functions** *Hecht, Michael*	**On a multigrid solution technique for the three-dimensional incompressible Navier-Stokes equations using discretely divergence-free finite elements** *Lohmann, Christoph*	**Preconditioning for a coupled Navier-Stokes Cahn-Hilliard model for the morphology evolution in organic solar cells** *Çiloğlu, Pelin*	**Multilevel Overlapping Schwarz Preconditioners for Fluid Problems** *Köhler, Stephan*	**Temporal Multiscale Modelling of Long-term Damage in Fluid-structure Interaction Problems** *Chang Dominguez, Dayron*	
S23.01 Magna	**Multi-objective Design Optimization for Axial Turbine via Deep Learning-Assisted Latent Space Exploration** *Raj, Rohit; Rentschler, Tobias*	**Physics-constrained frequency response prediction of structural dynamic systems via deep learning** *Libner, Christian*	**Learning Differential Equations from Numerically Integrated Artificial Neural Networks** *Bielitz, Timo*			
S25.02 A23/1.22	**A Neural Operator based Microscale Surrogate Model for Multiscale Simulations of Time Dependent Materials** *Jeyaraj, Dhananjeyan*	**Towards data-driven inelasticity for spatial problems: A neural network-based propagator approach** *Harnisch, Marius*	**Deep learning for non-iterative generation of optimized finite element meshes** *Legeland, Martin*	**Mathematical and numerical analysis of the robustness of Data-Driven Identification (DDI) method** *Hachem, Nour*	**Coupled CANN-DEM Simulation in Solid Mechanics** *Friedrich, Jonathan Georg*	**Comparison of Generative Learning Methods for Turbulence Modeling** *Drygala, Claudia*

Wednesday, April 9

Wednesday, April 9, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S01.02 A23/0.27	**Challenges of bringing ML-assisted Model Predictive Control for Wind Turbines into Industrial Practice** *Zierath, János*		**Incorporating Nonlinear Elastic Forces in the Nodal-Based Floating Frame of Reference Formulation** *Holzinger, Stefan*	**Techniques for recovering stresses from dynamic multibody simulations for fatigue assessment** *Nemov, Aleksandr*	**Analysis of Frictional Sliding Contact in Magnetic Track Brakes: A Simplified Methodology** *Kocbay, Emin*	
S04.03 A23/1	**Technical fabrics mechanical properties change as a reason of textile roofs failures** *Kłosowski, Paweł*		**Experimental Determination of a Load Approach FE-Method for Reducing the Formwork Support Time of Reinforced Concrete Ceilings** *W. Müllner, Herbert*	**Experimental and Numerical Analysis of the Impact of Perforation bands in the Facing on the Behavior of Sandwich Plates** *Chuda-Kowalska, Monika*	**Numerical and experimental analysis of lightweight barmembrane joints** *Zmuda Trzebiatowski, Marcin Adam*	
S06.1.03 A23/1.27	**1D model of twin branching in shape memory alloys accounting for the energy dissipation effects** *Stupkiewicz, Stanisław*	**Evaluating chemomechanical coupling in phase-field methods: Benchmarks and Insights** *Kannenberg, Thea*	**Multiphase-Field Modeling of Microstructure Evolution during Solid-State Processing of Al Alloys** *Nanayakkara, H.A.T Vimukthi*	**New insights into grain boundary kinetics by phase-field crystal modeling** *Punke, Maik*	**Numerical Modelling of Deformation-Induced Martensitic Transformation in Additively Manufactured 316L Stainless Steel under Cryogenic Conditions** *Maasch, Philipp*	

S07.03 A23/8	**Identification of Ferroelectric Energy Harvesting Cycles: from Material Modeling to Process Optimization** *Warkentin, Andreas*	**Multiscale modeling of structured magnetorheological elastomers using physics-augmented neural networks** *Roth, Heinrich*	**Numerical modeling of the thermo-mechanical and electrical behavior of a sensor-integrating jaw coupling** *Menning, Johannes D.M.*	**Energy, Momentum and Entropy Consistent Integrators for Discrete Coupled Systems Using GENERIC** *Reiff, Pit*	**Space-Time Discretization of Nonlinear Coupled Thermo-Elastodynamical Problems in a Novel, Polyconvexity-Inspired, Mixed GENERIC Framework** *Hille, Moritz*	

Wednesday, April 9, 8:30 - 10:30

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S10.03 A23/1.23	**LES/PDF Simulations of Turbulent Reacting Flows** *Muradoglu, Metin*		**CFD Based Kinetic Parameter Estimation Method for Arbitrary Reactor Geometries** *Qureshi, Muhammad Uzair*	**Development of detailed surface reaction mechanism for methanation process based on experiments** *Rakhi -*	**Kinetic investigation of methanation over Ni-CeO2 using a one-dimensional model** *Ibrayeva, D.*	
S11.02 A23/1.28	**High order Sharp Interface numerical methods for multiphase flows** *Kummer, Florian*		**Modelling multiscale multiphase flows with the MultiMorph Model** *Lucas, Dirk*	**Evolution of local bubble characteristics in a pressurised pneumatic flotation cell** *Zürner, Till*	**Consistency of pseudopotential lattice Boltzmann methods in two-phase flow simulations of droplet dynamics** *Czelusniak, Luiz Eduardo*	
S12.03 A23/0.22	**Towards the efficient simulation of large-scale soil-structure interaction problems using the scaled boundary finite element method** *Kuhn, Tobias*	**Time Domain Boundary Element Methods for the Neumann Problem: a Reduced Formulation for Practical Applications** *Schneider , Simon*	**A domain decomposition strategy for natural imposition of mixed boundary conditions in port-Hamiltonian systems** *Brugnoli, Andrea*	**Porous wall induced instabilities in compressible boundary layers** *De Broeck, Lara*		
S14.02 A23/3	**Variational modelling of porosity waves** *Zafferi, Andrea*	**Energy-variational structure in evolution equations** *Lasarzik, Robert*	**On some explicit solutions of the linearised Prandtl equations via hypergeometric functions** *De Anna, Francesco*	**On the connection of the Prandtl equations and the harmonic oscillator** *Kortum, Joshua*	**On an inhomogeneous coagulation model describing sedimentation** *Cristian, Iulia*	

Wednesday, April 9, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S15.03 A23/7	**Uncertainty Quantification For Lévy Random Fields - Theory and Numerics** *Gottschalk, Hanno*		**Laplace Transform–Based Non-Probabilistic Uncertainty Analysis of Viscoelastically Damped Structures** *Łasecka-Plura, Magdalena*	**Efficient first order second moment method for stochastic vibroacoustic problems with uncertain loads** *Hüpel, Yannik*	**Incorporating Model Form Uncertainty in Digital Twins for Reliable Parameter Updating and Quantities of Interest Analysis** *Arcones, Daniel Andrés*	
S18.03 A23/13	**Structure-preserving Model Reduction on Manifolds of port-Hamiltonian systems** *Glas, Silke*		**Energy-preserving Arnoldi approximations for Gauss-Runge-Kutta integrators** *Maier, Stefan*	**Beyond 1D: A higher dimensional perspective on composite gas flow simulations in pipelines** *Nayak, Ashwin Sadanand*	**Convergence of a Riemannian gradient method for the Gross-Pitaevskii energy functional in a rotating frame** *Yadav, Mahima*	
S19.03 A23/1.25	**Sampling, optimization, SDEs and gradient flows** *Majka, Mateusz*		**Spatial decay of perturbations in optimal control** *Schaller, Manuel*	**A novel distributed method for PDE-constrained GNEPs** *Sauer, Felix*	**Strategies for robust optimal control of chromatographic separation processes** *Cebulla, Dominik H.*	

Wednesday, April 9, 8:30 - 10:30

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S20.02 A23/2	**Comparison of a-posteriori error estimators in the context of Parametric Model Order Reduction by Matrix Interpolation** *Schopper, Sebastian*	**Reduced Order Modeling for Frequency Response Functions of Nonlinear Dynamical Systems: Application to Gear Transmission Systems** *Mohamed, Hady*	**Application of operator inference to reduced-order modeling of constrained mechanical systems** *Filanova, Yevgeniya*	**Approximate Balanced Truncation for Linear Structured Systems based on Greedy Numerical Integration** *Reddig, Celine*	**System-theoretic model order reduction for data assimilation** *König, Josie*	
S21.01 A23/0.23	**Duality in nonlinear eigenproblems** *Laubmann, Jonathan*		**Adjointfree Estimation of Operator Norms Do we need the Adjoint to Estimate Operator Norms?** *Schneppe, Felix*			
S22.03 A23/0.29	**Neural Operator-accelerated Parallel-in-Time Methods** *Götschel, Sebastian*	**A Physics-Informed Neural Network with Generalized Finite Difference method framework for solving groundwater flow** *Tsung-Han, Li*	**Autoencoders with CUR Decompositions for Physics-preserving Low-order Models in Fluid Flow** *Kim, Yongho*	**Concepts and strategies for the mathematical modelling of electroplating** *Schwöbel, Stephan Daniel*	**Development of a GPU-accelerated, Finite Element based Dynamical Core for Sea Ice** *Richter, Thomas*	
S25.03 A23/1.22	**On the performance and convergence of PINNs for problems in linear elasticity** *Kadlag, Dipraj*	**Model discovery and challenges using inelastic Constitutive Artificial Neural Networks (iCANN s) at finite strains** *Holthusen, Hagen*	**Hard-constraining techniques and architectures in physics-informed neural networks for silicidation simulations** *Straub, Christopher*	**Anisotropic hyperelasticity meets physics-augmented neural networks** *Kalina, Karl A.*	**Application of Deep Learning Methods to Simulate the Behaviour of Soft Tissue Materials in Biomechanics** *Mustafa, Agon*	

Wednesday, April 9, 8:30 - 10:30

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S26.01 A23/0.210	**The Quasi-Stationary Distribution approach to metastability** *Lelievre, Tony*		**On-the-fly adaptive sparse grids for coupling molecular monte-carlo and continuum models** *Hülser, Tobias*	**Koopman-based Control for Stochastic Systems: Application to Enhanced Sampling** *Guo, Lei*	**Coarse-grained simulation of protein self-assembly** *Mayrhofer, Lukas*	

	8:30	8:50	9:10	9:30	9:50	10:10
TS1 A23/9	**General introduction to PSNC and the scope of the tutorial** *Mazurek, Cezary*	**Foundational algorithms for quantum computing and applications** *Pecyna, Tomasz Wojciechowski, Konrad*	**Hands-on exercises with quantum programming** *Ivanko, Sofiia*	**Quantum and hybrid algorithms** *Slysz, Mateusz*		

Wednesday, April 9, 10:00 - 11:00

	10:00
Poster A23/Hall	**Deformation dependent conductivities in a porous electromechanical system from variationally consistent homogenization** *M. Blaszczyk, D. R. Rollin, F. Larsson, K. Runesson, R. Jänicke*
	Nonlinear interpolation inequalities with fractional Sobolev norms and pattern formation in biomembranes *J. Ginster, A. Pešić, B. Zwicknagl*
	Microstructure modeling of binder-jet 3D-printed materials *E. Donval, M. Schneider, H. Grimm-Strele, M. Godehardt, R. Burger, P. Lechner, D. Gün*
	Polyconvex constitutive modeling with physics-augmented neural networks *D. K. Klein, O. Weeger*
	Adjoint coupled plasma-neutral solvers with reversible pseudorandom number generators *E. Løvbak, G. Samaey*
	Structure-preserving methods for port-Hamiltonian flexible multibody systems *Philipp L. Kinon, Peter Betsch, Simon R. Eugster, Riccardo Morandin, Philipp Schulze*
	Strong simulations for strong magnets: Effects of defects *M. Vorwerk & J. Schröder*
	Dynamic fracture with thin structures and bond-associated peridynamics *K. Partmann, C. Wieners, K. Weinberg*
	Interface conditions for Maxwell's equations by homogenization of thin inclusions: transmission, reflection or polarization *B. Schweizer, D. Wiedemann*

Wednesday, April 9, 11:00 - 18:30

	11:00
Magna	**R.v. Mises Lecture**

	14:00
PL 4 Magna	**DPG Method on a New Road to Nonlinear Problems** *Demkowicz, Leszek*

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S01.03 A23/0.27	**Energy- and constraint-preserving integration for elastically coupled multibody systems** *Kotyczka, Paul*	**Galerkin-based approach for time integration of the rigid body in quaternion formulation** *May, Marvin*	**Practical Insights on Data-Based Robot Control: A Comparative Analysis of Data-Enabled Predictive Control and Model-Based Predictive Control** *Chen, Jingshan*			

S02.01 A23/0.22	**A multifactorial approach for modelling vascular tone regulation: from molecular pathways through tissue response to systemic couplings** *Marino, Michele*	**Experimental and numerical characterisation of a viscoelastic material by unifying different time scales** *Ruhland, Laura*	**Multimodal mechanical characterization of spinal cord tissue** *Ramachandran, Rahul Gopalan*	**PDE Framework for Tumor Invasion and Basement Membrane Dynamics: Application to Colorectal Cancer** *Schmid, Valentin*	**A novel variational biofilm model for growth death and metabolism effects in coupled species evolution** *Klempt, Felix*	**Thickness field optimization of implants used in hernia treatment: comparison of materials with different mechanical properties** *Kalinowski, Szymon*

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S04.04 A23/1	**An efficient Ritz-Method for post-buckling analysis of composite plates with bending-twisting coupling** *Dillen, Sebastian Dominik*	**A stationary predictor corrector method for the simulation of elastic-plastic bending of axially moving plates with non-material finite elements** *Ramsauer, Stefan*	**A variationally consistent membrane wrinkling model based on spectral decomposition of the strain tensor** *Kiendl, Josef*	**Approximate stability analysis of omega-stringer stiffened composite panels** *El Yaakoubi-Mesbah, Cherine*	**Deformation and Damage in Three-Layered Plates with Auxetic Core at Static and Impact Loading** *Breslavsky, Dmytro*	**Statistical evaluation of the influence of geometric and technological variables on the strength parameters of sandwich panels** *Pozorska, Jolanta*
S07.04 A23/8	**Anisotropic friction models of moving macromolecules in polymeric liquids** *Zmitrowicz, Alfred*	**Modeling concepts for piezoceramics in ultrasonic motors** *Sutter, Felix*	**Variational thermo-mechanically coupled SMA material model and optimization of SMA based out-of-plane bistable microactuator** *Shamim, Muhammad Babar*	**Multiphase-field simulation studies on Ni thin film dewetting** *Becker, Nils*	**Simulating cycled loading of hydrogen on thin metallic structures** *Gisy, Johannes*	**A laser beam welding process and its microstructural thermoelastoplastic analysis** *Hartwig, Philipp*
S08.03 A23/12	**Neural network enhanced computational polyconvexification** *Balazi, Loïc*	**Deep Eshelby Network: An AI Framework for Multiscale Mean-Field Homogenization** *Schwaighofer, Michael*	**Digital physics of 3D-printed sand cores** *Donval, Elodie*	**Model discovery in multiscale simulations for anisotropic materials** *Urrea-Quintero, Jorge-Humberto*	**Deep-Learning-Based Numerical Homogenization of Heterogeneous Media** *Kröpfl, Fabian*	**Digital process and functional design for PUR foam components based on multiscale simulations** *Staub, Sarah*
S10.04 A23/1.23	**Influence of porous material on the flow behind a backward-facing step: experimental study** *Klotz, Łukasz*		**Gas transfer through sea surface - turbulence and surfactan** *Piskozub, Jacek*	**Analysis and parametrization of turbulence in stably-stratified atmospheric boundary layers** *Wacławczyk, Marta*	**Turbulence statistics in thunderclouds** *Sarkar, Joydeep*	**Modelling transient, compressible and subcritical vessel outflows** *Fischer, Michael-David*

Wednesday, April 9, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S14.03 A23/3	**Magnetic skyrmions** *Simon, Theresa*		**Amplitude equations for the fractional Swift-Hohenberg equation** *Throm, Sebastian*	**Stress-Modulated Growth in the Presence of Nutrients** *Blawid, Julian*	**On the Derivation of the Timoshenko Beam Model from Nonlinear Elasticity by Gamma-Convergence** *Fastovska, Tamara*	**Legendre-Hadamard conditions in the nonlinear theory of fiber-reinforced elastic solids and shells** *Birsan, Mircea*
S15.04 A23/7	**Sensitivity Analysis of Bifurcation Curves** *Lux-Gottschalk, Kerstin*	**Augmented First-Order Reliability Method for Estimation of Imprecise Failure Probabilities** *Valdebenito, Marcos*	**Reliability analysis of structures with correlated random variables considering uncertain distribution parameters** *Li, Peipei Valdebenito, Marcos A. Faes, Matthias G.R.*	**Sensitivity Estimation of Failure Probability with Respect to Input Distribution Parameters in Stochastic Computational Models** *Zhang, Xuan-Yi*	**Optimization of shell structures with fuzzy-probability based random fields using artificial neural networks** *Schweizer, Maximilian*	**A high-performance multi-level stochastic gradient descent method with applications in optimal control under uncertainty** *Schneiderhan, David*
S16.02 A23/9	**Topology optimisation of non-periodic metamaterials via beam-based modelling** *Weißinger, Philippa*	**Process modeling-based optimization of grayscale masked stereolithography 3D printed parts** *Rutsch, Felix*	**Minimization of the structural compliance over the elastic moduli with a convex unit cost leads to a nonlinear elasticity problem** *Lewiński, Tomasz*	**Topology optimization in civil engineering – on the consideration of concrete failure characteristic and self-weight** *Masarczyk, Daniela*	**Topology Optimization Methods for Buckling Structures with Size Constraints** *Xiao, Manyu*	**Lasserre hierarchy for topology optimization of frame structures under dynamic excitations** *Tyburec, Marek*
S17.03 A23/0.21	**Towards understanding Krylov subspace methods through examples** *Liesen, Jörg*	**Spectral properties of certain nonsymmetric saddle point matrices** *Ramme, Justus*	**Spectral analysis of preconditioners for fully implicit Runge-Kutta methods** *Outrata, Michal*	**On a matrix-Newton-type framework for solving NEPv** *Werner, Tom*	**Generic eigenvalue algorithms and singular value algorithms for matrices of quaternions, reduced biquaternions, and dual numbers** *Slapničar, Ivan*	**Pollution free eigenvalue bounds for the Gramian operator** *Grubišić,Luka*

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S18.04 A23/13	**Reduced-order modeling and data assimilation with applications in structural health monitoring** *Gräßle, Carmen*		**Model Reduction for the Wave Equation beyond the limitations of the Kolmogorov N-width** *Feuerle, Moritz*	**Fast Solution of the Wave Equation Using Model Order Reduction and the Laplace Transform** *Henriquez, Fernando*	**Temperature Stratification in Lakes: Thermobaric Effects and Stability** *Irmscher, Jonathan*	**Global Free Flight Optimization via Eikonal Approach** *Jocas, Arturas*
S19.04 A23/1.25	**Optimal control of an ill-posed bloodflow model: Navier-Stokes with do-nothing boundary controls** *Wagner, Jakob*	**Output-based receding horizon stabilizing control for linear parabolic equations** *Rodrigues, Sergio S.*	**A machine learning based approximation of semi-concave functions with applications to optimal control** *Vasquez-Varas, Donato*	**The minimum energy estimator for a cubic wave equation** *Schröder, Jesper*	**Convergence of variational and iterative regularization methods under a range invariance condition** *Kaltenbacher, Barbara*	
S20.03 A23/2	**Controllability of an orbiting satellite model with electromagnetic-only actuation** *Yevgenieva, Yevgeniia*	**On the existence of periodic solutions to weakly nonlinear distributed parameter control systems** *Zuyev, Alexander*	**Approximate Control by Series Expansion with Application to the Ball and Beam System** *Gerbet, Daniel*	**Comparison and analysis of event-triggered state estimation methods for nonlinear systems** *Ji, Jiaxin*	**Flatness-based observer design of Shallow Water Waves in a Tube with Moving Boundary and non-collocated measurement in Material-Fixed Coordinates** *Wurm, Jens*	**Observability Test for Systems with Rational Nonlinearities** *Röbenack, Klaus*
S21.02 A23/0.23	**Hyperspectral Image denoising via Low-rank Tucker decomposition with Subspace Implicit Neural Representation** *Peng, Jiangjun*	**Denoising Hyperbolic-Valued Data by Relaxed Regularizations** *Bresch, Jonas*	**Riemannian Patch Assignment Gradient Flows** *Gonzalez-Alvarado, Daniel*	**Information Geometry of Exponentiated Gradient: Convergence beyond L-Smoothness** *Elshiaty, Yara*		

Wednesday, April 9, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S22.04 A23/0.29	**A Surface Crouzeix-Raviart Element for Geophysical Flow Problems** *Mehlmann, Carolin*		**Efficient numerical methods for the Maxey-Riley-Gatignol equation** *Ruprecht, Daniel*	**Magneto-mechanical coupling for magnetostriction using isogeometric analysis** *Merkel, Melina*	**Isogeometric Analysis of 2D Magnetostatics with THB-Splines enriched by Bézier Extraction for Local Refinement** *Grendas, Andreas*	
S25.04 A23/1.22	**Learning regularizers - bilevel opitimization or unrolling?** *Lorenz, Dirk*	**Time-adaptive SympNets for separable Hamiltonian systems** *Janik, Konrad*	**Sparse full-order model inference for incompressible fluid dynamics** *Yıldız, Süleyman*	**Investigation of hydrogel structure parameters in the Flory-Rehner model with data-driven approaches** *Wang, Yawen*	**Optimal data selection for learning differential equations** *Govoeyi, Medard*	**An Adaptive Random Fourier Features approach applied to learning Stochastic Differential Equations** *Kammonen, Aku*
S26.02 A23/0.210	**Family of Gaussian wavepacket dynamics methods from the perspective of a nonlinear Schrödinger equation** *Vanicek, Jiri*		**Multiresolution of the free-particle propagator** *Dinvay, Evgueni*	**Second-Order Time-Splitting Hermite Spectral Method for Nonlinear Schrödinger Equations with Time-Dependent Potential** *Bergold, Paul*	**Quasivoids in polydisperse glassy systems with atomistic PEL exploration and iso-configuration method** *Swayamjyoti, S.*	**Analysis of an inexact domain decomposition method with application to the Conductor-like Screening model** *Ghosh, Nibedita*

Thursday, April 10

Thursday, April 10, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
MS3 **A23/1.28**	**Improving descriptors and understandings in Material Sciences using TDA** *Senge, Jan F*	**Topological Analysis of Dynamical Systems** *Marszewska, Marta*		**Quantifying time-series similarity using topological conjugacy and related concepts** *Signerska-Rynkowska, Justyna*	**Bifiltrations of Dowker complexes and their applications** *Spaliński, Jan*	
S02.02 **A23/0.22**	**Lower limb multi-body model built in Artisynth for the use of coupled multibody-finite element simulations** *Denk, Alexander*	**Drift-Free Sagittal Angle Estimation in Outdoor Running Using IMUs: Application to Shank and Foot** *Ghiassi, Mehdi*	**Finite element analysis of the human elbow joint** *Kasprzyk, Julia*	**Finite Element Modelling of Impact Loads on the Human Head** *Wang, Zechang*	**A new concept for embedding fibers in continua via level-sets** *Fries, Thomas-Peter*	**Characterization of the statistically inhomogeneous mesostructure of moso bamboo using image processing** *Speichginger, Lukas*
S03.03 **A23/0.27**	**Phase-field modelling of ductile fatigue fracture** *Kalina, Martha*	**A Fracture Criterion for the Prediction of Complex Fracture Patterns and Fragmentation in Tempered Glass** *Kanan, Anas*	**Anisotropic brittle damage models at finite strains** *van der Velden, Tim*	**A Regularized Continuum Damage Model Based on Endurance Surfaces for Fatigue Prediction** *Feike, Klas*	**An analytical and numerical approach for the description of damage-free disassembly of joined CFRP structures** *Kreikemeier, Janko*	
S04.05 **A23/1**	**Dimension reduction in elasticity** *Kienzler, Reinhold*		**Asymptotically exact theory of functionally graded elastic beams** *Chau Le, Khanh*	**Numerical and analytical study of elastic parameters in linearized micropolar elasticity** *Schek, Lucca*	**The catenary line: numerical aspects and solutions for special boundary conditions.** *Beitelschmidt, Michael*	**Development of space-fractional finite element for scale-sensitive truss structures** *Stempin, Paulina*

Thursday, April 10, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S05.01 A23/1.27	**Dynamics of Two Coupled Bodies on a Rough Horizontal Plane with Variable Coefficient of Friction** *Prokopenya, Alexander*	**Pure Mobility: Rolling resistance in future vehicle-road systems** *Ruff, David*	**Secular Perturbations of the Orbital Elements in the Maby-Body System with Variable Masses** *Saparova, Moldir*	**Frequency analysis of a Superconducting Magnetic Bearing system in ring spinning using an Eddy Current Damper** *Delgado, Yves Jesus Perez*	**Peculiarities of Amplitude-Frequency Characteristics in Geometrically Nonlinear Vibrations of Composite Shells and Plates under Various Deformation Models** *Goriachko, Taras, Marchuk, Mykhailo*	**On the Influence of Cracks on the Dynamic Behavior of PICMA® Multilayer Actuators** *Riedel, Simon*
S06.2.01 A23/6	**Exploring the effects of thermal aging on filled and unfilled natural rubber compounds with a perspective of SIC modelling** *Farkas, Ondrej*	**Data-driven modeling of strain-induced crystallization based on physics-augmented neural networks** *Friedrichs, Konrad*	**Efficiency enhancement strategies on the concept of representative directions applied to the dynamic flocculation model for filled elastomers** *Niemeyer, Mascha*	**Comparative Analysis of Homogenization Techniques for Interphase Modeling in Elastomer Blends** *Ulrich, Marc*	**The Self-Heating of Rubber Elements in Vibration Absorber Systems** *Niksirat, Esmat*	
S07.05 A23/8	**Porous media approach for multi-physics modeling of Nafion membrane in water electrolysis** *Aldakheel, Fadi*		**Multi-scale modeling of electro-chemo-mechanical interactions in battery electrode composites** *Jänicke, Ralf*	**A phase-field model for the anodic dissolution process during electrochemical machining** *Schmidt, Annika*	**A thermodynamically consistent phase field model for organic solar cell production** *Tretmans, Carmen*	**Two scale FE-FFT based modeling of cancellous bone** *Blaszczyk, Mischa*

S08.04 A23/12	**Microstructure-Property Relationships in Solid Oxide Fuel Cell Electrodes** *Langner, Eric*	**A Homogenization Approach for Modeling Ion Transport in Solid Oxide Fuel Cells** *Puderbach, Janna*	**FExMS - Coupling Finite Elements with Molecular Statics by Homogenization** *Neelakandan, Aagashram*	**Multiscale modeling of lamellar materials accounting for size effects** *Klein, Claudius*	**The influence of microstructure model parameters on the prediction of effective elastic properties of cement paste** *Burczyński, Tadeusz*	**FE^2 method to model rod- and beam-like carbon-based nanostructures** *Ochs, Julian*

Thursday, April 10, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S10.05 A23/1.23	**The Influence of Hydrocarbon Additives on Laminar Burning Velocity and NOx Emissions in Hydrogen Combustion** *Hemaizia, Abdelkader*	**Towards the use of HiPS as scalar mixing model in a full engine cycle simulation** *Starick, Tommy*	**Effect of swirl flame shaping on emissions in CH4-NH3 co-firing - experimental and numerical study** *Ślefarski, Rafał*	**The Evolution of André Lévêque's Thermal Boundary-Layer Solution** *McMahon, Niall*		
S14.04 A23/3	**Localisation Limits and Degenerate Cross-Diffusion Systems** *Schmidtchen, Markus*	**Advection and enhanced diffusion in some active scalar problems** *Kalinin, Konstantin*	**Discrete-to-continuum limit for reaction-diffusion systems via variational convergence of gradient systems** *Heinze, Georg*	**On time-splitting methods for gradient flows with two dissipation mechanisms** *Stephan, Artur*	**On asymptotically self-similar behavior in reaction-diffusion systems** *Schindler, Stefanie*	**Conditional Exponential Equilibration of Electro-Energy-Reaction-Diffusion Systems** *Kniely, Michael*
S15.05 A23/7	**Bayesian shape inversion in time-harmonic scattering** *Scarabosio, Laura*		**Sequential Quasi-Monte-Carlo Sampling for Bayesian Inference of Chemical Kinetic Models Utilizing Normalizing Flows** *Panagiotopoulos, Andreas*	**Comparison of mono-level and bi-level approaches for surrogate-based robust optimization** *Schultz, Julius*	**Infinite Dimensional Bayesian Inversion for Semiconductor Devices** *Taghizadeh, Leila*	**Exploring Imprecise Probabilities in Quantum Algorithms with Possibility Theory** *Schneider, Jan*
S16.03 A23/9	**Convexification can help optimization, at least sometimes** *Wirth, Benedikt*		**Abs-Smooth Frank-Wolfe Method: Convergence Analysis and Implementation** *Tadinada, Sri Harshitha*	**Addressing Risk Aversion in Energy Market Models: A Non-Smooth Optimization Approach** *Schmidt, Adrian*	**How Stringent is the Linear Independence Kink Qualification in Abs-Smooth Optimization?** *Bethke, Franz*	**A robust optimization method for functions with discontinuities along lower-dimensional manifolds** *Igel, Lennart*

Thursday, April 10, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S18.05 A23/13	**A posteriori error bounds without generic constants by the two-energies-principle** *Braess, Dietrich*	**Goal-oriented dual-weighted error estimation for first order Virtual Elements** *Sellmann, Christian*	**Error representations for goal-oriented a posteriori error estimation in elasto-plasticity with applications to mesh adaptivity** *Mahnken, Rolf*	**Quantum Realization of the Finite Element Method** *Deiml, Matthias*	**Minimal residual discretization of a class of fully nonlinear elliptic PDE** *Tien Tran, Ngoc*	**Sparse low-rank approximation of multi-parametric partial differential equations** *Yang, Huqing*
S19.05 A23/1.25	**Numerical Methods and Optimality Conditions for PDE Constrained Optimal Control Problems with Control Variables Appearing Linearly** *Vossen, Georg*	**Newton's method for nonlinear mappings into vector bundles** *Weigl, Laura*	**Decomposition methods for mixed-integer optimal control using Pontryagin's principle** *Hante, Falk*	**Finite Element Error Analysis of the Beckmann Problem of Optimal Transport** *Eidecker, Niklas*	**Optimal control of rate-independent systems with non-convex energy** *Andreia, Merlin*	
S20.04 A23/2	**Improving Policy Iteration: A Koopman-Based Riccati Analogue for Nonlinear Control Systems** *Höveler, Bernhard*	**Exploring the Links between the Fundamental Lemma and Kernel Regression** *Molodchyk, Oleksii*	**Exponential trim turnpike property for optimal control systems with symmetries** *Wembe, Boris*	**Optimal control for a class of linear transport dominated systems via the shifted proper orthogonal decomposition** *Burela, Shubhaditya*	**New Lagrangian framework for optimality conditions in second order optimal control problems** *Maslovskaya, Sofya*	**New discrete Lagrangian approach for solving mechanical optimal control problems** *Konopik, Michael*
S21.03 A23/0.23	**Variational exit wave reconstruction - From classical approaches to deep unfolding** *Berkels, Benjamin*		**Towards a super-resolution theory for infinite-width shallow neural networks** *Carioni, Marcello*	**Pattern-Generating Reaction-Diffusion Systems for Texture Processing: Towards Generative Texture Descriptors** *Welk, Martin*	**Bundle Scale Spaces and Local Gauge Symmetries for Graph Networks** *Cassel, Jonas*	**Multilevel Optimization: Geometric Coarse Models and Convergence Analysis** *Vanmaele, Ferdinand-Joseph*

Thursday, April 10, 8:30 - 10:30

	8:30	8:50	9:10	9:30	9:50	10:10
S22.05 A23/0.29	**Algorithmic Differentiation for Second-Order Derivatives of Fixed-Point Iterations with ADOL-C** *Siebert, Tim*	**MaRDI Open Interfaces for Scientific Computing** *Kabanov, Dmitry I.*	**Efficient Implementation of a semi-smooth Newton method for parabolic PDE-constraint optimization** *Reinhold, Alexander*	**Automatic code generation for efficient matrix-free nonlinear solvers with application to solid mechanics** *Wichrowski, Michał*	**IFDIFF - A Matlab Toolkit for ODEs with Filippov-type and State-Dependent Switches** *Sommer, Andreas*	**Spectral gaps for Laplacians of symplectic groups** *Mizerka, Piotr*
S25.05 A23/1.22	**A spatiotemporal deep learning framework for prediction of crack dynamics in heterogeneous solids: efficient mapping of concrete microstructures to its fracture properties** *Najafi, Rasoul*	**A baseline study on the potential of combining Machine Learning and dynamic substructuring** *Hayn, Annika*	**Physics-Informed Recurrent Neural Networks for Predicting Elasto-Plastic Behavior in Hierarchical Finite Element Modeling** *Dyckhoff, Lena*	**Denoising Diffusion Model with Pixel Adaptive Convolutions for Sheet Metal Forming Analysis** *Ali, Syed Sarim*	**Hybrid modeling via machine learning corrections of friction surfacing process simulations towards experimental measurements** *Klusemann, Benjamin*	**Hybrid finite element/neural network solver** *Kapustsin, Uladzislau*
S26.03 A23/0.210	**Wigner crystallization** *Friesecke, Gero*		**A mathematical analysis of IPT-DMFT** *Perrin-Roussel, Solal*	**Certified Model Order Reduction for parametric Hermitian eigenproblems** *Zeng, Zhuoyao*	**Riemannian Optimisation Methods for Ground States of Multicomponent Bose-Einstein Condensates** *Hermann, Martin*	**An Energy-Adaptive Riemannian Conjugate Gradient Method for Eigenvector Problems of Kohn–Sham Type** *Püschel, Jonas*

S27.01 **A23/0.21**	**Room for Improvement – A Blended Learning Concept with Teachers as Tutors and a Digital Exercise Type for Mechanical Equations** *Sattler, Moritz*	**Addressing Common Learning Obstacles in Mechanics through Automated STACK Assignments: An Experience Report** *Zwiers, Ulrich*	**A concept for STACK-based individual electronic assignments in third semester engineering mechanics** *Strackeljan, Cornelius*	**Digital tutorials and examination tools for Structural Analysis – a case study** *Birk, Carolin*	**“Digital Engineering Mechanics” – implementation, opportunities and challenges** *Lammen, Henning*

Thursday, April 10, 11:00 - 13:00

	11:00
PL 5 Magna	**Resonances as a computational tool** *Schratz, Katharina*

	12:00
PL 6 Magna	**On Nonlinear Oscillations** *von Wagner, Utz*

Thursday, April 10, 14:00 - 16:00

	14:00	14:20	14:40	15:00	15:20	15:40
MS3 A23/1.28	**Classifying and predicting behaviours of porous structures using Topological Data Analysis** *Bogdan, Michał*	**Prediction of elastic modulus for metallic porous materials using 3D convolution neural networks** *Topolnicki, Rafał*	**Reeb graphs and the shape of space** *Michalak, Łukasz*	**From Mathematical Theory to Machine Learning: Detecting Symmetry Groups in Crystallographic Tilings** *Naskręcki, Bartosz*		
TS2 A23/1.23	**Large-scale implementation of new technologies in zero-emission city buses on the European market** *Michalak, Dariusz*		**Presentation of the new bus model in front of the LCC**			
S03.04 A23/0.27	**Predicting fatigue lifetime of high-strength concrete using physics-informed neural networks** *Baktheer, Abedulgader*	**Autoencoder based non-intrusive model reduction of damage simulations** *Brepols, Tim*	**A "Capriccio light" approach to study the capabilities of multiscale fracture simulations of thermoplastics** *Richter, Eva Maria*	**Predictability of fracture mechanical quantities based on chemically specific multiscale simulations** *Pfaller, Sebastian*		
S04.06 A23/1	**Experimental investigations on mechanics based additively manufactured stayed lattice structures** *Ou, Yating*	**Modeling the Influence of Temperature for Extrusion-Based 3D Concrete Printing – from Material to Structural Stability** *Robens-Radermacher, Annika*	**Numerical Investigation of Laser Path on Residual Stresses in the Laser Powder Bed Fusion Process** *Puthoor, Alfred Jose*	**Structural detailing of material extrusion additively manufactured 2D metamaterials with rigid inclusions** *Dönitz, Antonia*	**Numerical modelling of thin-walled plate-based lattices and TPMS structures for lightweight engineering applications** *Milenkovski, Nikola*	**Numerical Modelling of Additive Manufacturing in Construction** *Hürkamp, André*

Thursday, April 10, 14:00 - 16:00

	14:00	14:20	14:40	15:00	15:20	15:40
S04.07 A23/7	**Advancing the Simulation of Non-Linear Elastodynamics with Lattice Boltzmann Methods** *Müller, Henning*	**Reduced integration-based stabilization for virtual elements** *Pacolli, Njomza*	**A comparative study of polygonal element formulations for linear elasticity** *Pasupuleti, Ajay Kumar*	**Comparison of Particle finite element method and Finite element method for nonlinear material behaviour in simple test cases** *Kadam, Paras*	**Reissner-Mindlin plate theory by the equilibrium-based FEM** *Świątkiewicz, Paulina*	**Estimation of Discrete Model Parameters for Float Glass Panels Using the Rigid Finite Element Method** *Abramowicz, Małgorzata*
S05.02 A23/1.27	**Multi-Stable Systems: Nonlinear Dynamics and Energy Harvesting** *Warmiński, Jerzy*		**Forced response analysis of dynamic systems with inertia nonlinearity by applying the Multi-Harmonic-Balance Method** *Tatzko, Sebastian*	**Integration of Base Excitation with nonlinear Coupling within the Multiharmonic Balance Method** *Kubatschek, Tido*	**Stability analysis using predictor-corrector continuation to develop Ince-Strutt diagrams for a nonlinear parametric oscillator** *Jonkeren, Mirco*	**A MATLAB Toolbox for the continuation of stationary solution branches** *Vogelei, Julian*
S06.2.02 A23/6	**Modeling rate-dependent damage effects in soft biological tissue** *P. Wollner, Maximilian*	**Relaxation Effects in Thermo-Visco-Elastic Materials** *Hille, Frederik*	**Viscoplastic modeling of shotcrete 3D printing** *Tuan La, Quoc*	**Modeling of the Visco-Plastic Compaction Behavior of Crushed Salt Based on Micromechanical Deformation Mechanisms** *Gartzke, Ann-Kathrin*	**Modelling Material Behavior and Quantifying Recovery Strain in 4D Printed Shape Memory Polymers** *Hembrock, Henrik*	**Aspects of a multiplicative viscoelastic material model for ice** *Koßler, Marvin*
S07.06 A23/8	**Implementation of a thermomechanical model for journal bearings using p-FEM** *Schmidtchen, Fabian*	**Physics-based modeling of a counter-flow heat exchanger with application to control model development** *Klein, Marten*	**Thermal Analysis of Heat Sink with Different Channel Geometries** *Iticha, Welteji*	**Plastic strain induced phenomena at temperatures close to absolute zero** *Skoczen, Blazej*		

Thursday, April 10, 14:00 - 16:00

	14:00	14:20	14:40	15:00	15:20	15:40
S08.05 A23/12	**Towards a digital twin for pavements: A viscoplastic enhancement of the Microlayer framework for asphalt modeling** *May, Marcel*	**Inverse design of architected materials: spinodoids vs TPMS** *Otto, Alexandra*	**Variable Scale Separations in Homogenization of Phase Transforming Materials** *von Oertzen, Vincent*	**Development and Implementation of a New Algorithm for Periodic Boundary Conditions in 3D RVE Models** *Sadeghpour, Reza*	**Experiments on the energy absorption of open cellular structures under static and dynamic loading** *Weinberg, Kerstin*	**Generating microstructures for long fiber reinforced composites with fiber curvature control** *Lauff, Celine*
S09.01 A23/1.25	**Possible predictors of cerebrovascular accidents in paediatric patients with PHACES syndrome: in-silico investigations** *Obidowski, Damian*		**FSI simulation represents a novel and efficacious approach for evaluating the management of giant intracranial aneurysms** *Reorowicz, Piotr*	**Numerical assessment of changes in blood flow hemodynamics after varied virtual endovascular procedures of treating the cerebral aneurysms** *Tyfa, Zbigniew*	**Numerical Investigation of the Effect of Flow Vorticity on Red Blood Cell Orientation and Deformation** *Dirkes, Nico*	**Noninvasive assessment of artery wall stiffness** *Białecki, Ryszard Andrzej*
S14.05 A23/3	**On a non-isothermal Allen-Cahn model for tumor growth** *Ipocoana, Erica*	**Viscoelastic Phase Separation: Well-posedness and Singular Limit to Viscous Cahn–Hilliard Equation** *Gau, Moritz*	**Analysis of a Cahn-Hilliard model for viscoelastoplastic two phase flows in geodynamics** *Cheng, Fan*	**Sharp Interface Reduction of a Mesoscale Model for Two-Species Surfactant Films** *Fuchs, Jakob*	**A fully coupled Stokes-transport system modeling thermoregulation in human skin** *Hacker, Kilian*	**Γ-Convergence and Stochastic Homogenization of Second-Order Singular Perturbation Models for Phase Transitions** *Donnarumma, Antonio Flavio*

S16.04 A23/9	**Minimum compliance design of grillages via optimal transportation methods** *Bołbotowski, Karol*	**Optimization of fold-patterns on elastic thin plates** *Smoch, Christoph*	**Coordinated optimization of actuation and component structures in lightweight dynamic arm-like systems** *Janzik, Felix; Uttich, Eike*	**Optimal simulation parameters for modeling phase transformations in steels** *Potorski, Paweł*	**Minimization of nonlinear least squares inverse problems via global linearization** *Itner, Dominik*

Thursday, April 10, 14:00 - 16:00

	14:00	14:20	14:40	15:00	15:20	15:40
S18.06 A23/13	**Optimal Order Pressure Trajectory Approximation for Stokes Systems: Set of Pressure Solutions and its Post-Processing** *Bause, Markus*	**Stabilized finite elements for incompressible Navier-Stokes flows on manifolds** *Kaiser, Michael Wolfgang*	**Mixed finite element for the Stokes eigenvalue problem** *Dagli, Tugay*	**A positivity preserving scheme for a coupled Chemotaxis–(Navier–)Stokes system** *Pervolianakis, Christos*	**Goal-Oriented Adaptivity Techniques for Convection-Dominated Transport and Flow Problems** *Bruchhäuser, Marius Paul*	**Analysis and numerics of nonlinear PDE systems in porous media flow models** *Boisserée, Simon*
S20.05 A23/2	**Exponential splittings in the presence of unbounded operators** *Kropielnicka, Karolina*		**Extremum seeking algorithms with time-varying gains** *Grushkovska, Victoria*	**Simultaneous Inversion for Underactuated Mechanical Systems with Servo-Constraints** *Wang, Tengman*	**An averaging approach for the optimal design of stand-alone mini- grids** *Kliche, Nina*	**Rational Approximation of Transfer Functions with Automated Detection of Relative Degrees** *Heiland, Jan*
S21.04 A23/0.23	**Covariance Matrix Estimation for Massive MIMO** *Paul, Laura*	**Time-Harmonic Optical Flow with Applications in Elastography** *Melnyk, Oleh*	**Reconstructing Missing Fourier Data in MRI: Exploring GRAPPA and Subsampling Strategies in the Fourier Domain** *Riahi, Anahita*	**Automated Adjustment of the Focussing Optics of Free-electron Lasers** *Schmidt, Janina*	**Adaptive Bregman–Kaczmarz: an approach to solve linear inverse problems with independent noise exactly** *Tondji, Lionel*	**Density estimation for broken random samples** *Bi, Hancheng*
S22.06 A23/0.29	**Higher-Order Projection Methods for Variable Viscosity Fluids** *Schussnig, Richard*	**Transient numerical investigation of fluid flow with the Fast Boundary-Domain Integral Method** *Tibaut, Jan*	**Smoothed aggregation algebraic multigrid for problems with heterogeneous and anisotropic material behavior** *Firmbach, Max*	**A Hybrid Ice Model** *Kahl, Saskia*	**Matrix-free inexact preconditioning techniques for discretizations on structured grids** *Mika, Michał*	**NURBS fitting method for smoothed surface approximation in polymer additive manufacturing** *Timmann, Frederic*

Thursday, April 10, 14:00 - 18:30

	14:00	14:20	14:40	15:00	15:20	15:40
S25.06 A23/1.22	**Machine Learning and Stochastic 3D Modeling for Reconstructing 3D Grain Maps from 2D EBSD Data** *Furat, Orkun*	**Comparison of classical ANN architecture and neural operator approach to approximate 2-point probability functions** *Schmollack, Luzie*	**Data-efficient inverse design of elastic spinodoid metamaterials** *Rosenkranz, Max*	**A Variational Autoencoder Approach to Structure-Property Mapping in Porous Metamaterials** *Heider, Yousef*	**A holistic AI approach from model creation to model evaluation in engineering applications** *Drieschner, Martin*	**Inverse Material Design using Deep Reinforcement Learning and Homogenization** *Würz, Valentin*
S27.02 A23/0.21	**GAMEchanics: the open-source Mechanics-themed physical and virtual Escape Room** *Völlmecke, Christina*		**Enhancing Chemical Engineering Education: Constructive Alignment and Augmented Reality in Experimental Fluid Mechanics** *Kaufhold, Nils*	**On possibilities and challenges of GPT-assisted learning environments** *Harnisch, Marius*	**Innovative Fluid Mechanics Education through Augmented Reality and Interactive Learning** *Behr, Alexander S.*	**Programming-enhanced mechanics - an innovative teaching approach for AI Engineering Education** *Westphal, Hanna*

	16:30	16:50	17:10	17:30	17:50	18:10
S03.05 A23/0.27	**A Mixed Three-Field Variational Formulation for Phase-Field Fracture Modeling of Elastomer Materials** *Noii, Nima*	**Configurational forces for mixed-mode crack loading and growth analysis with the virtual element method** *Schmitz, Kevin*	**Analysis of dynamically loaded cracks with the virtual element method** *Wappler, Philipp*	**Determination of the Effective Crack Resistance in Porous Materials Using a Fracture Phase-Field Model** *Schlüter, Alexander*	**A Stochastic Phase-Field Approach for Ductile-Like Fracture of Rubber-Like Materials** *Tanış, Bülent Efe*	**Mechanical Behavior and Damage Evolution in Additively Manufactured Spinodoid** *Sreenivasa, Vishal*

S04.08 A23/1	**Geometrically exact planar beam dynamics: Port-Hamiltonian modeling and structure-preserving discretization** *L. Kinon, Philipp*	**A novel approach for mass lumping leveraging the spectral decomposition theorem** *Bäthge, Fabian*	**The Petrov-Galerkin Finite Element Method in the Context of Elastodynamic Problems** *Zähringer, Felix*	**Determining Shock Responses with Experimental Impulse-Based Substructuring** *Zobel, Oliver Maximilian*	**Comparison of the dynamics of a scaled trailer model and its real-size counterpart** *Volltrauer, Jan*	**Filtering and Regularization techniques to mitigate noise in experimental Frequency Based Substructuring and Transfer Path Analysis** *Trainotti, Francesco*

Thursday, April 10, 16:30 - 18:30

	16:30	16:50	17:10	17:30	17:50	18:10
S04.09 A23/7	**Prestressing of concrete using iron-based shape memory alloy (Fe-SMA) short fibers: Experimental and numerical analysis** *Tabrizikahou, Alireza*	**Modelling of Failure Mechanisms of CFS Members Restrained with bonded CFRP Textile** *Rzeszut, Katarzyna*	**Application of the Finite Difference Method (FDM) in bending, dynamic and stability calculations of variable cross-section beams** *Rakowski, Jerzy*			
S05.03 A23/1.27	**Slow-fast oscillations of an elastic double pendulum** *Steindl, Alois*	**Optimal l^p-Norm for Robust Integrity Measures of Safe Basins in High-Dimensional Systems** *Novelli, Nico*	**Mechanism of self excitation of silos for particles** *Kröger, Matthias*	**Investigations on Sensitivity of AFM Cantilevers Using Parametric Resonance** *Ehrmann, Jonathan*	**A new paradigm for multi-fidelity continuation using parallel model refinement** *Gross, Johann*	
S06.2.03 A23/6	**Neural networks meet hyperelasticity: On benefits and limits of polyconvexity** *K. Klein, Dominik*	**Data-driven statistical learning of polymeric data** *Chau, Vu M.*	**Data-driven statistical learning of textile reinforcements** *Ngoc Khiêm, Vu*	**A Data-Driven Constitutive Model for Compressible Polymers** *Dal, Hüsnü*	**Parameter identification of a cold-box sand with a micromorphic continuum** *Börger, Alexander*	**Numerical Analysis of the Forming Process for the Design of Tailored Fibre-Reinforced Thermoplastic Laminates** *Kabala, Philipp*
S08.06 A23/12	**Continuum Modeling of Dislocation Microstructures under Contact Mechanics** *Lee, Sing-Huei*	**Empirically Corrected Cluster Cubature for Reduced Order Models** *Goldbeck, Hauke*	**A generic software framework for adaptively solving two-scale coupled problems** *Desai, Ishaan*	**Upscaling Paper Microstructures: A Statistical Approach Utilizing Mechanical and Image Data** *Neumann, Johannes*	**Identification of material parameters in the relaxed micromorphic model** *Sarhil, Mohammad* **Identification of material parameters in the relaxed micromorphic model** *Sarhil, Mohammad*	

Thursday, April 10, 16:30 - 18:30

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S09.02 A23/1.25	**Mass transport of a two phase flow through a converging gap with one moving wall** *Graf, Matthias*	**Unveiling the Edge: Streamwise Localized Solutions and the Nature of Turbulence in Square-Duct Flow** *Gepner, Stanislaw*	**Experimental validation of a CFD model of blood flow in a myocardial bridge** *Melka, Bartlomiej*			
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S22.07 A23/0.29	**Meshless Numerical Approach to Forced Convection Problems with Optimized Port Configuration** *Chu, Chiung-Lin; Fan, Chia-Ming*	**Method of Fundamental Solutions with Domain-Decomposition Method and the Particle Swarm Optimization for Solving the Degenerate Boundary Problems** *Lam, Tan Phat*	**Numerical solutions of boundary detection problems by using the method of fundamental solution and the particle swarm optimization** *Fan, Chia-Ming*	**Optimization of the exhaust unit geometry to minimize Ex-zone dimensions** *Kaufhold, Nils*		
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Magna

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Wolfram, Marie-Therese

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12:00

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Menzel, Andreas

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GESELLSCHAFT für
ANGEWANDTE MATHEMATIK und MECHANIK e.V.
INTERNATIONAL ASSOCIATION of APPLIED MATHEMATICS and MECHANICS

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