

# Scientific Program 2023

## Workshops

*Participants of the Workshops at Oberwolfach are invited personally by the Director of the Institute. Participation is subject to such an invitation. Interested researchers, in particular junior scientists, can contact the administration of the Institute. Since the number of participants is restricted, not all inquiries can be considered.*

01.01. - 07.01.2023 (ID: 2301)

### **Combinatorics**

Peter Keevash, Oxford  
Wojciech Samotij, Tel Aviv  
Benny Sudakov, Zürich

08.01. - 14.01.2023 (ID: 2302)

### **Model Theory: Combinatorics, Groups, Valued Fields and Neostability**

Itay Kaplan, Jerusalem  
Silvain Rideau-Kikuchi, Paris  
Katrin Tent, Münster  
Frank Wagner, Villeurbanne

15.01. - 21.01.2023 (ID: 2303)

### **Low-dimensional Topology**

Stefan Friedl, Regensburg  
Yoav Moriah, Haifa  
Jessica Purcell, Melbourne  
Saul Schleimer, Warwick

22.01. - 28.01.2023 (ID: 2304)

### **Morphisms in Low Dimensions**

Andrew Lobb, Durham  
Maggie Miller, Stanford  
Arunima Ray, Bonn

29.01. - 04.02.2023 (ID: 2305)

### **Arithmetic of Shimura Varieties**

Laurent Fargues, Paris  
Ulrich Görtz, Essen  
Eva Viehmann, Garching  
Torsten Wedhorn, Darmstadt

05.02. - 11.02.2023 (ID: 2306)

### **Resolutions in Local Algebra and Singularity Theory**

Aldo Conca, Genova  
Steven Dale Cutkosky, Columbia  
Eleonore Faber, Leeds  
Srikanth B. Iyengar, Salt Lake City

12.02. - 18.02.2023 (ID: 2307)

### **Representation Theory of Quivers and Finite-Dimensional Algebras**

Claire Amiot, Gières  
William Crawley-Boevey, Bielefeld  
Osamu Iyama, Tokyo  
Jan Schröer, Bonn

19.02. - 25.02.2023 (ID: 2308)

### **Design and Analysis of Infectious Disease Studies**

Caroline Colijn, Burnaby  
M. Elizabeth Halloran, Seattle  
Pieter Trapman, Stockholm  
Philip O'Neill, Nottingham

05.03. - 11.03.2023 (ID: 2310a)

### **MATRIX-MFO Tandem Workshop: Stochastic Reinforcement Processes and Graphs**

Markus Heydenreich, München  
Mark Holmes, Melbourne  
Viktor Kleptsyn, Rennes  
Cécille Mailler, Bath

05.03. - 11.03.2023 (ID: 2310b)

### **Optimization Problems for PDEs in Weak Space-Time Form**

Helmut Harbrecht, Basel  
Angela Kunoht, Köln  
Valeria Simoncini, Bologna  
Karsten Urban, Ulm

## Miniworkshops

26.02. - 04.03.2023 (2309a/b/c), deadline for appl.: 4 September 2022  
29.10. - 04.11.2023 (2344a/b/c), deadline for appl.: 7 May 2023  
26.11. - 02.12.2023 (2348a/b/c), deadline for appl.: 7 May 2023  
17.12. - 23.12.2023 (2351a/b/c), deadline for appl.: 7 May 2023

## Tandem- or Miniworkshops

17.09. - 23.09.2023 (2338b/c) deadline for appl.: 31 July 2022  
24.09. - 30.09.2023 (2339a/b/c) deadline for appl.: 31 July 2022

## Arbeitsgemeinschaft (study group)

02.04. - 08.04.2023 (2314), to be announced in summer 2022  
08.10. - 14.10.2023 (2341), to be announced in winter 2022  
15.10. - 21.10.2023 (2342), to be announced in winter 2022

## Oberwolfach Seminars

28.05. - 03.06.2023 (2322a/b), to be announced in winter 2022  
22.10. - 28.10.2023 (2343a/b), to be announced in winter 2022  
19.11. - 25.11.2023 (2347a/b), to be announced in winter 2022

12.03. - 18.03.2023 (ID: 2311)

### **Real Algebraic Geometry with a View toward Koopman Operator Methods**

Didier Henrion, Toulouse  
Salma Kuhlmann, Konstanz  
Igor Mezic, Santa Barbara  
Victor Vinnikov, Be'er Sheva

19.03. - 25.03.2023 (ID: 2312)

### **New Directions in Real Algebraic Geometry**

Saugata Basu, West Lafayette  
Mario Kummer, Dresden  
Tim Netzer, Innsbruck  
Cynthia Vinzant, Seattle

26.03. - 01.04.2023 (ID: 2313)

### **Random Graphs: Combinatorics, Complex Networks and Disordered Systems**

Amin Coja-Oghlan, Frankfurt  
Tobias Friedrich, Potsdam  
Mihyun Kang, Graz  
Konstantinos Panagiotou, München

09.04. - 15.04.2023 (ID: 2315)

### **Komplexe Analysis — Differential and Algebraic Methods in Kähler Spaces**

Philippe Eyssidieux, Saint Martin d'Hères  
Jun-Muk Hwang, Daejeon  
Stefan Kebekus, Freiburg  
Mihai Paun, Bayreuth

16.04. - 22.04.2023 (ID: 2316)

### **Representations of Finite Groups**

Olivier Dudas, Paris  
Meinolf Geck, Stuttgart  
Radha Kessar, London  
Gabriel Navarro, València

23.04. - 29.04.2023 (ID: 2317)

### **Mathematical Foundations of Biological Organisation**

Jean-Pierre Eckmann, Genève  
Karsten Kruse, Genève  
Lai-Sang Young, New York

30.04. - 06.05.2023 (ID: 2318)

**Tomographic Inverse Problems: Mathematical Challenges and Novel Applications**

Simon Arridge, London  
Martin Burger, Erlangen  
Bernadette Hahn, Stuttgart  
Eric Todd Quinto, Medford

07.05. - 13.05.2023 (ID: 2319)

**Group Actions and Harmonic Analysis in Number Theory**

Valentin Blomer, Bonn  
Manfred Einsiedler, Zürich  
Emmanuel Kowalski, Zürich  
Maryna Viazovska, Lausanne

14.05. - 20.05.2023 (ID: 2320)

**Tropical Methods in Geometry**

Iliia Itenberg, Paris  
Hannah Markwig, Tübingen  
Kris Shaw, Oslo  
Ilya Tyomkin, Be'er Sheva

21.05. - 27.05.2023 (ID: 2321)

**Hypoelliptic Operators in Geometry**

Davide Barilari, Padova  
Xiaonan Ma, Paris  
Nikhil Savale, Köln  
Yi Wang, Baltimore

04.06. - 10.06.2023 (ID: 2323)

**Incidence Problems in Harmonic Analysis, Geometric Measure Theory, and Ergodic Theory**

Tuomas Orponen, Jyväskylä  
Pablo Shmerkin, Vancouver  
Hong Wang, Los Angeles

11.06. - 17.06.2023 (ID: 2324)

**Machine Learning for Science: Mathematics at the Interface of Data-driven and Mechanistic Modelling**

Neil Lawrence, Cambridge UK  
Jessica Montgomery, Cambridge UK  
Bernhard Schölkopf, Tübingen

18.06. - 24.06.2023 (ID: 2325)

**Recent Trends in Algebraic Geometry**

Olivier Debarre, Paris  
Gavril Farkas, Berlin  
Yuri Tschinkel, New York  
Ravi Vakil, Stanford

25.06. - 01.07.2023 (ID: 2326)

**Algebraische Zahlentheorie**

Guido Kings, Regensburg  
Ramdorai Sujatha, Vancouver  
Eric Urban, New York  
Otmar Venjakob, Heidelberg

02.07. - 08.07.2023 (ID: 2327)

**Differentialgeometrie im Grossen**

Richard Bamler, Berkeley  
Otis Chodosh, Stanford  
Urs Lang, Zürich  
Ben Weinkove, Evanston

09.07. - 15.07.2023 (ID: 2328)

**Dynamische Systeme**

Marie-Claude Arnaud, Paris  
Michael Hutchings, Berkeley  
Vadim Kaloshin, Klosterneuburg

16.07. - 22.07.2023 (ID: 2329)

**Transport and Scale Interactions in Geophysical Flows**

Christian L. E. Franzke, Busan  
Marcel Oliver, Bremen  
Jens Rademacher, Bremen  
Irina Rypina, Woods Hole

23.07. - 29.07.2023 (ID: 2330)

**Partial Differential Equations**

Guido De Philippis, New York  
Ailana M. Fraser, Vancouver  
Felix Schulze, Coventry

30.07. - 05.08.2023 (ID: 2331)

**Teichmüller Theory: Classical, Higher, Super and Quantum**

Ken'ichi Ohshika, Tokyo  
Athanasios Papadopoulos, Strasbourg  
Robert C. Penner, Bures-sur-Yvette  
Anna Wienhard, Heidelberg

06.08. - 12.08.2023 (ID: 2332)

**Homotopy Theory**

Jesper Grodal, Kobenhavn  
Mike Hill, Los Angeles  
Birgit Richter, Hamburg

13.08. - 19.08.2023 (ID: 2333)

**Mixed-integer Nonlinear Optimization: A Hatchery for Modern Mathematics**

Leo Liberti, Palaiseau  
Sebastian Sager, Magdeburg  
Angelika Wiegele, Klagenfurt

20.08. - 26.08.2023 (ID: 2334)

**Geometric Spectral Theory**

Asma Hassannezhad, Bristol  
Luc Hillairet, Orléans  
Konstantin Pankrashkin, Oldenburg  
Iosif Polterovich, Montréal

27.08. - 02.09.2023 (ID: 2335)

**Aspects of Aperiodic Order**

Michael Baake, Bielefeld  
Maria Isabel Cortez, Santiago de Chile  
David Damanik, Houston  
Nicolae Strungaru, Edmonton

03.09. - 09.09.2023 (ID: 2336)

**Classical and Quantum Mechanical Models of Many-Particle Systems**

Klemens Fellner, Graz  
Isabelle Gallagher, Paris  
Pierre-Emmanuel Jabin, University Park

10.09. - 16.09.2023 (ID: 2337)

**Many-Body Quantum Systems**

Christian Hainzl, München  
Benjamin Schlein, Zürich  
Robert Seiringer, Klosterneuburg  
Simone Warzel, München

17.09. - 23.09.2023 (ID: 2338a)

**Tensor-Triangular Geometry and Interactions**

Paul Balmer, Los Angeles  
Tobias Barthel, Bonn  
John Greenlees, Coventry  
Julia Pevtsova, Seattle

01.10. - 07.10.2023 (ID: 2340)

**New Challenges in the Interplay between Finance and Insurance**

Beatrice Acciaio, Zürich  
Hansjörg Albrecher, Lausanne  
Francesca Biagini, München  
Thorsten Schmidt, Freiburg

05.11. - 11.11.2023 (ID: 2345)

**Control Methods in Hyperbolic Partial Differential Equations**

Fabio Ancona, Padua  
Bani Anvari, London  
Olivier Glass, Paris  
Michael Herty, Aachen

12.11. - 18.11.2023 (ID: 2346)

**Mathematical Logic: Proof Theory, Constructive Mathematics**

Samuel R. Buss, La Jolla  
Rosalie Iemhoff, Utrecht  
Ulrich Kohlenbach, Darmstadt  
Michael Rathjen, Leeds

03.12. - 09.12.2023 (ID: 2349)

**Variational Methods for Evolution**

Franca Hoffmann, Bonn  
Alexander Mielke, Berlin  
Mark Peletier, Eindhoven  
Dejan Slepcevic, Pittsburgh

10.12. - 16.12.2023 (ID: 2350)

**Geometric, Algebraic, and Topological Combinatorics**

Gil Kalai, Jerusalem  
Isabella Novik, Seattle  
Francisco Santos, Santander  
Volkmar Welker, Marburg