



# Scientific Program 2022

## 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 excellent junior scientists working in the topic of a workshop, can contact the administration of the Institute. Since the number of participants is restricted, not all inquiries can be considered.*

02.01. - 08.01.2022 (ID: 2201)

### Graph Theory

Jim Geelen, Waterloo  
Daniel Kral, Brno/Coventry  
Alex Scott, Oxford

09.01. - 15.01.2022 (ID: 2202)

### Set Theory

Ilijas Farah, Toronto  
Ralf Schindler, Münster  
Dima Sinapova, Chicago  
W. Hugh Woodin, Cambridge MA

16.01. - 22.01.2022 (ID: 2203)

### Groups and Dynamics: Topology, Measure, and Borel Structure

David Kerr, Münster  
Anush Tserunyan, Montreal  
Robin Tucker-Drob, College Station

23.01. - 29.01.2022 (ID: 2204)

### Multiscale Coupled Models for Complex Media: From Analysis to Simulation in Geophysics and Medicine

Malgorzata Peszynska, Corvallis  
Sorin Pop, Diepenbeek  
Barbara Wohlmuth, Garching  
Zohar Yosibash, Tel Aviv

30.01. - 05.02.2022 (ID: 2205)

### Non-Archimedean Geometry and Applications

Peter Schneider, Münster  
Peter Scholze, Bonn  
Michael Temkin, Jerusalem  
Annette Werner, Frankfurt

06.02. - 12.02.2022 (ID: 2206)

### Space-Time Methods for Time-Dependent Partial Differential Equations

Ricardo Nochetto, College Park  
Stig Larsson, Göteborg  
Stefan Sauter, Zürich  
Christian Wieners, Karlsruhe

20.02. - 26.02.2022 (ID: 2208)

### Data Assimilation – Mathematical Foundation and Applications

Youssef M. Marzouk, Cambridge MA  
Sebastian Reich, Potsdam  
Aretha Teckentrup, Edinburgh

27.02. - 05.03.2022 (ID: 2209)

### Geometric Structures in Group Theory

Martin Bridson, Oxford  
Cornelia Drutu, Oxford  
Linus Kramer, Münster  
Bertrand Rémy, Palaiseau

06.03. - 12.03.2022 (ID: 2210)

### Population Dynamics and Statistical Physics in Synergy

Frank den Hollander, Leiden  
Anja Sturm, Göttingen  
Anita Winter, Essen

13.03. - 19.03.2022 (ID: 2211a)

### The Laguerre-Pólya Class and Combinatorics

Kathy Driver, Cape Town  
Olga Holtz, Berkeley  
Alan Sokal, London

## Miniworkshops

13.02. - 19.02.2022 (2207a/b/c), deadline for appl.: 18 July 2021  
20.03. - 26.03.2022 (2212a/b/c), deadline for appl.: 18 July 2021  
02.10. - 08.10.2022 (2240a/b/c), deadline for appl.: 3 April 2022  
27.11. - 03.12.2022 (2248a/b/c), deadline for appl.: 3 April 2022

## Arbeitsgemeinschaft (study group)

03.04. - 09.04.2022 (2214), to be announced in summer 2021  
09.10. - 15.10.2022 (2241), to be announced in winter 2021/22  
16.10. - 22.10.2022 (2242), to be announced in winter 2021/22

## Oberwolfach Seminars

05.06. - 11.06.2022 (2223a/b), to be announced in winter 2021/22  
23.10. - 29.10.2022 (2243a/b), to be announced in winter 2021/22  
20.11. - 26.11.2022 (2247a/b), to be announced in winter 2021/22

13.03. - 19.03.2022 (ID: 2211b)

### New Mathematical Techniques in Information Theory

Amos Lapidot, Zürich  
Prakash Narayan, College Park

27.03. - 02.04.2022 (ID: 2213)

### Toric Geometry

Jürgen Hausen, Tübingen  
Milena Hering, Edinburgh  
Nathan Ilten, Burnaby  
Diane Maclagan, Coventry

10.04. - 16.04.2022 (ID: 2215a)

### Structure-Preserving Discretizations for Nonlinear Systems of Hyperbolic, Involution-Constrained Partial Differential Equations on Manifolds

Manuel Castro, Malaga  
Bruno Després, Paris  
Michael Dumbser, Trento  
Christian Klingenberg, Würzburg

10.04. - 16.04.2022 (ID: 2215b)

### Conic Linear Optimization for Computer-Assisted Proofs

Etienne de Klerk, Tilburg  
Didier Henrion, Toulouse/Prague  
Frank Vallentin, Cologne  
Angelika Wiegele, Klagenfurt

17.04. - 23.04.2022 (ID: 2216)

### Diophantische Approximationen

Yann Bugeaud, Strasbourg  
Pietro Corvaja, Udine  
Laura DeMarco, Evanston  
Philipp Habegger, Basel

24.04. - 30.04.2022 (ID: 2217)

### Combinatorics, Probability and Computing

Michael Krivelevich, Tel Aviv  
Robert Morris, Rio de Janeiro  
Oliver Riordan, Oxford  
Angelika Steger, Zürich

01.05. - 07.05.2022 (ID: 2218)

### Interactions between Algebraic Geometry and Noncommutative Algebra

Bill Crawley-Boevey, Bielefeld  
Markus Reineke, Bochum  
Catharina Stroppel, Bonn  
Michel Van den Bergh, Diepenbeek

08.05. - 14.05.2022 (ID: 2219)

### Algebraic K-Theory

Thomas Geisser, Tokyo  
Lars Hesselholt, Copenhagen  
Annette Huber-Klawitter, Freiburg  
Moritz Kerz, Regensburg

15.05. - 21.05.2022 (ID: 2220)

**Re-thinking High-dimensional Mathematical Statistics**

Florentina Bunea, Ithaca  
Robert Nowak, Madison  
Alexandre Tsybakov, Palaiseau

22.05. - 28.05.2022 (ID: 2221)

**Deterministic Dynamics and Randomness in PDE**

Andrea Nahmod, Amherst  
Gigliola Staffilani, Cambridge MA  
Hendrik Weber, Bath  
Sijue Wu, Ann Arbor

29.05. - 04.06.2022 (ID: 2222)

**Universality: Random Matrices, Random Geometry and SPDEs**

Martin Hairer, London  
Grégory Miermont, Lyon  
Horng-Tzer Yau, Cambridge MA

12.06. - 18.06.2022 (ID: 2224)

**Geometrie**

Aaron Naber, Evanston  
André Neves, Chicago  
Burkhard Wilking, Münster

19.06. - 25.06.2022 (ID: 2225)

**Hilbert Complexes: Analysis, Applications, and Discretizations**

Ana M. Alonso Rodriguez, Trento  
Douglas N. Arnold, Minneapolis  
Dirk Pauly, Essen  
Francesca Rapetti, Nice

26.06. - 02.07.2022 (ID: 2226)

**Nonlinear Waves and Dispersive Equations**

Herbert Koch, Bonn  
Pierre Raphael, Nice  
Daniel Tataru, Berkeley  
Monica Visan, Los Angeles

03.07. - 09.07.2022 (ID: 2227)

**Real Analysis, Harmonic Analysis and Applications**

Michael Christ, Berkeley  
Detlef Müller, Kiel  
Christoph Thiele, Bonn  
Ana Vargas, Madrid

10.07. - 16.07.2022 (ID: 2228)

**Algebraic Geometry: Moduli Spaces, Birational Geometry and Derived Aspects**

Christopher Hacon, Salt Lake City  
Daniel Huybrechts, Bonn  
Richard Thomas, London  
Chenyang Xu, Princeton

17.07. - 23.07.2022 (ID: 2229)

**The Renormalization Group**

Roland Bauerschmidt, Cambridge UK  
Margherita Disertori, Bonn  
Stefan Hollands, Leipzig  
Manfred Salmhofer, Heidelberg

24.07. - 30.07.2022 (ID: 2230)

**Topologie**

Mark Behrens, Notre Dame  
Ruth Charney, Waltham  
Soren Galatius, Copenhagen  
Andras Stipsicz, Budapest

31.07. - 06.08.2022 (ID: 2231)

**Non-Commutative Geometry and Cyclic Homology**

Alain Connes, Paris  
Guoliang Yu, College Station  
Ryszard Nest, Copenhagen  
Thomas Nikolaus, Münster

07.08. - 13.08.2022 (ID: 2232)

**C\*-Algebras**

Dimitri Shlyakhtenko, Los Angeles  
Andreas Thom, Dresden  
Stefaan Vaes, Leuven  
Wilhelm Winter, Münster

14.08. - 20.08.2022 (ID: 2233)

**Calculus of Variations**

Lia Bronsard, Hamilton  
Laszlo Székelyhidi, Leipzig  
Yoshihiro Tonegawa, Tokyo  
Tatiana Toro, Seattle

21.08. - 27.08.2022 (ID: 2234)

**Mathematical Imaging and Surface Processing**

Mirela Ben-Chen, Haifa  
Antonin Chambolle, Palaiseau  
Martin Rumpf, Bonn  
Peter Schröder, Pasadena

28.08. - 03.09.2022 (ID: 2235)

**Character Theory and Categorification**

Christine Bessenrodt, Hannover  
Christopher Bowman, Canterbury  
Eugenio Giannelli, Florence  
Alexander Kleshchev, Eugene

04.09. - 10.09.2022 (ID: 2236)

**Complex Geometry and Dynamical Systems**

Tien-Cuong Dinh, Singapore  
George Marinescu, Köln  
Valentino Tosatti, Evanston  
Elizabeth Wulcan, Gothenburg

11.09. - 17.09.2022 (ID: 2237)

**Large Scale Stochastic Dynamics**

Pietro Caputo, Roma  
Fabio Toninelli, Wien  
Bálint Tóth, Bristol

18.09. - 24.09.2022 (ID: 2238)

**Multiscale Wave-Turbulence Dynamics in the Atmosphere and Ocean**

Ulrich Achatz, Frankfurt  
Oliver Bühler, New York  
Chantal Staquet, Grenoble  
William Young, La Jolla

25.09. - 01.10.2022 (ID: 2239)

**At the Interface between Semiclassical Analysis and Numerical Analysis of Wave Scattering Problems**

Simon Chandler-Wilde, Reading  
Monique Dauge, Rennes  
Euan Spence, Bath  
Jared Wunsch, Evanston

30.10. - 05.11.2022 (ID: 2244)

**Heat Kernels, Stochastic Processes and Functional Inequalities**

Masha Gordina, Storrs  
Takashi Kumagai, Kyoto  
Laurent Saloff-Coste, Ithaca  
Karl-Theodor Sturm, Bonn

06.11. - 12.11.2022 (ID: 2245)

**Analytic Number Theory**

Kaisa Matomäki, Turku  
Kannan Soundararajan, Stanford  
Robert C. Vaughan, State College  
Trevor D. Wooley, West Lafayette

13.11. - 19.11.2022 (ID: 2246)

**Mathematical Advances in Geophysical Fluid Dynamics**

Yoshikazu Giga, Tokyo  
Matthias Hieber, Darmstadt  
Peter Korn, Hamburg  
Edriss S. Titi, College Station/Rehovot

04.12. - 10.12.2022 (ID: 2249a)

**Algebraic Structures in Statistical Methodology**

Mathias Drton, München  
Thomas Kahle, Magdeburg  
Seth Sullivant, Raleigh  
Caroline Uhler, Zürich/Cambridge MA

04.12. - 10.12.2022 (ID: 2249b)

**History of Mathematics through Collaboration: Toward a Composite Portrait of Oswald Veblen**

Sloan Despeaux, Cullowhee  
Della Dumbaugh, Richmond  
Jemma Lorenat, Claremont

11.12. - 17.12.2022 (ID: 2250)

**Enumerative Combinatorics**

Mireille Bousquet-Mélou, Talence  
Guillaume Chapuy, Paris  
Michael Drmota, Wien  
Sergi Elizalde, Hanover