



Scientific Program 2021

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.

03.01. - 09.01.2021 (ID: 2101a)

**Homogeneous Structures:
Model Theory meets Universal Algebra**
Manuel Bodirsky, Dresden
Joanna Ochremiak, Talence
Michael Pinsker, Wien/Prague

03.01. - 09.01.2021 (ID: 2101b)

**Geometry, Dynamics and Spectrum of Operators
on Discrete Spaces**
David Damanik, Houston
Matthias Keller, Potsdam
Tatiana Nagnibeda, Geneva
Felix Pogorzelski, Leipzig

10.01. - 16.01.2021 (ID: 2102)

Nonstandard Finite Element Methods
Daniele Boffi, Pavia
Carsten Carstensen, Berlin
Alexandre Ern, Paris
Jun Hu, Peking

17.01. - 23.01.2021 (ID: 2103)

Spatial Networks and Percolation
Nina Gantert, München
Julia Komjáthy, Eindhoven
Peter Mörters, Köln
Vincent Tassion, Zürich

24.01. - 30.01.2021 (ID: 2104)

**Logarithmic Vector Fields and Freeness of Divisors
and Arrangements: New perspectives and applications**
Takuro Abe, Fukuoka
Alexandru Dimca, Nice
Eva-Maria Feichtner, Bremen
Gerhard Röhrle, Bochum

31.01. - 06.02.2021 (ID: 2105)

Moduli spaces and Modular forms
Jan Hendrik Bruinier, Darmstadt
Gerard van der Geer, Amsterdam
Valery Gritsenko, Villeneuve d'Ascq

07.02. - 13.02.2021 (ID: 2106a/b/c)

Mini-Workshops (deadline for applications: September 1st, 2020)

14.02. - 20.02.2021 (ID: 2107)

Challenges in Optimization with Complex PDE-Systems
Michael Hintermüller, Berlin
Karl Kunisch, Graz
Günter Leugering, Erlangen
Elisabetta Rocca, Pavia

21.02. - 27.02.2021 (ID: 2108)

Applications of Optimal Transportation in the Natural Sciences
Jean-David Benamou, Le Chesnay
Virginie Ehrlacher, Champs sur Marne
Daniel Matthes, Garching

28.02. - 06.03.2021 (ID: 2109)

Hyperbolic Balance Laws: Modeling, Analysis, and Numerics
Remi Abgrall, Zürich
Mauro Garavello, Milano
Maria Lukacova, Mainz
Konstantina Trivisa, College Park

07.03. - 13.03.2021 (ID: 2110a)

Homotopic and Geometric Galois Theory
Benjamin Collas, Bayreuth
Pierre Dèbes, Villeneuve d'Ascq
Hiroaki Nakamura, Osaka

07.03. - 13.03.2021 (ID: 2110b)

Deep Learning for Inverse Problems
Simon Arridge, London
Peter Maaß, Bremen
Carola Schönlieb, Cambridge UK

14.03. - 20.03.2021 (ID: 2111)

Homogenization Theory: Periodic and Beyond
Anne-Laure Dalibard, Paris
Claude Le Bris, Marnay-la-Vallée
Panagiotis E. Souganidis, Chicago

21.03. - 27.03.2021 (ID: 2112)

Mathematical Foundations of Machine Learning
Peter Bartlett, Berkeley
Cristina Butucea, Palaiseau
Johannes Schmidt-Hieber, Enschede

28.03. - 03.04.2021 (ID: 2113)

Geometric Numerical Integration
Marlis Hochbruck, Karlsruhe
Christian Lubich, Tübingen
Robert McLachlan, Palmerston North
Jesús María Sanz-Serna, Madrid

04.04. - 10.04.2021 (ID: 2114)

Arbeitsgemeinschaft (subject tba in summer 2020)

11.04. - 17.04.2021 (ID: 2115)

Mathematical Foundations of Biological Organization
Jean-Pierre Eckmann, Genève
Karsten Kruse, Genève
Lai-Sang Young, New York

18.04. - 24.04.2021 (ID: 2116)

Algebraic Groups
Corrado De Concini, Rome
Philippe Gille, Villeurbanne,
Peter Littelmann, Köln

25.04. - 01.05.2021 (ID: 2117)

Computability Theory
Vasco Brattka, Neubiberg
Noam Greenberg, Wellington
Iskander Kalimullin, Kazan
Mariya Soskova, Madison

02.05. - 08.05.2021 (ID: 2118)

**Foundations of Bayesian Inference for
Complex Statistical Models**
Richard Nickl, Cambridge UK
Judith Rousseau, Oxford
Aad van der Vaart, Leiden

09.05. - 15.05.2021 (ID: 2119a/b/c)

Mini-Workshops (deadline for applications: September 1st, 2020)

16.05. - 22.05.2021 (ID: 2120)

Geometric Methods of Complex Analysis
Bo Berndtsson, Göteborg
John Erik Fornæss, Trondheim
Nikolay Shcherbina, Wuppertal

23.05. - 29.05.2021 (ID: 2121a/b)

Oberwolfach Seminars (subjects tba in winter 2020)

30.05. - 05.06.2021 (ID: 2122)

**Mathematics and its Ancient Classics Worldwide:
Translations, Appropriations, Reconstructions, Roles**
Karine Chemla, Paris
Vincenzo De Risi, Berlin
Antoni Malet, Barcelona

06.06. - 12.06.2021 (ID: 2123)

Analysis, Geometry and Topology of Singular PDE
Claire Debord, Paris
Rafe Mazzeo, Stanford
Paolo Piazza, Roma
Boris Vertman, Oldenburg

13.06. - 19.06.2021 (ID: 2124)

Enumerative Geometry of Surfaces
Gaëtan Borot, Bonn
Samuel Grushevsky, Stony Brook
Martin Möller, Frankfurt

20.06. - 26.06.2021 (ID: 2125)

Classical Algebraic Geometry
Olivier Debarre, Paris
David Eisenbud, Berkeley
Gavril Farkas, Berlin
Ravi Vakil, Stanford

27.06. - 03.07.2021 (ID: 2126a)

**Analysis, Geometry and Topology of
Positive Scalar Curvature Metrics**
Bernd Ammann, Regensburg
Bernhard Hanke, Augsburg
Anna Sakovich, Uppsala

27.06. - 03.07.2021 (ID: 2126b)

Numerical Methods for Fully Nonlinear and Related PDEs
Sören Bartels, Freiburg
Susanne C. Brenner, Baton Rouge
Xiaobing Feng, Knoxville
Michael Neilan, Pittsburgh

04.07. - 10.07.2021 (ID: 2127)

Differentialgeometrie im Grossen
Richard Bamler, Berkeley
Ursula Hamenstädt, Bonn
Urs Lang, Zürich
Ben Weinkove, Evanston

11.07. - 18.07.2021 (ID: 2128)

Dynamische Systeme
Marie-Claude Arnaud, Paris
Helmut Hofer, Princeton
Michael Hutchings, Berkeley
Vadim Kaloshin, College Park

18.07. - 24.07.2021 (ID: 2129)

Explicit Methods in Number Theory
Karim Belabas, Talence
Bjorn Poonen, Cambridge MA
Fernando Rodriguez-Villegas, Trieste

25.07. - 31.07.2021 (ID: 2130)

Partial Differential Equations
Guido De Philippis, Trieste
Richard Schoen, Irvine
Felix Schulze, London

01.08. - 07.08.2021 (ID: 2131)

Computation and Learning in High Dimensions
Albert Cohen, Paris
Wolfgang Dahmen, Columbia
Ronald A. DeVore, College Station
Angela Kunoth, Köln

08.08. - 14.08.2021 (ID: 2132)

Dynamics of Waves and Patterns
Margaret Beck, Boston
Martina Chirilus-Brukner, Leiden
Christian Kühn, Garching
Jens Rademacher, Bremen

15.08. - 21.08.2021 (ID: 2133)

Computational Group Theory
Bettina Eick, Braunschweig
Derek Holt, Warwick
Gabriele Nebe, Aachen
Eamonn O'Brien, Auckland

22.08. - 28.08.2021 (ID: 2134)

Automorphic Forms, Geometry and Arithmetic
Gaetan Chenevier, Orsay
Tasho Kaletha, Ann Arbor
Stephen Kudla, Toronto
Sophie Morel, Princeton

29.08. - 04.09.2021 (ID: 2135)

Mathematical Aspects of General Relativity
Carla Cederbaum, Tübingen
Mihalis Dafermos, Princeton
Jim Isenberg, Eugene
Hans Ringström, Stockholm

05.09. - 11.09.2021 (ID: 2136a/b/c)

Mini-Workshops (deadline for applications: March 1st, 2021)

12.09. - 18.09.2021 (ID: 2137)

Quantum Groups – Algebra, Analysis and Category Theory
Masaki Izumi, Kyoto
Sergey Neshveyev, Oslo
Dmitri Nikshych, Durham
Adam Skalski, Warsaw

19.09. - 25.09.2021 (ID: 2138)

Homotopical Algebra and Higher Structures
Michael Batanin, Sydney
Andrey Lazarev, Lancaster
Muriel Livernet, Paris
Martin Markl, Prague

26.09. - 02.10.2021 (ID: 2139)

Singularities
Javier Fernandez de Bobadilla, Bilbao
Francois Loeser, Paris
András Némethi, Budapest
Duco van Straten, Mainz

03.10. - 09.10.2021 (ID: 2140a)

**Statistics of Stochastic Differential Equations
on Manifolds and Stratified Spaces**
Stephan Huckemann, Göttingen
Xue-Mei Li, London
Yvo Pokern, London
Anja Sturm, Göttingen

03.10. - 09.10.2021 (ID: 2140b)

Geometry and Optimization in Quantum Information
Hamza Fawzi, Cambridge UK
Omar Fawzi, Lyon
Aram Harrow, Cambridge MA
Monique Laurent, Amsterdam

10.10. - 16.10.2021 (ID: 2141)

Arbeitsgemeinschaft (subject tba in winter 2020)

17.10. - 23.10.2021 (ID: 2142)

Arbeitsgemeinschaft (subject tba in winter 2020)

24.10. - 30.10.2021 (ID: 2143a/b)

Oberwolfach Seminars (subjects tba in winter 2020)

31.10. - 06.11.2021 (ID: 2144)

Enveloping Algebras and Geometric Representation
Theory Iain Gordon, Edinburgh
Bernard Leclerc, Caen
Michaela Varagnolo, Cergy-Pontoise

07.11. - 13.11.2021 (ID: 2145)

Combinatorial Optimization
Karen Aardal, Delft
Satoru Iwata, Tokyo
Volker Kaibel, Magdeburg
Ola Svensson, Lausanne

14.11. - 20.11.2021 (ID: 2146)

Complexity Theory
Peter Bürgisser, Berlin
Irit Dinur, Rehovot
Sailil Vadhan, Cambridge MA

21.11. - 27.11.2021 (ID: 2147a/b)

Oberwolfach Seminars (subjects tba in winter 2020)

28.11. - 04.12.2021 (ID: 2148)

Applied Harmonic Analysis and Data Science
Ingrid Daubechies, Durham
Gitta Kutyniok, Berlin
Holger Rauhut, Aachen
Thomas Strohmer, Davis

05.12. - 11.12.2021 (ID: 2149a/b/c)

Mini-Workshops (deadline for applications: March 1st, 2021)

12.12. - 18.12.2021 (ID: 2150)

Convex Geometry and its Applications
Shiri Artstein-Avidan, Tel Aviv
Franck Barthe, Toulouse
Monika Ludwig, Vienna