



# Mathematisches Forschungsinstitut Oberwolfach

## Scientific Programme 2015

Participants of the workshops at Oberwolfach are invited personally by the Director of the Institute. The participation is subject to such an invitation. Interested researchers, in particular young mathematicians, can contact the administration of the Institute. Since the number of participants is restricted, not all inquiries can be considered. More information is available on our website: <http://www.mfo.de> or <http://www.oberwolfach.org>

**04.01.2015 - 10.01.2015** (1502)

### **Spectral Theory and Weyl Functions**

Jussi Behrndt, Graz  
Malcolm Brown, Cardiff  
Michael Plum, Karlsruhe  
Christiane Tretter, Bern

**11.01.2015 - 17.01.2015** (1503)

### **New Discretization Methods for the Numerical Approximation of PDEs**

Stephan Dahlke, Marburg  
Gitta Kutyniok, Berlin  
Rob Stevenson, Amsterdam  
Endre Süli, Oxford

**18.01.2015 - 24.01.2015** (1504)

### **Geometric Topology**

Martin Bridson, Oxford  
Clara Löh, Regensburg  
Thomas Schick, Göttingen

**25.01.2015 - 31.01.2015** (1505)

### **Geometric Methods of Complex Analysis**

Bo Berndtsson, Göteborg  
John Erik Fornæss, Trondheim  
Nikolay Shcherbina, Wuppertal

**01.02.2015 - 07.02.2015** (1506)

### **Geometric and Algebraic Combinatorics**

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

**08.02.2015 - 14.02.2015** (1507)

**15.02.2015 - 21.02.2015** (1508)

### **Mini-Workshops**

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**22.02.2015 - 28.02.2015** (1509)

### **Control Theory: A Mathematical Perspective on Cyber-Physical Systems**

Frank Allgöwer, Stuttgart  
Uwe Helmke, Würzburg  
Naomi Leonard, Princeton

**01.03.2015 - 07.03.2015** (1510)

### **Discrete Differential Geometry**

Alexander I. Bobenko, Berlin  
Richard Kenyon, Providence  
Peter Schröder, Pasadena

**08.03.2015 - 14.03.2015** (1511)

### **Homotopy Theory**

Paul Goerss, Evanston  
John Greenlees, Sheffield  
Stefan Schwede, Bonn

**15.03.2015 - 21.03.2015** (1512)

### **Algebraic Geometry**

Christopher Hacon, Salt Lake City  
Daniel Huybrechts, Bonn  
Yujiro Kawamata, Tokyo  
Bernd Siebert, Hamburg

**22.03.2015 - 28.03.2015** (1513)

### **Subfactors and Conformal Field Theory**

Dietmar Bisch, Nashville  
Terry Gannon, Edmonton  
Vaughan Jones, Nashville  
Yasuyuki Kawahigashi, Tokyo

**29.03.2015 - 04.04.2015** (1514)

### **Arbeitsgemeinschaft**

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**05.04.2015 - 11.04.2015** (1515)

### **Representations of Finite Groups**

Joseph Chuang, London  
Meinolf Geck, Stuttgart  
Markus Linckelmann, London  
Gabriel Navarro, Valencia

**12.04.2015 - 18.04.2015** (1516a)

### **Mathematical Theory of Water Waves**

Jerry Bona, Chicago  
Mark Groves, Saarbrücken  
Mariana Haragus, Besançon  
Erik Wahlén, Lund

**12.04.2015 - 18.04.2015** (1516b)

### **Copulae: On the Crossroads of Mathematics and Economics**

Xiaohong Chen, New Haven  
Wolfgang Karl Härdle, Berlin  
Piotr Jaworski, Warsaw  
Johanna G. Nešlehová, Montréal

**19.04.2015 - 25.04.2015** (1517a)

### **Multivariate Splines and Algebraic Geometry**

Henry K. Schenck, Urbana  
Larry L. Schumaker, Nashville  
Tatyana Sorokina, Towson

**19.04.2015 - 25.04.2015** (1517b)

### **Mirror Symmetry, Hodge Theory and Differential Equations**

Claus Hertling, Mannheim  
Claude Sabbah, Palaiseau  
Christian Sevenheck, Mannheim

**26.04.2015 - 02.05.2015** (1518)

### **Tropical Aspects in Geometry, Topology and Physics**

Tobias Ekholm, Uppsala  
Hannah Markwig, Saarbrücken  
Grigory Mikhalkin, Genève  
Eugenii Shustin, Tel Aviv

**03.05.2015 - 09.05.2015** (1519)

### **Cohomology of Finite Groups: Interactions and Applications**

Alejandro Adem, Vancouver  
David J. Benson, Aberdeen  
Jon F. Carlson, Athens  
Henning Krause, Bielefeld

**10.05.2015 - 16.05.2015** (1520)

### **Enveloping Algebras and Geometric Representation Theory**

Iain Gordon, Edinburgh  
Bernard Leclerc, Caen  
Wolfgang Soergel, Freiburg

**17.05.2015 - 23.05.2015** (1521)

### **Probabilistic Techniques in Modern Statistics**

Vladimir Koltchinskii, Atlanta  
Richard Nickl, Cambridge UK  
Markus Reiß, Berlin  
Sara van de Geer, Zürich

**24.05.2015 - 30.05.2015** (1522)

### **Oberwolfach Seminars**

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**31.05.2015 - 06.06.2015** (1523)

### **Mathematical Methods in Quantum Molecular Dynamics**

George A. Hagedorn, Blacksburg  
Caroline Lasser, München  
Claude Le Bris, Marne-La-Vallee

**07.06.2015 - 13.06.2015** (1524)

### **Free Probability Theory**

Alice Guionnet, Cambridge MA  
Roland Speicher, Saarbrücken  
Dan-Virgil Voiculescu, Berkeley

**14.06.2015 - 20.06.2015** (1525)

### **Noncommutative Geometry**

Alain Connes, Paris  
Joachim Cuntz, Münster  
Stefaan Vaes, Leuven  
Guoliang Yu, Nashville

**21.06.2015 - 27.06.2015** (1526)

### **New Perspectives on the Interplay between Discrete Groups in Low-Dimensional Topology and Arithmetic Lattices**

Ursula Hamenstädt, Bonn  
Gregor Masbaum, Paris  
Alan Reid, Austin  
Tykai Nanjundiah Venkataramana, Mumbai

**28.06.2015 - 04.07.2015** (1527)

### **Differentialgeometrie im Großen**

Gerard Besson, Saint Martin d'Hères  
Ursula Hamenstädt, Bonn  
Michael Kapovich, Davis

**05.07.2015 - 11.07.2015** (1528)

### **Explicit Methods in Number Theory**

Karim Belabas, Talence  
Bjorn Poonen, Cambridge MA  
Fernando Rodriguez Villegas, Trieste

**12.07.2015 - 18.07.2015** (1529)

### **Mathematical Aspects of General Relativity**

Mihalis Dafermos, Princeton  
Jim Isenberg, Eugene  
Hans Ringström, Stockholm

**19.07.2015 - 25.07.2015** (1530)

### **Dynamische Systeme**

Hakan Eliasson, Paris  
Helmut Hofer, Princeton  
Jean-Christophe Yoccoz, Paris

**26.07.2015 - 01.08.2015** (1531)

### **Interplay of Analysis and Probability in Applied Mathematics**

Volker Betz, Darmstadt  
Wolfgang König, Berlin  
Florian Theil, Coventry  
Johannes Zimmer, Bath

**02.08.2015 - 08.08.2015** (1532)

### **Partial Differential Equations**

Alice Chang, Princeton  
Camillo De Lellis, Zürich  
Peter Topping, Coventry

**09.08.2015 - 15.08.2015** (1533)

### **Mathematical Aspects of Hydrodynamics**

Peter Constantin, Princeton  
Susan Friedlander, Los Angeles  
Gregory Seregin, Oxford  
Edriss S. Titi, Rehovot & Irvine

**16.08.2015 - 22.08.2015** (1534)

### **Applied Harmonic Analysis and Sparse Approximation**

Ingrid Daubechies, Durham  
Gitta Kutyniok, Berlin  
Holger Rauhut, Aachen  
Thomas Strohmer, Davis

**23.08.2015 - 29.08.2015** (1535)

### **Reductions of Shimura Varieties**

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

**30.08.2015 - 05.09.2015** (1536)

### **Scaling Limits in Models of Statistical Mechanics**

Dmitry Ioffe, Haifa  
Gady Kozma, Rehovot  
Fabio Toninelli, Lyon

**06.09.2015 - 12.09.2015** (1537)

### **Oberwolfach Seminars**

N.N.

**13.09.2015 - 19.09.2015** (1538)

### **Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws**

Rémi Abgrall, Zürich  
Willem Hundsdorfer, Amsterdam  
Andreas Meister, Kassel  
Thomas Sonar, Braunschweig

**20.09.2015 - 26.09.2015** (1539)

### **The Mathematics and Statistics of Quantitative Risk Management**

Richard Davis, New York  
Paul Embrechts, Zürich  
Thomas Mikosch, Copenhagen  
Andrew Patton, Durham

**27.09.2015 - 03.10.2015** (1540)

### **Computational Engineering**

Susanne C. Brenner, Baton Rouge  
Carsten Carstensen, Berlin  
Leszek Demkowicz, Austin  
Peter Wriggers, Hannover

**04.10.2015 - 09.10.2015** (1541)

### **Arbeitsgemeinschaft**

N.N.

**11.10.2015 - 17.10.2015** (1542)

### **Computational Geometric and Algebraic Topology**

Benjamin Burton, Brisbane  
Herbert Edelsbrunner, Klosterneuburg  
Jeff Erickson, Urbana  
Stephan Tillmann, Sydney

**18.10.2015 - 24.10.2015** (1543)

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

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

**25.10.2015 - 31.10.2015** (1544a)

### **History of Mathematics: Models and Visualization in the Mathematical and Physical Sciences**

Jeremy Gray, Milton Keynes  
Ulf Hashagen, München  
Tinne Hoff Kjeldsen, Roskilde  
David E. Rowe, Mainz

**01.11.2015 - 07.11.2015** (1545)

**08.11.2015 - 14.11.2015** (1546)

### **Mini-Workshops**

N.N.

**15.11.2015 - 21.11.2015** (1547)

### **Complexity Theory**

Peter Bürgisser, Berlin  
Oded Goldreich, Rehovot  
Madhu Sudan, Cambridge MA  
Salil Vadhan, Cambridge MA

**22.11.2015 - 28.11.2015** (1548)

### **Oberwolfach Seminars**

N.N.

**29.11.2015 - 05.12.2015** (1549)

### **Geometric Partial Differential Equations: Surface and Bulk Processes**

Klaus Deckelnick, Magdeburg  
Charles M. Elliott, Coventry  
Ralf Kornhuber, Berlin  
James A. Sethian, Berkeley

**06.12.2015 - 12.12.2015** (1550)

### **Convex Geometry and its Applications**

Franck Barthe, Toulouse  
Martin Henk, Magdeburg  
Monika Ludwig, Wien

**13.12.2015 - 19.12.2015** (1551)

### **Non-Archimedean Geometry and Applications**

Vladimir Berkovich, Rehovot  
Walter Gubler, Regensburg  
Peter Schneider, Münster  
Annette Werner, Frankfurt