

# Mathematics Calendar

Please submit conference information for the Mathematics Calendar through the Mathematics Calendar submission form at <http://www.ams.org/cgi-bin/mathcal-submit.pl>. The most comprehensive and up-to-date Mathematics Calendar information is available on the AMS website at <http://www.ams.org/mathcal/>.

## December 2014

1–5 **AIM Workshop: Beyond Kadison-Singer - paving and consequences**, American Institute of Mathematics, Palo Alto, California. (Jun/Jul 2014, p. 664)

1–5 **38th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing (ACCMCC)**, Victoria University of Wellington, Wellington, New Zealand. (Mar. 2014, p. 317)

1–5 **Automorphic forms, Shimura varieties, Galois representations and L-functions**, Mathematical Sciences Research Institute, Berkeley, California. (Jun/Jul 2014, p. 664)

1–5 **BioInfoSummer 2014: Summer Symposium in Bioinformatics**, Monash University (Caulfield), Melbourne, Australia. (Oct. 2014, p. 1105)

1–5 **International Conference on Applied Mathematics — in honour of Professor Roderick S. C. Wong's 70th Birthday**, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong. (May 2014, p. 556)

1–12 **4th African Mathematical School: Mathematical Tools for Financial and Actuarial Sciences**, University of Douala, Douala, Cameroon. (Nov. 2014, p. 1274)

1–12 **Winter School on Operator Spaces, Non-commutative Probability and Quantum Groups**, Métabief, France. (Feb. 2014, p. 214)

\* 4–5 **Workshop on Integrable Systems**, School of Mathematics and Statistics, University of Sydney, NSW, Australia.

**Organizers:** Nalini Joshi, Sarah Lobb, Christopher Lustrì, Milena Radnovic

**Description:** <http://wp.maths.usyd.edu.au/igs/workshops/december2014/>.

**This section** contains announcements of meetings and conferences of interest to some segment of the mathematical public, including ad hoc, local, or regional meetings, and meetings and symposia devoted to specialized topics, as well as announcements of regularly scheduled meetings of national or international mathematical organizations. A complete list of meetings of the Society can be found on the last page of each issue.

**An announcement** will be published in the *Notices* if it contains a call for papers and specifies the place, date, subject (when applicable), and the speakers; a second announcement will be published only if there are changes or necessary additional information. Once an announcement has appeared, the event will be briefly noted in every third issue until it has been held and a reference will be given in parentheses to the month, year, and page of the issue in which the complete information appeared. Asterisks (\*) mark those announcements containing new or revised information.

**In general**, announcements of meetings and conferences carry only the date, title of meeting, place of meeting, names of speakers (or sometimes a general statement on the program), deadlines for abstracts or contributed papers, and source of further information. If there is any application deadline with respect to participation in the meeting, this fact should be noted. All communications on meetings and conferences

6–31 **The Info-Metrics Annual Prize in Memory of Halbert L. White Jr.**, Washington, DC. (Feb. 2014, p. 214)

8–10 **IMA Conference on Game Theory and its Applications**, St. Anne's College, Oxford, United Kingdom. (Jun/Jul 2014, p. 665)

8–12 **AIM Workshop: Transversality in contact homology**, American Institute of Mathematics, Palo Alto, California. (May 2014, p. 556)

8–12 **The 5th International Conference on Scientific Computing and Partial Differential Equations**, Hong Kong Baptist University, Hong Kong, China. (Oct. 2014, p. 1106)

8–12 **8th Australia - New Zealand Mathematics Convention**, University of Melbourne, Melbourne, Australia. (Apr. 2014, p. 433)

8–12 (NEW DATE) **International Conference on Pure and Applied Mathematics, Goroka 2014: ICPAM-GOROKA (2014)**, University of Goroka, Goroka, Eastern Highlands Province, Papua, New Guinea. (Sept. 2014, p. 978)

9–10 **First call for the training programme "Collaborative Mathematical Research"**, Centre de Recerca Matemàtica, Bellaterra, Barcelona, Spain. (Mar. 2014, p. 317)

9–19 **Recent Advances in Operator Theory and Operator Algebras-2014**, Bangalore, India. (Dec. 2013, p. 1497)

9–20 **Vertex algebras, W-algebras, and applications**, Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy. (Jun/Jul 2014, p. 665)

10–12 **I Brazilian Congress of Young Researchers in Pure and Applied Mathematics**, Mathematics and Statistics Institute, University of São Paulo, São Paulo, Brazil. (Aug. 2014, p. 795)

\* 10–15 **Hamiltonian Dynamics, Nonautonomous Systems, and Patterns in PDE's**, Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia.

in the mathematical sciences should be sent to the Editor of the *Notices* in care of the American Mathematical Society in Providence or electronically to [notices@ams.org](mailto:notices@ams.org) or [mathcal@ams.org](mailto:mathcal@ams.org).

**In order** to allow participants to arrange their travel plans, organizers of meetings are urged to submit information for these listings early enough to allow them to appear in more than one issue of the *Notices* prior to the meeting in question. To achieve this, listings should be received in Providence **eight months** prior to the scheduled date of the meeting.

**The complete listing** of the Mathematics Calendar will be published only in the September issue of the *Notices*. The March, June/July, and December issues will include, along with new announcements, references to any previously announced meetings and conferences occurring within the twelve-month period following the month of those issues. New information about meetings and conferences that will occur later than the twelve-month period will be announced once in full and will not be repeated until the date of the conference or meeting falls within the twelve-month period.

**The Mathematics Calendar**, as well as Meetings and Conferences of the AMS, is now available electronically through the AMS website on the World Wide Web. To access the AMS website, use the URL: <http://www.ams.org/>.

**Description:** Lobachevsky State University of Nizhny Novgorod and Nizhny Novgorod Mathematical Society organize the conference-school "Hamiltonian Dynamics, Nonautonomous Systems, and Patterns in PDE's", dedicated to the 70th birthday of Professors Lev Lerman and Albert Morozov.

**Topics:** Hamiltonian Dynamics (chaos, integrable and near-integrable systems, reversible systems); Nonautonomous Systems (periodic, quasiperiodic, random, general); Patterns in PDEs (emergence, bifurcations, spatio-temporal behavior); Applications of dynamical systems. The conference will also feature a number of mini-courses for students and postdoctoral researchers. A limited financial support for young participants will be available. Nizhny Novgorod has an airport with connecting flights from Moscow, Saint Petersburg, Frankfurt, and other places. It can be conveniently reached from Moscow by railway with several daytime and overnight intercity trains.  
**Information:** <http://www.hamidyn.unn.ru/en>.

11-20 **Foundations of Computational Mathematics Conference**, Universidad de la República, Montevideo, Uruguay. (Feb. 2014, p. 214)

15-16 **4th International Conference on Internet and Cloud Computing Technology (ICI2CT 2014)**, Hotel Changi Village, Singapore. (Nov. 2014, p. 1274)

15-17 **10th IMA International Conference on Mathematics in Signal Processing**, Austin Court, Birmingham, United Kingdom. (Jun/Jul 2014, p. 665)

\* 15-17 **International Conference on Algebra and Its Applications**, Department of Mathematics, Aligarh Muslim University, Uttar Pradesh, India.

**Description:** The purpose of the conference is to contribute to the development of algebra and to bring together the algebraists from all over the world working in related areas to present their researches, to exchange new ideas, to discuss challenging issues, to foster future collaborations and to expose young researchers.

**Information:** <http://www.amu.ac.in/newevent/event/9769.pdf>.

16-17 **IMA Conference on the Mathematical Challenges of Big Data**, Woburn House, London, United Kingdom. (Nov. 2014, p. 1274)

16-17 **1st International Conference on Security Standardisation Research**, Royal Holloway, University of London (RHUL), Egham Hill, Egham, United Kingdom. (Jun/Jul 2014, p. 665)

\* 17-19 **Shilnikov Workshop-2014**, Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russia.

**Description:** International Conference "Shilnikov Workshop-2014" dedicated to the 80th birthday of Leonid Shilnikov (1934-2011). The Shilnikov Workshop has been held at the University annually since 2012, its date is close to birthday of Leonid Shilnikov, December 17. The conference will cover various topics of the theory of dynamical systems: bifurcations, strange attractors, dynamics of Hamiltonian and reversible systems, as well as applications of the theory to mathematical models from sciences and engineering. This year the conference became international thanks to a support of the Russian Science Foundation (grant 14-41-00044). We expect that many young researches, Ph.D. students, and graduate students will participate; mini-courses on bifurcation theory and theory of strange attractors are planned for them. We invite you to take part at the conference and are looking forward for the further fruitful collaboration towards the advance of the theory of dynamical systems.

**Information:** <http://www.shilnikov2014.unn.ru/en>.

18-21 **International Conference on Geometric Function Theory and its Applications (ICGFTA-2014)**, Department of Mathematics, Indian Institute of Technology, Kharagpur, Kharagpur-721302, West Bengal, India. (Oct. 2014, p. 1106)

19-21 **International Conference on Current Developments in Mathematics and Mathematical Sciences (ICDMMS-2014)**, Calcutta Mathematical Society, AE-374, Sector-1, Salt Lake City, Kolkata-700064 West Bengal, India. (Apr. 2014, p. 433)

19-21 **2014 Fourth International Conference on Emerging Applications of Information Technology (EAIT 2014)**, Indian Statistical Institute, Kolkata, India. (May 2014, p. 556)

19-21 **Workshop on Mathematical Biology and Nonlinear Analysis**, The University of Miami, Coral Gables, Florida. (Sept. 2014, p. 980)

21-23 **8th International Conference of IMBIC on "Mathematical Sciences for Advancement of Science and Technology (MSAST 2014)"**, IMBIC, Salt Lake City, Kolkata, India. (Jun/Jul 2014, p. 665)

21-23 **International Conference on Recent Trends in Mathematical Analysis and Its Applications**, Indian Institute of Technology Roorkee, Roorkee-247667 Uttarakhand, India. (Sept. 2014, p. 980)

## January 2015

1-March 31 **High Performance and Parallel Computing for Materials Defects and Multiphase Flows**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Jun/Jul 2014, p. 666)

4-6 **ACM-SIAM Symposium on Discrete Algorithms (SODA15), being held with Analytic Algorithmics and Combinatorics (ANALCO15) and Algorithm Engineering and Experiments (ALENEX15)**, The Westin Gaslamp Quarter, San Diego, California. (Feb. 2014, p. 214)

\* 4-10 **Hyperbolic Geometry and Minimal Surfaces**, IMPA, Rio de Janeiro, Brazil.

**Description:** The study of hyperbolic manifolds has advanced considerably. Many problems and conjectures in the subject have recently been resolved. Incompressible surfaces in hyperbolic manifolds have played an important role in this research. Minimal surfaces have been used as well: Embedded incompressible surfaces are isotopic to least area minimal surfaces. The conference will focus on various problems in the intersection of hyperbolic geometry and the minimal surface theory. We believe that a joint meeting of specialists in minimal surface theory and hyperbolic geometry will encourage collaboration to study the global geometry of minimal surfaces in hyperbolic manifolds.

**Topics:** The topics of the conference will include minimal surfaces in hyperbolic manifolds, min-max techniques in hyperbolic geometry, systoles in expanding families of hyperbolic manifolds.

**Information:** [http://www.impa.br/opencms/en/eventos/store/evento\\_1501](http://www.impa.br/opencms/en/eventos/store/evento_1501).

5-9 **AIM Workshop: Tumor-immune dynamics**, American Institute of Mathematics, Palo Alto, California. (Jun/Jul 2014, p. 665)

5-10 **ICMC 2015: The Second International Conference on Mathematics and Computing**, Haldia Institute of Technology Haldia, West Bengal, India. (Oct. 2014, p. 1106)

5-June 26 **Periodic and Ergodic Spectral Problems**, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom. (Mar. 2013, p. 365)

6-9 **Winter Meeting on Bruhat-Tits Buildings**, Imperial College London, London, United Kingdom. (Oct. 2014, p. 1106)

12-16 **Multiple Sequence Alignment**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Aug. 2014, p. 795)

12-May 22 **Dynamics on Moduli Spaces of Geometric Structures Program**, Mathematical Sciences Research Institute, Berkeley, California. (Jan. 2014, p. 117)

12–July 3 **Random Geometry**, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom. (Mar. 2013, p. 365)

15–16 **Connections for Women: Dynamics on Moduli Spaces of Geometric Structures**, Mathematical Sciences Research Institute, Berkeley, California. (Jun/Jul 2014, p. 665)

19–February 6 **Lie Theory and Representation Theory**, Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy. (Jun/Jul 2014, p. 665)

20–23 **AIM Workshop: Inference in high-dimensional regression**, American Institute of Mathematics, Palo Alto, California. (Aug. 2014, p. 795)

20–23 **Introductory Workshop: Dynamics on Moduli Spaces of Geometric**, Mathematical Sciences Research Institute, Berkeley, California. (Jun/Jul 2014, p. 665)

21–25 **The Ninth International Conference on Nonlinear Analysis and Convex Analysis (NACA2015)**, Rimkok Resort Hotel, Chiang Rai, Thailand. (Oct. 2014, p. 1106)

26–30 **AIM Workshop: Graph Ramsey Theory**, American Institute of Mathematics, Palo Alto, California. (Jun/Jul 2014, p. 665)

26–30 **Symmetry and Topology in Quantum Matter**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Aug. 2014, p. 795)

\* 26–30 **Symmetry and Topology in Quantum Matter**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA.

**Description:** Topological phases of matter are remarkable both for their richness of physical phenomena, and for their mathematical description by topological quantum field theories (TQFTs). Recently, the prediction and experimental discovery of topological insulators has spurred physicists to explore the role of symmetry in topological phases, leading to the identification of new classes of phases of matter, and new insights into their classification, properties, and potential physical realizations. This is an area with a history of strong connections between physics and mathematics, and the time is ripe for the emerging understanding of symmetric topological phases to benefit from new mathematical ideas in TQFTs, and vice versa.

**Information:** <http://www.ipam.ucla.edu/programs/workshops/symmetry-and-topology-in-quantum-matter/>.

29–30 **Connections for Women: Geometric and Arithmetic Aspects of Homogeneous Dynamics**, Mathematical Sciences Research Institute, Berkeley, California. (Aug. 2014, p. 796)

## February 2015

2–6 **Introductory Workshop: Geometric and Arithmetic Aspects of Homogeneous Dynamics**, Mathematical Sciences Research Institute, Berkeley, California. (Nov. 2014, p. 1275)

2–6 **MBI Workshop on Tumor Heterogeneity and the Microenvironment**, Mathematical Biosciences Institute, The Ohio State University, Jennings Hall 3rd Floor, 1735 Neil Ave., Columbus, Ohio. (Jun/Jul 2014, p. 665)

2–March 8 **ICERM Semester Program: Phase Transitions and Emergent Properties**, Brown University, Providence, Rhode Island. (Mar. 2014, p. 317)

4–6 **Computational Photography and Intelligent Cameras**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Sept. 2014, p. 982)

5–7 **4rd International Conference on Mathematics & Information Science**, Zewail City, Cairo, Egypt. (Oct. 2014, p. 1106)

7–8 **Southern California Geometric Analysis Seminar**, UCSD, La Jolla, California. (Nov. 2014, p. 1275)

8–28 **Algebraic topology, geometric and combinatorial group theory**, Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy. (Jun/Jul 2014, p. 665)

9–13 **Crystals, Quasicrystals and Random Networks**, Brown University, Providence, Rhode Island. (Mar. 2014, p. 317)

9–13 **Zariski-dense Subgroups**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Aug. 2014, p. 796)

13–15 **Mathemusical Conversations: Mathematics and Computation in Music Performance and Composition**, Yong Siew Toh Conservatory of Music and Institute for Mathematical Sciences, National University of Singapore, Singapore. (Oct. 2014, p. 1106)

16–20 **MBI Workshop on Treatment, Clinical Trials and Resistance of Cancer**, Mathematical Biosciences Institute, The Ohio State University, Jennings Hall 3rd Floor, 1735 Neil Ave., Columbus, Ohio. (Jun/Jul 2014, p. 667)

\* 23–26 **Workshop in Memory of Sergio Console**, University of Torino, Torino, Italy.

**Invited Speakers:** J. Lauret (Cordoba, AR); L. Nicolodi (Parma, IT); C. Olmos (Cordoba, AR); G. Ovando (Rosario, AR); F. Ricci (SNS Pisa, IT); M. Rigoli (Milano, IT); J. P. Rossetti (Cordoba, AR); E. Samiou (Nicosia, CY); S. Salamon (KCL, UK); G. Thorbergsson (Köln, DE).

**Information:** <http://www.personalweb.unito.it/annamaria.fino/WorkshopSergioConsole.html>.

23–27 **Machine Learning for Many-Particle Systems**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Aug. 2014, p. 796)

25–March 1 **Introductory Workshop**, Uppsala University, Uppsala, Sweden. (Jun/Jul 2014, p. 667)

28–March 1 **Ohio River Analysis Meeting 5**, University of Cincinnati, Cincinnati, Ohio. (Nov. 2014, p. 1275)

## March 2015

2–5 **Flow(ers) & Friends in Frankfurt (a workshop on Geometric Analysis)**, Goethe Universitaet Frankfurt, Frankfurt am Main, Germany. (Oct. 2014, p. 1106)

9–June 12 (NEW DATE) **Broad Perspectives and New Directions in Financial Mathematics**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California. (Aug. 2014, p. 796)

\* 10–13 **Financial Mathematics Tutorials**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The long program opens with four days of tutorials that will provide an introduction to major themes of the entire program and the four workshops, aimed at providing a foundation for the participants of this program who have diverse scientific backgrounds. The tutorials will include courses on: The mathematics of systemic risk (4 hours); energy and commodity markets (4 hours); high frequency markets (4 hours); portfolio theory (4 hours).

**Registration:** Registration for tutorials is free, to encourage broad participation. Applications for financial support are due Tuesday, January 13, 2015. Consult the webpage for more information.

**Information:** <http://www.ipam.ucla.edu/fmtut>.

14–18 (UPDATED) **SIAM Conference on Computational Science and Engineering (CSE15)**, The Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, Utah. (Jun/Jul 2014, p. 667)

\* 15–20 **ALCOMA 15 - Algebraic Combinatorics and Applications**, Kloster Banz, Germany.

**Description:** The intention of ALCOMA 15 is to bring together researchers that work in particular in the field of constructive theory of combinatorial designs and error-correcting codes or on closely related topics. A special focus of the conference is on q-analogues of designs and their recent application in random network coding. ALCOMA15 is dedicated to the memory of Axel Kohnert Topics \* Design theory \* Coding theory \* q-analogues \* Finite geometry \* Finite group actions.

**Location:** <http://alcoma15.uni-bayreuth.de/>.

16–20 **6th International Conference on High Performance Scientific Computing**, Hanoi, Vietnam. (Sept. 2014, p. 983)

16–20 **Small Clusters, Polymer Vesicles and Unusual Minima**, Brown University, Providence, Rhode Island. (Mar. 2014, p. 317)

18–20 **Critical Issues in Mathematics Education 2015: Developmental Mathematics: For whom? Toward what ends?**, Mathematical Sciences Research Institute, Berkeley, California. (Oct. 2014, p. 1107)

18–20 **IAENG International Conference on Scientific Computing 2015**, Royal Garden Hotel, Hong Kong. (Aug. 2014, p. 796)

23–27 **AIM Workshop: Dynamical algebraic combinatorics**, American Institute of Mathematics, Palo Alto, California. (Aug. 2014, p. 796)

23–27 **MBI Workshop on Targeting Cancer Cell Proliferation and Metabolism Networks**, Mathematical Biosciences Institute, The Ohio State University, Jennings Hall 3rd Floor, 1735 Neil Ave., Columbus, Ohio. (Jun/Jul 2014, p. 667)

\* 23–27 **Systemic Risk and Financial Networks**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The recent financial crisis has highlighted the importance of the stability of the financial system as a whole and the FMWS1 Poster interconnectedness of its components, prompting new research efforts directed at understanding the key determinants of the structure and stability of the network(s) underlying the financial system and the mechanism which govern the onset of systemic risk and the propagation of distress propagation across financial markets and institutions. This interdisciplinary workshop will bring together mathematical scientists, economists and regulators who have made key contributions to the recent research efforts for explaining, monitoring or regulating systemic risk. Capital requirements, central clearing, default contagion through insolvency and illiquidity, and nonlinear feedback effects are some of the proposed key elements of recent models and will be discussed in the workshop.

**Deadline:** January 26, 2015.

**Information:** <http://www.ipam.ucla.edu/programs/workshops/workshop-i-systemic-risk-and-financial-networks/>.

27 **Philosophy of Information and Information Processing**, Pembroke College, Oxford, United Kingdom. (Jun/Jul 2014, p. 667)

30–31 **3rd IMA International Conference on Flood Risk**, Swansea University, Wales, United Kingdom. (Jun/Jul 2014, p. 667)

30–April 30 **Sets and Computations**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Oct. 2014, p. 1107)

#### April 2015

\* 9–11 **Latina/os in the Mathematical Sciences Conference**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** IPAM will host a three day conference showcasing the achievements of Latina/os in the mathematical sciences. The conference will feature talks by junior and senior researchers, as well as events for undergraduates, graduate students, and postdoctoral fellows. There will be plenary lectures, community lectures, panel discussions, and activities to facilitate networking. The goal of the conference is to encourage Latina/os to pursue careers in the mathematical sciences, to promote the advancement of Latina/os currently in the discipline, to showcase research being conducted by Latina/os at the forefront of their fields, and, finally, to build a community around shared academic interests. Applications for travel support are due February 9, 2015. Please consult the webpage for more information.

**Information:** <http://www.ipam.ucla.edu/lat2015>.

13–17 **Dynamics on Moduli Spaces**, Mathematical Sciences Research Institute, Berkeley, California. (Jun/Jul 2014, p. 667)

13–17 **Limit Shapes**, Brown University, Providence, Rhode Island. (Mar. 2014, p. 317)

13–17 **MBI Workshop on Stem Cells, Development, and Cancer**, Mathematical Biosciences Institute, The Ohio State University, Jennings Hall 3rd Floor, 1735 Neil Ave., Columbus, Ohio. (Jun/Jul 2014, p. 667)

\* 19–22 **15th International Conference on Numerical Combustion**, Palais des Papes, Avignon, France.

**Description:** Continuous advances in computational algorithms, hardware and software, as well as progress in chemistry description and turbulent combustion modeling, have a revolutionary impact on combustion sciences. The forthcoming Fifteenth International Conference on Numerical Combustion will focus on the integration of theory, modeling and numerical implementation to perform high-fidelity simulations of basic combustion physics and technological applications. Contributed presentations (15 min talk followed by 5 min discussion) as well as mini-symposia (two-hour sessions devoted to well-focused subjects and consisting in four 25-min presentations) are encouraged in all areas of numerical combustion. This conference follows a series of conferences, the more recent held in St. Petersburg Beach (1991), Garmisch-Patenkirchen (1993), New Orleans (1996), York (1998), Amelia Island (2000), Sorrento (2002), Sedona (2004), Granada (2006), Monterey (2008), Corfu (2011) and San Antonio (2013).

**Information:** <http://www.nc15.ecp.fr>.

19–25 **Spring School on Variational Analysis, Paseky**, Paseky nad Jizerou, Czech Republic. (Nov. 2014, p. 1275)

\* 24–25 **Finger Lakes Seminar**, University of Rochester, Rochester, New York.

**Description:** This is an annual conference for probabilists in or near upstate New York. Others are also very welcome.

**Talks:** There will be 4 talks, on the pattern of the Midwest Probability Colloquium.

**Speakers:** Yuri Bakhtin (main speaker, Courant), Sevak Mkrtchyan (Rochester), and Pierre Patie (Cornell).

**Information:** <http://www.math.rochester.edu/people/faculty/cmlr/Finger-Lakes-Seminar/>.

#### May 2015

3–7 **Mal'tsev Meeting**, Sobolev Institute of Mathematics (SB RAS), Novosibirsk, Russia. (Nov. 2014, p. 1275)

\* 4–8 **Commodity Markets and their Financialization**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA.

**Description:** The proliferation of commodity indexes and the dramatic increase of investors gaining commodity exposure through ETFs tracking indexes have changed the landscape of the commodity markets and increased the correlations between commodities and equity, and among commodities included in the same indexes. On the other hand, because of the crucial role played by commodities in modern economies, the growing concern about environmental issues inherent to the production of energy, and the combination of both physical and financial trades, the commodity markets require a treatment independent of the traditional equity, fixed income, foreign exchange and credit markets. A growing number of economists, econometricians and mathematicians are studying the financialization of the commodity markets, which has been taking place over the last 10 years and which cannot be explained by relying on the fundamentals of the physical markets

**Information:** <http://www.ipam.ucla.edu/programs/workshops/workshop-iii-commodity-markets-and-their-financialization/>.

4-15 **Workshop on Stochastic Processes in Random Media**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Oct. 2014, p. 1107)

\* 6-10 **Arithmetic and Algebraic Differentiation: Witt Vectors, Number Theory and Differential Algebra**, University of California, Berkeley, California.

**Description:** Number theory, algebraic topology and applied model theory have traditionally been quite separate fields, and it has not been easy for experts on Witt vectors and arithmetic differentiation in one of these fields to keep on top of developments in the others, even though they are working with largely the same mathematical objects. The purpose of the conference, then, is to remedy this. We will bring together researchers in these fields who study Witt vectors and arithmetic differentiation from their own points of view and for their own purposes. This will allow them to learn about the latest developments in other fields. Further, we hope that bringing together researchers from very different traditions with very different ways of thinking about the same mathematical objects will lead to jolts forward in all of these fields.

**Location:** <http://www.math.berkeley.edu/~scanlon/ardi15.html>.

6-10 **Representation Theory Workshop**, Uppsala University, Uppsala, Sweden. (Jun/Jul 2014, p. 668)

11-15 **Advances in Homogeneous Dynamics**, Mathematical Sciences Research Institute, Berkeley, California. (Jun/Jul 2014, p. 668)

13-16 **13th Viennese Workshop on Optimal Control and Dynamic Games**, Vienna University of Technology, Vienna, Austria. (Nov. 2014, p. 1275)

17-21 **SIAM Conference on Applications of Dynamical Systems (DS15)**, Snowbird Ski and Summer Resort, Snowbird, Utah. (May 2014, p. 556)

18-22 **AIM Workshop: Carleson theorems and multilinear operators**, American Institute of Mathematics, Palo Alto, California. (Aug. 2014, p. 796)

\* 18-22 **Forensic Analysis of Financial Data**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** This workshop will bring together researchers in machine learning from computer science, statistics, and electrical engineering; financial engineers and economists; applied mathematicians; legal scholars; econometricians; practitioners; and regulators to address the challenging questions raised by the post-mortem analysis of financial crisis data. In light of recent theoretical, empirical, and technological progress (e.g., big data analytics, better understanding of fire sales and liquidity shocks, and secure multi-party computation), the participants will revisit recent market anomalies to find, in hindsight, what could have been done to predict, prepare for, and/or prevent them given the current technology. This workshop will feature the 2014 Green Family Lectures by Andrew Lo. This series consists of a public lecture (Monday, 5/18), a research lecture (Tuesday, 5/19), and a technical lecture (Monday, 5/18). Applications for travel support are due Monday, March 23, 2015.

**Information:** <http://www.ipam.ucla.edu/fmws4>.

18-22 **International Conference on Differential & Difference Equations and Applications 2015**, Military Academy, Amadora, Portugal. (Sept. 2014, p. 985)

18-29 **Workshop on New Directions in Stein's Method**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Oct. 2014, p. 1107)

\* 26-29 **8th Chaotic Modeling and Simulation International Conference**, Henri Poincaré Institute (IHP), Paris, France.

**Description:** IHP is the ideal place for the conference as Henri Poincaré is considered as the father of chaotic modeling with his Poincaré recurrence theorem and Poincaré map.

You are kindly invited to participate and to address a talk or to organize an invited session. (The abstract or paper submissions page for all types of submissions (invited or contributed) is open at <http://www.cmsim.org/abstractpaper.html>.)

**Topics:** The general topics and the special sessions proposed for the conference include but are not limited to: Chaos and nonlinear dynamics, stochastic chaos, chemical chaos, data analysis and chaos, hydrodynamics, turbulence and plasmas, optics and chaos, chaotic oscillations and circuits, chaos in climate dynamics, geophysical flows, biology and chaos, neurophysiology and chaos, Hamiltonian systems, chaos in astronomy and astrophysics, chaos and solitons, micro- and nano- electro-mechanical systems, neural networks and chaos, ecology and economy. The publications of the conference include: 1. The Book of Abstracts in electronic and in paper form 2. Electronic Proceedings in the web in a permanent website 3. Publication in the Journal of "Chaotic Modeling and Simulation" (CMSIM) 4. Book Publications devoted to CHAOS2015 International Conference

**Information:** For more information and abstract/paper submission and special session proposals please visit the conference website at: <http://www.cmsim.org> or send email to the conference secretariat at: [Conf@cmsim.eu](mailto:Conf@cmsim.eu).

27-30 **Seventh International Conference on Dynamic Systems and Applications & Fifth International Conference on Neural, Parallel, and Scientific Computations**, Department of Mathematics, Morehouse College, Atlanta, Georgia. (Aug. 2014, p. 797)

\* 28-30 **Geometry, Arithmetic and Physics: Around Motives**, University of Strasbourg, Strasbourg, France.

**Description:** The conference is part of the series "Encounter between Mathematicians and Theoretical Physicists".

**Invited speakers:** Norbert A. Campo (Basel), Joseph Ayoub (Zürich), Pierre Cartier (IHES), Hélène Esnault (Berlin), Annette Huber (Freiburg), Bruno Kahn (Paris), Dirk Kreimer (Berlin), Pierre Lochak (Paris), Olav Arnfinn Laudal (Oslo), Hiroaki Nakamura (Osaka), Leila Schneps (Paris), Christophe Soulé (IHES), Walter van Suijlekom (Nijmegen), Pierre Vanhove (IHES), Jörg Wildeshaus (Paris).

**Language:** English.

**Talks:** Some of the talks will be survey talks intended for a general audience. Graduate students and young mathematicians are welcome. Registration is required (and free of charge) at this link. Hotel booking can be asked for through the registration link. For practical matters and other questions please contact the organizers: Florence Lecomte: [lecomte@math.unistra.fr](mailto:lecomte@math.unistra.fr); Athanase Papadopoulos: [athanase.papadopoulos@math.unistra.fr](mailto:athanase.papadopoulos@math.unistra.fr).

**Information:** <http://www-irma.u-strasbg.fr/article1450.html>.

28-31 **3rd International Conference on "Applied Mathematics & Approximation Theory-AMAT 2015"**, Ankara, Turkey. (May 2014, p. 557)

31-June 6 **Spring School on Analysis 2015: Function Spaces and Lineability IX**, Paseky nad Jizerou, Krkonose Mountains, Czech Republic. (Nov. 2014, p. 1275)

## June 2015

1-5 **AIM Workshop: Stochastic methods for non-equilibrium dynamical systems**, American Institute of Mathematics, Palo Alto, California. (Sept. 2014, p. 985)

1-5 **Integrability in Mechanics and Geometry: Theory and Computations**, Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, Rhode Island. (Nov. 2014, p. 1275)

1-July 31 **Networks in Biological Sciences**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Oct. 2014, p. 1107)

\* 5–10 **XVII-th International Conference on Geometry, Integrability and Quantization**, Sts. Constantine and Elena resort, Varna, Bulgaria.  
**Description:** This conference is next in a row of previous meetings on Geometry and Mathematical Physics which took place in Bulgaria - Zlatograd (1995) and annual conferences under the same title in Varna (1998–2014). The overall aim is to bring together experts in classical and modern differential geometry, complex analysis, mathematical physics and related fields, to assess recent developments in these areas and to stimulate new investigations and the international collaboration.

**Principal speakers:** Metin Gurses, Integrable Curves and Surfaces; Jędrzej Sniatycki, Geometric Quantization; Jose Vargas, The Kaehler Calculus.

**Information:** <http://www.bio21.bas.bg/conference>.

8–12 **AIM Workshop: Mathematical aspects of physics with non-self-adjoint operators**, American Institute of Mathematics, Palo Alto, California. (Aug. 2014, p. 797)

\* 14–19 **BIOMATH 2015: International Conference on Mathematical Methods and Models in Biosciences**, University Centre Bachinovo, South-West University, Blagoevgrad, Bulgaria.

**Description:** The conference is devoted to recent research in life sciences based on applications of mathematics as well as mathematics applied to or motivated by biological studies. It is a multidisciplinary meeting forum for researchers who develop and apply mathematical and computational tools to the study of phenomena in the broad fields of biology, ecology, medicine, biotechnology, bioengineering, environmental science, etc. Contributed talks in any of these fields are invited. Proceedings in volume 4 (2015) of the journal *Biomath*. Selected papers will be published in special issues of other science journals.

**International Steering Committee:** R. Anguelov (Univ. of Pretoria), Y. Dumont (CIRAD, France), J. Farkas (Univ. of Stirling), P. Hingley (European Patent Office), P. Hinow (Univ. of Wisconsin-Milwaukee), H. Kojouharov (Univ. of Texas at Arlington), J. Lubuma (Univ. of Pretoria), S. Markov (IMI-BAS), N. Pesheva (IMech-BAS), M. R. Roussel (Univ. of Lethbridge), S. Schnell (Univ. of Michigan).

**Deadline:** Abstracts: March 30, 2015.

**Information:** <http://www.biomath.bg/2015>.

\* 14–21 **Fifty-third International Symposium on Functional Equations (53rd ISFE)**, Hotel Pegaz, Krynica-Zdrój, Poland.

**Description:** The symposium is devoted to functional equations and inequalities, mean values, equations on algebraic structures, Hyers-Ulam stability, regularity properties of solutions, conditional equations, iteration theory, and their applications to the natural, social and behavioral sciences. Participation is by invitation only. Those wishing to attend the 53rd ISFE should send information on their scientific interests and, preferably, publications, together with their postal and email addresses to Roman Ger, Institute of Mathematics, University of Silesia, Bankowa 14, 40-007 Katowice, Poland; [roman-ger@us.edu.pl](mailto:roman-ger@us.edu.pl) by January 15, 2015.

**Organizing Committee:** Consists of M. C. Zdun (chairman), A. Bahyrycz, K. Ciepliński, Z. Leśniak, J. Olko, M. Piszczek, and P. Solarz.  
**Scientific Committee:** R. Ger (chairman), Zs. Páles, J. Rätz, J. Schwaiger, A. Sklar, J. Aczél (honorary chairman), W. Benz, Z. Daróczy, and L. Reich (honorary members).

**Information:** <http://53isfe.up.krakow.pl/>.

15–19 **Connections in Discrete Mathematics**, Simon Fraser University, Vancouver, Canada. (Jun/Jul 2014, p. 668)

15–19 **MEGA 2015: Effective Methods in Algebraic Geometry**, University of Trento, Povo (Trento), Italy. (Oct. 2014, p. 1107)

15–26 **Summer Graduate School — Geometric Group Theory**, Mathematical Sciences Research Institute, Berkeley, California. (Nov. 2014, p. 1275)

22–24 **3rd International Conference on “Graph Modelling in Engineering”**, University of Bielsko-Biala, Bielsko-Biala, Poland. (Jun/Jul 2014, p. 668)

22–26 **International conference “Dynamical Systems and Their Applications”**, Institute of Mathematics of National Academy of Sciences of Ukraine, Kiyv, Ukraine. (Sept. 2014, p. 985)

\* 26–July 1 **The Eighth Congress of Romanian Mathematicians**, University A.I. Cuza, Iasi, Romania.

**Description:** The meeting continues an old tradition of holding congresses of Romanian mathematicians; it is largely open to international participation.

**Organizer:** The Section of Mathematical Sciences of the Romanian Academy, the Romanian Mathematical Society, the Simion Stoilow Institute of Mathematics of the Romanian Academy, the Faculty of Mathematics of “Alexandru Ioan Cuza” University of Iasi, the Faculty of Mathematics and Computer Science of the University of Bucharest, and the “Octav Mayer” Institute of Mathematics of the Romanian Academy, Iasi. Talks will be given in nine main sections. Proposals for special sections are also welcome.

**Deadline:** December 1, 2014. Preliminary registration by email should be sent to [congmatro@imar.ro](mailto:congmatro@imar.ro), containing name, affiliation, section of congress, and intention to give a talk.

**Information:** <http://www.imar.ro/congmatro8/conf.php>.

29–July 10 **Summer Graduate School — Mathematical Topics in Systems Biology**, Mathematical Sciences Research Institute, Berkeley, California. (Nov. 2014, p. 1276)

## July 2015

\* 5–12 **24th International Conference on Nearings, Nearfields and Related Topics**, Manipal Institute of Technology, Manipal University Manipal - 576 104, Karnataka, India.

**Description:** Algebra is often described as the language of mathematics. Historically, the terms algebra and algorithm originate from the same source. The theory of nearings is now a sophisticated theory in algebra. The connections between nearings (especially nearfields) and geometry are well-known. There will be plenary talks, invited talks, and short communication sessions. In addition there will be few special sessions on algebra. Nearing conferences are held approximately every two years to discuss new ideas, share results and identify new trends. The conferences were held previously in countries namely Germany, Italy, USA, UK, Canada, South Africa, Austria etc, starting from the year 1968. In Asia the conference took place earlier in India (in the year 1985) and in Taiwan (in the year 2005).

**Information:** <http://conference.manipal.edu/near-rings2015>.

6–10 **Classical and quantum hyperbolic geometry and topology/ Topologie et géométrie hyperbolique classique et quantique**, Université Paris-Sud, Orsay, France. (Jun/Jul 2014, p. 668)

6–10 **Equadiff 2015**, Université Claude Bernard Lyon 1, Lyon, France. (Oct. 2014, p. 1107)

6–10 **10th IMACS Seminar on Monte Carlo Methods**, Johannes Kepler University Linz and Radon Institute for Computational and Applied Mathematics, Linz, Austria. (Oct. 2013, p. 1205)

8–10 **SIAM Conference on Control and Its Applications (CT15)**, Maison de la Mutualité, Paris, France. (Jun/Jul 2014, p. 668)

12–24 **Summer Graduate School — Gaps between Primes and Analytic Number Theory**, Mathematical Sciences Research Institute, Berkeley, California. (Nov. 2014, p. 1276)

13–17 **Computational and Analytical Aspects of Image Reconstruction**, Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, Rhode Island. (Nov. 2014, p. 1276)

13–17 **12th International Conference on Finite Fields and Their Applications (Fq12)**, Skidmore College, Saratoga Springs, New York. (Feb. 2014, p. 214)

13–December 18 **Coupling Geometric PDEs with Physics for Cell Morphology, Motility and Pattern Formation**, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom. (Mar. 2014, p. 318)

14–17 **International Conference on Nonlinear Operators, Differential Equations and Applications, ICNODEA-2015**, Babes-Bolyai University, Cluj-Napoca, Romania. (Aug. 2014, p. 797)

20–24 **The 11th International Conference on Fixed Point Theory and Its Applications**, Galatasaray University, Istanbul, Turkey. (Dec. 2013, p. 1497)

20–August 14 **Metric and Analytic Aspects of Moduli Spaces**, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom. (Mar. 2014, p. 318)

\* 27–August 1 **XVIII International Congress on Mathematical Physics, ICMP 2015**, Pontificia Universidad Católica de Chile, Santiago de Chile, RM, Chile.

**Description:** The International Congress of Mathematical Physics (ICMP), on its three-year cycle, is the most important conference of the International Association of Mathematical Physics (IAMP). The ICMP 2015 will be a major event, where new results and future challenges will be discussed, illustrating the richness and vitality of Mathematical Physics. Following a tradition started in London in 2000, the ICMP 2015 will be preceded by the Young Researchers Symposium (July 24 and 25, 2015). Several satellite meetings are being organized in Valparaiso and Santiago (Chile) and in Sao Paulo (Brazil) either before or after ICMP2015.

**Information:** <http://www.icmp2015.cl>.

27–August 7 **Summer Graduate School — Incompressible Fluid Flows at High Reynolds Number**, Mathematical Sciences Research Institute, Berkeley, California. (Nov. 2014, p. 1276)

## August 2015

3–7 **AIM Workshop: First passage percolation and related models**, American Institute of Mathematics, Palo Alto, California. (Aug. 2014, p. 797)

3–7 **Differential and combinatorial aspects of singularities**, TU Kaiserslautern, Germany. (Aug. 2014, p. 797)

3–7 **The 3rd Strathmore International Mathematics Conference Theme: Exploring Mathematics and Its Applications**, Strathmore University, Nairobi, Kenya. (Oct. 2014, p. 1107)

\* 17–21 **20th International Summer School on Global Analysis and Applications “General Relativity: 100 Years after Hilbert”**, Stara Lesna, High Tatras, Slovakia.

**Description:** International Summer Schools on Global Analysis and its Applications belong to traditional scientific mathematical meetings, organized annually since 1996 by professor Demeter Krupka and his collaborators. The 2015 Summer School entitled “General Relativity: 100 Years after Hilbert”, celebrates the anniversary of the Hilbert variational principle and is devoted to the foundations of general relativity.

**Information:** <http://www.lepageri.eu/summer-school>.

19–December 18 **Mathematical, Foundational and Computational Aspects of the Higher Infinite**, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom. (Sept. 2014, p. 987)

## September 2015

1–August 31 **Call for Research Programmes 2015–2016**, Centre de Recerca Matemàtica, Bellaterra, Barcelona, Spain. (Sept. 2014, p. 987)

1–4 **IMA Conference on Numerical Methods for Simulation**, Mathematical Institute, University of Oxford, UK. (Aug. 2014, p. 797)

\* 8–December 11 **New Directions in Mathematical Approaches for Traffic Flow Management**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The recent emergence of new technologies such as sensor networks, smartphones, and new paradigms such as crowdsourcing social networks has induced profound transformations in the way traffic management will be done in the future. Sensor networks have enabled robust and resilient monitoring of the backbone of the transportation network. Smartphones have provided ubiquitous coverage of the transportation network, but provide unpredictable, sometimes unreliable data, which requires a significant amount of filtering. Finally, the emergence of social networks has enabled direct access to people’s mobility patterns and the ability to interact with them, thus presenting an opportunity to incentivize behavior change (either through a social group or the social network). Applications for travel support are due Monday, June 8, 2015. Please consult the webpage for more information.

**Information:** <http://www.ipam.ucla.edu/tra2015>.

9–11 **IMA Conference on Mathematics of Robotics**, St. Anne’s College, Oxford, United Kingdom. (Sept. 2014, p. 987)

9–December 4 **ICERM Semester Program: Computational Aspects of the Langlands Program**, Brown University, Providence, Rhode Island. (Jun/Jul 2014, p. 669)

14–18 **The European Numerical Mathematics and Advanced Applications (ENUMATH) Conference**, Institute of Applied Mathematics, Middle East Technical University, Ankara, Turkey. (Dec. 2013, p. 1497)

\* 17–19 **The 96th Encounter between Mathematicians and Theoretical Physicists: Geometry and Biophysics**, University of Strasbourg, Strasbourg, France.

**Description:** The conference is part of the series “Encounters between Mathematicians and Theoretical Physicists”.

**Invited speakers:** Ebbe Sloth Andersen (Aarhus), Joergen Andersen (Aarhus), Hiroyuki Fuji (Tsinghua U.), Misha Gromov (IHES), Sigeo Ihara (Tokyo), Herv Isambert (Paris), Masahide Manabe (Warsaw), Nadya Morozova (IHES), Jose Onuchic (Rice U.), Renzo Ricca (Milan), Piotr Sulkowski (Warsaw and Caltech), Michael Waterman (USC).

**Talks:** The talks will be in English. Some of the talks will be survey talks intended for a general audience. Graduate students and young mathematicians are welcome.

**Registration:** Is required (and free of charge) at this link. Hotel booking can be asked for through the registration link. For practical matters and other questions please contact the organizers: Athanase Papadopoulos: [athanase.papadopoulos@math.unistra.fr](mailto:athanase.papadopoulos@math.unistra.fr); Bob Penner: [rpenner@caltech.edu](mailto:rpenner@caltech.edu) and Joanna Sulkowska: [jsulkowska@chem.uw.edu.pl](mailto:jsulkowska@chem.uw.edu.pl).

**Information:** <http://www-irma.u-strasbg.fr/article1453.html>.

21–26 **International Conference in Mathematics Education**, Catania, Sicily, Italy. (Aug. 2014, p. 797)

## October 2015

\* 12–16 **Workshop II: Traffic Estimation**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The last decade has seen a sharp increase in the amount of data available for traffic estimation, and furthermore the types of data available has also drastically diversified itself. This evolution has been particularly quick in the last few years, with the explosion of cellular devices, leading to novel sources of traffic data. The workshop will investigate techniques which are commonly used for traffic estimation for partial differential equations, ranging from straight extensions of Kalman filtering to statistical methods such as particle filters (subtopic 1). It will also focus on methods which are statistically based, in particular for the arterial networks for which there is not necessarily sufficient amounts of data (subtopic

2). Subtopic 3 will cover optimization methods applied to networks of PDEs, with specific emphasis on traffic models.

**Deadline:** Applications received by Monday, August 17, 2015 will receive fullest consideration.

**Information:** <http://www.ipam.ucla.edu/traws2>.

\* 26–30 **Traffic Control**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA.

**Description:** In the past decades, traffic control has mainly included approaches based on ramp metering, i.e., actuation on the freeway via lights preventing a too high flow from entering the freeway during congestion times. In the last years, with the advent of distributed computing, wireless communication and ubiquitous sensing, metering can be achieved at large scale (not only locally), and can be allied with numerous other approaches such as variable speed limits, special use lanes, etc. The mathematical formulation of the underlying problems is quite challenging (for example variable speed limits changes the underlying flow model used in the problem set up). The formulation of the corresponding control problems is also quite difficult, as many times it results in nonlinear nonconvex optimization problems. Numerous approaches have been investigated to solve these problems, which include Lyapunov techniques, adjoint based optimization, and convex relaxation.

**Information:** <http://www.ipam.ucla.edu/programs/workshops/workshop-iii-traffic-control/>.

## November 2015

\* 16–20 **Decision Support for Traffic**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The next decade will see numerous decision support tools emerge for traffic management. This is mainly due to the fact that all pieces necessary for the development of these tools are now at our disposal, and have emerged in the recent years. This includes sensing, communication, high performance, and modeling capabilities. All over the world, several Departments of Transportation have started to investigate the steps required to build tools capable of advising humans in charge of optimization of mobility at the scale of a city. Specific breakthroughs are already visible in Australia, France, and in the Netherlands. Such tools require significant amount of modeling (the interplay of various control schemes on a distributed parameter system, which can be modeled as a partial differential equation), which will be presented in the first subtopic of the workshop.

**Deadline:** September 21, 2015.

**Information:** <http://www.ipam.ucla.edu/programs/workshops/workshop-iv-decision-support-for-traffic/>.

**The following new announcements will not be repeated until the criteria in the next to the last paragraph at the bottom of the first page of this section are met.**

## December 2015

\* 31–January 4 **String Mathematics 2015**, Sanya, Hainan, China.

**Description:** String theory plays a central role in theoretical physics as a candidate for the quantum theory unifying gravity with other interactions. It has profound connections with broad branches of modern mathematics ever since the birth. In the last decades, the prosperous interaction, built upon the joint efforts from both mathematicians and physicists, has given rise to marvelous deep results in supersymmetric gauge theory, topological string, M-theory, and duality on the physics side as well as in algebraic geometry, differential geometry, algebraic topology, representation theory, and number theory on the mathematics side. The interplay is two-fold. The mathematics has provided powerful tools to fulfill the physical interconnection of ideas and clarify

physical structures to understand the nature of string theory. On the other hand, ideas from string theory and quantum field theory have been a source of significant inspirations to reveal surprising mathematical structures and create new spectrums of mathematics. The aim of the String-Math annual conference is to bring together researchers working at the rapidly developing interface of these two academic fields to exchange current significant ideas and explore future directions.

**Information:** <http://msc.tsinghua.edu.cn/sanya/StringMath2015/home.aspx>.

## January 2016

\* 5–9 **Conference on General Relativity**, Sanya, Hainan, China.

**Description:** Einstein's general relativistic field equations govern the universe, in particular phenomena in cosmology, astrophysics, and notably gravitational waves. The study of these equations has led to thriving new mathematical research in the areas of geometric analysis, nonlinear partial differential equations (PDE) of hyperbolic and elliptic character, differential geometry as well as in scattering theory and the analysis of asymptotic behavior of solutions. Purely analytic and numerical methods complement each other on this road. Modern mathematical breakthroughs allow to attack and solve physical problems that have been a challenge for the last century. Among these are the study and detection of gravitational waves. These are produced in mergers of black holes or neutron stars or in core-collapse supernovae. Our era faces the verge of detection of these waves, which we can think of as fluctuations in the curvature of the spacetime. Mathematically gravitational waves are investigated by means of geometric analysis as well as numerics. Through geometric analysis Christodoulou's findings of a nonlinear memory effect of gravitational waves, displacing test masses permanently has sparked new research leading to insights into this very effect for other fields coupled to Einstein equations. Moreover, Christodoulou's results on black hole formation have likewise launched abundant activities in hyperbolic PDE. Further the stability of Minkowski spacetime, the stability of black hole spacetimes, the study of the constraint equations, the evolution equations or the Penrose inequality have pushed further mathematical and physical research, thereby having created more challenging questions for the future. This conference discusses recent developments in these areas.

**Information:** [http://msc.tsinghua.edu.cn/sanya/2016/CGR2016/synopsis\\_and\\_organizers.aspx](http://msc.tsinghua.edu.cn/sanya/2016/CGR2016/synopsis_and_organizers.aspx).

## March 2016

\* 7–June 10 **Culture Analytics**, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, California.

**Description:** The explosion in the widespread use of the Internet and social media and the ubiquity of low-cost computing have increased the possibilities for understanding cultural behaviors and expressions, while at the same time have facilitated opportunities for making cultural artifacts both accessible and comprehensible. The rapidly proliferating digital footprints that people leave as they crisscross cyberspace offer a treasure trove of cultural information, where culture is considered to be expressive of the norms, beliefs, and values of a group. This program encourages the exploration of the unsolved mathematical opportunities that are emerging in this cultural information space. The application deadline is Monday, December 7, 2015.

**Information:** <http://www.ipam.ucla.edu/programs/long-programs/culture-analytics/>.