
Mathematics Calendar

The most comprehensive and up-to-date Mathematics Calendar information is available on e-MATH at <http://www.ams.org/mathcal/>.

September 2003

2003–July 2004 **Set Theory**, Centre de Recerca Matemàtica, Bellaterra, Spain. (Jun./Jul. 2003, p. 721)

Organizers: Local: J. Bagaria (ICREA and Univ. of Barcelona); Visitor: S. Todorčević (CNRS).

Main Research Topics: Ramsey methods in functional analysis, the continuum problem.

Other Research Topics: Applications of combinatorial set theory and forcing to general topology and Boolean algebras; Inner model theory for large cardinals; Generic absoluteness and its consequences in combinatorics and descriptive set theory; Current topics in descriptive set theory; Current topics in combinatorial set theory.

Seminars: There will be two weekly seminars on Set Theory (coordinated by J. Bagaria) and Combinatorics and Its Applications to Analysis (coordinated by S. Todorčević).

Conference: Barcelona Conference on Set Theory; Dates: September 16–20, 2003; <http://www.crm.es/set-theory/>.

Advanced Course: Advanced Course on Ramsey Methods in Analysis; Dates: January 19–28, 2004; <http://www.crm.es/RamseyMethods/>.

Information: Centre de Recerca Matemàtica, Apartat 50, 08193 Bellaterra, Spain; tel: +34 935 811 081; fax: +34 935 812 202; <http://www.crm.es/>.

1–3 **3rd WSEAS International Conference on Instrumentation, Measurement, Control, Circuits and Systems**, Malta, Italy. (Aug. 2003, p. 844)

Information: <http://www.wseas.org>.

1–3 **3rd WSEAS International Conference on Information Science**

and Applications, Malta, Italy. (Aug. 2003, p. 844)

Information: <http://www.wseas.org>.

1–3 **3rd WSEAS International Conference on Soft Computing, Optimization, Simulation & Manufacturing Systems**, Malta, Italy. (Aug. 2003, p. 844)

Information: <http://www.wseas.org>.

1–3 **4th WSEAS Multiconference in Applied Mathematics**, Malta, Italy. (Jun./Jul. 2003, p. 721)

Description: The WSEAS multiconference in linear algebra, numerical analysis, differential equations, optimization, probability and statistics, operational research, computers, education, algorithms, discrete mathematics and control is the fourth in the successful history of the conference that was held in Athens, Greece (2000); Cairns, Australia (2001); and Miedzyzdroje, Poland (2002). As in 2002 in the conference in Poland, all the accepted papers will be published in WSEAS Transactions on Mathematics.

Information: <http://www.wseas.org/>.

1–6 **The Sixth International Workshop on Differential Geometry and Its Applications and The Third German-Romanian Seminar on Geometry**, Cluj-Napoca, Romania. (Oct. 2002, p. 1135)

Invited Speakers (confirmed by the end of May 2002): P. Benito (Spain), C.-H. Chu (England), J. Dorfmeister (Germany), A. Elduque (Spain), L. Funar (France), R. Grimaldi (Italy), Th. Hangan (France), E. Macias-Virgos (Spain), S. Marchiafava (Italy), A. Sambuseti (Italy), M. Schlichenmaier (Germany), S. Schmidt (Germany), V. Sergiescu (France), L. Vanhecke (Belgium).

Organizers: D. Andrica, “Babes Boyai” Univ. of Cluj-Napoca, email: dandrica@math.ubbcluj.ro; R. Iordanescu, Inst. of Math. of the

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 held in North America 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. Meetings held outside the North American area may carry more detailed information. In any case, if there is any application deadline with

respect to participation in the meeting, this fact should be noted. All communications on meetings and conferences 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 or 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, 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/>.

Romanian Acad., Bucharest, email: Radu.Iordanescu@imar.ro; C. Pinte, "Babes Boyai" Univ. of Cluj-Napoca; C. Varga, "Babes Boyai" Univ. of Cluj-Napoca; T. Zamfirescu, Univ. of Dortmund, email: Tudor.Zamfirescu@mathematik.uni-dortmund.de.

1–December 19 **Granular and Particle-Laden Flows**, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Mar. 2003, p. 407)

Description: The programme will be concerned with theoretical issues in the burgeoning areas of dry granular and particle laden flows. The flow of such materials is of considerable practical interest, with applications ranging from the geosciences to industry. In recent years it has also become a very active area in the international physics community, as it provides rich structure in the form of novel pattern-forming processes. Much of the progress that is made in these studies relies upon relatively simple mathematical modelling which is often ad hoc in nature. In all cases, a fundamental difficulty which makes essential theoretical input difficult is the availability of suitable continuum models. Indeed, appeal is often made to microscopic descriptions, although these are often limited in scope. Therefore, the time is now ripe for a workshop where mathematicians and physicists can be brought together to discuss these fundamental issues at a detailed level. Three specific topics will be addressed:

1. Localisation and type change: The mathematical issues raised at the interface between appropriate models for different flow regimes.
2. Pattern formation and chaos: The mathematical modelling of patterns and their dynamics in controlled experiments on segregation and vibrated layers.
3. Geophysical and particle-laden flows: Theoretical modelling of problems ranging from the formation of sedimentary rock to avalanching.

Organizers: N. Gray (Manchester), K. Hutter (Darmstadt), J. T. Jenkins (Cornell), T. Mullin (Manchester).

Information: <http://www.newton.cam.ac.uk/programmes/CPD/>. Isaac Newton Institute for Mathematical Sciences, 20 Clarksons Road, Cambridge, CB3 0EH or CB3 0EH; tel: +44 (0) 1223 335999; fax: +44 (0) 1223 330508; email: info@newton.cam.ac.uk.

2–5 **Symposium for the Developments of the Cantorian Set Theory**, Paris, France. (Jan. 2003, p. 83)

Organizers: F. Collot, R. Saumont, F. Anceau.

Program and Call for Papers: Search of New Axioms for the Set Theory, the Brouwerian Conceptions Revisited, Continuum Hypothesis, Well-Ordering on the Continuum, Generalized Continuum Hypothesis, Problem of the Countable Ordinal Numbers ϵ , Exotic Irrational Numbers, Nonstandard Analysis, Conway's Numbers, Applications to Computer Science, Quantic Theory, Biology, Cosmology.

Submission: Extended abstracts (at most 6 pages) of papers to be presented at the conference to: F. Collot, 4 rue Mayet 75006, Paris, before June 1, 2003. Abstracts or papers will be published in the journal *Bio-Math*.

Information: email: editions.europeenne@wanadoo.fr.

2–6 **The Barcelona Conference on Asymptotic Statistics**, Bellaterra, Barcelona, Spain. (Jan. 2003, p. 83)

Aim: The aim of the conference is to open a new line of international events devoted to asymptotic methods in statistics.

Topics: Inference for continuous-time stochastic processes, linear and nonlinear time series, wavelets and theory of extreme values.

Main Speakers: D. Boscq (Univ. Paris 6), R. Cao (Univ. de A Coruña), A. V. Ivanov (Internat. Christian Univ., Kyiv), I. Johnstone (Stanford Univ.), R. Khasminskii (Wayne State Univ.), U. Küchler (Humboldt-Univ. zu Berlin), Y. Kutoyants (Univ. de Maine) A. Le Breton (Univ. Joseph Fourier), T. Mikosch (Univ. of Copenhagen).

Coordinator: V. Zaiats.

Scientific Committee: Y. Kutoyants, U. Küchler, F. Utzet, and V. Zaiats.

Organizing Committee: F. Utzet, P. Puig, W. González, and V. Zaiats.

Deadlines: For applications for financial support, May 23; for registration and payment, June 30.

Information: email: bas2003@crm.es or visit <http://www.crm.es/bas2003/>.

3–5 **2003 Joint Conference on Declarative Programming: APPIA-GULP-PRODE 2003**, Reggio Calabria, Italy. (Jun./Jul. 2003, p. 722)

Description: The aim of the conference is to foster scientific cooperation between Italian, Portuguese, Spanish, and Latin American, researchers—although submissions are open to the whole declarative programming community—to improve the knowledge of the state of the art of declarative programming (through the invited talks) and to show ongoing research done (through presentations of papers).

Information: <http://www.informatica.ing.unirc.it/agp03/> or email: agpo@mat.unical.it.

3–6 **ERATO Conference on Quantum Information Science 2003 (EQIS'03)**, Nijimakaikan, Kyoto, Japan. (Aug. 2003, p. 844)

Description: The EQIS meetings are to focus on quantum information science and technology, a new interdisciplinary field bridging computer science, quantum physics, mathematics, optics and nano-technologies. EQIS'03 will be the third conference in a series and is to concentrate on theoretical and also experimental aspects of quantum information science. The program of EQIS'03 will consist of invited talks, short communications and posters. EQIS'03 is also expected to be accompanied by satellite pre- and postconference workshops.

Contributions for short communications and posters will be solicited in the research areas related to quantum information science, including but not limited to: design and analysis of quantum algorithms and circuits; quantum games; quantum computational and communication complexity; quantum computing and automata models; quantum cryptography; quantum information theory; quantum entanglement; quantum fault-tolerant and decoherence-free computations; quantum continuous variable computations; quantum geometric and topological computations; nonstandard models of quantum computation; quantum optics; NMR and solid state technologies; fermionic, bosonic, and anyonic computation.

Sponsors: ERATO Quantum Computation and Information Project, Japan Science and Technology Corporation.

Deadlines: Submissions (communications and posters): July 15, 2003. Notification of Acceptance/Rejection: August 1, 2003. Early Registration Deadline: August 9, 2003.

Information: <http://www.qci.jst.go.jp/eqis03/>.

4–9 **Analytic Methods of Analysis and Differential Equations (AMADE-2003)**, Belarusian State University, Minsk, Belarus. (Jan. 2003, p. 83)

Description: Belarusian State University (BSU) and Institute of Mathematics of Belarusian National Academy of Sciences, together with Moscow State University, organize the 3rd International Conference "Analytic Methods of Analysis and Differential Equations (AMADE-2003)" on September 4–9, 2003, in Minsk, Belarus. The arrival and departure days are September 3 and 10. The conference will be held under the guidance of ISAAC (International Society of Analysis, Applications and Computations).

Topics: Integral Transforms and Special Functions; Differential Equations and Applications; Integral, Difference, Functional Equations and Fractional Calculus; Real and Complex Analysis.

Organizing Committee: I. V. Gaishun (Belarus, cochair), V. A. Il'in (Russia, cochair), A. V. Kozulin (cochair), A. A. Kilbas (Belarus, vice chair), M. V. Dubatovskaya (Belarus, secretary), S. V. Rogosin (Belarus, secretary), H. Begehr (Germany), V. I. Burenkov (Great Britain), V. V. Gorokhovik (Belarus), N. A. Izobov (Belarus), V. I. Korzyuk (Belarus), P. A. Mandrik (Belarus), E. I. Moiseev (Russia), S. G. Samko (Portugal), N. I. Yurchuk (Belarus).

Program Committee: P. Adler (France), M. Dzhenaliev (Kazakhstan), H.-J. Glaeske (Germany), R. Gorenflo (Germany), V.I. Gromak (Belarus), N.K. Karapetyants (Russia), V. S. Kiryakova (Bulgaria), A. I. Kozhanov (Russia), A. Kufner (Czech), Kun Soo Chang (Korea), I. Laine (Finland), O. I. Marichev (USA), V. V. Mityushev (Poland), O. A. Repin (Russia), E. A. Rovba (Belarus), V. N. Rusak (Belarus), M. Saigo (Japan), S. Saitoh (Japan), A. A. Sen'ko (Belarus), A. P. Soldatov (Russia), J. J. Trujillo (Spain), N. A. Virchenko (Ukraine), L. A. Yanovich (Belarus).
Deadline: Let us know by the end of December 2002 about your intention to participate in the conference. Please send the following information: Your name, affiliation and position, mailing address and telephone (fax), email, section title, and title of report to: AMADE-2003, Dept. of Math. and Mech., Belarusian State Univ., Fr. Skaryny Ave. 4, 220050 Minsk 50, Belarus; email: amade@im.bas-net.by and amade@bsu.by; <http://amade.virtualave.net/>.

5-10 6th International Conference on Geometry and Applications, Varna, Bulgaria. (Jun./Jul. 2003, p. 722)

Topics: Foundations of Geometry and Incidence Geometry, Differential Geometry, Applications of Computers in Geometry, Geometry in the School.

Conference Chairs: W. Benz (Hamburg), G. Stanilov (Sofia).

Information: G. Stanilov, email: stanilov@fmi.uni-sofia.bg; Ch. Lozanov, email: lozanov@fmi.uni-sofia.bg.

7-11 Topological Phases in Condensed Matter Physics, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 844)

Program: This workshop, sponsored by AIM and the NSF, will explore the interface between topological quantum field theory and solid state physics. We will study which "topological phases" might be physically realized and how they might be detected and finally manipulated.

Organizers: M. Freedman, C. Nayak, and Z. Wang.

Deadline: June 1, 2003.

Information: <http://aimath.org/ARCC/workshops/topquantum.html>.

8-10 25th World Conference on Boundary Element Methods: BEM 25: Incorporating Electromagnetic Effects on Human Beings and Equipment Seminar, Split, Croatia. (Oct. 2002, p. 1135)

Organizer: Wessex Inst. of Tech, UK, in collaboration with the Univ. of Split, FESB Croatia.

Sponsor: The Croatian Ministry of Science and Technology.

Information: <http://www.wessex.ac.uk/conferences/2003/bem25/>.

8-12 BSDCon'03, San Mateo, California.

Information: <http://www.usenix.org/events/bsdcon03/>.

8-12 Eurocomb'03-European Conference on Combinatorics, Graph Theory and Applications, Prague, Czech Republic. (Apr. 2003, p. 498)

Topic: Combinatorics and Graph Theory. The conference concentrates mainly on four areas: algebraic, algorithmic, geometric, and probabilistic combinatorics, including their applications to other areas of mathematics, computer science and engineering. During the symposium the European Prize in Combinatorics will be awarded.

Information: <http://kam.mff.cuni.cz/~ecomb03/>.

8-December 13 Inverse Problems: Computational Methods and Emerging Applications, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, California. (Oct. 2002, p. 1135)

Information: <http://www.ipam.ucla.edu/programs/inv2003/>.

9-11 Quantum Analysis in Operator Algebras, Research Institute for Mathematical Sciences, Kyoto University, Kyoto, Japan. (Aug. 2003, p. 844)

Information: <http://www.kurims.kyoto-u.ac.jp/workshop-e.html>.

10-12 Sixth International Conference on Computational Methods for the Solution of Electrical and Electromagnetic Engineering Problems: ELECTROCOMP 2003, Split, Croatia. (Oct. 2002, p. 1135)

Organizer: Wessex Inst. of Tech, UK, in collaboration with the Univ. of Split, FESB Croatia.

Information: <http://www.wessex.ac.uk/conferences/2003/electrocomp03/>.

11-14 Logic, Game Theory and Social Choice 3, University of Siena, Certosa di Pontignano, Siena, Italy. (Apr. 2003, p. 498)

Description: Following LGS1 (Tilburg 1999) and LGS2 (St. Petersburg 2001), LGS3 will bring into focus the developing theoretical connections between logic and game theory, game theory and social choice, and logic and social choice. The conference program will consist of invited lectures and contributed papers. Submissions of contributed papers are invited. Papers focussing on connections between the relevant disciplines are especially encouraged by the program committee.

Deadline: Submissions should be received before March 31, 2003.

Topics: The topics of LGS3 include, but are not limited to, Logic and Game Theory: game semantics, information flow in games, knowledge representation in games, category-theoretic and recursion-theoretic methods in game theory; Game Theory and Social Choice: implementation, coalition formation, strategy-proofness; Social Choice and Logic: rights-systems modelling, uses of deontic and fuzzy logics in social choice theory, category-theoretic and recursion-theoretic methods in social choice; concerning applications, some relevant examples are: strategic properties of decision processes and procedures, complexity of decision procedures, evolution of collective decision rules, characterization and assessment of influence in strategic networks, coalition formation in political/economic decision making.

Invited Speakers: J. M. Hyland (Univ. of Cambridge, UK), B. Monjardet (Univ. de Paris 1), D. Samet (Univ. of Tel Aviv), J. Van Benthem (Univ. of Amsterdam and Stanford Univ.).

Information: Further information on LGS3, including submissions, participation fees, and accommodations will be made available in due course at the conference website, <http://www.econ-pol.unisi.it/lgs3/>.

12-14 EMS Mathematical Weekend, Gulbenkian Foundation, Lisbon, Portugal. (Apr. 2003, p. 498)

Plenary Speakers: M. Audin (Strasbourg), J.-M. Bismut (Orsay), B. Dacorogna (Lausanne), H. Foellmer (Berlin), G. Lebeau (Nice).

Special Sessions: Symplectic and Related Geometries, Analysis and Geometry, Calculus of Variations, Stochastic Analysis and Mathematical Finance, Non-linear Evolution Equations

Organizers: European Mathematical Society and the Portuguese Mathematical Society

Local Organizers: A. Bela Cruzeiro, A. Cannas da Silva, P. Freitas, R. Loja Fernandes and J. Matias (IST-Lisbon).

Information: <http://www.math.ist.utl.pt/ems/>; phone: 351 218 417 113; fax: 351 218 417 598; email: rfern@math.ist.utl.pt; <http://www.math.ist.utl.pt/~rfern/>.

12-16 International Conference of Computational Methods in Sciences and Engineering (ICCMSE 2003), Kastoria, Greece. (Feb. 2003, p. 294)

Description: In the past decades many significant insights have been made in several areas of computational methods in sciences and engineering. New problems and methodologies have appeared. There is permanently a need in these fields for the advancement of information exchange. The aim of the conference is to bring together computational scientists and engineers from several disciplines in order to share methods, methodologies, and ideas.

Topics: The topics to be covered include (but are not limited to): Computational mathematics, computational physics, computational chemistry, computational engineering, computational mechanics, computational finance, computational medicine, computational biology, computational economics, high-performance computing, mathematical methods in sciences and engineering, industrial mathematics, etc.

Organizers: General Chair: Z. Kalogiratou, Tech. Educ. Inst. of W. Macedonia, Kastoria, Greece. Invited Chair: T. E. Simos, Univ. of Peloponnese, Tripolis, Greece.

Contact Information: Secretary ICCMSE, email: iccmse@uop.gr; 26 Menelaou Street, Amfiteha Paleon Faliron, GR-175 64, Athens, Greece; fax: +30210 94 20 091.

Information: <http://www.uop.gr/~iccmse/>, <http://kastoria.teiko.gr/~iccmse/>.

12-17 **Combinatorics in Oporto**, University of Porto, Porto, Portugal. (Jun./Jul. 2003, p. 722)

Main Topics: Graph Theory, Matroid Theory (including Coxeter Matroids and Oriented Matroid Theory) and Convex Geometry.

Program: (a) Two minicourses (September 12 and 13), specially designed for students and young researchers, by M. Lemos (Univ. Fed. Pernambuco, Brazil): "Interaction between Graphs and Matroids", and U. Brehm (Tech. Univ. Dresden, Germany): "Polyhedral Maps"; (b) talks (September 15, 16, and 17): a series of eight to nine invited talks of 50 minutes and thirteen to fifteen contributed talks of 25 minutes; (c) poster session.

Invited Speakers: J. Bokowski (Tech. Univ. Darmstadt, Germany), A. Borovik (UMIST, Manchester, UK), U. Brehm (Tech. Univ. Dresden, Germany), J. Dias da Silva (Univ. Lisboa, Portugal), D. Larman (Univ. College of London, UK), M. Las Vergnas (CNRS, Paris, France), M. Lemos (Univ. Fed. Pernambuco, Brazil), M. Noy (Univ. Politecnica Catalunya, Spain), J. Szwarcfiter (Univ. Fed. Rio de Janeiro, Brazil).

Deadline: For sending abstracts, June 10, 2003.

Information: <http://www.fc.up.pt/mp/comb03/>.

14-17 **2nd WSEAS International Conference on Applications of Electrical Engineering**, New York, New York. (Aug. 2003, p. 844)

Information: <http://www.wseas.org>.

14-17 **5th WSEAS International Conferences on Algorithms, Scientific Computing, Modelling and Simulation; Telecommunications and Informatics**, New York, New York. (Aug. 2003, p. 844)

Information: <http://www.wseas.org>.

15-19 **Colloquium on the Occasion of the 200th Anniversary of Charles-François Sturm and Workshop on Sturm-Liouville Theory**, University of Geneva, Geneva, Switzerland. (Oct. 2002, p. 1135)

Information: <http://theory.physics.unige.ch/~fiteo/sturm/colloquium.html>.

15-19 **IMA Tutorial: Open Week Tutorial**, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 407)

Organizers: S. Keller-McNulty (Los Alamos National Labs), M. Newton (Wisconsin-Madison), S. Tavaré (USC).

Information: Institute for Mathematics and its Applications, Univ. of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/fall/t1.html>.

15-21 **International Conference on Nonlinear Partial Differential Equations**, Alushta, the Crimea, Ukraine. (May 2003, p. 603)

Topics: 1. Qualitative properties of solutions of nonlinear elliptic and parabolic equations. 2. Degenerate nonlinear elliptic and parabolic equations and their applications in mathematical physics. 3. Blow-up and singularities for quasilinear elliptic and parabolic equations. 4. Homogenization problems for nonlinear PDE. 5. Free boundary problems

Visas: All foreign nationals coming to the Ukraine should have a valid passport and most will need a visa. If you need a visa, we advise you to apply for one at a Ukrainian consular office in your country.

Information: A. A. Kovalevsky, Institute of Applied Mathematics & Mechanics of NAS of Ukraine, R. Luxemburg St. 74 83114 Donetsk, Ukraine; Phone: 38(0622)552394; Fax: 38(0622)552265; email: NPDE2003@iamm.ac.donetsk.ua; <http://www.iamm.ac.donetsk.ua/mmmain.html>.

15-21 **Optimization, Approximation, and Multiscale Analysis with Applications to Signal and Image Processing**, Borovez (Rila Mountains), Bulgaria. (Jun./Jul. 2003, p. 722)

Description: The minisymposium will be accompanying the International Congress Masee 2003, a conference organized by the Mathematical Society of SouthEastern Europe (MASSEE).

Organizing and Program Committee: H. Gonska (Chair), Univ. of Duisburg-Essen, Germany; D. Kacso (Secretary), Univ. of Duisburg-Essen, Germany; O. Kounchev (Co-chair), Inst. of Mathematics and Informatics, Bulgarian Academy of Sciences, Sofia; P. Nettaanmaki, Univ. of Jyväskylä, Finland; H. Render, Univ. of Duisburg-Essen, Germany; J. Sprekels, Weierstrass Inst. for Applied Analysis and Stochastics, Berlin, Germany; D. Tiba, Inst. of Mathematics, Romanian Academy of Sciences, Bucharest.

Invited Speakers: A. Bejancu, Univ. of Leeds, UK; B. Bojanov, Sofia Univ. and Bulgarian Academy of Sciences; F.-J. Delves, Univ. of Siegen, Germany; W. Haußmann, Univ. of Duisburg-Essen, Germany; B. Sendov, Bulgarian Academy of Sciences; D.-X. Zhou, City Univ., Hong Kong.

Information: Information on the minisymposium: <http://www.math.bas.bg/~kounchev/Workshop2003.html>. Information on the International Congress Masee 2003: <http://www.math.bas.bg/masee2003/>. Email inquiries should be directed to kounchev@math.bas.bg or tiba@wias-berlin.de.

16-20 **The Barcelona Conference on Set Theory**, Bellaterra, Barcelona, Spain. (Jan. 2003, p. 83)

Aim: To present the latest developments and results in all areas of set theory and their applications to other areas of mathematics.

Topics: Descriptive set theory, inner model theory, forcing, infinite combinatorics, and applications to analysis.

Main Speakers: M. Dzamonja (Univ. of East Anglia), I. Farah (York Univ.), J. Hirschorn (Institut für Formale Logik, Univ. Wien), R. Schindler (Institut für Formale Logik, Univ. Wien), O. Spinas (Christian-Albrechts-Univ. zu Kiel), J. Zapletal (Univ. of Florida, Gainesville).

Coordinator: J. Bagaria.

Program Committee: A. Blass, S. Friedman, S. Todorcevic, and W. H. Woodin.

Local Organizing Committee: D. Asperó, J. Bagaria, R. Bosch, J. Llopis, and J. López-Abad.

Deadlines: For applications for financial support, May 23; for registration and payment, June 30.

Information: email: set-theory@crm.es and website: <http://www.crm.es/set-theory/>.

17-19 **Computational Modelling in Medicine**, Edinburgh, UK. (Aug. 2003, p. 844)

Topics: Mathematical modelling and numerical simulation play a major role in many important medical applications. The meeting will be organised around the two interlinked themes of the vascular and pulmonary systems and soft tissue mechanics. The purpose is to bring together people who work on mathematical modelling, numerical analysis, simulation and direct medical applications related to these areas, and to act as a focus to stimulate further research and the development of even more realistic medical simulations.

Information: <http://www.ma.hw.ac.uk/icms/meetings/2003/cmm/>.

* 17–20 **Workshop on Computational Aspects of Graphical Models**, Aalborg University, Denmark.
Information: <http://www.math.auc.dk/gr/gr2003.html>.

* 20–21 **First East Coast Operator Algebras Symposium**, Vanderbilt University, Nashville, Tennessee.
Description: The East Coast Operator Algebras Symposium (ECOAS) is a new yearly conference series in operator algebras and applications which will be held during the fall semester at various venues along the generalized East Coast. The first meeting in this series will take place at Vanderbilt University on Saturday, September 20, and Sunday, September 21, 2003. Vaughan Jones (UC Berkeley), Dirk Kreimer (IHES and Boston University), and Henri Moscovici (Ohio State University) have agreed to give invited talks. Further invited speakers will be announced in July. Students and postdocs are strongly encouraged to attend the symposium. The deadline to apply for financial aid is August 25, 2003.
Organizers: D. Bisch (Vanderbilt Univ.), G. Kasparov (Vanderbilt Univ.), and G. Yu (Vanderbilt Univ.).
Information: For additional information, please consult the conference web page at <http://www.math.vanderbilt.edu/~ecoas03>.

20–21 **Innovative Teaching of Mathematics “New Concepts & Cutting Edge Technology Applied to Mathematical Education”**, Research Institute for Mathematical Sciences (RIMS), Kyoto University, Kyoto, Japan. (Aug. 2003, p. 844)

Description: Until now many conferences have been devoted to Clifford geometric algebra and its applications. In the 1990s Clifford geometric algebra started to be used for undergraduate and graduate teaching at some universities. In the view of the conceptual merits of geometric algebra there are increasingly strong efforts (e.g., summer courses for school teachers) under way to introduce Clifford geometric algebra also into school curricula. In order to further investigate and communicate the conceptual advantages of geometric algebra for the teaching of mathematics, the time seems ripe for an international symposium with an explicit focus on Clifford geometric algebra for teaching.

The second major focus of this symposium is to present new ways of innovative cooperation between the industrial and scientific communities for the use of modern communication technology in mathematical teaching. A kind of forum for the two communities is intended to exchange new ideas and steer the future development in the most meaningful direction.

Organizers: R. Nagaoka (Univ. of the Air, Tokyo), H. Ishi (Yokohama City Univ.), E. Hitzer (Fukui Univ.).
Speakers: Speakers both from abroad and domestic Japanese experts are invited. Confirmed are: D. Hestenes (Arizona), R. Gonzalez Calvet (Barcelona), U. Kortenkamp (Berlin), H. Uno (SHARP, Japan).
Information: <http://sinai.mech.fukui-u.ac.jp/ITM2003/>.

21–24 **Inference and Prediction in Neocortical Circuits**, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 844)

Program: This workshop, sponsored by AIM, NSF, and RNI, will be devoted to working toward an understanding of inference and prediction in neocortical circuits.

The cerebral cortex is responsible for most of our conscious experience, yet we remain largely ignorant of the principles underlying its function despite progress on many fronts of neuroscience. The principal reason for this is not a lack of data, but rather the absence of a solid theoretical framework for motivating experiments and interpreting findings. The purpose of this workshop is to bring together mathematicians, statisticians, computer scientists, neuroscientists, and psychologists in order to work towards a theoretical framework for neocortical function.

Organizers: J. Hawkins and B. Olshausen.
Application Deadline: June 7, 2003.
Information: <http://aimath.org/ARCC/workshops/brain.html>.

22–26 **Analytic Dynamical Systems, Summability of Divergent Series and Galois Theories**, Université Paul Sabatier, Toulouse, France. (Mar. 2003, p. 407)

Description: International Conference on the occasion of the 60th Anniversary of Jean-Pierre Ramis.

Topics: Complex analysis, analytic dynamical systems (Painlevé equations, d-modules, differences and q-differences equations, foliations, p-adic differential equations), Summability of divergent series and applications, Galois theories.

Speakers: Y. André (Paris); J.-B. Bost (Orsay); B. Braaksma (Groningen); A. Connes (Collège de France); O. Costin (Rutgers); B. Dubrovin (Sissa); Y. Il’Yashenko (Moscou and Cornell); V. Kaloshin (Princeton); T. Kawai (RIMS-Kyoto); Y. Laurent (Grenoble); A. Lins Neto (IMPA-Rio); J. Morales (Barcelona); R. Moussu (Dijon); K. Okamoto (Tokyo); J. Sauloy (Toulouse); D. Sauzin (Paris); M. Singer (MSRI – Berkeley); H. Umemura (Nagoya); M. Van der Put (Groningen); A. Verjovski (Cuernavaca).

Organizers: A. Duval (Lille), F. Fauvet (Strasbourg), M. Loday-Richaud (Angers), M. Klughertz (Toulouse), J.-F. Mattei (Toulouse), L. Stolovitch (Toulouse).

Information: email: ramisconf@picard.ups-tlse.fr; <http://picard.ups-tlse.fr/>.

24–26 **International Conference on Differential Equations Devoted to the 100th Anniversary of K. P. Persidskii**, Institute of Mathematics of the ME&S of the RK, Almaty, Kazakhstan (CIS). (Sept. 2002, p. 1001)

Background: The conference honors K. P. Persidskii, the academician of the Academy of Sciences of Kazakh Republic (1946), well known to mathematicians all over the world for his significant contribution to the theory of differential equations.

Workshop Topics: (1) Differential equations, (2) Dynamic systems, (3) Theory of stability, (4) Mathematical physics, (5) Related problems of mathematical analysis, (6) Applied and numerical mathematics.

Speakers: M. I. Imanaliev (Kyrgyzstan), V. M. Millionshchikov (Russia), M. I. Rakhimberdiev (Kazakhstan), R. Kh. Rozov (Russia), V. V. Rummyantsev (Russia), A. M. Samoilenko (Ukraine).

Deadlines: April 1, 2003: deadline for submission of applications; June 1, 2003: conformation of acceptance; July 1, 2003: fee payments for accepted participants.

Information: G. K. Zakiryanova; tel.: +7(3272) 91-37-64; fax: +7(3272) 91-37-40; email: zakir@math.kz, Institute of Mathematics of the ME&S of the RK, 125, Pushkin street, 480100 Almaty, Kazakhstan (CIS). Visit <http://www.math.kz/>.

24–28 **Workshop on Cauchy Problem for the Einstein Equations**, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 844)

Description: A number of major advances have been achieved over the past few years in the analysis of the Cauchy problem in general relativity. These include the proof of the nonlinear stability of Minkowski space, the proof of the Riemannian Penrose conjecture, and the rigorous description of the asymptotic behavior at infinity of the admissible Cauchy data. This workshop will bring together some of the key players who have been involved in these developments and will provide an opportunity for exploring some of the remaining open problems.

The workshop will be preceded by two short courses given by G. Huisken (MPI Golm) and A. Ashtekar (Penn State).

Organizers: F. Finster (Regensburg), N. Kamran (McGill).
Invited Participants: M. Anderson (Stony Brook) (*), R. Bartnik (Canberra) (*), H. Bray (MIT) (*), M. Choquet-Bruhat (Paris 6), D. Christodoulou (ETH) (*), J. Corvino (Brown) (*), P. Chrusciel (Tours), H. Friedrich, G. Galloway (Miami), C. Gerhardt (Heidelberg) (*), C. Gundlach (Southampton) (*), T. Ilmanen (ETH) (*), J. Isenberg (Oregon), J. Kijowski, S. Klainerman (Princeton) (*), J. Lewandowski, E. T. Newman, F. Nicolo (Rome) (*), D. Pollack (Washington) (*), A. Rendall (AEI Golm) (*), C. Rovelli (CPT Luminy) (*), C. Sogge (Johns Hopkins) (*), R. Schoen (Stanford) (*), E. Seidel

(AEI Golm) (*), T. Thiemann (AEI Golm) (*), S. Zelditch (Johns Hopkins) (*), N. Zipser (MIT) (*). (*) to be confirmed.

29–30 Workshop “High-Resolution Schemes for Convection-Dominated Flows: 30 Years of FCT”, University of Dortmund, Germany. (Jun./Jul. 2003, p. 722)

Scope: Convection-dominated flows are notoriously difficult to treat numerically. Solutions produced by standard discretization techniques are corrupted by nonphysical oscillations and/or excessive numerical diffusion. The first high-resolution scheme to overcome these shortcomings was the now classical Flux-Corrected-Transport (FCT) algorithm introduced 30 years ago by Boris and Book. Their pioneering idea of blending high- and low-order discretizations has paved the way for the development of a whole range of high-resolution schemes which use flux/slope limiters to prevent the formation of wiggles in the vicinity of shocks and discontinuities while retaining the high accuracy of approximation in regions where the solution is sufficiently smooth. The aim of this 2-day workshop is to provide a forum for discussion of the progress made in the numerical simulation of convection-dominated flows during the three decades elapsed since the birth of FCT. Scientists from around the globe are encouraged to present their results regarding recent trends and developments in this challenging research field.

Organizing Committee: D. Kuzmin, Univ. of Dortmund, Germany; R. Loehner, George Mason Univ., USA; S. Turek, Univ. of Dortmund, Germany.

Speakers: The tentative list of speakers includes leading experts (D. L. Book, R. Loehner, S. Zalesak) who have laid the foundations of the FCT methodology and demonstrated its potential in a variety of spectacular CFD simulations.

Information: An online registration form will be available shortly at the homepage of the workshop: <http://www.mathematik.uni-dortmund.de/lisiii/conf/fct30.html>.

29–October 3 IMA Workshop 1: Statistical Methods for Gene Expression: Microarrays and Proteomics, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 407)

Organizers: M. A. Newton (Wisconsin-Madison), G. Parmigiani (Johns Hopkins).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/fall1/c1.html>.

30–October 3 International Silk Road Conference: Quantum Theory, Partial Differential Equations of Mathematical Physics and Their Applications, Tashkent, Uzbekistan. (May 2003, p. 604)

Organizers: Inst. of Nuclear Physics, Uzbekistan Acad. of Sciences, Tashkent; The INTAS–Network Project Nr.15,2000, entitled “Partial Differential Equations Modelling Semiconductors”; The Wolfgang Pauli Institute, Vienna, <http://www.wpi.ac.at/>; The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.

Topics: (1) Nonlinear Differential Equations of Mathematical Physics, (2) Inverse problems, (3) Kinetic equations and Problems of Statistical Physics, (4) Mathematical Modelling of Semiconductors, (5) Fluid Dynamics, (6) Spectral properties of Hamiltonians, (7) Quantum Semiconductor Device Models and Nanotechnology.

Language: English at plenary sessions and both English and Russian at parallel sessions.

Deadlines: Applications for financial support: April 15, 2003. Registration form: May 1, 2003. Abstract: June 1, 2003. The second information bulletin: May 1, 2003. The conference fee: September 1, 2003.

Information: Further information about the conference may be obtained from: M. Yu. Rasulova, Institute of Nuclear Physics, Ulugbek, Tashkent, 702132, Uzbekistan; tel.: +998712/(3712) 60 67 53; fax: +998712/(3712) 64 25 90; email: qtpm2003@suninp.tashkent.su or wittgenstein.mathematik@univie.ac.at.

30–October 7 Mathematics in Armenia—Advances and Perspectives, Institute of Mathematics of National Academy of Sciences of Armenia, Yerevan, Armenia. (Feb. 2003, p. 295)

Main Topics: Real and complex analysis, Probability and mathematical statistics, Differential and integral equations, Algebra and geometry.

Organizing Committee: G. Gevorkian, M. Ginovian, A. Hakobyan, B. Nahapetian, A. Sahakia.

Speakers: S. Adian (Russia), D. Drasin (USA), N. Nikolskii (France), S. Aivazian (Russia), P. Gauthier (Canada), S. Nikolskii (Russia), R. Ambartzumyan (Armenia), L. Gogoladze (Georgia), A. Olevskii (Israel), N. Arakelian (Armenia), A. Gonchar (Russia), K. Oskolkov (USA), O. Besov (Russia), I. Ibragimov (Russia), H. Shahgholian (Sweden), J. Brennan (USA), B. Kashin (Russia), V. Temlyakov (USA), X. Cabre (USA), W. Luh (Germany), P. Ul’yanov (Russia), L. Caffarelli (USA), V. Mikhailov (Russia), N. Uraltseva (Russia), Z. Ciesielski (Poland), R. Minlos (Russia).

Deadline: For application: April 1, 2003.

Information: email: conf@instmath.sci.am; <http://math.sci.am/conf.html>.

October 2003

1–5 Workshop on the Interaction of Gravity with Classical Fields, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 845)

Description: The interaction of gravity with external fields is governed by highly coupled systems of partial differential equations on manifolds. The analysis of these systems leads to rigorous analytical results on fundamental questions such as the scattering of waves by black holes and the role of external fields in the dynamics of gravitational collapse and black hole formation.

The workshop will be preceded by two short courses given by J. Smoller (Michigan). It will be simultaneous with the first series of Aisenstadt lectures for the year, to be delivered by S. T. Yau.

Organizers: F. Finster (Regensburg), N. Kamran (McGill).

Invited Participants: S. Anco, H. Andreasson (Chalmers Goteborg), A. Bachelot (Bordeaux) (*), R. Beig (Vienna) (*), H. Beyer (AEI Golm), B. Carter (Meudon), M. Dafermos, S. De Bievre (Lille) (*), P. Forgacs (Missouri), P. Hislop (Kentucky) (*), W. Israel (Victoria), B. Koyama (Nagoya), H. Kunzle (Alberta), J. Kunz (Oldenburg), A. Linden (Bloomington), D. Maison (Munich), R. McLenaghan (Waterloo), R. Melrose (MIT) (*), J. P. Nicolas (Bordeaux), E. Poisson (Guelph), I. Racz (*), A. Sa-Barreto (Purdue), I. Sigal (Toronto) (*), W. Simon (Vienna) (*), A. Soffer (Rutgers), C. Sogge (Johns Hopkins) (*), J. Stalker (Princeton) (*), N. Straumann (Zurich) (*), S. Tahvildar-Zadeh (Rutgers), A. Tomimatsu (Nagoya) (*), C. Ugge (Karlstad) (*), J. Ventrella (UBC and Austin, TX) (*), B. Whiting (Florida), S. T. Yau (Harvard), M. Zworski (Berkeley) (*). (*) to be confirmed.

2–4 AMS Joint Central and Western Section Meeting, University of Colorado, Boulder, Colorado (May 2003, p. 604)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

11–12 AMS Eastern Section Meeting, SUNY-Binghamton, Binghamton, New York. (Sept. 2002, p. 1001)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

13–15 3rd WSEAS International Conferences on Simulation, Modelling and Optimization; Signal, Speech and Image Processing; Multimedia, Internet and Video Technologies; Robotics, Distance Learning and Intelligent Communication Systems; Nanoelectronics, Nanoengineering and Electromagnetic Compatibility, Rethymno, Crete, Greece. (Aug. 2003, p. 845)

Information: <http://www.wseas.org>.

13–15 5th WSEAS International Conference on Mathematics and Computers in Physics; Mechanical Engineering Multiconference, Rethymno, Crete, Greece. (Aug. 2003, p. 845)

Information: <http://www.wseas.org>.

13–17 **2003 IEEE/WIC International Conference on Web Intelligence (WI 2003)**, Tianlun Dynasty Hotel, Beijing, China. (Feb. 2003, p. 295)

Description: Web Intelligence (WI) is a new direction for scientific research and development that explores the fundamental roles as well as practical impacts of Artificial Intelligence (AI) and advanced Information Technology (IT) on the next generation of Web-empowered products, systems, services, and activities. The 2003 IEEE/WIC International Conference on Web Intelligence (WI 2003) is held jointly with the 2003 IEEE/WIC International Conference on Intelligent Agent Technology (IAT 2003, <http://www.comp.hkbu.edu.hk/IAT03/>). The IEEE/WIC 2003 joint conferences are sponsored and organized by IEEE Computer Society Technical Committee on Computational Intelligence (TCCI) (<http://www.cs.uvm.edu/~7Exwu/tfvi/index.shtml>) and by Web Intelligence Consortium (WIC) (<http://wi-consortium.org/>).

Topics: Intelligent Web-Based Business and Grid Computing, Knowledge Networks and Management, Ubiquitous Computing and Social Intelligence, Intelligent Human-Web Interaction, Web Information Management, Web Information Retrieval, Web Agents, Web Mining and Farming, Emerging Web Technology.

Information: <http://www.comp.hkbu.edu.hk/WI03/>.

15–20 **Von Neumann Centennial Conference: Linear Operators and Foundations of Quantum Mechanics**, Budapest, Hungary. (Sept. 2002, p. 1001)

Description: The conference will cover many topics in linear operator theory and the mathematical foundations of quantum mechanics, including recent developments showing the broad and long-standing impact of von Neumann's work. In addition to a session devoted to historical and personal perspectives on von Neumann, the main subjects are: linear operators, especially Schrödinger and other unbounded operators, their role in mathematical physics; stochastic aspects of quantum mechanics, for example, probability and statistics in the Hilbert space formalism; quantum information theory and quantum entropy; algebras of operators, von Neumann algebras and their applications in quantum statistical mechanics and in field theory; formal approaches to quantum theory, such as quantum logics and quantum structures.

Advisory Board: H. Araki, A. Jaffe, P. D. Lax, J. Palis, W. Thirring.

Main Organizer: D. Petz.

Information: <http://www.math.bme.hu/~vonneumann/>.

17–18 **Twenty-Third Southeast-Atlantic Regional Conference on Differential Equations**, Kennesaw State University, Kennesaw, Georgia. (Aug. 2003, p. 845)

Information: <http://math.kennesaw.edu/search/>.

20–24 **IMA Workshop 2: Comparative Genomics**, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 408)

Organizers: J. Lagergren (Royal Inst. of Tech., Stockholm), B. Moret (UNM), D. Sankoff (Ottawa).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/fall/c2.html>.

20–25 **International Symposium of Mathematics, Analysis and Probability**, Hammamet, Tunisia. (Apr. 2003, p. 498)

Scientific Program: Analysis on Variety, Harmonic Analysis, Infinite Dimensional Analysis, Stochastic Analysis and Applications, Non-commutative and Quantum Probability, Random Walk, Brownian Motion.

Organizers: The symposium is organized in association with the French Mathematical Society (SMF) and the Tunisia Mathematical Society (SMT).

Scientific Committee: J.-P. Anker, D. Bakry, J. Bertoin, Ph. Biane, Ph. Bougerol, H. Chebli, J.-L. Clerk, J. Faraut, K. Harzallah, H. Ouerdiane, J.-J. Risler, K. Trimeche.

Organizing Committee: Ph. Biane, R. Boukhris, R. Hachaichi, R. Gannoun, H. Ouerdiane, H. Sadraoui, L. Silva, F. Ballalouna.

Invited Speakers: L. Accardi, S. Albeverio, A. Ancona, M. Babilot, D. Békollé, B. Farah, H. B. Massoud, P. Carmona, L. Gallardo, A. Guionnet, Y. Guivarc'h, T. Hida, Y. Hu, N. Kammoun, V. Kaimanovich, M. S. Khalgui, P. Krée, Y. J. Lee, P. Malliavin, K. Mokni, S. Mustapha, D. Nualart, N. Obata, N. O'Connell, Y. Ouknine, M. Roeckner, B. Roynette, C. Sabot, Z. Shi, A. S. Sznitman, A. Touati, C. Vilani, D. Voiculescu, W. Werner, J. A. Yan, M. Yor, A. Zuk.

Information: P. Biane, DMA-Superior Normal School 45, ulm street, 75230 Paris Cedex 05, France; tel: + 33 (0)1 44 32 20 39; fax: + 33 (0)1 44 32 20 80; email: Philippe.Biane@ens.fr; or H. Ouerdiane, Dept. of Math., Faculty of the Sciences of Tunis, Campus universitaire, 1060 Tunis, Tunisia; fax: + 216 1 885 350; email: habib.ouerdiane@fst.rnu.tn.

23–26 **Amoebas and Tropical Geometry**, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 845)

Program: This workshop will be devoted to a brand new subject called tropical geometry. Tropical varieties are piecewise-linear objects in Euclidean space. The link between the classical complex geometry and the tropical geometry is provided by amoebas or logarithmic images of complex varieties. The tropical varieties appear as certain degenerations of amoebas.

Organizers: G. Mikhalkin, B. Sturmfels, and O. Viro.

Application Deadline: June 15, 2003.

Information: <http://aimath.org/ARCC/workshops/amoebas.html>.

24–25 **AMS Southeastern Section Meeting**, University of North Carolina, Chapel Hill, North Carolina. (Sept. 2002, p. 1001)

Information: G. Alsfeld; email: gma@ams.org; <http://www.ams.org/amsmtgs/sectional.html>.

26–31 **LISA'03—17th Systems Administration Conference**, San Diego, California. (Jun./Jul. 2003, p. 723)

Information: <http://www.usenix.org/events/lisa03/>.

27–29 **International Network Optimization Conference**, Institut National des Télécommunications, Evry/Paris, France. (Jun./Jul. 2003, p. 723)

Scope: Information sciences and communication technologies are increasingly both a main focus and a major application of well-established as well as emerging theories and techniques. Examples are operations research, graph theory and queueing theory, in addition to stochastic search, to state just a few. The aim of this conference is to bring together people from those disciplines with a main focus on network optimization. Special attention will be given to the latest technologies and to the challenges encountered therein.

Deadlines: Short paper submission deadline: April 25, 2003. Notification of acceptance: July 14, 2003. Long paper submission (optional): August 16, 2003. Submission of camera-ready short papers: August 16, 2003. Deadline for early conference registration: September 19, 2003.

Information: <http://www.int-evry.fr/INOC2003/>; email: inoc2003-oc@int-evry.fr.

28–31 **Fourteenth International Symposium on Methodologies for Intelligent Systems**, Maebashi TERRSA, Maebashi City, Japan. (Feb. 2003, p. 295)

Description: This symposium is intended to attract individuals who are actively engaged both in theoretical and practical aspects of intelligent systems. The goal is to provide a platform for a useful exchange between theoreticians and practitioners, and to foster the cross-fertilization of ideas in the following areas: active media human-computer interaction, autonomic and evolutionary computation, intelligent agent technology, intelligent information retrieval, intelligent information systems, knowledge representation and integration, knowledge discovery and data mining, logic for

artificial intelligence, soft computing, web intelligence. In addition, we solicit papers dealing with applications of intelligent systems in complex/novel domains, e.g. human genome, global change, manufacturing, health care, etc. Authors are invited to submit their manuscript in the LNCS/LNAI style (maximum 10 pages). All paper submissions will be handled electronically. Detailed instructions are provided on the conference homepage at <http://www.wi-lab.com/ismis03/>.

Deadlines: Submission of Papers: March 10, 2003. Acceptance Notification: May 15, 2003. Final Paper: June 30, 2003.

Call for Papers: ISMIS 2003.

Information: For additional information contact: Z. W. Ras (ISMIS 2003), Univ. of North Carolina, Dept. of Computer Science, Charlotte, NC 28226; Fax: 704-547-3516; email: ras@unc.edu. N. Zhong (ISMIS 2003), Department of Information Engineering, Maebashi Institute of Technology, 460-1, Kamisadori-Cho, Maebashi-City, 371-0816, Japan; telephone & fax: +81-27-265-7366; email: zhong@maebashi-it.ac.jp.

November 2003

3-5 Second International Conference on Computational Methods in Multiphase Flow, Santa Fe, New Mexico. (Oct. 2002, p. 1135)

Organizer: Wessex Inst. of Tech, UK, in collaboration with the Univ. of Mexico.

Information: <http://www.wessex.ac.uk/conferences/2003/multiphase03/>.

3-7 DIMACS Workshop on Data Quality, Data Cleaning and Treatment of Noisy Data, DIMACS Center, Rutgers University, Piscataway, New Jersey. (Aug. 2003, p. 845)

Short Description: Many disciplines have taken piecemeal approaches to data quality. The areas of process management statistics, data mining database research, and metadata coding have all developed their own ad hoc approaches to solve different pieces of the data quality puzzle. These include statistical techniques for process monitoring, treatment of incomplete data and outliers, techniques for monitoring and auditing data delivery processes, database research for integration, discovery of functional dependencies and join paths, and languages for data exchange and metadata representation. We need an integrated end-to-end approach within a common framework, where the various disciplines can complement and leverage each other's strengths. In this workshop our broad objective is to bring together experts from different research disciplines to initiate a comprehensive technical discussion on data quality, data cleaning, and treatment of noisy data; specifically: to provide an overview of the existing research in data quality; to present data quality as a continuous, end-to-end concept; to discuss and update the definition of data quality; to develop metrics for measuring data quality; to emphasize data exploration, data browsing, and data profiling for validating schema specific constraints and identifying aberrations; to focus on disciplines such as knowledge representation and rule-based programming for capturing and validating domain specific constraints; to highlight applications and case studies; to present research tools and techniques; and to identify research problems in data quality and data cleaning.

Organizer: P. Dasu, AT&T Labs, tamr@research.att.com.

Local Arrangements: M. Mercado, DIMACS Center, mercado@dimacs.rutgers.edu, 732-445-5928.

Deadline: Abstracts for contributed papers and posters: September 6, 2003.

Information: Visit <http://dimacs.rutgers.edu/Workshops/DataCleaning/>.

3-8 IV International Colloquium on Differential Equations and Applications, Maracaibo, Venezuela. (Apr. 2003, p. 498)

Topics: This meeting will include topics in Discrete Dynamical Systems, Control Theory, Stochastic Differential Equations, Nonlinear Optimization Methods, Fluid Mechanics, and Numerical Analysis.

In addition to contributed talks, the program also includes a course on Semilinear Evolution Equations by Prof. Anibal Rodriguez Bernal from the Complutense University of Madrid.

Deadline: The deadline for receipt of paper proposals in L^AT_EX is April 30, 2003. Notification of acceptance will be given before May 30, 2003. Full manuscripts from the selected abstracts are expected by no later than August 1, 2003. Each paper submitted will be peer-reviewed by the Technical and Program Committee.

Information: For additional information contact A. D. Rueda or J. G. Matamala, email: ivceda@luz.ve.

4-6 Seventh International Conference on Computational Modelling of Free and Moving Boundary Problems, Santa Fe, New Mexico. (Oct. 2002, p. 1135)

Organizer: Wessex Inst. of Tech, UK, in collaboration with the Univ. of Mexico.

Information: <http://www.wessex.ac.uk/conferences/2003/movingboundaries03/>.

*** 6-7 Digital Biology: The Emerging Paradigm**, National Institutes of Health, Bethesda, Maryland.

Description: This symposium will offer a broad look at the convergence of biomedical and computational research. Key issues to be addressed include: (1) the mounting scientific imperative to study biological systems at multiple levels of organization, (2) the growing need to use quantitative approaches to analyze biomedical data on a large scale, and (3) the potential impact of extensive computer networks on the nature and conduct of biomedical research.

Keynote Speakers and Program Highlights: S. Brenner, a recipient of the 2002 Nobel Prize in Physiology or Medicine, will present the biology keynote address. N. Myhrvold, a co-founder and managing director of the private entrepreneurial firm Intellectual Ventures and formerly chief technology officer at Microsoft Corporation, will present the technology keynote address. Other program features include scientific poster presentations; demonstrations; a grant-writing information session; and concurrent sessions addressing scientific data integration, networked science, and quantitative biology.

Call for Posters: Those wishing to present a poster at the meeting should submit an abstract of the research by August 20, 2003. Authors will be notified of acceptance by September 30, 2003.

Registration and Additional Information: Guidelines for abstract preparation and submission, poster presentation, selection criteria, a preliminary agenda, and registration information are all available at <http://www.bisti.nih.gov/2003meeting/>. If you have questions, please email: bistic@nih.gov.

7-9 Weekend Algebra Meeting, Florida Atlantic University, Boca Raton, Florida. (Jun./Jul. 2003, p. 723)

Format: The format is simple, there is no registration fee, and, conversely, we cannot offer honoraria or travel reimbursement (except for graduate students and young Ph.D.'s; see below). We are planning to have 20-minute presentations on Friday afternoon, Saturday morning, and Sunday morning. On Saturday afternoon there will be a special session on current directions and emerging opportunities in our areas of research. The department plans to host a banquet on Friday evening and a party on Saturday evening.

Organizers: L. Klingler (klingler@fau.edu) and M. Schmidmeier (mschmidm@fau.edu).

Sponsor: The Charles E. Schmidt College of Science of Florida Atlantic University.

Support: We have applied for NSF support for graduate students and young Ph.D.'s (travel and local expenses).

Information and Registration: We are going to send out the second email announcement in May. If you haven't received the first announcement but want us to keep you informed, please pre-register at <http://www.math.fau.edu/weekend-algebra/>; send

an email to one of the organizers; or send a fax to Weekend Algebra Meeting 2003 (561-297-2436).

10-13 **SIAM Conference on Geometric Design & Computing**, Elliott Grand Hyatt, Seattle, Washington. (Nov. 2002, p. 1287)

Information: email: meetings@siam.org.

14-18 **Workshop on Patterns in Physics**, The Fields Institute, Toronto, Ontario. (Jun./Jul. 2003, p. 723)

Organizing Committee: R. Almgren, N. Ercolani (Chair), D. Henderson, J. Lega, M. Pugh.

Information: <http://www.fields.utoronto.ca/programs/scientific/03-04/pde/physics/index.html>.

17-21 **IMA Workshop 3: Networks and the Population Dynamics of Disease Transmission**, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 408)

Organizers: M. Morris (Washington), C. Neuhauser (UMN).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/fall/c3.html>.

19-22 **ICDM '03: The Third IEEE International Conference on Data Mining**, Melbourne, Florida. (Jun./Jul. 2003, p. 723)

Call for Papers: Papers due: June 10, 2003.

Invited Speakers: T. G. Dietterich, Oregon State Univ.; U. M. Fayyad, digiMine.com; H. Mannila, Univ. of Helsinki, Finland; G. W. Myers, Univ. of California, Berkeley; P. S. Yu, IBM T. J. Watson Research Center.

Scope: Areas of interest are machine learning, automated scientific discovery, statistics, pattern recognition, knowledge acquisition, soft computing, databases and data warehousing, data visualization, and knowledge-based systems. As an important part of the conference, the workshops program will focus on new research challenges and initiatives, and the tutorial program will cover emerging data mining technologies and the state-of-the-art of data mining developments.

Information: <http://www.cs.uvm.edu/~xwu/icdm-03.html>.

Further Information: Xindong Wu (ICDM 2003), Department of Computer Science, University of Vermont, 351 Votey Building, Burlington, VT 05405; phone: 802-656-7839; fax: 802-656-0696; email: xwu@cs.uvm.edu.

26-29 **Modern Problems of Mathematical Physics and Informational Technologies**, National University of Uzbekistan, Tashkent, Uzbekistan. (Jun./Jul. 2003, p. 724)

Description: The conference is devoted to modern problems in the area of differential equations and IT science. Scientists of any scientific background are welcome to participate (students, Ph.D. students, and professional researchers).

Topics: (1) Degenerating equations and mixed type equations, (2) Spectral theory of differential operators, (3) Boundary value problems of differential equations and their applications, (4) Calculus and information technologies.

Deadline: Deadline for submitting papers (L^AT_EX file, no more than 5 papers) is June 1, 2003.

Information: (in Russian): <http://www.nuu.uz/conf/>.

27-28 **II International Workshop on Information Technologies and Computing Techniques for the Agro-Food Sector**, CIMNE, Barcelona, Spain. (Aug. 2003, p. 845)

Description: Mathematical models combined with appropriate numerical simulations have become indispensable to make accurate predictions in industry applications, but also to optimize and control processes. Moreover, current trends are moving towards the combination of information technologies with computational techniques.

The main objective of this second edition of the AFoT workshop is to provide a thorough introduction to the most

important issues regarding the use of information technologies, and mathematical and computing techniques in the context of the food sector. Topics of interest include novel IT-related methods and tools (e.g., Web-based simulation and decision support systems) plus all the traditional computer simulation techniques (especially regarding distributed process systems), as well as signal processing techniques for advanced sensors.

Agro-Food Technology (AFoT) is a thematic area within MACSI-Net, a European network supported by the Information Society Technologies Programme (IST) of the Fifth Framework Programme of the European Commission. MACSI-Net is an initiative to form an open network for the advancement of mathematics, computing, and simulation for industry.

The workshop is one of the activities of the MACSI-Net network to urge unified mathematical and computing techniques involving food scientists, engineers, and industrial people, as well as to encourage new cooperation at an international level between companies and research institutions.

Information: email: ebalisa@cimne.upc.es.

December 2003

5-8 **Numerical Probabilistic Methods for High-Dimensional Problems in Finance**, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 846)

Program: This workshop, sponsored by AIM and the NSF, will be devoted to developing and studying efficient numerical algorithms, based on probabilistic methods, for solving high-dimensional optimization/nonlinear problems in finance and exploring the connection with the theory of Forward Backward Stochastic Differential Equations while at the same time extending that theory. The workshop will bring together researchers in numerical methods, PDEs, Monte Carlo simulation, quantitative finance, Malliavin calculus, Forward Backward Stochastic Differential Equations, nonparametric regression kernel techniques, and similar. We hope especially to facilitate communication on this topic between mathematicians, researchers from finance departments, and those from the finance industry.

Organizers: J. Cvitanic and N. Touzi.

Application Deadline: June 21, 2003.

Information: Visit <http://aimath.org/ARCC/workshops/highdimfinance.html>.

8-12 **Stochastic Methods in Coagulation and Fragmentation**, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK. (Jun./Jul. 2003, p. 724)

Information: Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge, CB3 0EH UK; tel: +44 (0) 1223 335999; fax: +44 (0) 1223 330508; email: info@newton.cam.ac.uk. Further information and application forms are available from the WWW at: <http://www.newton.cam.ac.uk/programs/IGS/igs04.html>.

14-16 **International Conference on Matrix Analysis and Applications**, Nova Southeastern University, Fort Lauderdale, Florida. (Mar. 2003, p. 408)

Description: The aim of this meeting is to stimulate research and interaction of researchers interested in all aspects of linear algebra and matrix analysis and applications, and to provide an opportunity for researchers to exchange ideas and recent developments on the subjects.

Keynote Speaker: R. Horn, Univ. of Utah.

Organizing Committee: T. Ando (Hokkaido Univ., Japan), C.-K. Li (College of William and Mary, USA), G. P. H. Styan (McGill Univ., Canada), H. Woerdeman (College of William and Mary, USA, and Catholic Univ., Belgium), F. Zhang (Nova Southeastern Univ., USA).

Contact: ckli@math.wm.edu or zhang@nova.edu.

Information: <http://www.resnet.wm.edu/~cklixx/nova03.html>.

14-18 **Computational Algebraic Statistics**, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 846)

Program: This workshop, sponsored by AIM and the NSF, will bring together researchers in the emerging field of computational algebraic statistics. This new field applies methods of computational algebra and discrete geometry to problems in multivariate analysis, experimental design, probability theory, and disclosure limitation. The interaction of these areas has led, for instance, to the algebraic geometry of hierarchical models and Bayesian networks. The workshop will be a springboard for new ideas to expand the frontiers in computing Gröbner bases in the context of algebraic statistics, counting lattice points in polytopes, and optimally disseminating massive data while preserving confidentiality.

Organizers: J. A. De Loera, S. Fienberg, S. Hosten, A. Karr, and B. Sturmfels.

Application Deadline: July 1, 2003.

Information: <http://aimath.org/ARCC/workshops/compalgstat.html>.

15–19 Numerical Methods in Imaging Science and Information Processing, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Dec. 2002, p. 1422)

Organizers: R. Chan (Chinese Univ. of Hong Kong, China), S. S. Goh (National Univ. of Singapore), Z. Shen (National Univ. of Singapore), C.-W. Shu (Brown Univ.).

Plenary Speakers: J. Benedetto (Univ. of Maryland), N. Bose (Pennsylvania State Univ.), R. Chan (Chinese Univ. of Hong Kong, China), T. Chan (Univ. of California, Los Angeles), C. Chui (Stanford Univ./Univ. of Missouri - St. Louis), M. Hanke-Bourgeois (Johannes-Gutenberg-Universität, Germany), M. Hegland (Australian National Univ., Australia), A. Katsaggelos (Northwestern Univ.), S. Osher (Univ. of California, Los Angeles), R. Plemmons (Wake Forest Univ.), C.-W. Shu (Brown Univ.).

Registration: Registration forms are available at <http://www.ims.nus.edu.sg/Programs/imgsci/numerical.htm> and should be received at least one month before the conference. For general enquiries, send email to ims@nus.edu.sg, while for enquiries on academic matters, send email to [S. S. Goh at matgohss@nus.edu.sg](mailto:S.S.Goh@matgohss@nus.edu.sg).

Contributed Talks: Abstracts for 15-minute contributed talks are welcomed and should be received by November 14, 2003. Please submit abstracts to [S. S. Goh at matgohss@nus.edu.sg](mailto:S.S.Goh@matgohss@nus.edu.sg). Authors will be notified within one month of submission of the abstracts.

15–19 The 8th Asian Technology Conference in Mathematics, Chung Hua University, Hsin-Chu, Taiwan. (Apr. 2003, p. 499)

Aim: The aim of this conference is to provide an interdisciplinary forum for teachers, researchers, educators and decision makers around the world in the fields of mathematics and mathematical sciences. It will also provide a venue for researchers and developers of computer technology to present their results in using technology in both basic research and pedagogical research and to exchange ideas and information on their latest developments. The conference will cover a broad range of topics on the relevancy of technology in mathematical research and teaching.

Topics: Mathematics for information technology; Geometry using technology; Computer algebra; Internet technology for mathematics; Machine learning, theorem proving and games; Multimedia distance learning; Graphics calculators; Mathematical research and teaching using technology; Physics research and teaching using technology; Applications in mathematical sciences using technology; Mathematical software and tools on the WWW; Assessment of implementation of technology in education; Integrating technology into mathematics education; Mathematics learning and cognition; Childhood mathematics learning.

Information: Please visit <http://www.atcminc.com/>.

* **15–19 The 28'th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing**, Melbourne, Australia.

Topics: The conference covers all areas of combinatorics, including theoretical and computational.

Invited Speakers: P. Adams, Queensland, Australia, Using graph theory to sequence problematic regions of genomes; L. Bader, Naples, Italy, Flocks of cones and related structures; A. Gulliver, Victoria, Canada, Self-reciprocal polynomials; S. Inamdar, ISI Bangalore, India, On the rigidity of finite projective planes; J. Siran, Slovak University of Technology, Slovak Republic, Highly symmetrical maps on nonorientable surfaces; H. Van Maldeghem, Gent, Belgium, Buildings: More than just bricks and apartments; I. Wanless, Australian National University, Canberra, Atomic latin squares and perfect factorizations.

Information: Additional information is available from the organizer, L. Batten, Deakin Univ., lmbatten@deakin.edu.au, or at <http://www.cm.deakin.edu.au/comb03melbourne>. The registration form and call for abstracts will be available on the website by the end of July, and an early registration discount applies to all those who register by November 14, 2003.

17–20 First Joint International Meeting between the American Mathematical Society and Various Indian Mathematical Societies, Bangalore, India. (Sept. 2002, p. 1001)

Information: <http://www.ams.org/amsmtg/internmtgs.html>.

18–20 1st Indian International Conference on Artificial Intelligence (IICAI-03), Hyderabad, India. (Aug. 2003, p. 846)

Focus: This conference focuses on all areas of AI and its applications to many areas. We are inviting paper submissions and sessions proposals.

Information: <http://www.iiconference.org>.

19–21 WSEAS Multiconferences, Tenerife, Canary Islands, Spain. (Jun./Jul. 2003, p. 724)

Description: The multiconference is the 4th in the successful history of the conference that was held in Athens, Greece (2000), Cairns, Australia (2001), Miedzyzdroje, Poland (2002). As in 2002 in the conference in Poland, all the accepted papers will be published in *WSEAS Transactions on Mathematics*.

Topics: 4th WSEAS International Conference on Mathematics and Computers in Biology and Chemistry (MCBC'03) with special emphasis on: Bioengineering, molecular biology, mathematical biology, biochemistry, biophysics, computer biology, biological dynamical systems. 4th WSEAS International Conference on mathematics and computers in business and economics (MCBC'04) (theoretical, mathematical, computational, statistical, experimental methods for economics, business and management science and applications). 7th WSEAS Internat.Conf. on 4th WSEAS International Conference on Automation & Information (ICAI'03). 4th WSEAS International Conference on acoustics, music, speech and language processing (ICAMSL 2003) (former acoustics and music: theory and applications).

Information: <http://www.wseas.org/>.

20–22 International Symposium on Recent Advances in Mathematics & Its Applications (ISRAMA 2003), Kolkata (Calcutta), India. (Jun./Jul. 2003, p. 724)

Topics: Algebra, Discrete Mathematics & Theoretical Computer Science; Analysis & Topology and Their Applications; Geometry and Its Applications; Dynamical Systems, Chaos and Fractals; Continuum Mechanics; Plasma Physics; Control Theory and Optimization Theory; Bio-mechanics; Applications of Mathematics to Environmental Problems; History and Philosophy of Physical Science; Quantum Information Theory. All deliberations in the symposium shall take place in English.

Registration Fee: US \$200 for each participant from other countries (local hospitality will be provided).

Contact: All correspondence regarding the symposium should be addressed to: M. R. Adhikari, Secretary, Calcutta Mathematical Society, Physics & Applied Mathematics Unit, AE-374, Sector-1, Salt Lake City, Calcutta-700064, India; email: cms@ca12.vsn1.net.in; H. P. Mazumdar, Convener; Indian Statistical Institute, 203 B. T. Road, Calcutta-700035, India; hpm@isical.ac.in.

22–25 **International Conference on Analysis and Applications**, Department of Mathematics, Banaras Hindu University, Varanasi 221 005, India. (Jun./Jul. 2003, p. 724)

Conference Themes: Recent trends of researches in classical and modern analysis including functional analysis, operator theory, distribution theory, harmonic analysis and wavelets, optimization theory, approximation theory, computational analysis and differential equations.

Invited Speakers: R. D. Charmichael (USA), J. Schmeelk (USA), S. Pilipovic' (Yugoslavia), K. Fujita (Japan), S. Watanabe (Japan), H. P. Dikshit (India), P. K. Jain (India), S. Kesavan (India), G. Mishra (India), U. B. Tewari (India), J. N. Pandey (Canada), S. P. Singh (Canada), H. M. Srivastava (Canada), M. W. Wong (Canada).

Call for Papers: Abstract of contributed papers should be sent by July 31, 2003. Proceedings of the conference will be published.

Information: N. Lal, R. S. Pathak, Dept. of Math., Banaras Hindu Univ., Varanasi 221 005, India; tel: 091-542-2575262/2275662; fax: 091-542-2368174; email: rspathak@banaras.ernet.in; http://ramshankarpathak@yahoo.co.in/.

January 2004

5–9 **Workshop on Large N Limits of $U(N)$ Gauge Theory in Physics and Mathematics**, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 846)

Description: This workshop is devoted to the large N expansion in quantum Yang Mills theory, particularly in the explicitly solvable 2D setting. During the '90s a series of articles by such physicists as D. J. Gross, W. Taylor, G. Matytsin, M. Douglas, V. Kazakov, and G. Moore produced a series of conjectured expansions for objects of 2D Yang-Mills with gauge group $U(N)$, such as the partition function of a closed surface of genus g , the partition function of a cylinder, the expected value of the Wilson loop functional, as well as certain characters $\chi_R(U)$. These quantities are related to traces and other invariants of heat kernels, as well as to volumes and traces over moduli spaces of flat connections. The asymptotics of the partition functions are governed by statistics of branched covers of surfaces.

Topics: The Matytsin asymptotics for the characters $\chi_R(U)$, recently proven by A. Guionnet and O. Zeitouni; the Kazakov-Douglas phase transition in $g = 0$, recently proven by A. Boutet de Monvel and M. Shcherbina; Zelditch's limit formula for the partition function on the cylinder; statistics of branched covers (integrals over Hurwitz spaces); volumes and trace integrals over moduli spaces of flat bundles; the large N limit of objects of S_N ; relations between large N theory of YM_2 and random matrix models; relations with free probability; the new, very fast developing work of Dijkgraaf-Vafa.

Organizers: P. Bleher (IUPUI), V. Kazakov (École Normale), and S. Zelditch (Johns Hopkins).

Invited Participants: Physics: R. Dijkgraaf (Amsterdam) (*), M. Douglas (Rutgers), B. Eynard (Saclay), I. Kostov (Saclay), M. Marino (Harvard), G. Moore (Rutgers) (*), M. Staudacher (Max Planck) (*), W. Taylor (MIT) (*), C. Vafa (Harvard) (*).

Mathematics: P. Biane (ENS) (*), A. M. Boutet de Monvel (Paris 7), D. Diderot, C. Frohman (SUNY) (*), W. Goldman (Maryland), A. Guionnet (UMPA-Lyon), K. Johansson (KTU) (*), A. Okounkov (Berkeley), R. Pandharipande (Princeton) (*), N. Reshetikhin (UC Berkeley) (*), M. Shcherbina (Kharkov), R. Wentworth (Johns Hopkins) (*), C. Woodward (Rutgers), O. Zeitouni (Technion). (*) to be confirmed.

7–9 **IMA Short Course: The Internet for Mathematicians**, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 408)

Organizers: W. Willinger (AT&T Research), B. Hajek (Illinois).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; http://www.ima.umn.edu/complex/winter/sc1.html.

7–10 **Joint Mathematics Meetings**, Phoenix Civic Plaza, Phoenix, Arizona. (Sept. 2002, p. 1001)

Information: http://www.ams.org/amsmtgs/2004_phioeintro.html.

9–10 **2003-04 ASL Winter Meeting (with Joint Mathematics Meetings)**, Phoenix, Arizona. (Apr. 2003, p. 499)

Program Committee: T. McNicholl, I. Neeman, and C. Wood (chair).
Information: Email: asl@vassar.edu.

11 **IMA Tutorial: Measurement, Modeling and Analysis of the Internet**, University of Minnesota, Minneapolis, Minnesota.

Organizers: B. Hajek (Illinois), D. Towsley (Massachusetts). (Mar. 2003, p. 408)

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; http://www.ima.umn.edu/complex/winter/t2.html.

11–14 **Thompson's Group at 40 Years**, AIM Research Conference Center, Palo Alto, California. (Aug. 2003, p. 846)

Program: This workshop, sponsored by AIM and the NSF, will be devoted to understanding Thompson's group from many different viewpoints and approaching some open questions about the group.

This workshop will bring together researchers in group theory, category theory, and dynamics for a joint approach towards Thompson's group. We hope especially to facilitate communication between researchers in these differing fields who may view Thompson's group in quite different ways. Exploring the connections between these viewpoints will lead to new and innovative approaches to some open problems concerning this group.

Organizers: S. Cleary, S. Gersten, J. Stallings, and J. Taback.

Application Deadline: September 1, 2003.

Information: Visit <http://aimath.org/ARCC/workshops/thompsonsgroup.html>.

12–16 **IMA Workshop 4: Measurement, Modeling and Analysis of the Internet**, University of Minnesota, Minneapolis, Minnesota. (Mar. 2003, p. 408)

Organizers: B. Hajek (Illinois), D. Towsley (Massachusetts).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; http://www.ima.umn.edu/complex/winter/c4.html.

18–22 **Computing: The Australasian Theory Symposium**, University of Otago, Dunedin, New Zealand. (Aug. 2003, p. 846)

Topics: Papers are invited on all aspects of theoretical computer science. Some representative but not exclusive topics include the following: logic, reasoning and verification; formal specification techniques and program semantics; formal development methods, program refinement, synthesis and transformation; concurrent, parallel and distributed system theory; algorithm design and data structures; streaming data computation; computational biology, geometry, and number theory; complexity and computability; automata, types and category theory; tools for automated reasoning, and program analysis and development.

Important Dates: August 29, 2003: Deadline for submissions of full papers. October 11, 2003: Notification of acceptance for formal submissions. November 29, 2003: Deadline for informal submissions. November 14, 2003: Final versions of accepted formal papers due, deadline for author registrations, notification of acceptance for informal submissions. January 18–22, 2004: Australasian Computer Science Week, incorporating CATS 2004.

Information: <http://www.cs.otago.ac.nz/staffpriv/mike/CATS04/CATS04.html>.

19–July 9 **Statistical Mechanics of Molecular and Cellular Biological Systems**, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Mar. 2003, p. 408)

Description: The programme will be structured along four linked themes:

1. Single molecule biophysics (including protein dynamics, mechanical force spectroscopy).
2. Membrane/cortical dynamics and self-assembly (including lipid phase separation, motility and interaction with the extracellular matrix).
3. Molecular motors (including modelling of single-molecule motors in the presence of noise, cooperative behaviour, etc.).
4. Molecular and cellular aspects of gene expression (including DNA binding proteins and complexes, cell division, transmembrane signalling, networks or polymerisation and depolymerisation).

While all four will be worked on throughout the 6-month period, there will be periods of more focus on each when the theoretically based scientists and mathematicians of the long-term programme will be visited on a shorter-term basis by key experimentalists working in these areas and their boundaries.

Organizers: T. McLeish (Leeds), J. Trinick (Leeds), P. Stockley (Leeds), J. Molloy (York), W. Poon (Edinburgh), T. Duke (Cambridge).

Information: Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge, CB3 0EH UK; tel: +44 (0) 1223 335999; fax: +44 (0) 1223 330508; email: info@newton.com.ac.uk; http: //www.newton.cam.ac.uk/.

*20–25 **International Educational Conference & Exhibition**, Knowledge Village, Dubai, UAE.

Description: This is the first international conference on educational and knowledge development centers and institutions in the world. The event will include all universities and research centers and academies in the world. The main objective of this event is to facilitate the direct contact and exchange of knowledge between the educational centers in the world and their direct contact with the public that has a high demand. The conference will be held in the first and largest knowledge village and education center in the world.

Information: Tel: 0097142695539; fax: 0097142695311/2650043; email: blexpo@emirates.net.ae; trctcs@uohyd.

21–30 **Advanced Course on Ramsey Methods in Analysis**, Bellaterra (Barcelona), Spain. (Apr. 2003, p. 499)

Coordinator: J. Bagaria.

Information: http://www.crm.es/RamseyMethods/.

26–July 16 **Random Matrix Approaches in Number Theory**, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Mar. 2003, p. 408)

Description: The programme will mainly focus on how random matrix theory can further contribute to unanswered questions in number theory and on how to put the connection between random matrices and number theory on a rigorous footing. However, both random matrix theory and number theory individually play significant roles in theoretical physics, and probability random matrix statistics appear in the spectra of quantum systems whose classical limit is chaotic; the problem of quantum unique ergodicity has connections with the theory of modular surfaces and algebraic number theory; many of the main results on the statistics of ensembles of random matrices have been the work of probabilists; the Riemann zeta function even shows up in the theory of Brownian motion—and this is just to name a few. These themes will also be developed through focused workshops.

Organizers: B. Conrey (Palo Alto), P. Diaconis (Stanford), F. Mezzadri (Bristol), P. Sarnak (Princeton).

Information: Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge, CB3 0EH UK; tel: +44 (0) 1223 335999; fax: +44 (0) 1223 330508; email: info@newton.com.ac.uk; http: //www.newton.cam.ac.uk/.

February 2004

2–13 **Advanced Course on Contemporary Cryptology**, Bellaterra

(Barcelona), Spain. (Apr. 2003, p. 499)

Coordinator: P. Morillo.

Information: http://www.crm.es/ContemporaryCryptology/.

8 **IMA Tutorial: Robustness and the Internet: Design, Evolution, and Theoretical Foundations**, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: W. Willinger (AT&T), J. Doyle (Caltech).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; http://www.ima.umn.edu/complex/winter/t3.html.

9–13 **IMA Workshop 5: Robustness in Complex Systems**, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: W. Willinger (AT&T), J. Doyle (Caltech).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; http://www.ima.umn.edu/complex/winter/c5.html.

17–20 **Announcement and Call for Papers: IV International Symposium on Mathematical Methods Applied to the Sciences**, San José, Costa Rica. (Aug. 2003, p. 847)

Topics: Data Analysis, Multivariate Statistics, Clustering and Classification Probability, Stochastic Processes, Financial Mathematics Optimization, Operations Research, Approximation, Numerical Analysis, Applications of the above topics. To submit a short course or a paper, please visit our website for instructions. Send the abstract to: email: jtrejos@cariari.ucr.ac.cr.

Deadline: October 15, 2003.

Languages: English and Spanish.

Registration: Please visit our website for prices and deadlines. We offer special discounts for Central Americans and students. The preliminary program will be available at the beginning of January 2004.

Organizers: J. Trejos (chairman), email: jtrejos@cariari.ucr.ac.cr; W. Mora (webmaster), email: wmora@itcr.ac.cr.

Information: http://www.itcr.ac.cr/simmac/, http://www.emate.ucr.ac.cr.

Further Information: On the website you can find further details about the Scientific and the Organizing Committees, as well as travel, hotel, tourism, and other information.

March 2004

1–26 **Markov Chain Monte Carlo: Innovations and Applications in Statistics, Physics, and Bioinformatics**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Jun./Jul. 2003, p. 725)

Description: The purpose of this program is to bring together people who work on innovative developments and applications in statistics, physics, and bioinformatics. The program aims to encourage cross-fertilization between workers in rather different developments and also to challenge the theoretical capacity of these methods by exposing them to statistical and bioinformatical applications.

Organizing Committee: W. Kendall, chair (Univ. of Warwick, UK); F. Liang, co-chair (National Univ. of Singapore and Texas A&M Univ., USA) and J.-S. Wang, co-chair (National Univ. of Singapore).

Format: The program will be comprised of a tutorial (March 8–12, 2004) on background material and a workshop (March 22–26, 2004) at the research level, in addition to seminars and informal discussions.

Registration: Registration forms for the tutorial/workshop are available at http://www.ims.nus.edu.sg/Programs/mcmc/index.htm and should be received at least one month before commencement of each activity. Registration is free. Membership is not required for participation.

Membership: Membership application for visiting the institute under the program is also available from the above website. Members do not need to register for specific activities.

Contacts: For general enquiries, please email: ims@nus.edu.sg; for enquiries on scientific aspects of the program, please email W. Kendall, w.s.kendall@warwick.ac.uk; F. Liang, email: fliang@stat.tamu.edu; and J.-S. Wang, email: cscwjs@nus.edu.sg.

Information: For more information please visit: <http://www.ims.nus.edu.sg/Programs/mcmc/index.htm>.

4–6 Workshop on Spectral Geometry, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 847)

Description: Relations between the geometric properties of manifolds and the spectrum of the Laplacian have been actively studied for decades. It is well known that many important geometric invariants are determined by the spectrum, and, vice-versa, the behavior of eigenvalues is strongly dependent on the underlying geometry and topology. Still, our understanding of the interplay between geometry and the spectrum is very far from being complete. In recent years some major developments have occurred in various areas of spectral geometry, such as spectral asymptotics, eigenvalue estimates, isospectrality, and others. These problems and their applications will be the focus of the workshop.

Organizer: I. Polterovich (Montréal).

Invited Participants: M. Ashbaugh (Missouri), C. Gordon (Dartmouth), P. Gilkey (Oregon), D. Goev (UPenn), V. Guillemin (MIT), M. Hitrik (UCLA), V. Ivrii (Toronto), P. Li (UC Irvine), J. Lott (Michigan), R. Mazzeo (Stanford), P. Perry (Kentucky).

7 IMA Tutorial: Control and Pricing in Communication and Power Networks, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: C. L. DeMarco (Wisconsin-Madison), F. P. Kelly (Cambridge), T. G. Kurtz (Wisconsin-Madison), R. J. Williams (San Diego).
Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/winter/t4.html>.

8–13 IMA Workshop 6: Control and Pricing in Communication and Power Networks, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: C. L. DeMarco (Wisconsin-Madison), F. P. Kelly (Cambridge), T. G. Kurtz (Wisconsin-Madison), R. J. Williams (San Diego).
Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/winter/c6.html>.

8–June 11 Proteomics, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, California.

Information: <http://www.ipam.ucla.edu/programs/prot2004/>.

12–13 AMS Southeastern Section Meeting, Florida State Univ., Tallahassee, Florida. (Dec. 2002, p. 1001)

Information: G. Alsfeld, gma@ams.org, <http://www.ams.org/amsmtgs/sectional.html>.

26–27 AMS Central Section Meeting, Ohio Univ., Athens, Ohio. (Dec. 2002, p. 1001)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

29–April 2 IMA Short Course: Tools for Modeling and Data Analysis in Finance/Asset Pricing, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: M. Avellaneda (NYU), P. P. Carr (NYC).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/spring/sc2.html>.

April 2004

1–May 15 Econometric Forecasting and High-Frequency Data Analysis, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Aug. 2003, p. 847)

Program Organization: This is a program jointly organized by the Institute for Mathematical Sciences; National Univ. of Singapore; and School of Economics and Social Sciences, Singapore Management Univ. Co-chairs: R. S. Mariano (Singapore Management Univ.), S. Ouliaris (National Univ. of Singapore), and Y. K. Tse (Singapore Management Univ.); Members: O. E. Barndorff-Nielsen (Univ. of Aarhus, Denmark), A. Pagan (Australian National Univ., Australia), A. Tay (National Univ. of Singapore), and G. Tiao (Univ. of Chicago, USA).

Description: Econometric forecasting has seen new dimensions recently due to developments in nonstationary time series, systems of equations and nonlinear dynamics modeling, while the advances in high-frequency data (HFD) analysis have recently accelerated with the availability of financial intra-day trade data.

Format: The program will focus on two major topics in econometrics: the first three weeks on forecasting, with the other three weeks on HFD analysis. The program will commence with a plenary session providing an overview of the themes and coverage. It will be followed by a series of formal meetings comprised of open forums, tutorials, research seminars/workshops, and a conference for the presentation of research papers on forecasting and high-frequency analysis.

Registration: Registration forms for the tutorial/workshop are available at <http://www.ims.nus.edu.sg/Programs/econometrics/index.htm> and should be received at least one month before commencement of each activity. Registration is free. Membership is not required for participation.

Membership: Membership application for visiting the institute under the program is also available from the above website. Members do not need to register for specific activities.

Contacts: For general enquiries please email ims@nus.edu.sg, while for enquiries on scientific aspects of the program, please email R. S. Mariano at rsmariano@smu.edu.sg. More information is available at the program website: <http://www.ims.nus.edu.sg/Programs/econometrics/index.htm>.

3–4 AMS Western Section Meeting, University of Southern California, Los Angeles, California. (May 2003, p. 604)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

4–7 Fractal 2004, Vancouver, Canada. (Jun./Jul. 2003, p. 725)

Topics: “Complexity and Fractals in Nature”, 8th International Multidisciplinary Conference.

Information: <http://www.kingston.ac.uk/fractal/>.

12–16 IMA Workshop 7: Risk Management and Model Specifications Issues in Finance, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: M. Avellaneda (NYU), R. Cont (École Polytechnique).
Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/spring/c7.html>.

17–18 AMS Eastern Section Meeting, Rider Univ., Lawrenceville, New Jersey. (Sept. 2002, p. 1001)

Information: G. Alsfeld, email: gma@ams.org, <http://www.ams.org/amsmtgs/sectional.html>.

19–24 CHT-04: Advances in Computational Heat Transfer, Cruise ship between Kirkenes and Bergen, Norway. (Jun./Jul. 2003, p. 725)

Objective: To provide a forum for the exposure and exchange of ideas, methods, and results in computational heat transfer. Papers on all aspects of computational heat transfer, both fundamental and applied, will be welcome.

Program: The program will comprise contributed papers, all of which will be poster presentations; nine invited keynote lectures, all presented as stand-up lectures; a panel discussion on "Validation and Verification of Computational Solutions" (with invited participants plus open discussion from the floor); and a minisymposium on "Computational Combustion" (with invited speakers).

Deadline: For extended (3–4 page) abstracts: September 1, 2003.

Information: <http://cht04.mech.unsw.edu.au/>.

22–25 2004 ASL Spring Meeting (with APA), Chicago, Illinois. (Jun./Jul. 2003, p. 725)

Description: This meeting will be held jointly with the Annual Meeting of the Central Division of the American Philosophical Association.

Program Committee: S. Awodey, T. Bays, and M. Kremer (chair).

Information: Visit <http://www.aslonline.org/>.

May 2004

3–7 IMA Workshop 8: Model Implementation, Algorithms and Software Issues, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)

Organizers: J. Langsam (Morgan Stanley), G. Papanicolaou (Stanford).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/spring/c8.html>.

3–8 AARMS-CRM—Workshop on Singular Integrals and Analysis on CR Manifolds, Halifax, Nova Scotia, Canada. (Aug. 2003, p. 847)

Description: The theory of singular integral operators in the context of analysis on CR submanifolds of \mathbb{C}^n , in particular the Heisenberg group, has been studied and proven fruitful over the last thirty years. In recent years the emphasis has shifted to singular integral operators which do not fall under the standard Calderon-Zygmund theory. These include operators arising from product kernels on nilpotent Lie groups, which in turn lead to the study of flag kernels. The workshop combines the areas of harmonic analysis, several complex variables, symmetric spaces, and Lie groups. It will include two series of lectures, to be delivered by Alexander Nagel (Wisconsin) and Elias M. Stein (Princeton). The workshop will be held in Halifax, Nova Scotia.

Organizers: G. Dafni (Concordia), A. Fraser (Dalhousie).

Speakers: A. Boggess (Texas A&M) (*), A. Bonami (Orleans), D.-C. Chang (Georgetown), P. Ciatti (Padova) (*), M. Cowling (UNSW-Sydney), A. Dooley (UNSW-Sydney), J. Faraut (Paris VI) (*), G. Folland (Seattle), G. Gaudry (UNSW-Sydney) (*), P. Greiner (Toronto), P. Guan (McMaster) (*), K. Hare (Waterloo) (*), A. Koranyi (CUNY), G. Mockenhaupt (Georgia Tech) (*), L. Rothschild (UCSD) (*), E. Sawyer (McMaster) (*), M.-C. Shaw (Notre Dame) (*), P. Sjögren (Göteborg) (*), N. Stanton (Notre Dame) (*), S. Thangavelu (Bangalore), S. Wainger (Wisconsin) (*), J. Wright (Edinburgh) (*). (*) to be confirmed.

3–June 26 2004 Geometric Partial Differential Equations, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Aug. 2003, p. 847)

Description: Combining geometric insights and analytic techniques together has generated many fruitful ideas and surprising results. The advances of the analytical results on nonlinear partial differential equations have helped to accelerate research on differential geometry for the last forty years. On the other hand, geometry has provided subtle and elegant equations for investigation. The objective of the program is to initiate and conduct investigations into nonlinear partial differential equations arising from geometric problems, especially those related to the scalar curvature, Q-curvature, and Sigma curvature.

Organizing Committee: Co-chairs: X. Xu (Nat. Univ. of Singapore) and P. Yang (Princeton Univ.); W. Ding (Beijing Univ., China), M. C. Leung (Nat. Univ. of Singapore), C. S. Lin (Nat. Chung Cheng

Univ., Taiwan), P. Pang (Nat. Univ. of Singapore), G. Tian (MIT), and N. S. Trudinger (Australian Nat. Univ.).

Format: The program will consist of tutorials on background material and a workshop (May 28–June 2, 2004) at research level, in addition to seminars and informal discussions. The program will focus on the following topics: (i) scalar curvature problem, especially prescribed scalar curvature problem on n-sphere; (ii) conformally invariant operators; (iii) geometric flow problem; and (iv) fully nonlinear partial differential equations.

Registration: Registration forms for the tutorial/workshop are available at <http://www.ims.nus.edu.sg/Programs/pdes/index.htm> and should be received at least one month before commencement of each activity. Registration is free. Membership is not required for participation.

Membership: Membership application for visiting the institute under the program is also available from the above website. Members do not need to register for specific activities.

Information: For general enquiries please email ims@nus.edu.sg, while for enquiries on scientific aspects of the program, please email X. Xu at matxuxw@nus.edu.sg. More information is available at the program website: <http://www.ims.nus.edu.sg/Programs/pdes/index.htm>.

4–7 Workshop on Spectral Theory and Automorphic Forms, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 848)

Organizers: D. Jakobson (McGill), Y. Petridis (CUNY).

Description: In the last forty years it has been understood that there is a close connection between the spectral theory of hyperbolic manifolds and the theory of L-functions attached to automorphic forms. Trace formulas of Selberg and Kuznetsov-Bruggeman are extremely useful in studying the spectrum and eigenfunctions of the hyperbolic Laplacian. Surprising connections have also been discovered between subconvexity estimates for L-functions and the equidistribution results for Eisenstein series and cusp forms.

Analytical questions about families of L-functions include questions about the distributions of zeros and GRH, value-distribution, special values and applications, as well as connections with arithmetical questions (such as distribution of primes, size of class groups, analytic ranks of elliptic curves). One of the most fruitful approaches to the study of statistical properties of zeros of L-functions involves establishing connections with random matrix theory.

The goal of this workshop is to bring together leading researchers in those fields, to introduce young researchers and graduate students to the state of the art results, and to give an account of applications of techniques from analytic number theory to problems in analysis.

The workshop will coincide with the second series of Aisenstadt lectures for the year, to be given by P. Sarnak.

Invited Participants: J. Bolte (Bristol) (*), B. Conrey (AIM) (*), D. Goldfeld (Columbia) (*), W. Duke (UCLA), J. Friedlander (Toronto) (*), D. Hejhal (Minnesota), J. Hoffstein (Brown), L. Ji (Michigan), C. Judge (Indiana), J. Keating (Bristol) (*), E. Kowalski (Bordeaux) (*), S. Koyama (Keio) (*), E. Lindenstrauss (Stanford) (*), W. Luo (Ohio), P. Michel (Montpellier) (*), S. Miller (Rutgers), W. Mueller (Bonn), R. Murty (Queen's) (*), C. O'Sullivan (CUNY) (*), P. Perry (Kentucky) (*), B. Randol (CUNY) (*), Z. Rudnick (Tel Aviv), P. Sarnak (Princeton), K. Soundararajan (Michigan) (*), N. Vatsal (UBC), A. Venkov (Aarhus), M. Wakayama (Kyushu) (*), A. Zaharescu (Illinois) (*), S. Zelditch (Johns Hopkins) (*). (*) to be confirmed.

19–24 2004 ASL Annual Meeting, Carnegie Mellon Univ., Pittsburgh, Pennsylvania. (Dec. 2002, p. 1422)

Local Organizing Committee: J. Avigad (Chair), S. Awodey, L. Blum, J. Cummings, E. Schimmerling, and W. Sieg.

Program Committee: S. Artemov (chair), T. Bartoszynski, D. Hirschfeldt, M. C. Laskowski, and W. Sieg.

Information: The 2004 Mathematical Foundations of Programming

Semantics (MFPS) Meeting, to begin on May 23, 2004, will co-locate with the ASL Annual Meeting. For more information about MFPS, visit <http://www.math.tulane.edu/MFPS.html>.

24–28 IMA Workshop 9: Financial Data Analysis and Applications, University of Minnesota, Minneapolis, Minnesota. (Apr. 2003, p. 499)
Organizers: J. Heaton (Chicago), A. Lo (MIT).

Information: Institute for Mathematics and its Applications, University of Minnesota, 207 Church St. SE, 400 Lind Hall, Minneapolis, MN 55455; phone: 612-624-6066; email: visit@ima.umn.edu; <http://www.ima.umn.edu/complex/spring/c9.html>.

24–28 Workshop on Hamiltonian Dynamical Systems (jointly with The Fields Institute), Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 848)

Description: A conference on analytic techniques of dynamical systems, including perturbation theory, variational methods, and stability theory. The workshop will cover both finite-dimensional Hamiltonian systems such as in celestial mechanics, and infinite-dimensional Hamiltonian systems, such as those arising from PDE or from other dynamical systems with infinitely many degrees of freedom. Part of The Fields Institute thematic program, it follows a workshop on integrable and near-integrable Hamiltonian PDE, held the previous week in Toronto.

Organizing Committee: D. Bambusi (Milano); W. Craig (McMaster); S. Kuksin (Edinburgh); C. E. Wayne (Boston), chair; E. Zehnder (ETH-Zentrum).

* **28–31 International Conference on Mathematics and Its Applications**, City University of Hong Kong.

Description: The aim of the conference is to share the most recent development in mathematical research, and to enhance international academic exchanges and collaboration. In addition, the conference will be dedicated to Professor R. Wong, Fellow of Royal Society of Canada, Dean of the Faculty of Science and Engineering and Director of the Liu Bie Ju Centre for Mathematical Sciences of City University of Hong Kong, on the occasion of his 60th birthday.

Plenary Speakers: S. S. Antman (Univ. Maryland, USA), R. A. Askey (Univ. Wisconsin, USA), J. M. Ball (Univ. Oxford, UK), D. J. Benney (MIT, USA), M. Berry (Bristol Univ, UK), J. P. Bourguignon, (IHES, France), A. Bressan (Intl. School for Advanced Studies, Italy), P.G. Ciarlet (City Univ., Hong Kong), D. S. Jones (Univ. Dundee, UK), T. T. Li (Fudan Univ., China), P. L. Lions (Collège de France, France), T. P. Liu (Stanford Univ., USA), Z. M. Ma (Peking Univ., China), R. M. Miura (New Jersey Inst. Techn., USA), L. Nirenberg (New York Univ, USA), R. E. O'Malley (Univ. Washington, USA), F.W.J. Olver (Univ. Maryland, USA), J. M. Roquejoffre (Univ. Paul Sabatier, France), S. Smale (Toyota Techn. Inst., USA), A. C. C. Yao (Princeton Univ., USA)
Organizing Committee: P. G. Ciarlet (co-chair), Q. Zhang (co-chair), F. Cucker, H. H. Dai, T. Yang (City University of Hong Kong).

Information: email: mclbj@cityu.edu.hk; tel:+852 2788-9816; fax:+852 2788-7446; <http://www.cityu.edu.hk/rcms/icma2004>.

June 2004

2004 Mathematical Foundations of Learning Theory, Barcelona, Spain. (Apr. 2003, p. 499)

Coordinator: G. Lugosi.

Information: <http://www.crm.es/MathematicalFoundations/>.

2004 WSEAS Conferences, Corfu Island, Greece. (Apr. 2003, p. 500)

Topics: 7th WSEAS Internat. Conf. on Circuits, 7th WSEAS Internat. Conf. on Systems, 7th WSEAS Internat. Conf. on Communications, 7th WSEAS Internat. Conf. on Computers.

Topics for Conferences at Rhodes Island, Greece: 3rd WSEAS Internat. Conf. on Applied Informatics and Communications (AIC'03); 3rd WSEAS Internat. Conf. on Signal Processing, Computational Geometry & Artificial Vision (ISCGAV'03); 3rd WSEAS Internat.

Conf. on Systems Theory and Scientific Computation (ISTASC'03) (formerly: Scientific Computation and Soft Computing).

Information: For more details and to contact us, see the website <http://www.wseas.org/>.

1–11 Workshop on Semi-classical Theory of Eigenfunctions and PDEs, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 848)

Description: Many questions in quantum chaos are motivated by the correspondence principle in quantum mechanics. It asserts that certain features of the classical system manifest themselves in the semiclassical (as Planck's constant \hbar^2) limit of a quantization of the classical system. The exact relationship between classical dynamics and asymptotic properties of high energy eigenstates of a quantized system is still not completely understood, despite exciting developments in the last twenty years. Important issues related to the correspondence principle include asymptotic L^∞ (L^p) bounds for the eigenfunctions, integrated (and pointwise) Weyl errors and scarring. Another fundamental question concerns the local and global statistical properties of eigenfunctions (e.g., the random wave model), their nodal sets and critical points. These problems draw extensively on the theory of partial differential equations, and so we propose to bring together experts in these areas.

The workshop will include several short courses. H. Donnelly (Purdue) (*), N. Nadirashvili (Chicago), and D. Jerison (MIT) (*) have been invited.

Organizers: D. Jakobson (McGill), J. Toth (McGill).

Invited Participants: P. Bleher (IUPUI) (*), E. Bogomolny, D. Borthwick (Emory) (*), N. Burq (Paris-Sud) (*), Y. Colin de Verdière (Grenoble) (*), W. Craig (McMaster) (*), C. Fefferman (Princeton) (*), L. Friedlander (Arizona), P. Gerard (Paris-Sud), P. Guan (McMaster) (*), V. Guillemin (MIT) (*), B. Helffer (Paris-Sud) (*), E. Heller (Harvard) (*), V. Ivrii (Toronto) (*), E. Martinez (UCLA) (*), Min-Oo (McMaster) (*), D. J. Nonnenmacher (Ulm) (*), K. Okikiolu (San Diego) (*), G. Popov (Nantes) (*), T. Paul (École Normale) (*), Z. Rudnick (Tel-Aviv), Y. Safarov (London), P. Sarnak (Princeton) (*), B. Shiffman (Johns Hopkins) (*), M. Shubin (Northeastern) (*), J. Sjöstrand (Polytechnique) (*), U. Smilansky (Weizmann), A. Sobolev (Sussex), C. Sogge (Johns Hopkins), T. Tate (Keio) (*), A. Uribe (Michigan) (*), A. Voros (Saclay) (*), S. T. Yau (Harvard) (*), S. Zelditch (Johns Hopkins) (*), M. Zworski (Berkeley) (*). (*) to be confirmed.

2–4 ICNPAA 2004: Mathematical Problems in Engineering and Aerospace Sciences, The West University of Timisoara, Romania. (May 2003, p. 604)

Scope: Includes mathematical problems in all areas of engineering and aerospace sciences.

Organizers: S. Sivasundaram (general chair); S. Balint (local organizing chair).

Sponsors: IFNA, IFIP, IEEE, AIAA.

Deadlines: (1) Organizing Special Session (the title of the session, name of the organizers): June 30, 2003; to send the title of the talks and speakers: November 30, 2003. (2) For abstracts of the talks: January 30, 2004; full papers for the proceedings: July 15, 2004.

Contact: ICNPAA 2004, 104, Snow Goose Ct., Daytona Beach, FL 32119; email: SeenithI@aol.com.

Information: <http://www.icnpaa.com/>.

16–19 AIMS' Fifth International Conference on Dynamical Systems and Differential Equations, California State Polytechnic University, Pomona, California. (Aug. 2003, p. 848)

Topics: The conference will cover all major research areas in analysis and dynamics. Equally emphasized will be real world applications in terms of modeling and computations.

Description: The conference will provide a unique international forum for the international community of mathematicians and scientists working in analysis, differential equations, dynamical systems, and their applications to real world problems in the forms

of modeling and computation. The aim of this conference is to bring the worldwide senior experts as well as young researchers together to report recent achievements, exchange ideas, and address future trends of research in a relaxing but stimulating environment.

Format: There will be one-hour plenary talks, 30-minute special session talks, and 20-minute contributed talks.

Organizing Committee: I. Mihaila, M. Nakashima, C. Pinter-Lucke, S. Wirkus, W. Xie (chair, wxie@csupomona.edu).

Scientific Committee: J. Bona, S. Hu (chair, shh209f@smsu.edu), X. Lu (coordinator: lux@uncwil.edu); W.-M. Ni, M. Otani, R. Temam, K. L. Teo.

Deadline: Early registration and abstract submission: March 1, 2004.

Proceedings: The conference proceedings will be published by AIMS-Press.

Funding: Limited funding from the NSF is expected to support graduate students and young researchers.

Information: Abstract submission, registration, housing, plenary speakers, special sessions, and more details will be posted at <http://AIMSciences.org/>. For local information, please contact W. Xie at wxie@csupomona.edu. To organize a special session, please contact S. Hu.

*28-July 3 **International Association for Statistical Education (IASE) 2004 Roundtable**, Lund University, Lund, Sweden.

Description: The goal of the Round Table Conferences is to bring together a small number of experts, representing as many different countries as possible, to discuss one another's views and approaches on a given topic area. The Round Table Conferences provide opportunities for developing better mutual understanding of common problems and for making recommendations concerning the topic area under discussion. A main outcome is a monograph containing a set of papers which have been prepared for, and discussed during, the conference. The monograph will present a global overview of the conference subject, to serve as a starting point for further research on the selected theme.

Topic: The topic for the IASE Round Table Conference in 2004 will be Curricular Development in Statistics Education. The need for processing the increasing amount of data people receive in the course of their work and lives has made it imperative that students leave elementary and secondary schools prepared to make reasoned decisions based on sound statistical thinking. Countries and communities have approached this problem in different ways. The Round Table will provide the opportunity for sharing what works and to highlight the challenges and potential solutions researchers have faced as they design and implement curricula to produce statistically literate citizens. The Round Table will be held on 28 June to 3 July in Lund, Sweden, which is in close proximity to Copenhagen, Denmark, where the Tenth International Congress on Mathematical Education will be held on 4-11 July 2004.

Contact Information: Gail Burrill, Scientific Program Committee Chair, 116 N. Kedzie, Division of Science and Mathematics Education, Michigan State University, East Lansing, MI 48824; email: burrill@msu.edu; phone: 517-432-2152, ext. 133.

Information: Our website is http://hobbes.lite.msu.edu/~IASE_2004_Roundtable. Details are also posted on the IASE website, <http://www.cbs.nl/isi/iase.htm>.

30-July 7 **Fourth World Congress of Nonlinear Analysts (WCNA2004)**, Hyatt Orlando, Orlando, Florida. (Aug. 2003, p. 849)

Short Description: The fourth World Congress (WCNA-2004) of Nonlinear Analysts will be held at the Hyatt Regency Orlando (Near Walt Disney World Resort) under the auspices of the International Federation of Nonlinear Analysts (IFNA). The vision of IFNA and WCNA is to promote, encourage, and influence more cooperation, understanding, and collaboration in the world community of nonlinear analysts from various diverse disciplines; to bring together various disciplines that attempt to understand nonlinear phenomena and solve nonlinear problems; and to help minimize the

ever-widening gap between the developed and developing countries by providing scientific and technical research assistance in various forms. It is with this spirit that the International Federation of Nonlinear Analysts was established in 1992 as a transdisciplinary world society. IFNA sponsors the World Congress of Nonlinear Analysts periodically once every four years.

Scientific Program: There will be several invited lectures, organized sessions, minisymposia and workshops (by academic, industrial, and government experts) covering recent trends in nonlinear problems arising in such diverse disciplines as: aerospace sciences, atmospheric sciences, biological sciences, chemical sciences, cosmological sciences, economics, engineering & technological sciences, environmental sciences, geophysical sciences, medical & health sciences, numerical & computational sciences, oceanographic sciences, physical sciences, social sciences, and mathematical sciences. There will be opportunities to present short communications (30 minutes), organize informal seminars, and propose special sessions. More details concerning travel facilities, social events, preregistration, accommodations, submission of abstracts, scientific program, and invited lectures will be provided in the second announcement, which will be posted shortly.

Information: <http://kermani.math.fit.edu/>; email: wca2004@yahoo.com.

July 2004

1-December 31 **Wall Bounded and Free-Surface Turbulence and Its Computation**, Institute for Mathematical Sciences, National University of Singapore, Singapore. (Aug. 2003, p. 849)

Description: Turbulence in fluid flow has remained one of the challenging problems of science and engineering today. Although important advances have been made in our knowledge and understanding of the processes of turbulence since the experiments of Osborne Reynolds more than a hundred years ago, our current ability to accurately predict turbulent events and their properties is still very limited for all but simple flows. The present program seeks to create a forum for the exchange of ideas and knowledge on recent developments in the theory of turbulence, turbulence modeling and computation, and turbulence control. The emphasis will be on turbulence at surfaces, since this is commonly encountered in applications, but related works in boundary layer transition and turbulence are also welcome.

Organizing Committee: Co-chairs: B. E. Launder (Univ. of Manchester Inst. of Sci. and Tech.), C. C. Mei (MIT), and K. S. Yeo (Nat. Univ. of Singapore).

Registration: Registration forms for participation in tutorials/workshops are available at <http://www.ims.nus.edu.sg/Programs/wbfst/index.htm> and should be received at least one month before commencement of each activity. Registration is free of charge. Membership is not required for participation.

Information: For general enquiries please email ims@nus.edu.sg, while for enquiries on scientific aspects of the program, please email K. S. Yeo at mpeyeoks@nus.edu.sg. More information about the program is available at the website: <http://www.ims.nus.edu.sg/Programs/wbfst/index.htm>.

5-9 **Graphes et Combinatoire, un Colloque a la Memoire de Claude Berge**, Université Paris 6, Paris, France. (Mar. 2003, p. 409)

Program: Graph theory and combinatorics.

Organizers: A. Bondy, J.-C. Fournier, and M. Las Vergnas.

5-9 **19th "Summer" Conference on Topology and Its Applications**, Department of Mathematics and Applied Mathematics, University of Cape Town, Rondebosch, South Africa.

Keynote Lecturers: O. Alas (Univ. of Sao Paulo, Brazil); A. Edalat (Imperial College London, UK); M. Erne (Univ. of Hannover, Germany); M. I. Garrido (Univ. of Extremadura, Badajoz, Spain); V. Gutev (Univ. of Natal, Durban, South Africa); P. Johnstone (Univ. of Cambridge, UK); V. Pestov (Univ. of Ottawa, Canada); D. Repovš (Univ. of Ljubljana, Slovenia).

Workshops: Topological Methods in Algebra: M. D. Neusel (Texas Tech Univ. at Lubbock, USA); Duality as a Unifying Framework: I. Rewitzky (Univ. of Cape Town, South Africa).

Special Sessions: Session 1: Topology and Set Theory (e.g. Foundations, Continuum Theory). Session 2: Topology in Algebra (e.g. Topological Groups, Topological Semigroups). Session 3: Topology in Analysis and Geometry (e.g. Function Spaces, Dynamical Systems, Uniformity, Asymmetric Topology). Session 4: Topology and Computer Science (e.g. Domain Theory, Computational Topology). Session 5: Topology and Category Theory (e.g. Pointfree Topology, Topological Categories, Closure Operators). Participants are invited to present 20-minute talks.

Organizers: H. Kunzi, C. Gilmour, G. Brummer, J. Frith, S. Mabizela, I. Rewitzky, A. Schauerte (Univ. of Cape Town); D. Holgate, P. Matutu (Univ. of Stellenbosch); N. Marcus (Univ. of the Western Cape).

Information: Summer Conference on Topology and Its Applications, Department of Mathematics and Applied Mathematics, University of Cape Town, Private Bag, Rondebosch 7701, South Africa; email: topsum04@maths.uct.ac.za; fax: +27-21-6502334; <http://vishnu.mth.uct.ac.za/Conferences/Topology/>.

5-16 Advanced Course on Automata Groups, Bellaterra (Barcelona), Spain. (Apr. 2003, p. 500)

Coordinator: W. Dicks.

Information: <http://www.crm.es/AutomataGroups/>.

24-28 European Congress on Computational Methods in Applied Sciences and Engineering, Jyväskylä, Finland. (Feb. 2003, p. 295)

Scientific Programme: The scientific programme of the Congress consists of invited keynote lectures by leading experts, mini-symposiums, special technological sessions, contributed papers, and poster presentations. Further details will be given in the Third Announcement (May 2003).

Congress Topics: Computational fluid mechanics, Computational solid and structural mechanics, Computational acoustics, Computational electromagnetics, Computational chemistry, Computational mathematics and numerical methods, Inverse problems, Optimization and control, Computational methods in life sciences, Industrial applications.

Call for Papers: Prospective authors are kindly invited to visit the congress website in order to submit their two-page abstracts on topics related to the themes of the Congress by November 15, 2003.

Further Information: The congress website <http://www.mit.jyu.fi/eccomas2004/> or ECCOMAS Chairman, Prof. Pekka Neittaanmäki, Univ. of Jyväskylä, Dept. of Math. Inform. Tech., P.O. Box 35 FIN-40014, Univ. of Jyväskylä, Finland; fax: +358 14 260 2771; email: pn@mit.jyu.fi; ECCOMAS 2004 Congress Secretariat, Ms. Pirjo-Leena Pitkanen, Jyväskylä Congresses, P.O. Box 212 FIN-40101, Jyväskylä, Finland; fax +358 14 339 8159; email: pirjo-leena.pitkanen@jyvaskyaa.com.

25-31 2004 ASL European Summer Meeting (Logic Colloquium '04), Torino, Italy. (Jun./Jul. 2003, p. 725)

Program Committee: T. Arai, D. DeJohgh, W. Goldfarb, G. Hjorth, S. Lempp, G. Lolli, D. Marker, D. Martin, R. McKenzie, W. Pohlers (Chair), W. Sieg, A. Sorbi, and A. Wilkie.

Local Organizing Committee: A. Andretta (Chair), S. Berardi, R. Camerlo, U. De Liguoro, M. Dezani, A. Marcone, N. Olivetti, and D. Zambella.

Information: <http://lc2004.unito.it/>.

26-30 IMS Annual Meeting/6th Bernoulli World Congress, Barcelona, Spain. (Aug. 2003, p. 849)

Topics: The program covers a wide range of topics in statistics and probability, presenting recent developments and the state of the art in a variety of modern research topics and in applications such as mathematical finance and statistical bioinformatics. The program include up to twelve Special Invited Lectures given by leading specialists, thirty-five Invited Paper Sessions and a large number of contributed talks.

Organizers: D. Nualart, Chairman of the Organizing Committee; W. Kendall, Chairman of the Scientific Committee.

Information: <http://www.imub.ub.es/events/wc2004/>.

26-30 Workshop on Spectral Theory of Schrödinger Operators, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 849)

Description: This workshop will focus on the spectral theory of random and quasiperiodic Schrödinger operators. In solid state physics random and almost periodic Schrödinger operators serve as models of disordered systems such as alloys, glasses and amorphous materials. The disorder of the system is reflected by the dependence of the potential on some random parameters.

From a mathematical point of view, random Schrödinger operators show quite "unusual" spectral behavior. If the disorder is large enough, then these operators have dense point spectrum with exponentially decaying eigenfunctions (Anderson localization). The appearance of dense point spectra is a reflection of the physical fact that the strongly disordered systems are bad conductors. It is believed that in the weak disorder regime and for dimensions larger than 2 these operators have some absolutely continuous spectrum which corresponds to nonzero conductivity of the weakly disordered systems. The mathematical proof of this expected spectral phase transition (Anderson delocalization) is a fundamental open problem in mathematical physics.

This workshop will bring together the world leaders in spectral theory of random and quasiperiodic Schrödinger operators. Its goal is to review the state of the art of the field and to map new directions of the research.

The program includes short courses to be given by M. Aizenman (Princeton), B. Simon (Caltech) (*), and S. Jitomirskaya (Irvine).

Organizers: V. Jaksic (McGill), Y. Last (Hebrew).

Invited Participants: J. Avron (Technion), J.M. Barbaroux (Toulon), J. M. Combes (Marseille) (*), D. Damanik (Caltech), E. B. Davies (London), R. Del-Rio (UNAM), A. Elgart (Princeton), A. Fedotov (St. Petersburg), A. Figotin (Irvine), R. Froese (UBC) (*), F. Germinet (Lille), F. Gesztesy (Missouri), M. Goldstein (Toronto), A. Gordon, I. Herbst (Virginia) (*), P. Hislop (Kentucky), D. Hundertmark (Caltech), A. Joye (Grenoble), Y. Karpeshina (Alabama), R. Killip (Caltech), W. Kirsch (Bochum), A. Kiselev (Wisconsin), A. Klein (Irvine), F. Klopp (Paris), A. Laptev (Stockholm), D. Lenz (Chemnitz), S. Molchanov (UNCC), L. Pastur (Paris), C. Remling (Osnabruck), W. Schlag (Caltech), A. Sobolev (Sussex), P. Stollmann (Chemnitz), G. Stolz (Alabama), S. Tcheremchantsev (Orleans), B. Vainberg (UNCC). (*) to be confirmed.

* **26-30 XIV Brazilian Topology Meeting**, Campinas, São Paulo, Brazil.

Host: Instituto de Matemática, Universidade Estadual de Campinas (UNICAMP)-Campinas, São Paulo, Brazil.

Description: Characteristic Classes, Cobordism, Fixed Point Theory, Foliations, Group Actions, Homotopy Theory, Immersions, Low-Dimensional Topology, and related topics.

Organizers: D. L. Gonçalves, S. Firmo, N. A. Goussevskii, J. Guaschi, S. Fenley, P. Zvengrowski.

Information: email: top2004@ime.unicamp.br; <http://www.ime.unicamp.br/top2004>.

26-31 2004 ASL European Summer Meeting (Logic Colloquium '04), Torino, Italy. (Apr. 2003, p. 500)

Program Committee: T. Arai, D. DeJongh, W. Goldfarb, G. Hjorth, S. Lempp, G. Lolli, D. Marker, D. Martin, R. McKenzie, W. Pohlers (chair), W. Sieg, A. Sorbi, and A. Wilkie.

Local Organizing Committee: A. Andretta (chair), S. Berardi, R. Camerlo, U. De Liguoro, M. Dezani, A. Marcone, N. Olivetti, and D. Zambella.

Information: F. Whitney; email: asl@vassar.edu.

August 2004

2–6 Workshop on Dynamics in Statistical Mechanics, Centre de Recherches Mathématiques, Montréal, Québec, Canada. (Aug. 2003, p. 850)

Description: During the last years significant efforts have been devoted to the study of dynamical properties of (classical and quantum) open systems. In particular, through the study of noisy or forced dissipative systems, or Hamiltonian systems with a large number of degrees of freedom, our understanding of the mathematical structure of nonequilibrium statistical mechanics has greatly improved. The aim of this meeting is to present the latest results and discuss the possible future directions of research in this area. The following topics will be discussed:

Axiomatic approaches: Under appropriate hypotheses on the ergodic properties of the underlying dynamical system (chaotic hypothesis, asymptotic abelianness, etc.), it is possible to prove various predictions of nonequilibrium thermodynamics (linear response, Kubo formula, Onsager's relations, etc.). This approach also leads to unexpected results, like the Gallavotti-Cohen fluctuation theorem.

Specific models: Modern techniques (quantum field theory, algebraic quantum dynamical systems, spectral analysis, renormalization group, etc.) have been successfully applied to the study of various models (spin-boson, spin-fermion, Pauli-Fierz, Lorentz-gas, etc.). Elementary physical properties like return to equilibrium or existence and structural properties of nonequilibrium steady states have been obtained in this way. More difficult questions, like the emergence of the Fourier law, are currently under investigation.

Markovian dynamics: It gives a natural mathematical framework to study the dynamics of various nonequilibrium processes: Hamiltonian systems coupled to reservoirs, exclusion processes on the lattice, noisy extended systems.

The program includes short courses to be given by H. Araki (Kyoto), B. Derrida (École Normale), J. Froehlich (ETH), J.-P. Eckmann (Geneva) (*).

Organizers: V. Jaksic (McGill), C.-A. Pillet (Toulon).

Invited Participants: V. Bach (Mainz) (*), J. Bellissard (Georgia Tech), S. De Bievre (Lille), D. Dawson (McGill), J. Dereziński (Warsaw), L. Erdos (Georgia Tech), B. Helffer (Paris-Sud), G. Gallavotti (Rutgers) (*), C. Gerard (Polytechnique), M. Griesemer (Alabama), A. Knauf (Erlangen) (*), S. Kuksin (Heriot-Watt), A. Kupiainen (Helsinki) (*), J. Lebowitz (Rutgers), C. Liverani (Roma) (*), C. Maes (Leuven), T. Matsui (Kyushu), M. Merkli (ETH), F. Nier (Rennes), L. Rey-Bellet (UMass), M. Sigal (Toronto), D. Spohn (Essen), H. Spohn (München) (*), L. E. Thomas (Virginia), A. Verbeure (Leuven) (*), H. T. Yau (NYU) (*). (*) to be confirmed.

2–27 Magnetic Reconnection Theory, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Apr. 2003, p. 500)

Description: The basic theory of MHD reconnection in two dimensions is now well developed, and the time is ripe for two new developments, which are the main aims of the programme, namely, to develop: (i) the theory for the way the process can operate in three dimensions; (ii) models for the various aspects of collisionless reconnection. We would envisage having two short workshops, an introductory one at the beginning to set the scene and one at the end to present the results and stimulate further work. There would be a series of brainstorming sessions on various key topics throughout the 4 weeks, with the emphasis on the sharing of ideas and genuine cross-fertilization. For the whole 4 weeks. In addition, the groups would have been prepared by a series of email debates amongst the participants in the months leading up to the programme, so that the members will be well prepared and ready to hit the ground running when they arrive.

Organizers: E. R. Priest (St. Andrews), J. Birn (Los Alamos), T. G. Forbes (New Hampshire).

Information: Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge, CB3 0EH UK; tel: +44 (0) 1223 335999;

fax: +44 (0) 1223 330508; email: info@newton.com.ac.uk; http://www.newton.cam.ac.uk/.

6–7 New Directions in Probability Theory, Fields Institute, Toronto, Canada. (Aug. 2003, p. 850)

Description: The meeting consists of five sessions and four one-hour lectures, of which two are IMS Medallion Lectures. It is intended for a general probability audience interested in recent developments in probability theory. The topics of the session are Random Walks with Self-Repulsion, Random Matrices, Random Media, Superprocesses, and Markov Chains with Algorithms.

CoSponsor: The Institute of Mathematical Statistics (IMS) and The Fields Institute for Research in Mathematical Sciences. The meeting immediately precedes the Joint Statistical Meetings of August 8–12 (co-sponsored by ASA, IMS, ENAR, WNAR, SSC). It will take place on Friday/Saturday and will be held at The Fields Institute.

Information & Registration: There will be no registration fee for the meeting. However, space at The Fields Institute is limited, and so early registration is recommended; http://www.imstat.org/meetings/NDPT/default.htm.

16–December 17 Quantum Information Science, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Apr. 2003, p. 500)

Organizers: C. H. Bennett (IBM Yorktown), D. P. DiVincenzo (IBM Yorktown), N. Linden (Bristol), S. Popescu (Bristol).

Information: Isaac Newton Institute for Mathematical Sciences, 20 Clarkson Road, Cambridge, CB3 0EH UK; tel: +44 (0) 1223 335999; fax: +44 (0) 1223 330508; email: info@newton.com.ac.uk; http://www.newton.cam.ac.uk/.

* **24–27 International Conference on Nonlinear Operators, Differential Equations and Applications (ICNODEA-2004)**, Babes-Bolyai University, Cluj-Napoca, Romania.

Purpose: To bring together experts in nonlinear analysis and promote contacts between Romanian mathematicians and mathematicians from all over the world in order to discuss recent advances in the field.

Organizers: I. A. Rus, Gh. Micula, A. Petrusel, R. Precup.

Program: Plenary lectures, invited section lectures, short communications, poster session.

Call for Papers: Papers related to the following topics are appropriate for submission to the conference: Fixed Point Theory, Ordinary Differential Equations, Nonlinear Integral Equations, Partial Differential Equations, Analysis of Multivalued Mappings, Optimal Control, Biomathematics, Mathematical Economics, Approximation and Numerical Methods.

Language: English.

Registration Deadline: April 30, 2004.

Information: All correspondence related to the conference should be addressed to: I. A. Rus, G. Micula, A. Petrusel, or R. Precup, Babes-Bolyai University, Department of Applied Mathematics, Str. M. Kogalniceanu 1, 3400 Cluj-Napoca, Romania; email: nodeacj@math.ubbcluj.ro; http://www.math.ubbcluj.ro/~mserban/confan.htm; phone: ++40-64-405327; fax: ++40-64-191906.

30–September 3 9th Conference on Differential Geometry and Its Applications, Prague, Czech Republic. (Apr. 2003, p. 500)

Organizer: Faculty of Mathematics and Physics of Charles University in collaboration with other Czech universities.

Information: email: jburess@karlin.mff.cuni.cz.

September 2004

1–6 (REVISED) Sixth Pan-African Congress of Mathematicians, Institut National des Sciences Appliquées et de la Technologie (IN-SAT), Université 7 Novembre à Carthage, Tunis, Tunisia. (May 2003, p. 604)

Theme: Mathematical Sciences and the Development of Africa—Challenges for Building a Knowledge Society in Africa. The scientific

program will include plenary lectures, invited lectures, contributed research papers, a symposium, and exhibitions.

Contact: Those interested in speaking at or participating in the congress are invited to contact: A. Boukricha, local organizing committee, Université de Tunis EL Manar Département de Mathématiques, Faculté des Sciences De Tunis, 1060 Tunis, Tunisia; email: aboukricha@fst.rnu.tn.

Information: Please submit curriculum vitae and abstract to: J. Persens, Pres., African Mathematical Union, Univ. of the Western Cape, Private Bag X17, Belville 7535, South Africa; jpersens@uwc.ac.za; and copies to: J.-P. Ezin, Sec. General, African Mathematical Union, Institut de Mathématiques et de Sciences Physiques, BP613, Porto Novo, Benin; jpezin@syfed.bj.refer.org.

14-18 Third International Conference on Boundary Integral Methods: Theory and Applications, Brunel Univ., West London, United Kingdom. (Nov. 2002, p. 1287)

Description: As well as discussing recent developments in the theory and numerical analysis of boundary integral equations, the conference will strive to encompass applications of contemporary relevance such as direct and inverse (medium and high) frequency scattering, electromagnetics and moving boundary problems in hydrodynamics. Continuing progress in key computational techniques such as multipole, wavelets and panel clustering, together with innovative algorithm design will be an additional theme.

Conference Organizing and Scientific Committee: S. Amini (Univ. of Salford), S. Chandler-Wilde (Brunel Univ., Chair), K. Chen (Univ. of Liverpool), P. Davies (Univ. of Strathclyde), I. Graham (Univ. of Bath), P. Martin (Colorado School of Mines).

Information: <http://www.brunel.ac.uk/~mastsnc/bimta3.html>.

October 2004

16-17 AMS Southeastern Section Meeting, Vanderbilt University, Nashville, Tennessee. (May 2003, p. 604)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

16-17 AMS Western Section Meeting, University of New Mexico, Albuquerque, New Mexico. (May 2003, p. 604)

Information: <http://www.ams.org/amsmtgs/sectional.html>.

November 2004

6-7 AMS Eastern Section Meeting, University of Pittsburgh, Pittsburgh, Pennsylvania.

Information: G. Alsfeld; email: gma@ams.org; <http://www.ams.org/amsmtgs/sectional.html>.

December 2004

5-16 International Workshop on Nonlinear Partial Differential Equations, IPM, Tehran, Iran. (Aug. 2003, p. 850)

Scope: New trends and activities in the theory and applications of nonlinear partial differential equations. Topics include free boundary problems, applications of nonlinear pde's in fluids and geometry, inverse problems in pde's, stochastic and kinetic pde's, fully nonlinear pde's.

Sponsors: Institute for Studies in Theoretical Physics and Mathematics (IPM) (<http://www.ipm.ir>), Tehran, Iran; Wolfgang Pauli Institute (WPI) (<http://www.wpi.ac.at>), Vienna, Austria.

Organizers: P. A. Markowich (WPI), M. Shahshahani (IPM).

Scientific Committee: H. W. Engl (Linz, Austria), P. A. Markowich (WPI, Vienna), H. Shahgholian (KTH, Sweden), M. M. Shahshahani (IPM, Tehran), S. Tahvildarzadeh (Rutgers, USA), N. Uraltseva (St. Petersburg, Russia).

Call for Papers: Papers will be accepted for presentation at the workshop subject to approval by the Scientific Committee. Please send submissions (extended abstract) electronically (preferably in PDF format) to one of the organizers at an email address listed below.

Contact: M. M. Shahshahani (mehrdads@ipm.ir); P. A. Markowich (wittgenstein.mathematik@univie.ac.at).

17-19 International Conference on Smarandache Algebraic Structures, Indian Institute of Technology, IIT Madras, Chennai-600 036 Tamil Nadu, India. (Aug. 2003, p. 850)

Description: A Smarandache n -structure on a set S means a weak structure w_0 on S such that there exists a chain of proper subsets $P_{n-1} \subset P_{n-2} \subset \dots \subset P_2 \subset P_1 \subset S$ whose corresponding structures verify the inverse chain $w_{n-1} \succ w_{n-2} \succ \dots \succ w_2 \succ w_1 \succ w_0$, where \succ signifies "strictly stronger" (i.e., structure satisfying more axioms).

Program: (1) Smarandache-type groupoids, semigroups, rings, fields; (2) Smarandache-type k -modules, vector spaces, linear algebra, fuzzy algebra.

Organizer: W. B. Vasantha Kandasamy.

Speakers: R. Padilla, M. Khoshnevisan, M. Popescu.

Deadline: November 30, 2004.

Information: <http://www.gallup.unm.edu/~smarandache/eBooks-otherformats.htm>.

January 2005

5-8 Joint Mathematics Meetings, Hyatt Regency Atlanta & Atlanta Marriott Marquis, Atlanta, Georgia. (Sept. 2002, p. 1001)

Information: <http://www.ams.org/amsmtgs/national.html>.

17-July 15 Model Theory and Applications to Algebra and Analysis, Isaac Newton Institute for Mathematical Sciences, Cambridge, England. (Apr. 2003, p. 500)

Description: Pure model theory. We expect further developments in the use of stability theory techniques in unstable contexts (simple theories, algebraically closed valued fields) and in nonelementary classes.

Model theory of fields with operators, and connections with arithmetic geometry. The model theory of differentially closed fields and of other fields with operators has been at the centre of model-theoretic proofs of results in arithmetic geometry. The Zil'ber programme of pseudo-analytic functions is also expected to have some interesting consequences.

O-minimality and related topics. O-minimality is a property of ordered structures, yielding results akin to traditional real analytic results, such as the classical finiteness theorems for subanalytic sets (cell decompositions, Whitney stratifications, etc.). Mathematically central, new examples of o-minimal structures have emerged, and the logical theory has had applications to Lie theory, to asymptotics, and to neural networks.

Henselian fields. Model theory of Henselian fields, and in particular of p -adic fields and Arc spaces. Connections with algebraic and analytic geometry. Study of cohomology theories and motives, aiming at uniformity results. Study of compact complex manifolds and uses of stability.

Model theory of groups. We plan to have a workshop on groups of finite Morley rank, a topic connected to the classification of finite simple groups via its techniques and its aims. The recent (and very exciting) developments in the model theory of nonabelian free groups should also be studied, depending on its degree of maturity.

Organizers: Z. Chatzidakis (Paris), A. Pillay (Illinois), A. Wilkie (Oxford).

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