ESI **The Erwin Schrödinger International Institute for Mathematical Physics**

Boltzmanngasse 9
A-1090 Wien, Austria

Scientific Report for the Year 2001

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March 1, 2002

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ERWIN SCHRÖDINGER INTERNATIONAL INSTITUTE OF MATHEMATICAL PHYSICS, SCIENTIFIC REPORT FOR THE YEAR 2001

ESI, Boltzmanngasse 9, A-1090 Wien, Austria

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Table of contents

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General remarks

In the year 2001 ESI was host to 461 visitors. There were 132 preprints contributed to the preprint series (152 till beginning of February), some of them still belong to programs from 1999, 395 seminar talks or ESI-Colloquia were given outside of conferences, many more lectures were given in conferences at ESI.

ESI has spent AS 7.290 Mio for science which was supplemented by AS 1.537 Mio of foreign support; AS 3.7 Mio were spent for administrative costs including renting the premises and personnel cost.

The Austrian Ministry asked ESI for a paper on strategic future development (Strategiepapier 1998). In this paper the senior fellows program was sketched and was later put into effect with the hope that the necessary increase of the budget would materialize eventually. But in autumn 2001 the governing board of ESI (Vorstand des Vereines) had to decide that there is no hope anymore for the envisaged budget-increase. Since ESI was spending too much it was decided to reduce the senior fellows programs in accordance with the promises made to the appointed senior fellows in 2002, to cut all programs for 2002 by at least 10%, and to disallow all ESI contributions to continuation programs. This was detrimental to ESI's good name as a reliable supporter for scientific programmes.

From the preprint server `http://www.esi.ac.at/Preprints` 16127 preprints were downloaded during the year 2001 (January 899, February 1724, March 2280, April 1501, May 1356, June 1137, July 804, August 1006, September 959, October 2761, November 1170, December 530) For comparison, in 1998 we had 7011 downloads, in 1999 15845, and in 2000 14356.

The following conferences were (co)organized by ESI:

(1) **The 21th Winter school on geometry and physics**, January 13–20, 2001, in Srni, a small village in the Bohemian forest, Czech republic.
(2) **75 Jahre Schrödinger-Gleichung**, Lectures at ESI, March 28, May 9 and 10. Organized by J. Yngvason and W. Reiter.
(3) **Poisson Geometry**, June 13 – 22. Organized by Anton Alekseev during his stay as a senior fellow, together with P. Michor. For the lectures given see the report on Anton Alekseev below.
(4) **Interesting algebraic varieties arising in the theory of algebraic groups**, October 22 – October 26. This conference was held as a continuation of the program **Algebraic Groups, Invariant Theory, and Applications** which was organized by: B. Kostant, P. Michor, F. Pauer and V. Popov. August 1 – December 29, 2000. For the lectures given in this conference see the report on the program below.

Many workshops and conferences were organized inside the current programs of 2001.

Winter School in Geometry and Physics

The traditional winter school in geometry and physics which takes places for one week each January since 1980 in a picturesque village in the Czech parts of the Bohemian mountains is a joint enterprise of the Czech society of mathematicians and physicists and ESI, from 1994 onwards. Usually there are proceedings, which are published as a supplement of the 'Rendiconti Matematici di Palermo'.

In this year, the 21th Winter school on Geometry and Physics took place in the week January 13–20, 2001. ESI has contributed AS 15.000.– The former conferences with ESI-participation are published in the proceedings volumes:

The proceedings of the Winter school 'Geometry and Physics', Srní, January 1994. Suppl. Rend. Circ. Mat. Palermo, II. Ser. **39** (1996), 9–148. **43** (1996), 9–228. **46** (1997), 9–176 **54** (1998), 11–124. **59** (2000), 7–228. **63** (2000), 7–196.

The proceedings of the 20th Winter school 'Geometry and Physics', Srní, January 15–22, 2000.
Suppl. Rend. Circ. Mat. Palermo, II. Ser. **66** (2001), 7–218
Contents:

75 Jahre Schrödinger-Gleichung

Lectures at ESI to commemorate the 75th anniversay of the Schrödinger equation. Organized by W. Reiter and J. Yngvason. The program:

March 28. T. Hänsch (MPI Garching): Atomoptik und Materiewellen.
May 9. P. Zoller (Uni Innsbruck): Engineering entanglement.
May 10. J. Yngvason (Uni Wien): The roots of the Schrödinger equation.
May 10. G.M. Graf (ETH Zürich): Classical action and Quantum scattering.
May 10. J. Burgdörfer (TU Wien): What do Schrödinger waves know about Chaos?

PROGRAMS IN 2001

Scattering Theory

ESI contributed AS 980,000.–, foreign support was AS 208.000.– 8 ESI-preprints: [1040], [1044], [1048], [1052], [1067], [1068], [1073], [1091].

Organized by Vesselin Petkov, András Vasy, and Maciej Zworski.

Review of the goals of the program. The purpose of the program was to bring together experts with different perspectives in scattering theory. In particular in the following areas:

(1) Scattering theory in settings where there are singularities at infinity: the N-body problem and higher rank locally symmetric spaces.
(2) Resonances which describe scattering states which oscillate at some frequency (or have some rest energy) and decay at some rate.
(3) *Quantum chaos* in the context of scattering.
(4) Scattering theory in modern physics

Workshops. The program had two formal workshops and an informal one: in March, May and July respectively. Almost all invited participants attended and the May workshop was particularly large and lively. In July, there were 15 participants in residence and that lead to a series of interesting talks (by Sjoestrand, Sigal, Stoyanov, Dimassi, Zerzeri, Petkov, Vasy, and Zworski) which amounted to an informal workshop.

The talks during the workshops reflected the goals of the program. In particular, the interaction with physicists during the second workshop (Gaspard, Smilansky) was very succesful. In fact, Professor Gaspard of Brussels was, apart from the organizers, the most conscientious participant who attended all the talks, and contributed to questions and discussions. Perhaps one omission (pointed out by Smilansky) was the lack of a problem session: many problems and new directions came up during lectures and a formal set-up would have been helpful.

Other topics were also covered during the workshop: diffraction on manifolds with conic singularities, propagation of singularities for time dependent Schrödinger equations, inverse problems (notably for resonances), semi-classical approaches to non-linear Schrödinger equation, existence of absolutely continuous spectrum for Schrödinger operators with slowly decaying potentials.

Interaction with other programs. We would like to single out four instances of interesting interaction

(1) One of the most interesting talks of the second workshop was given by N. Burq on his work with P. Gérard and N. Tzvetzkov concerning applications of semi-classical methods to non-linear evolution equations. Both as far as the authors and the topics go this created an overlap with another recent program at ESI.
(2) The talks of W. Müller and L. Ji on scattering on locally symmetric spaces were of interest to experts from the Mathematics Department of the University of Vienna (as well as to the "Poisson structures" visitors to ESI), and lead to subsequent discussions and consultations.
(3) S. Zelditch of Johns Hopkins who was a one month visitor of our program participated actively in the "Poisson structures" program (which included his giving a talk in that workshop as well), and the "Randon Walks" program.
(4) M. Zworski is organizing a semester in "Semi-classical analysis" at MSRI in the spring of 2003. One of the goals of that program is to bring together mathematicians, physicists and chemists interested in semi-classics. Because of a certain overlap of topics we used the scattering program at ESI as an experimental ground for testing chances of such an interaction: our program had about 10 % physics participation, while the MSRI we will aim for about 40 %. The conclusion is that we can have a very interesting and fruitful math/phys/chem interaction!

Focus on specific projects. In this section we will describe, from the personal perspective of the organizers, some projects which were strongly related to the program.

(1) During the "Spectral theory" program at ESI in the spring of 1998, V. Petkov and M. Zworski commenced their collaboration on the "Breit-Wigner approximation". That lead to publications of [S8], [S9], [S10]. Some of the results of [S8] were then generalized by J.-F. Bony [S1], and some of the results of [S10] by J.-F. Bony and J. Sjöstrand. The ultimate generalization to date was then achieved by V. Bruneau and V. Petkov [S7], who used also the related work of Bony [S2] and Sjöstrand [S12]. The topic of understanding Breit-Wigner approximation and the trace formulæ for resonances is far from exhausted and will lead to further work. Except for Bony (who was invited but could not attend) all the researchers mentioned here participated in the ESI program.
(2) A. Vasy is involved in a project with A. Hassell and R.B. Melrose (both participating in the program) whose goal is to understand scattering for potentials which do not decay at infinity – see [S4]. Another group, with whom this direction of research originates [S5], consists of I. Herbst and E. Skibsted. They also participated in the program and their presence lead to an interesting and exciting exchange of views.
(3) A. Vasy and X.-P. Wang worked together on a problem of regularity of the spectral shift function for the N-body problem and they made substantial progress [S13]. That worked was conducted at ESI and Université de Nantes (Wang's home institution): Vasy spent some time at Nantes, and Wang at ESI.
(4) L. Ji and M. Zworski are continuing their work on scattering on locally symmetric spaces [S6] – the new project is party expository in nature and resulted from discussions at ESI. The idea is to make methods of [S6] more accessible by presenting them in a simpler setting.

Other projects were also the consequence of interaction during the meeting: Popov-Zelditch [S11], Popov-Stefanov (on lower bounds for the number of resonances, in progress), Wunsch (propagation of microlocal defect measures on manifolds with conic singularities, in progress), and more.

[S1] J.-F. Bony, *Majoration du nombre de résonances dans des domaines de taille h*, preprint (2000), to appear in IMRN..

[S2] J.-F. Bony, *Minoration du nombre de résonances engendrée par une trajectoire fermée*, preprint (2000), to appear in Comm. P.D.E..
[S3] J.-F. Bony and J. Sjöstrand, *Trace formula for resonances in small domains*, preprint (2000), J. Func. Anal. to appear..
[S4] A. Hassell, R.B. Melrose, and A. Vasy,, *Spectral and scattering theory for symbolic potentials of order zero*, Séminaire E.D.P. 2000-2001,, École Polytechnique..
[S5] I. Herbst, *Spectral and scattering theory for Schrödinger operators with potentials independent of* $|x|$, Amer. J. Math. **113** (1991), 509–565.
[S6] L. Ji and M. Zworski, *Scattering matrices and scattering geodesics of locally symmetric spaces*, Ann. Sci. Ec. Norm. Sup. **34** (2001), 441-469.
[S7] V. Bruneau and V. Petkov, *Meromorphic continuation of the spectral shift function*, ESI-preprint 1073 (2001).
[S8] V. Petkov and M. Zworski, *Breit-Wigner approximation and distribution of resonances*, Comm. Math. Phys. **204** (1999), 329-351, ESI-preprint 600.
[S9] V. Petkov and M. Zworski, *Correction to* [S8], Comm. Math. Phys. **214** (2000), 733-735.
[S10] V. Petkov and M. Zworski, *Semi-classical estimates on the scattering determinant*, Annales H. Poincaré **2** (2001), 675-711.
[S11] G. Popov and S. Zelditch, *KAM and converse quantum ergodicity*, preprint (2001).
[S12] J. Sjöstrand, *Resonances for bottles and related trace formulæ*, Math. Nachr. **221** (2001), 95-149.
[S13] A. Vasy and X.-P. Wang, *Smoothness and high energy asymptotics of the spectral shift function in many-body scattering*, ESI-preprint 1048 (2001.).

Vesselin Petkov, András Vasy, and Maciej Zworski.

Invited scientists: Ivana Alexandrova, Vincent Bruneau, Nicolas Burq, Vladimir Buslaev, Monique Combescure, Predrag Cvitanović, Jan Derezinski, Mouez Dimassi, Shin-ichi Doi, Bruno Eckhardt, Julian Edward, Pierre Gaspard, Christian Gerard, Gian Michele Graf, Andrew Hassell, Ira Herbst, Michael Hitrik, Mitsuru Ikawa, Hiroshi Isozaki, Victor Ivrii, Vojkan Jaksic, Wojciech Jaworski, Lizhen Ji, Alexander Kiselev, Evgeni Korotyaev, Ari Laptev, Gilles Lebeau, André Martinez, Anders Melin, Richard Melrose, Jacob Schach Moller, Werner Müller, Shu Nakamura, Laurence Nedelec, Jean-Philippe Nicolas, Leonid Parnovski, Vesselin Petkov, Georgi Popov, David William Pravica, Thierry Ramond, Didier Robert, Israel Michael Sigal, Johannes Sjöstrand, Erik Skibsted, Uzy Smilansky, Plamen Stefanov, Latchezar N. Stoyanov, Siu-Hung Tang, Gunther Uhlmann, Andras Vasy, Gueorgui Vodev, Lan Wang, Xue P. Wang, Jared Wunsch, Dimitri Yafaev, Kenji Yajima, Steve Zelditch, Maher Zerzeri, Maciej Zworski.

Random Walks

ESI contributed AS 1,091,155.–, foreign support was 647,750.–. 29 ESI-preprints: [1002], [1003], [1004], [1009], [1010], [1016], [1021], [1022], [1034], [1043], [1070], [1071], [1127], [1128], [1134] [1026], [1051], [1053], [1054], [1058], [1074], [1075], [1077], [1083], [1085], [1093], [1098], [1101], [1125] (the preprints of Schmidt's director's share are also listed here).

Organized Vadim Kaimanovich, Klaus Schmidt and Wolfgang Woess

The Erwin Schrödinger Institute hosted a special semester with the title 2001 - RANDOM WALKS during the period mid-February – mid-July 2001. The organizers were Vadim A. Kaimanovich (Rennes, France), Klaus Schmidt (Vienna, Austria) and Wolfgang Woess (Graz, Austria). The semester was dedicated to various problems connected with stochastic processes on geometric and algebraic structures, with an emphasis on their interplay as well as on their interaction with Theoretical Physics. Some of the focal points were: *Probability on groups*, *Products of random matrices and simplicity of the Lyapunov spectrum*, *Boundary behaviour, harmonic functions and other potential theoretic aspects*, *Brownian motion on manifolds*, *Combinatorial and spectral properties of random walks on graphs* and *Random walks and diffusion on fractals*.

There were two separate main periods of activity: the first (in February/March) concentrated on **Random Walks and Statistical Physics**, and the second (in May/June/July) on **Random Walks and Geometry**. We also mention that there was a 'satellite conference' at the Technical University of Graz with the title **Fractals in Graz 2001**, June 4–9, 2001. The organizers of this satellite conference were Martin Barlow (University of British Columbia, Vancouver), Robert Strichartz (Cornell University, Ithaca), Peter Grabner (Technical University of Graz) and Wolfgang Woess (Technical University of Graz). On the level of organization and funding, this workshop was disjoint from the ESI programme.

First Part: Random Walks and Statistical Physics. As highlights of the first part we want to point out the lecture of Rob van den BERG on "Hesitant coalescing random walks". Also the lecture of Frank den HOLLANDER "On the volume of the intersection of two Wiener sausages" not only was very clear and instructive, but he also was a very lively participant who contributed enormously to the success of the workshop by initiating many discussions.

Participants: Smail Alili (Cergy-Pontoise), Rob van den Berg (Amsterdam), Davide Cassi (Parma), Frank den Hollander (Eindhoven), Barry Hughes (Melbourne), Michael Keane (Eindhoven), Yuri Kifer (Jerusalem), Sergei Nechaev (Paris), Pal Revesz (Budapest/Vienna), Toshikazu Sunada (Sendai), Domokos Szasz (Budapest), Balint Toth (Budapest), Anatoli Vershik (St. Petersburg), Marton Balazs (Budapest), Maria S. Bernabei (Bonn), Daniela Bertacchi (Milano), Sara Brofferio (Paris), Leda Boussiakou (York), Pierfrancesco Buonsante (Parma), Raffaella Burioni (Parma), Marco Contedini (Parma), Dmitry Dolgopyat (Penn State), Sergei Fedotov (Manchester), Nina Gantert (Berlin), Thomas Gilbert (Rehovot), Ahmed Jellal (Trieste), Tadeusz Kosztolowicz (Kielce, Poland), Motoko Kotani (Sendai), Dmitry Kozakov (Moscow), Philippe Marchal (Lyon), Franz Merkl (Eindhoven), Michail Monastyrsky (Moscow), Francesca Nardi (Eindhoven), Igor Pak (Cambridge, Mass.), Alexander Rabodzei (Moscow), Frank Redig (Eindhoven), Sofia Regina (Parma), Silke Rolles (Eindhoven), Alexander Soshnikov (Davis), Nina Stepanenko (Moscow), Andras Telcs (Budapset), Evgeny Verbitskiy (Eindhoven), Alessandro Vezzani (Parma), Martin Zerner (Haifa), Sergej Zhitomirskiy (Moscow), Fabio Zucca (Milano).

Programme of First Workshop.

Toshikazu SUNADA: Random walks applied to the geometry of crystal lattices
Davide CASSI: Random walks and physical models on graphs - an introduction
Thomas GILBERT: Entropy production and fractals
Sergei FEDOTOV: Front propagation, random walks and large deviation theory
Alessandro VEZZANI: The type problem on the average for random walks on graphs
Rob van den BERG: Hesitant coalescing andom walks
Motoko KOTANI: A central limit theorem for magnetic transition operators on a crystal lattice
Domokos SZASZ: Statistical properties of the multidimensional Lorentz process
Balinth TOTH: Self-repelling random walks and deposition models
Silke ROLLES: Reinforced random walks
Sergei NECHAEV: Conformal transforms and multifractality: geometry of locally non-uniform hyperbolic spaces
Andras TELCS: Sub-Gaussian heat kernel estimates, and Harnack inequalities of andom walks on graphs
Michail I. MONASTYRSKI: Statistics of knots and random walks on Hecke lattices
Fabio ZUCCA: Equidistribution of random walks on spheres
Smail ALILI: Discrete-time branching random walk and the voter model
Daniela BERTACCHI: Classification on the average of random walks
Vadim A. KAIMANOVICH: Random walks with random transition probabilities
Wolfgang WOESS: Periodic oscillations of transition probabilities on the Sierpinski graph
Raffaella BURIONI: Random walks and geometrical universality on graphs
Pal REVESZ: Local time of coalescing random walk
Philippe MARCHAL: Loop-erased random walks and heaps of cycles
Yuri KIFER: Dimension gap for continued fractions with random digits and related problems
Frank REDIG: Entropy production for interacting random walks
Evgeny VERBITSKIY: On the variational principle for the topological entropy of certain non-compact sets
Francesca R. NARDI: Metastability for the Ising model with a parallel dynamics
Igor PAK: Blind algorithms and Markov chains
Dmitry DOLGOPYAT: Passive transport in random peridoic media
Marton BALAZS: Structure of the shock in a new domain growth model
Frank den HOLLANDER: On the volume of the intersection of two Wiener sausages
Anatoli VERSHIK: Random walks on orbits of actions of groups (entropy and past)
Franz MERKL/Martin ZERNER: A zero-one law for planar random walks in random environment
Barry HUGHES: Some stochastic problems for the new millennium

Further seminars:

Michael KEANE: Random coin tossing
Anatoli VERSHIK: Lebesgue measure in infinite dimensional space and properties of Levy's gamma processes
Barry HUGHES: Continuous time random walks (At the Technical University of Graz)

Workshop on Fractals in Graz. Highlights were the talks of H. Furstenberg on "Ergodic Theory and the Geometry of Fractals", and of R. I. Grigorchuk, "From fractal groups to fractal sets".

Programme

Th. COULHON (Cergy): Estimates for transition probabilities of random walks on infinite graphs
M. BARLOW (Vancouver): Which values of the volume growth and anomalous diffusion exponents are possible?
C. SABOT: Spectral properties of fractal lattices and iteration of rational maps

K. FALCONER (St. Andrews): Fractal aspects of random fields
C. BANDT: Global and local symmetries of self-similar sets
J.-M. REY: Properties of the dimension of a measure and the behaviour of correlation dimensions
Y. XIAO: Renewal techniques for small ball probabilities of Brownian motion restrict to self-similar sets
E. TEUFL: Hausdorff-dimension of overlapping self-similar sets and combinatorics on words
P. SIRI: A stochastic algorithm to compute optimal probabilities in the chaos-game
M. MENDÈS-FRANCE (Bordeaux): Infinite chains of strings and masses
A. LASOTA (Katowice): Fractals, Multifunctions, and Markov Operators
J. MYJAK: On dimensions of measures
A. TEPLYAEV (Riverside): Dirichlet form analysis on the Sierpinski gasket
B. KRÖN: Self-similar graphs and their spectrum
C. WOLF: Fractal Julia sets in complex dynamics of C?
N. GLAZUNOV: Number theory, dynamical systems, and distribution of numerical sequences
Z. BUCZOLICH: Hölder spectrum of typical monotone continuous functions
R. WINKLER: Hausdorff dimensional results connected with the distribution of subsequences
N. PATZSCHKE: Tangent measure distributions of self-conformal measures
H. FURSTENBERG (Jerusalem): Ergodic Theory and the Geometry of Fractals
R. I. GRIGORCHUK (Moscow): From fractal groups to fractal sets
M. ZÄHLE: Riesz potentials and Besov spaces on fractals
M. LAPIDUS (Riverside): Fractal Geometry and Number Theory
J. THUSWALDNER: Neighbours of tiles in periodic tilings
C. ESCRIBAÑO: A Combinatorial Method to Calculate Local Measure Dimension
S. SASTRE: Hausdorff Dimension of Self-Similar Measures without the Open Set Condition
W. STEINER: Digital Expansions and Rauzy Fractals
T. KUMAGAI (Kyoto): Large Deviations and laws of the iterated logarithm for Brownian Motion on fractals
S. KOCH: Construction of a Poisson boundary
V. A. KAIMANOVICH: Fractals and hyperbolicity
A. SOOS: Selfsimilar fractal functions using contraction method in probabilistic metric spaces
A. PETRUSEL: Fixed points and fractals
W. SLOMCZYNSKI: Entropy, dynamics, and fractals
R. PEIRONE: Convergence of Discrete Dirichlet Forms to Continuous Dirichlet Forms on Fractals
Popular talk for a general audience (in German): H.-O. PEITGEN: Ordnung im Chaos – Chaos in der Ordnung
B. HAMBLY (Oxford): Branching processes and random recursive fractals
A. TELCS: Random walks and a new type of Harnack inequalities
K. HATTORI: Self-repelling Walk on the Sierpinski Gasket
T. LUNDH: Martin boundary of a fractal domain
V. METZ: Uniqueness of Laplacians on fractals and [0,1]d: orthogonal currents of reducible Dirichlet forms
J. KIGAMI (Kyoto): Quasidistance and heat kernel asymptotics on self-similar sets
U. FREIBERG: An Application of the Renewal Theorem to Measure Geometric Laplacians on Fractals
V. E. ARKHINCHEEV: Microscopic models with anomalous diffusion and its generalizations
D. GUIDO: Fractals in Noncommutative Geometry
M. NDOYE: On the Black-Scholes model driven by mixed multifractal Brownian motion
G. GOODMAN: How Statistical Mechanical Ideas Arise in a Problem of Computer Graphics
A. GOETZ: Self similar structures in the dynamics of piecewise rotations

Second Part: Random Walks and Geometry. Highlights were the lecture of Anna ERSCHLER (DYUBINA) on "Random walks on amenable groups and harmonic functions on the universal cover of a Riemannian manifold" with surprising results on existence of bounded harmonic functions. The lecture of Stanislav SMIRNOV on "Conformal invariance of critical percolation" presented prize winning and impressive results on percolation. Greg LAWLER on "Conformal invariance and continuum limits of two-dimensional systems" presented a deep and impressive theory in collaboration with Oded Schramm and Wendelin Werner. Andrzej ZUK on "Random walks and the Atyiah conjecture" gave the solution of a problem posed by Atyiah. Gregory MARGULIS on "Recurrence properties of random walks on locally symmetric spaces". Ilya GOLDSHEID on "Lingering random walks in quasi-one-dimensional random environment" gave a very nice and clear talk about random walks in random environments.

Participants: Martine Babillot (Orleans), Rob van den Berg (Amsterdam), Martin Barlow (Vancouver), Donald Cartwright (Sydney), Davide Cassi (Parma), Thierry Coulhon (Cergy), Persi Diaconis (Stanford), [nc] Steven Evans (Berkeley), Alex Furman (Chicago), Rostislav Grigorchuk (Moscow), Yves Guivarch (Rennes), David Handelman (Ottawa), Wojciech Jaworski (Ottawa), Michael Keane (Eindhoven), Gregory Lawler (Durham), Francois Ledrappier (Paris), Russ Lyons (Bloomington), Gregory Margulis (New Haven), Fabio Martinelli (Rome), Stansilav Molchanov (Charlotte), Pal Revesz (Vienna/Budapest), Ben-Zion Rubshtein (Beer-Sheva), Laurent Saloff-Coste (Ithaca), Jeff Steif (Goeteborg), Domokos Szasz (Budapest), George Willis (Newcastle, NSW), Georges Alexopoulos (Orsay), Valery Arkhincheev (Ulan-Ude), Laurent Bartholdi (Brasilia), Daniela Bertacchi (Graz),

Sebasiten Blachere (Toulouse), Emmanuel Breuillard (New Haven), Sara Brofferio (Paris), Alexander Bufetov (Princeton), Anna Dioubina-Erschler (Tel Aviv), Galina Filipuk (Minsk), David Fisher (New Haven), Sergei Frolovichev (Moscow), Alexander Gamburd (Berkeley), Ilya Goldsheid (London), Eugene Gutkin (Santa Monica), Chris Hoffman (Seattle), Alessandra Iozzi (Zurich), Anders Karlsson (Zurich), Anatoly Katok (State College, PA), Tamer Khalil (Cairo), Anatoly N. Kochubei (Kiev), Mokhtar Konsowa (Jeddah, Saudi Arabia), Katarina Krupchik (Minsk), Michel Leprince (Rennes), Pierre Mathieu (Marseille), Michail Monastyrski (Moscow), Roman Muchnik (New Haven), Tatiana Nagnibeda (Stockholm), Volodia Nekrashevych (Kiev), Arnaldo Nogueira (Marseille), Sam Northshield (Plattsburgh), C. R. E. Raja (Bangalore), Jacqui Rammage (Newcastle, NSW), David Revelle (Ithaca), Riddhi Shah (Mumbai), Yehuda Shalom (Jerusalem), Nikita Sidorov (Manchester), Meir Smorodinsky (Tel Aviv), Rita Solomyak (Seattle), Varju Tamas (Budapest), Andras Telcs (Budapest), A. Uglanov (Yaroslavl), Tamas Varju (Budapest), John Velling (New York), Raphael Voituriez (Paris Orsay), Anton Zorich (Rennes), Fabio Zucca (Milano), Andrzeij Zuk (Lyon), Udo Baumgartner (Frankfurt), Abraham Boyarski (Montreal), Eliot Brenner (New Haven), Angeles Carmona (Barcelona), Tullio Ceccherini-Silberstein (Benevento), Christophe Cuny (Rennes), Moon Duchin (Chicago), Timothy R. Field (Malvern, UK), Wojciech Florek (Chicago), Pawel Gora (Montreal), Kenneth Hochberg (Ramat Gan, Israel), Irene Hueter (Gainesville), Inkang Kim (Seoul), Adam Koranyi (New York), Dimitry Kozakov (Moscow), Bernhard Kroen (Graz), Brenda MacGibbon (Montreal), Yuri Neretin (Moscow), Dimitri Petritis (Rennes), Christophe Pittet (Toulouse), Mark Policott (Manchester), Iris Reinbacher (Graz), Richard Sharp (Manchester), Karl-Theo Sturm (Bonn), Christiane Takacs (Linz), John Taylor (Montreal), Alain Valette (Neuchatel), Klaus Ziegler (Augsburg),

Programme of Second Workshop

Martin BARLOW: Which values of the volume growth and anomalous diffusion exponents are possible?
Anders KARLSSON: Multiplicative ergodic theory and Busemann functions
Yves GUIVARC'H: Orbits of linear group actions, random walks on homogeneous spaces, and toral automorphisms
Yuri NERETIN: Combinatorial analogue of the group of diffeomorphisms of the circle and Hilbert spaces associated with trees
Roman MUCHNIK: Semigroup actions on T^n
Domokos SZASZ: Recurrence of the planar Lorentz process by dynamical methods
Sara BROFFERIO: How a centred random walk on the affine group goes to infinity
Russell LYONS: Uniform spanning forests and the Geometry of random walks and groups
Alexander BUFETOV: Markov operators and pointwise convergence of spherical averages for actions of free groups
Shrikrishna G. DANI: Measures on groups, automorphisms and invariance
Rita SOLOMYAK: Invariant measures for some equivalence relations
Sam NORTHSHIELD: Cogrowth of arbitrary graphs
Volodymir NEKRASHEVYCH: Limit spaces of self-similar group actions
Jeff STEIF: Dynamical sensitivity of randomness
John VELLING: Escape rates, growth rates and Hausdorff dimension - behaviour at infinity of hyperbolic manifolds
Riddhi SHAH: Levy's measures and self-decomposable measures on Lie groups
Raphael VOITURIEZ: Random walks on the braid group B_3 and magnetic translations in hyperbolic geometry
Steve EVANS: Pinching and twisting Markov processes
Pierre MATHIEU: Log Sobolev and spectral gap inequalities for the knapsack problem
Thierry COULHON: Pointwise estimates for random walks on infinite graphs
Inkang KIM: Affine actions and Margulis invariant
Anna ERSCHLER (DYUBINA): Random walks on amenable groups and harmonic functions on the universal cover of a Riemannian manifold
Donald I. CARTWRIGHT: Isotropic random walks on buildings
Tullio CECCHERINI-SILBERSTEIN: Growth tightness of context-free languages
Laurent BARTHOLDI: Random walks on surface groups, and cactus trees
Tatiana NAGNIBEDA: Ergodic properties of boundary actions
Rostislav I. GRIGORCHUK: On spectra of Markov operators on groups and graphs
Stanislav SMIRNOV: Conformal invariance of critical percolation
Greg LAWLER: Conformal invariance and continuum limits of two-dimensional systems
Chris HOFFMAN: Random walk on percolations clusters
Mark POLICOTT: Ergodicity of frame flows and their stable foliations
Ben-Zion RUBSHTEIN: On a class of one-sided Markov shifts
Wojciech JAWORSKI: Boundaries of random walks and SAT actions of locally compact groups
Andrzej ZUK: Random walks and the Atyiah conjecture
Richard SHARP: A local limit theorem for closed geodesics and homology
Francois LEDRAPPIER: Ergodic properties of some linear actions
David FISHER: Local rigidity of group actions on homogeneous manifolds
Tim FIELD: Stochastic Hamilton-Jacobi theory on manifolds - the emergence of wave-functions

Pawel GÓRA: Absolutely continuous invariant measures for random maps with position dependent probabilities
Bernhard KRÖN: Green functions and asymptotics of transition probabilities on self-similar graphs
Gregory MARGULIS: Recurrence properties of random walks on locally symmetric spaces
Ilya GOLDSHEID: Lingering random walks in quasi-one-dimensional random environment
Franz LEHNER: On the computation of spectra on free product groups
Christophe PITTET: On an inequality of Varopoulos for finitely generated groups and the question of its optimality
Andras TELCS: On an almost new isoperimetric inequality
Dimitri PETRITIS: Random walks on randomly oriented lattices
Fabio MARTINELLI: Asymmetric simple exclusion and interfaces of the quantum XXZ model
Irene HUETER: Mean square displacement of self-avoiding walk in all dimensions
Alex FURMAN: Entropy and cocycle growth along random walks
Alex ESKIN: Uniform exponential growth for linear groups
Anton ZORICH: Geometry and dynamics of flat surfaces
Arnaldo NOGUEIRA: Ergodic properties of the Euclidean algorithms
Nikita SIDOROV: Unique beta-representations of real numbers and dynamics
Angeles CARMONA: Boundary values on networks: some applications to random walks
David REVELLE: Rate of escape of random walks on groups
Laurent SALOFF-COSTE: Lower bound in total variation for random walks on finite groups
Georges ALEXOPOULOS: Random walks on nilpotent groups
Sebastien BLACHERE: Cut times for random walks on groups of polynomial growth
Alexander GAMBURD: Expander graphs, random matrices and quantun chaos
Stanislav MOLCHANOV: Random walks on finite and compact groups and testing of RNG
Marc BURGER: Bounded cohomology and rigidity theory
Alessandra IOZZI: De Rham cohomology of amenable foliations
George WILLIS: Totally disconnected locally compact groups
Christiane TAKACS: Strong law of large numbers for branching Markov chains
Anatoly KOCHUBEI: Stochastic processes over non-Archimedian fields
Valery ARKHINCHEEV: Fractal diffusion equations: microscopic models with anomalous diffusion
Eugene GUTKIN: Mathematics of billiards
Anatoly KATOK: Are random walks any good for classical dynamical systems?

There will be a volume of Proceedings of the Random Walks Programme, published by de Gruyter. A separate proceedings volume will cover the workshop on Fractals in Graz.

Vadim Kaimanovich, Klaus Schmidt and Wolfgang Woess

Invited scientists: Georgios Alexopoulos, Smail Alili, Valerii Arkincheev, Martine Babillot, Márton Balázs, Martin T. Barlow, Laurent Bartholdi, Udo Baumgartner, Maria Simonetta Bernabei, Daniela Bertacchi, Sébastien Blachere, Eliot Brenner, Emmanuel Breuillard, Sara Brofferio, Alexander Bufetov, Pierfrancesco Buonsante, Marc Burger, Raffaella Burioni, Angeles Carmona, Donald Cartwright, Davide Cassi, Tullio Ceccherini-Silberstein, Marco Contedini, Thierry Coulhon, Christophe Cuny, Frank Den Hollander, Dmitry Dolgopyat, Moon Duchin, Anna Erchler, Alex Eskin, Steven Neil Evans, Serguei Fedotov, Timothy R. Field, Galina Filipuk, David Fisher, Alex Furman, Alexander Gamburd, Thomas Gilbert, Ilia Goldsheid, Pawel Gora, Rostislav Grigorctchouk, Yves Guivarch, Eugene Gutkin, Kenneth Hochberg, Chris Hoffman, Irene Hueter, Barry Hughes, Alessandra Iozzi, Vadim Kaimanovich, Anders Karlsson, Anatoly Katok, Michael Keane, Yuri Kifer, Inkang Kim, Anatoly Kochubei, Adam Koranyi, Tadeusz Kosztolowicz, Motoko Kotani, Dmitriy Kozakov, Bernhard Krön, Katsiaryna Krupchyk, Gregory Lawler, François Ledrappier, Franz Lehner, Vincent Le Prince, Russell Lyons, Brenda MacGibbon, Philippe Marchal, Grigoriy Margulis, Fabio Martinelli, Pierre Mathieu, Franz Merkl, Stanislav Molchanov, Michael Monastyrsky, Roman Muchnik, Francesca Romana Nardi, Serguei Nechaev, Volodymyr Nekrashevych, Arnaldo Nogueira, Sam Northsield, Igor Pak, Dimitri Petritis, Christophe Pittet, Mark Pollicott, Tal Poznansky, Robinson Edward Raja, Jacqui Ramagge, Frank Redig, Iris Reinbacher, David Revelle, Pál Révész, Silke Rolles, Ben Zion Rubshtein, Laurent Saloff-Coste, Richard Sharp, Nikita Sidorov, Tatiana Smirnova-Nagnibeda, Stanislav Smirnov, Meir Smorodinsky, Rita Solomyak, Jeffrey Steif, Toshikaz Sunada, Domokos Szász, John C. Taylor, András Telcs, Balint Toth, Jacob Van den Berg, Tamaś Varjú, John A. Velling, Eugeny Verbitskiy, Alessandro Vezzani, Raphael Voituriez, George Willis, Wolfgang Woess, Martin Zerner, Anton Zorich, Fabio Zucca, Andrzej Zuk.

Mathematical Cosmology

ESI contributed AS 468.853–, foreign support was AS 9,000.–. 6 ESI-preprints: [1057], [1117], [1119], [1120], [1122], [1123]

ESI, June 15 - August 15, 2001. The program was aimed to the development and application of mathematical methods for the study of anisotropic and inhomogeneous cosmological models with a view towards understanding their global structure and evolution and towards uncovering limitations in the idealized homogeneous models.

Organizers: P.C. Aichelburg, (Inst. f. Theoretische Physik der Univ. Wien, Vienna, Austria), G.F.R. Ellis (Dept. of Mathematics and Applied Mathematics, Univ. of Cape Town, Rondebosch, South Africa), V. Moncrief (Dept. of Physics & Dept. of Mathematics, Yale University, New Haven, CT, USA), J. Wainwright (Dept. of Applied Mathematics, Univ. of Waterloo, Canada).

Long-times-existence and asymptotic behavior. Among the most challenging mathematical problems in classical general relativity are those related to the long-time-existence and asymptotic behavior of inhomogeneous solutions to Einstein's equations. During the ESI program higher order energy estimates were used to analyze a large family of Ricci flat spacetimes of expanding cosmological models for proving global existence and asymptotic behavior(Lars Anderson, Y. Choquet and V. Moncrief). The asymptotic behavior was numerically partially verified in the expanding direction for Gowdy metrics on the 3-torus (B.Berger).

Perhaps even more challenging are questions about asymptotic behavior in the direction of collapse since these must confront the complexity of spacetime singularities. Recent results emerging from these numerical studies have provided strong evidence for the conjectures that velocity-dominated and, more generally Belinsky–Lifschitz–Khalatnikov behavior should occur in certain classes of inhomogeneous Einstein spacetimes. The already successful proven idea to apply the Fuchsian method to study spacetime singularities was further developed. (J.Isenberg, V. Moncrief and A. Rendall) Work was completed on the Fuchsian methods applied to velocity dominated singularities in U(1) symmetric vacuum spacetimes.

The idea that certain homogeneous, or at least highly symmetric, cosmological solutions may be "attractors" in the full phase space for Einstein's equations is a key motivation for studying cosmology in a setting of dynamical systems. With the help of new techniques such as the use of expansion normalized frame variables and the Ellis–van Elst formulation of the field equations as a hyperbolic system some of the issues addressed were: Does the asymptotic self-similarity observed in certain families of cosmological solutions have a deeper significance – why is self-similarity a common feature in a number of the known "attractors"? What are the limits to conclusions drawn from purely homogeneous models? (G. Ellis, H.v. Elst, C. Uggla, J. Wainwright) The program also provided an opportunity for confronting the Hamiltonian with the orthonormal frame approach. A number of collaborations were initiated.

Critical Phenomena in gravitational collapse. Several studies during the last few years have uncovered critical behavior in the (spherically symmetric) gravitational collapse of a variety of matter field and perfect fluid systems which is analogous to that in statistical mechanics. Following some early work of Christodoulou it was shown numerically by Choptuik that there exists a threshold for the initial data leading to black hole formation by a massless scalar field which exhibits both scaling and universality. This threshold is characterized by a selfsimilar solution of the field equations and an associated co-dimension one attractor (i.e., one having a single unstable mode) in the phase space of initial data for the system. This critical behavior has now been observed for several types of gravitating matter sources and, in the case of axial symmetry, for the pure gravitational field itself. While the examples studied so far represent isolated systems in an asymptotically flat context, the basic phenomenon is a quasi-local one for which the precise asymptotic conditions are irrelevant. Thus this critical behavior will be equally significant in cosmology at the onset of black hole formation and perhaps also for the occurrence of stable stellar or geon-like configurations. Furthermore the selfsimilar critical solutions that signal the threshold of collapse are known to have naked singularities (i.e., regions of unbounded spacetime curvature that are not hidden behind event horizons). This existence represents a fundamental limitation to the use of energy methods to prove long-time-existence theorems for the case of sufficiently large initial data. When singular solutions exist (and when their singular regions are not safely hidden inside black holes) then the energy methods must break down or at least require a significant refinement. During the program substantial progress was made in proving existence of continues selfsimilar solutions for certain wave maps coupled

to gravity. (P. Bizon and A. Wasserman) Moreover, work on the numerical/analytical studies of a new transition from continues to discrete self-similar behavior was reported (P.C. Aichelburg).

Topological aspects of cosmological models. There is an intimate connection between the dynamics of general relativity and the topology of the manifold upon which Einstein's equations are formulated. For the cases of most physical interest (globally hyperbolic, time-orientable spacetimes) the 4-manifold is a product of the form $M \times \mathbb{R}$ (roughly space $\times$ time) with the interesting topology thus confined to the spatial factor M. For the important special case of a "closed" universe M is compact and the possible choices for M are the objective of the 3-manifold classification program. For many such 3-manifolds (those of the so-called negative Yamabe type) it is well-known that an expanding universe can never develop a maximal hypersurface and begin to collapse. Quite recently however a direct connection has been found for such manifolds between the infimum of the reduced (Arnowitt–Deser–Misner) Hamiltonian for Einstein's equations H_{ADM} and the topological invariant called the σ-constant of M (which Michael Anderson has used extensively in his reformulation of the Thurston 3-manifold classification program). During the program the above raised issues were discussed.(M. Anderson, A. Fischer and V. Moncrief). Implications of non-trivial topologies of the universe for observation were analyzed (R. Tavakol).

Seminars given during the program.
Vince Moncrief: Einstein Spaces as Attractors for the Einstein Equations
Henk van Elst: Scale Invariant Dynamics for G-2 Cosmology
G.F.R. Ellis: Inflationary Dynamics and Horizons
Alan Rendall: Fuchsian Equations and Spacetime Singularities
Peter C. Aichelburg: Episodic CSS in Critical Collapse
Alan Rendall: Fuchsian Equations and Spacetime Singularities
Reza Tavakol: Aspects of approximately flat Cosmologies
Lars Anderson: BKL and Gowdy Cosmologies
Dieter Brill: Cosmology in 2+1 gravity
Michael Anderson: Relations between vacuum evolution of space-times and geometrization of 3-manifolds
Arthur Fischer: The Reduction of Einstein's Equations in Higher Dimensions
István Rácz: On rigidity of cosmological spacetimes with a compact Cauchy horizon
Hans Ringström: Gowdy vacuum space-times - detailed asymptotics for an open set of initial data
Beverly Berger: Exploring Mathematical Cosmology with Computer Simulations

Invited scientists: Peter C. AICHELBURG, Lars ANDERSSON, Michael ANDERSON, Beverly BERGER, Piotr BIZON, Dieter BRILL, Marco BRUNI, Yvonne CHOQUET-BRUHAT, George F. R. ELLIS, Arthur FISCHER, Helmut FRIEDRICH, Jim ISENBERG, Roy MAARTENS, Vincent MONCRIEF, Istvan RACZ, Alan RENDALL, Wolfgang RINDLER, Hans RINGSTRÖM, Mattias SANDBERG, Masayuki TANIMOTO, Reza TAVAKOL, Claes UGGLA, Henk VAN ELST, John WAINWRIGHT, Arthur WASSERMAN, Marsha WEAVER.

Public Relations: Article in the newspaper "Die Presse" 28. 7. 2001, by Thomas Kramar "Zurück zu Einstein: Lösungen für ein expandierendes Universum".

P.C. Aichelburg

Mathematical Aspects of String Theory

ESI contributed AS 821,000.–, no foreign support. 12 ESI-preprints: [1087], [1090], [1096], [1099], [1100], [1102], [1103], [1104], [1106], [1116], [1118], [1126],

Organized by Matthias Blau, Figuera O'Farril, Greens, Albert Schwarz, Helmuth Urbantke.

From September 3 to November 16 2001, the Erwin Schrödinger International Institute for Mathematical Physics (ESI) in Vienna hosted a programme on *Mathematical Aspects of String Theory*.

The purpose of this meeting was to bring together mathematicians and physicists working on a variety of mathematical aspects of string theory and string-inspired mathematics. The aim was to bridge the language gap that occasionally exists even between mathematical physicicst and mathematicians, and thus to create a stimulating environment allowing for a fruitful exchange of ideas and cross-disciplinary discussions and collaborations.

This meeting was attended by aproximately sixty invited participants, mostly young researchers working in (Eastern and Western) Europe or the United States. As a consequence of the events of September 11th, however, there were a significant number of short-term cancellations by distinguished colleagues from the United States.

In addition, the meeting had a loyal following among members of the scientific community in Vienna who welcomed the opportunity to receive first-hand accounts of the exciting developments that have occurred in string theory in recent years and regularly came to our seminars.

String theory, even when limited to its more mathematical aspects, is a vast field. It was thus mandatory to provide some kind of subdivision of the 11-week programme without, however, narrowing down the subjects too much, as this would have been contrary to the spirit of the programme whose aim it was, after all, to encourage the exchange of cross-disciplinary information. In the end we settled for a rough division into three parts, namely

(1) Non-Commutative Geometry and Non-Commutative Field Theory (Week 1-4)
(2) Mirror Symmetry, D-branes and Supersymmetric Gauge Theories (Week5-7)
(3) Differential Geometry and Supergravity Branes (Week 8-11)

These three headings cover the main areas of current research on string theory with the exception of the more phenomenological issue of physics of large extra dimensions and model building.

The backbone of the programme were regular series of two or three introductory lectures delivered by leading researchers in the field, e.g.

(1) by Connes, Nekrasov and Schwarz on non-commutative geometry and non-commutative field theory,
(2) by Schweigert on boundary conformal field theory,
(3) by Tatar on geometric transitions and strong coupling results in field theory,
(4) by Klemm, Kapustin and Ruan on on various aspects of mirror symmetry,
(5) and by de Wit, Nicolai and Bandons on supergravity and supergeometry.

It were in particular these lectures that also attracted, and were particularly appreciated by, the local scientific community in Vienna.

These lectures were accompanied by a variety of one-hour seminars on related topics, providing an at times relaxed and at times somewhat more intense schedule with on average seven lectures a week, amounting to a total of seventy-seven seminars in eleven weeks, divided among the approximately sixty participants of the programme.

Outside these lectures, the ESI provided a perfect environment for everything ranging from informal discussions and mimi-tutorials to intense calculations and collaborations. At all times of the day, and frequently also far into the night, one would see groups of people gathered in front of one of the numerous blackboards, either in the corridor or in the common room, discussing, working, calculating.

We believe that, by this token alone, the meeting has to be considered a success, as it was precisely this kind of atmosphere and activity that the organizers had hoped to create. This impression is confirmed by the (exclusively positive) feedback we have received from the participants of the programme.

Our colleagues were also full of praise for the adminstration of the ESI, and we would like to take this opportunity to thank Maria Windhager, Eva Kissler and Ursula Sagmeister for their unfailing support, helpfulness and kindness throughout the programme. Credit for the success of our programme should also go to them.

Matthias Blau

Invited scientists: Mohab Abou-Zeid, Christoph Adam, Paolo Aschieri, José Azcárraga, Igor Bandos, Helga Baum, Florin Belgun, Matthias Blau, Udo Bruzzo, David Calderbank, Alain Connes, Lorenzo Cornalba, Ludwik Dabrowski, Chand Devchand, Bernard De Wit, Bergfinnur Durhuus, José M. Figueroa-O'Farrill, Bartomeu Fiol, Jürgen Fuchs, Cesar Gomez, Rafael Hernández, Christopher Hull, Daniel Huybrechts, Ines Kath, Vladimir Kazakov, Michael Keane, Bumsig Kim, Nakwoo Kim, Yoshihisa Kitazawa, Albrecht Klemm, Anatoly Konechny, Giovanni Landi, Felipe Leitner, Fedele Lizzi, Ruben Minasian, Kumar Narain, M.S. Narasimhan, Sergei Natanzon, Nikita Nekrasov, Hermann Nicolai, Jacek Pawelczyk, Alexander Polishchuk, Leonid Positselski, Andreas Recknagel, Alexei Rosly, Wei-Dong Ruan, Henning Samtleben, Emanuel Scheidegger, Volker Schomerus, Albert

Schwarz, Christoph Schweigert, Uwe Semmelmann, Harald Skarke, Simón Joan Soler, William Spence, Radu Livili Tatar, Daniel Waldram.

Nonlinear Schrödinger and Quantum-Boltzmann Equations

ESI contributed AS 947,000.–, foreign support was AS 57,000.–. No ESI-preprints contributed.

Organized by Prof. P. **Gérard** (Univ. Paris XI, **Orsay**, France), Prof. P.A. **Markowich** (Inst. f. Math, **Uni Wien**), Prof. N.J. **Mauser** (Inst. f. Math, **Uni Wien**), Prof. G. **Papanicolaou** (**Stanford** Univ., CA, USA).

Originally requested period: Spring 2001, Approved period: Fall 2001.

Introduction. The programme has been very successful, both for organizing 4 workshops, 2 summer/winter-schools and for scientific work in small groups. A lot of scientific interaction of the ESI invitees among them and with Austrian groups took place. In particular PhD students, partly from the new Austrian PhD programme on "differential equations" interacted well with the ESI funded visitors. Hence an important activity of this programme were the 2 "schools" on NLS, one in February, one in July-August. These high level courses were attended by students from all over the world, thanks to a cofinancing from the START project of NJM for travel and from the Vienna PhD Programme (Wissenschaftskolleg) "Differential equations" (speaker C. Schmeiser) for funding the lecturers (see below for a list). The workshops in fall were both high level conferences and a platform for "working groups" on particular topics and publications.

However, there has been a certain unforeseen difficulty since most activities took place after Sep. 11 and the majority of North American collegues decided on short hand notice not to attend the 3 workshops afterwards. Also, GP as one of the organizers, could not come to Vienna in fall.

In fall, this ESI programme coincided with a thematically close "special trimester" at the IHP in Paris, organized by F. Golse (ENS Ulm). In the course of a close collaboration, there was a "twin colloquium" Paris-Vienna "in honour of Claude Bardos", with the first part at the IHP/DMA in September, the second part in October at the ESI/WPI.

Budget and co-financing.

The budget has been spent to 90 per cent by Dec. 31st 2001; the saving of 10 percent being a result of co-funding by other projects and the above mentioned reduced participation of US invitees. According to the written ESI rules, we plan for the remaining budget of approximately 10 000 Euro the invitation of two one month Postdocs from Russia and two small scientifically very desirable events until the end of winter. A description is given in "follow up events"

Direct additional funding has been provided by the Wittgenstein prize of PAM, the European TMR network "Asymptotic Methods in Kinetic Theory", and - massively - by the START prize of NJM who cofinanced travel of many participants of this programme.

Scientific highlights of the programme. The programme not only contributed to scientific breaktroughs of state-of-the-art problems, but triggered work on new topics with new methods that arose from the discussions in the working groups at the ESI. As examples we mention the use of the "modulated energy method" of Y. Brenier to limits from Vlasov-Maxwell and Schrödinger-Poisson to incompressible Euler and e-MHD equations in collaboration with NJM and M. Puel who was in the group of NJM as a European TMR network post doc at that time (e.g. [BrMPu2]). Another example is the work of NJM together with P. Bechouche and S. Selberg on the nonrelativistic limit of the Klein-Gordon Maxwell system towards the Schrödinger-Poisson system, a breaktrough based on Selbergs capability to "turn the Klainerman-Macheddon machinery" [BeMSe1]. Also the work [ZZM1] of NJM with Ping Zhang from the Chinese Academy of Science and Yuxi Zheng from Bloomington (now Pittsburg) on the classical limit from Schrödinger-Poisson to Vlasov-Poisson for the pure state case attracted a lot of attention. This 1-d result based on an improvement of the Zheng-Majda (diPerna) result on measure valued solutions of Vlasov-Poisson is the first work to get rid of the particular "mixed state assumption" that also P.L.Lions and T.Paul had to use in their famous '93 paper. Another real breaktrough was given in a series of papers of the frequent ESI visitors F. Golse

and C. Bardos together with NJM on the derivation of the Schrödinger-Poisson system from the linear N particle Schrödinger equation with Coulomb interaction. The final step was done in collaboration with L. Erdös and H.T. Yau [BEGMY] who delivered the crucial estimates on compressed trace norms for proving uniqueness of the limit hierarchy. In follow up work the case of fermions, i.e. antisymmetrized initial data is dealt with [BGGM2] - this work is done together with A. Gottlieb and aroused interest, e.g. in the group of C. LeBris at the ENPC and people at the French Atomic Energy Commission. A continuation of this promising collaboration as a follow up workshop of this ESI programme is foreseen in March.

As another example we mention that the collaboration of PAM with Shi Jin from Georgia Tech and Singapore based Weizhu Bao together with the Innsbruck team around P. Zoller on numerics of NLS was enhanced by this ESI programme and resulted in one of the best simulation codes for 3-d simulation of Bose Einstein Condensates [BMS1], [BMS2], [BJM1]. An adapted version of this code has proven to be very valuable for simulations of the Schrödinger-Poisson-Xα equation [BMS1] as the simplest DFT model including the exchange interaction due to the Pauli principle. Together with S. Kamvissis this numerical method is currently used also for simulations of the "classical" cubic NLS, where the "integrable system approach" is pushed to 2+1 dimensional problems, where numerical simulations give valuable insight for the analysis. It is highly desirable to continue these collaborations.

Also the invitations of PG in this ESI programme have resulted in several new research programmes - as a result we mention the collaboration with N, Tzvetkow and N. Burq [BGZ1], [BGZ2], [BGZ3].

The invitation of A. Komech in the course of this ESI programme has not only produced high level publications but also triggered the build-up of a strong group in Vienna working on the asymptotic stability of solitons in a quantum relativistic context, like Klein-Gordon coupled to a classical particle. As a result of this ESI programme Prof. Komech will come to Vienna as visiting professor, cofunded by NJM. However, it his highly desirable to invite also his PostDoc Tatiana Dudnikova for the month of March as a "follow up" event of this ESI programme.

A particular highlight was the summer school on NLS where among others Vienna born Wilhelm Schlag (now Caltech) gave his Princeton lectures on "harmonic analysis and PDEs" - attended by about 20 students from all the world, mainly from the groups at the WPI and French students from places like the ENS.

Selected publications. In the sequel we give a short list of some particular important publications produced in direct collaboration of researchers participating in this ESI programme.

[BEGMY] C. Bardos, L. Erdös, F. Golse, N.J. Mauser, H.-T. Yau,, *Derivation of the Schrödinger-Poisson equation from the quantum N-particle Coulomb problem", to appear in C.R.A.S.* (2002).

[BrMPu2] Y. Brenier, N.J. Mauser, M. Puel, *Incompressible Euler and e-MHD as scaling limits of the Vlasov-Maxwell system,*, submitted to Comm.Math.Phys (2002).

[BaMSt1] W. Bao, N.J. Mauser, H.P. Stimming, *The Schrödinger-Poisson-α equation*, submitted to Chaos (2002).

[BeMSe1] P. Bechouche, N.J. Mauser, S. Selberg, *Nonrelativistic limit of Klein-Gordon-Maxwell to Schrödinger-Poisson*, preprint (2002).

[BaJiM1] W. Bao, Shi Jin, P.A. Markowich, *Time-splitting sp ectral approximations for the Schrödinger equation in the semiclassical regime,*, to appear in J.Comp. Phys. (2002).

[BaJiM2] W. Bao, Shi Jin, P.A. Markowich, *Numerical Study of time-splitting spectral Discretisations of nonlinear Schroedinger Equations in the Semiclassical Regimes,*, submitted (2001).

[BaJaM1] W.Bao, D.Jaksch, P.A. Markowich, *Numerical Solution of the Gross-Pitaevskii Equation for Bose-Einstein Condensation*, manuscript (2002).

[BGT1] N. Burq, P. Gérard et N. Tzvetkov, *Strichartz inequalities and the nonlinear Schrödinger equation on compact manifolds*, Preprint Orsay (2001).

[BGT2] N. Burq, P. Gérard et N. Tzvetkov, *An instability property of the nonlinear Schrödinger equation on the sphere*, Preprint Orsay (2001).

[BGT3] N. Burq, P. Gérard et N. Tzvetkov, *Two singular dynamics of the nonlinear Schrödinger equation on a plane domain*, in preparation (2002).

[PoVa] F. Poupaud and A.Vasseur, *Classical and Quantum Transport in Random Media*, submitted (2002).

[ZZM] P. Zhang, Y. Zheng and N.J. Mauser, *Classical limit from Schrödinger-Poisson to Vlasov-Poisson equations for general initial data including the pure state case, in 1-d*, to appear in Comm.Pure and Appl. Math. (2002).

Special events in the course of the programme. In the sequel give an overview information - for details of the activities, including the full list of participants (with or without ESI

funding) please see the web-page of the programme. By coincidence, during the first winter school, there was a nice interaction with participants of the parallel workshop of the "Nonequilibrium Statistical Mechanics" programme (e.g. with H. Spohn, S. Kuksin).

- **"Winter School on NLS"**, Feb. 5th - 16th, 2001, organized by PG and NJM.
- **Workshop on "Nonlinear Dispersive Equations"**, July 17-24, 2001, organized by PG and NJM.
- **Summer School on NLS**, July 24 - Aug 25, 2001, organized by NJM.
- **Colloquium on "Hydrodynamical Limits: Results and Perspectives"**, October 19-24, 2001, organized by NJM.
- **Workshop on "Semiclassical Limits: WKB methods vs Wigner Transform Methods"**, Nov. 20-26, 2001, organized by NJM, PG and PAM.
- **Workshop on "(Asymptotic) Analysis of the Dirac-Maxwell System"**, Dec. 10-14, 2001, organized by NJM, G. Rein and S. Selberg.

Norbert Mauser

Invited scientists: Ben Abdallah, Thomas Alazard, Hakan Andréasson, Christophe Antonini, Kazuo Aoki, Anton Arnold, Weizhu Bao, Claude Bardos, Abdelghani Bellouquid, Jean-David Benamou, Poitr Biler, Xavier Blanc, Yann Brenier, Nicolas Burq, Timothy Cale, Rémi Carles, Jose A. Carrillo, Jean-Marc Delort, Juan Carlos De Los Reyes, Bernard Ducomet, Tatiana Dudnikova, Klemens Fellner, Clotilde Fermanian, Ester Gabetta, Davide Gabrielli, Isabelle Gallagher, Clément Gallo, Patrick Gérard, Omar Gil, Matthias K. Gobbert, Michael Goldshtein, Francois Golse, Alexandre Gorboulski, Alex Gottlieb, Thierry Goudon, Jean-Claude Guillot, Myo Thein Gyi, Emmanuel Jabin, Shi Jin, Qiangchang Ju, Spyros Kamvissis, Grzegorz Karch, Sahbi Keraani, Michael Kiessling, Alexander Komech, Elena Kopylova, Frédéric Lagoutiére, Celine Laurent, Hailiang Li, Yuri Lvov, Alex Mahalov, Josef Malek, Nader Masmoudi, Frank Merle, Luc Miller, Peter D. Miller, Simon Moulin, Christophe Pallard, Mathieu Pilot, Fabrice Planchon, Raphael Poncet, Frédéric Poupaud, Jagdish Rai, Suranjana Rai, Pierre Raphael, Michel Rascle, Mukhaya Rasulova, Gerhard Rein, Michael Renardy, Yuriko Renardy, Alan Rendall, Leonid Ryzhik, Wilhelm Schlag, Sigmund Selberg, Walter A. Strauss, Shaoqiang Tang, Giuseppe Toscani, Nikolay Tzvetkov, Seiji Ukai, Muthusamy Vanninathan, Alexis Vasseur, Björn Walther, Gershon Wolansky, Jorge Passamani Zubelli.

CONTINUATION OF PROGRAMS FROM 2000 and earlier

Duality, String Theory, and M-theory. Continuation of a program March 15 - July 15, 2000. Organized by Harald Grosse (Univ. Wien), Maximilian Kreuzer (TU Wien), Stefan Theisen (Univ. München). ESI contributed AS 28,000.–, no foreign support. 5 ESI-preprints: [982], [998], [999], [1015], [1065]. Invited scientists: Adam Schwimmer, Klaus Sibold, Stefan Theisen.

Altogether: ESI contributed AS 1024,250.–, foreign support was AS 155,000.–, 33 ESI-preprints.

Confinement. Continuation of a program held in May-June, 2000. Organized by: Wolfgang Lucha (Institut für Hochenergiephysik, ÖAW), André Martin (Theoretical Physics Division, CERN), local Organizer: Franz F. Schöberl (Universität Wien). ESI contributed AS 19,000.–, no foreign support. 2 ESI-preprints: [984], [985] Invited scientists: Richard Hall, Francisco J. Yndurain.

Altogether: ESI contributed AS 319,000.–, no foreign support. 6 ESI-preprints.

Representation theory. Continuation of a program held in April – Juli 2000, organized by Victor Kac and Alexandre Kirillov. No ESI money spent. ESI-preprints: [995], [1023], [1024], [1025], [1045], [1111], [1112], [1114], [1115], [1131], [1132]. Altogether: ESI contributed AS 963,450.–, foreign support was AS 61,000.–. 30 ESI-preprints.

Algebraic Groups, Invariant Theory, and Applications. Continuation of a program organized by: B. Kostant, P. Michor, F. Pauer and V. Popov. August 1 – December 29, 2000. ESI contributed AS 63,000.–. 9 ESI-preprints: [978], [983], [993], [994], [996], [1000], [1001],

[1066], [1133]. Altogether: ESI contributed AS 962,000.–, foreign support was AS 5,000.–. 15 ESI-preprints.

As a continuation of this progam a conference was organized: **Interesting algebraic varieties arising in the theory of algebraic groups**, October 22 – October 26 . The program:

D. Saltman (University of Texas at Austin, USA): "Invariants of symmetric and orthogonal groups of degree 8", 10.22.

D. Snow (University of Notre Dame, USA): "The role of exotic affine spaces in the classification of homogeneous affine varieties", 10.22.

N. Gordeev (Pedagogical University, Russia): "Branch locus of quotients of finite group actions", 10.22.

A. Parshin (Steklov Institute, Russia): "The Krichever correspondence for algebraic varieties", 10.23.

C. Procesi (University Rome-1, Italy): "Diagonal harmonics", 10.23.

F. Zak (CEMI, Russia): "Orders and classes of projective varieties", 10.23.

C. De Concini (University Rome-1, Italy): "On semigroups associated to irreducible representations of algebraic groups", 10.24.

J. Landsberg (Georgia Institute of Technology, USA): "Deligne dimension and decomposition formulas from a geometric perspective", 10.24.

V. Popov (Moscow Technical University MGIEM, Russia): "Self-dual algebraic varieties, Lie algebras, and symmetric spaces", 10.24.

C. Ciliberto (University Rome-2, Italy): "Varieties with one apparent double point", 10.25.

H. Nicolai (Albert-Einstein-Institut, Golm): "BKL dynamics and hyperbolic Kac-Moody algebras ", 10.25.

L. Manivel (Institute Fourier / Grenoble, France): "The singularities of Schubert varieties", 10.25.

S. Mukai (Nagoya University, Japan): "Minimal counterexample to Hilbert's 14th problem", 10.25.

E. Tevelev (Moscow Independent University, Russia): "Rank stratification of the tangent space of G/P", 10.26.

J.-M. Hwang (KIAS, South Korea): "Automorphism groups of the spaces of lines on projective manifolds with Picard number 1", 10.26.

N. Mok (University of Hong-Kong, Hong-Kong): "Holomorphic vector fields and deformation rigidity", 10.26.

Invited scientists: Ciro Ciliberto, Corrado De Concini, Nikolai Gordeev, Jun-Muk Hwang, Joseph M. Landsberg, Laurent Manivel, Ngaiming Mok, Shigeru Mukai, Alexey Parshin, Claudio Procesi, David J. Saltman, Dennis Snow, Evgueni Tevelev,

Quantum Measurement and Information. Continuation of a program organized by Anton Zeilinger (Wien), Arthur Eckert (Oxford), Peter Zoller (Innsbruck), Sept. - Dec. 2000. No ESI contribuation. 8 ESI-preprints: [981], [988], [1006], [1019], [1035], [1036], [1041], [1080], Altogether: ESI contributed AS 990,000.–, foreign support was AS 200,000.–. 16 ESI-preprints.

Functional Analysis. Continuation of a program from 1999. Organized by James B. Cooper, Paul F.X. Müller, Michael Schmuckenschläger, and Charles Stegall. ESI contributed 16,154.–. 9 ESI-preprints: [1005], [1007], [1008], [1012], [1013], [1014], [1020], [1031], [1060]. Alltogether, in 3 years: AS 1,017,154.– from ESI, foreign support AS 770,500.–, 52 ESI preprints.

Nonequilibrium Statistical Mechanics. Continuation of a program in 1999, organized by by G. Gallavotti, H. Spohn, and H. A. Posch. ESI contributed AS 194,122.–, foreign support AS 5.000.–. 1 ESI-preprints: [1113] Altogether: ESI contributed AS 709,000.–, foreign support AS 21,000.–, 5 ESI-preprints.

In this continuation program there was the following conference: **Chaotic Dynamics and Dynamical Systems**, February 5 – 15. Program:

E.G.D. Cohen (Rockefeller University): Dynamical systems in statistical mechanics

W.G. Hoover (Univ. of California): SPAM Steady-State Shockwave Structure Simulations

Harald A. Posch (Univ. Wien): Thermostated many-body systems

R. Livi (Univ. di Firenze): Anomalous and Normal Heat Conduction in Lattices

G. Schneider (Univ. Bayreuth): The stochastic Landau equation as an amplitude equation

G. Gallavotti (Univ. di Roma): Irreversibility and entropy production

G. Gentile (Univ. di Roma): The shape of the analyticity domain for the conjugating function of the standard map

L. Rondoni (Politecnico di Torino): Equivalence of nonequilibrium ensembles and axiom C structures in 2-dimensional fluid mechanics

A. Shirikyan (Herriot-Watt University, Edinburgh): A version of the Ruelle-Perron-Frobenius (RPF) theorem and applications

R. Livi (Univ. di Firenze): Emergence of chaotic behaviour in linearley stable systems

W.G. Hoover (Univ. of California): Quantum-thermostated hard disk

C. Pillet (Univ. de Marseille): 'Natural' Non-Equilibrium Steady States for finite Quantum Systems

W. Thirring (Univ. Wien): Gravitational collapse and Ergodicity in confined gravitatioxal system: a discussion

C. Dettmann (University of Bristol): Chaos and diffusion

M. Wojtkowski (University of Arizona): Isoenergetic dynamics and Weyl connections

S. Ciliberto (ENS Lyon): The pressure fluctuations of a turbulent wind verify the Gallavotti-Cohen fluctuation theorem
H. Spohn (TU Muenchen): Statistical self-similarity of a nonequilibrium growth process
F. Bonetto (Ecole Politecnique Palaiseau): Properties of Stationary Nonequilibrium States in the Thermostatted Periodic Lorentz Gas with many Weakly Interacting Particles
S. Kuksin (Heriot Watt University Edinburgh): New proof of the uniqueness of an invariant measure for a randomly forced PDE
C. Liverani (Universita di Roma): Toward ergodic properties of weakly non-linear disordered chain
H. Van Beijeren (Utrecht University): Lorentz gas Lyapunov exponents on strong fields
S. De Bievre (Universite de Lille): Motion of a classical particle in a vibration field: ohmic hehaviour
H. Posch (Univ. Wien): Lyapunov modes
S. Tcheremchantsev (Universite de Orleans): Generalized fractal dimensions of probability measures: definitions and basic properties
M. Arndt (Univ. Wien): Quantum Interferences of Fullerenes: Perfect de Broglie Coherence of hot Molecules
M. Pettini (Osservatorio Astronomica di Firence): Topology and Phase Transitions

Invited scientists: Henk van Beijeren, Federico Bonetto, Sergio Ciliberto, E.G.D. Cohen, Stephan De Bievre, Carl Dettmann, Astrid De Wijn, Gianlorenzo Fagiolo, Christina Forster, Giovanni Gallavotti, Guido Gentile, Bill Hoover, Sergei Kuksin, Carlangelo Liverani, Roberto Livi, Christian Maes, Marco Pettini, Claude-Alain Pillet, Lamberto Rondoni, Guido Schneider, Armen Shirikyan, Herbert Spohn, Serguei Tcheremchantsev, Maciej P. Wojtkowski,

Complex Analysis. Continuation of a program in 1999, November 2000. ESI contributed 13.000.– 3 ESI-preprints: [987], [991], [1028], Alltogether, ESI contributed AS 684,000.–, foreign support was AS 1,000.–, 30 preprints.

Invited scientists: Ingo Lieb, Edgar Lee Stout.

SENIOR FELLOWS and GUESTS via Director's shares

Anton Alekseev. Senior fellow May 16 – July 2. ESI budget AS 70,250.–, share AS 60,000.–. Together with P. Michor he organized the 2-week conference **Poisson Geometry**, June 13 – 22. ESI contributed further AS 150,866.–, out of P. Michor's share, foreign support was AS 123,801.– ESI-preprints: [1049], [1056], [1089], [1135]

The program was as follows:

A. Gorski (Moscow): "Duality and integrability", 06.13.
J.-Cl. Hausmann (Geneva): "Genetics of the Poisson reduction of products of R^3's", 06.13.
Steve Zelditch (Johns Hopkins): "Moment maps, Newton polytopes and zeros of polynomials", 06.13.
A. Rosly (Moscow): "Polar Homology", 06.14.
V. Roubtsov (Angers): "Double elliptic 'elegant' integrable system", 06.14.
Yuri Neretin (ITEP, Moscow and ESI, Vienna): "Dymplectic category and secon quantization", 06.14.
Peter Michor (Vienna): "Calogero-Moser systems with spin via symplectic reduction", 06.15.
P. Xu (Penn State): "Calogero-Moser systems with spin via symplectic reduction", 06.15.
V. Ginzburg (UC Santa-Cruz): "Grothendieck Groups of Poisson Vector Bundles ", 06.15.
B Dubrovin (SISSA): "Normal forms of integrable PDEs, tau-functions and Gromov-Witten invariants", 06.18.
B. Kostant (M.I.T): "The Weyl algebra and the structure of all Lie superalgebras of Ruimannian type", 06.18.
M. SEMENOV-TIAN-SHANSKY (Dijon): "Q-deformed Toda lattice, the modular double, and representations of $U_q(sl(2,\mathbb{R}))$", 06.18.
V. Fock (Moscow): "Cosh-Gordon equation and quasi-Fuchsian groups", 06.18.
B. Kostant (M.I.T): "The character variety in T*G, geometric quantization, symplectic reduction and the Harish-Chandra character formula ", 06.19.
D. Lebedev (Moscow): "Wave functions of the q-deformed Toda lattice", 06.19.
O. Kravchenko (Lyon): "Structures up-to homotopy and deformations of Hopf algebras", 06.19.
V. Ginzburg (UC Santa Cruz): "Morita category in Poisson Geometry", 06.19.
Yuri Neretin (ESI): "Combinatorial analogue of the group of diffeomorphisms of the circle and Hilbert spaces associated with trees", 06.19.
Yves Guivarch (Univ.): "Orbits of linear group actions, random walks on homogeneous spaces, and toral automorphisms", 06.19.
A. Weinstein (UC Berkeley): "Courant algebroids", 06.20.
K Gawedzki (I.H.E.S and ENS, Lyon): "Wess-Zumino-Witten and Chern-Simons theories with boundary", 06.20.
P Boalch (SISSA): "Stokes matrices and Poisson Lie groups", 06.20.
E. Meinrenken (Toronto): "Poisson-Lie groups and the hyperbolic Duflo map", 06.21.

P. Severa (IHES): "Courant algebroids, homotopy and variational problems", 06.21.
P. Xu (Penn State): "Stokes matrices and Poisson Lie groups", 06.21.
T. Strobl (Jena): "Poisson Sigma Models with 3-Form", 06.21.
D. Roytenberg (Penn State): "On the structure of symplectic supermanifolds and Courant algebroids", 06.22.
J. Huebschmann (Lille): "Lie-Rinehart triples, quasi-Gerstenhaber and quasi-Batalin-Vilkovisky algebras", 06.22.
P. Bressler (Angers): "Polarized deformation quantization", 06.22.
T. Ratiu (Lausanne): "The optimal momentum map", 06.22.

Invited scientists: Philip Boalch, Paul Bressler, Boris Dubrovin, Vladimir Fock, Victor Ginzburg, Alexander Gorski, Jean-Claude Hausmann, Johannes Huebschmann, Bertram Kostant, Olga Kravchenko, Dimitriy Lebedev, Jiang-Hua Lu, Eckhard Meinrenken, Tudor S. Ratiu, Alexei Rosly, Vladimir Roubtsov, Dmitry Roytenberg, Michael Semenov-Tian-Shansky, Thomas Strobl, Aexandre Tchervov, Pavol Ševera, Alan Weinstein.

Vladimir Popov. Senior fellow August 1 – December 27, 2000. ESI-budget AS 225,047.–, share AS 60,000.–. Organizer of the program 'Algebraic groups, invartiant theory, and applications' in 2000. Organizer of the conference **Interesting algebraic varieties arising in the theory of algebraic groups**, October 22 – October 26. See the program report above for a description of the conference and for the list of preprints.

Yurii A. Neretin. Senior fellow May 3 – June 29 and November 05 – February 28, 2002. ESI budget 155,536.–. 5 ESI preprints [1011], [1046], [1108], [1124], [1130]. Altogether: ESI cost: 366,789.– plus 37,564.– tax. 10 ESI preprints.

Ivan Todorov. Senior fellow February 1 – May 31 and November 1 – December 31. ESI budget AS 247,623.–, share AS 60,000.–. ESI preprints: [986], [1094], [1111], [1112], [1131], [1132]

Invited scientists: David Broadhurst, Bojko Bakalov, Dirk Kreimer, Dimitri Leites, Yassen Stanev, Nikolay Mitov Nikolov.

Shrikrishna G. Dani. Senior fellow March 22 – August 31. ESI budget 240,700.–, share AS 40,000.–. 2 ESI-preprint [1030], [1050].

Invited scientists: Robinson Edward Raja, Arnaldo Nogueira.

Anatoli Vershik. Senior fellow March 1 – March 15 and October 16 – December 15. ESI budget AS 82,562.–, share AS 13,000.–. ESI-preprints: [1086], [1107].

Invited scientist: Pavel Nikitine.

Guests of Walter Thirring. ESI contributed AS 228,000.–, foreign support AS 77.000,0–. 2 ESI-preprints: [979], [1078]. **Invited scientists:** Detlev Buchholz, Nevena Petrova Ilieva-Litova.

Guests of Jakob Yngvason. ESI contributed AS 269,000.–, foreign support was AS 191.500.– 11 ESI-preprints: [990], [1027], [1029], [1042], [1055], [1061], [1082], [1092], [1097], [1109], [1121].

Invited scientists: Alexei A. Abrikosov, Hans-Jürgen Borchers, Detlev Buchholz, László Erdős, Soren Fournaisalekseev, Krzysztof Gawedzki, José M. Gracia-Bondia, Gian Michele Graf, Piotr Hajac, Theodor W. Hänsch, Bernard Helffer, Bernard S. Kay, Ari Laptev, Elliott Lieb, John Roberts, Manfred Salmhofer, Florian Scheck, Armin Uhlmann, Michiel van den Berg, Dmitri Vassilevich, Heribert Zenk.

Guests of Klaus Schmidt. ESI contributed AS 135,000.–, foreign support was AS 178,000.– 9 ESI-preprints: [1021], [1022], [1034], [1043], [1070], [1071], [1127], [1128], [1134].

Invited scientists: Siddhartha Bhattacharya, Madabusi Santanam Raghunathan, Wolfgang Schmidt.

Guests of Peter Michor. ESI support was AS 360,000.–, foreign support was AS 29,000.–. 20 ESI-preprints: [980], [982], [996], [997], [1027], [1037], [1038], [1046], [1082], [1063], [1064], [1066], [1076], [1081], [1088], [1105], [1109], [1110], [1114], [1129].

Invited scientists: Ilka Agricola, Leonid Friedlander, Thomas Friedrich, Franz W. Kamber, Alexander Klyachko, Bertram Kostant, Dmitriy Kozakov, Mark V. Losik, Nikolai Nadirashvilli, Giovanni Sparano, Gaetano Vilasi, Ernest Vinberg, Patrizia Vitale, Cornelia Vizman, Mariusz Wodzicki.

Guests of A. Cap. ESI contributed AS 16,000.–, no foreign support. 3 ESI-preprints: [989], [1084], [1095]. **Invited scientists:** Rod Gover, Jan Slovak.

Guests of Th. Hofmann-Ostenhof. ESI support came from director's shares. ESI-preprints: [992], [1017], [1018], [1033], [1037], [1038], [1039], [1059], [1069], [1072], [1097],

List of Preprints in 2001

We try to keep track of the bibliographical data of the published versions of the preprints – this is very incomplete and we are trying to update it. The most complete list can always be found on the ESI server `http://www.esi.ac.at/ESI-Preprints.html`.

Here we no longer give the full list of all preprints, not even the last 3 years any more, just the last year. A full list will be given in the 10-year report next year.

978. Vladimir L. Popov, *Self–Dual Algebraic Varieties and Nilpotent Orbits* (2001), 21 pp..
979. Nevena Ilieva, *Two–Dimensional Anyons and the Temperature Dependence of Commutator Anomalies*, Int. J. Mod. Phys. **A16** (2001), 1407–1415.
980. Dmitri Alekseevsky, Peter W. Michor, Wolfgang Ruppert, *Extensions of Super Lie Algebras* (2001), 10 pp..
981. Norman D. Megill, Mladen Pavičić, *Orthomodular Lattices and a Quantum Algebra*, Internat. J. Theoret. Phys. **40** (2001), 1387–1410.
982. Peter B. Gilkey, Klaus Kirsten, Dmitri V. Vassilevich, *Heat Trace Asymptotics with Transmittal Boundary Conditions and Quantum Brane–world Scenario*, Nucl. Phys. B **601** (2001), 125–148.
983. M. Havlíček, A.U. Klimyk, S. Pošta, *Representations of the q–Deformed Algebra U'$_q(so_4)$*, J. Math. Phys. **42, 11** (2001), 5389–5416.
984. Richard L. Hall, Wolfgang Lucha, Franz F. Schöberl, *Energy Bounds for the Spinless Salpeter Equation: Harmonic Oscillator* (2001), 8 pp..
985. Richard L. Hall, Wolfgang Lucha, Franz F. Schöberl, *Energy Bounds for the Spinless Salpeter Equation* (2001), 17 pp..
986. I.T. Todorov, *Two–Dimensional Conformal Field Theory and Beyond. Lessons from a Continuing Fashion*, Lett. Math. Phys., 13 pp. (to appear).
987. Miroslav Engliš, *Pseudolocal Estimates for $\bar{\partial}$ on General Pseudoconvex Domains* (2001), 12 pp..
988. Pranaw Rungta, V. Bužek, Carlton M. Caves, M. Hillery, G.J. Milburn, *Universal State Inversion and Concurrence in Arbitrary Dimensions*, Phys. Rev. A **64** (2001), 042315.
989. Andreas Čap, *Correspondence Spaces and Twistor Spaces for Parabolic Geometries* (2001), 34 pp..
990. Christian Hainzl, Robert Seiringer, *Bounds on One–Dimensional Exchange Energies with Application to Lowest Landau Band Quantum Mechanics*, Lett. Math. Phys. **55** (2001), 133–142.
991. Jeffery D. McNeal, *Uniform Subelliptic Estimates on Scaled Convex Domains of Finite Type* (2001), 10 pp..
992. Michael Birman, Tatyana Suslina, *Threshold Effects near the Lower Edge of the Spectrum for Periodic Differential Operators of Mathematical Physics* (2001), 32 pp..
993. Sujeewa Wickramasekara, *Symmetry Representations in the Rigged Hilbert Space Formulation of Quantum Mechanics* (2001), 24 pp..
994. Sujeewa Wickramasekara, *On the Representations of Lie Groups and Lie Algebras in Rigged Hilbert Spaces* (2001), 14 pp..
995. C. Teleman, C. Woodward, *Parabolic Bundles, Products of Conjugacy Classes, and Quantum Cohomology* (2001), 24 pp..
996. E.B. Vinberg, *Equivariant Symplectic Geometry of Cotangent Bundles*, Moscow Math. J. **1, No. 2** (2001), 287–299.
997. Dmitri Alekseevsky, Andreas Kriegl, Mark Losik, Peter W. Michor, *The Riemannian Geometry of Orbit Spaces. The Metric, Geodesics, and Integrable Systems* (2001), 21 pp..
998. Karl–Georg Schlesinger, *Some remarks on consequences of Shor's Factoring Algorithm* (2001), 6 pp..
999. Karl–Georg Schlesinger, *A Plausibility Argument for $\#P \neq P$ from Physics* (2001), 5 pp..
1000. David J. Saltman, *Invariant Fields of Symplectic and Orthogonal Groups* (2001), 26 pp..
1001. David J. Saltman, Jean–Pierre Tignol, *Generic Algebras with Involution of Degree 8m* (2001), 8 pp..
1002. Fabio Zucca, *The Mean Value Property for Harmonic Functions on Graphs and Trees*, Ann. Mat. Pura Appl., 20 pp. (to appear).
1003. D. Bertacchi, F. Zucca, *Uniform Asymptotic Estimates of Transition Probabilities on Combs* (2001), 31 pp..
1004. D. Bertacchi, *Random Walks on Diestel–Leader Graphs* (2001), 28 pp..
1005. Mario A. Lopez, Shlomo Reisner, *Linear Time Approximation of 3D Convex Polytopes* (2001), 14 pp..
1006. G. Vidal, J.I. Cirac, *Irreversibility in Asymptotic Manipulations of Entanglement* (2001), 4 pp..
1007. P.N. Dowling, C.J. Lennard, B. Turett, *The Fixed Point Property for Subsets of Some Classical Banach Spaces* (2001), 5 pp..
1008. F. Barthe, *Levels of Concentration Between Exponential and Gaussian* (2001), 11 pp..
1009. Tatiana Nagnibeda, Wolfgang Woess, *Random Walks on Trees with Finitely Many Cone Types* (2001), 31 pp..
1010. Vadim A. Kaimanovich, Wolfgang Woess, *Boundary and Entropy of Space Homogeneous Markov Chains* (2001), 36 pp..
1011. Yu.A. Neretin, *Index Hypergeometric Transform and Imitation of Analysis of Berezin Kernels on Hyperbolic Spaces* (2001), 33 pp..
1012. M. Fabian, V. Zizler, *Norms that Locally Depend on Countably Many Linear Functionals* (2001), 17 pp..

1013. V. Müller, *On the Kato Decomposition of Quasi–Fredholm and B–Fredholm Operators* (2001), 6 pp..
1014. Eva Matoušková, Charles Stegall, *The Structure of the Fréchet Derivative in Banach Spaces* (2001), 10 pp..
1015. Harald Grosse, Karl–Georg Schlesinger, *A Suggestion for an Integrability Notion for Two Dimensional Spin Systems* (2001), 9 pp..
1016. András Telcs, *Volume and Time Doubling of Graphs and Random Walks, the Strongly Recurrent Case*, Comm. Pure. and Appl. Math., 34 pp. (to appear).
1017. M. Hoffmann–Ostenhof, T. Hoffmann–Ostenhof, A. Laptev, *A Geometrical Version of Hardy's Inequality* (2001), 9 pp..
1018. B. Helffer, M. Hoffmann-Ostenhof, T. Hoffmann-Ostenhof, N. Nadirashvili, *Spectral Theory for the Dihedral Group* (2001), 30 pp..
1019. Terry Rudolph, Barry C. Sanders, *Requirement of Optical Coherence for Continuous–Variable Quantum Teleportation*, Phys. Rev. Lett. **87** (2001), eprint 077903.
1020. Petr Holický, Václav Komínek, *On Projections of Nonseparable Souslin and Borel Sets Along Separable Spaces* (2001), 8 pp..
1021. Oleg N. Ageev, *On Asymmetry of the Future and the Past for Limit Self–Joinings* (2001), 9 pp..
1022. O.N. Ageev, C.E. Silva, *Genericity of Rigidity and Multiple Recurrence for Infinite Measure Preserving and Nonsingular Transformations* (2001), 8 pp..
1023. Sergey Fomin, Andrei Zelevinsky, *Cluster algebras I: Foundations* (2001), 33 pp..
1024. A. Sergeev, *Enveloping Algebra $U(\mathfrak{gl}(3))$ and Orthogonal Polynomials in Several Discrete Indeterminates*, Noncommutative structures in mathematics and physics (S. Duplij, J. Wess, eds.), Proc. NATO Advanced Reserch Workshop, Kiev, 2000, Kluwer, 2001, pp. 113–124.
1025. A. Sergeev, *Enveloping Superalgebra $U(\mathfrak{osp}(1|2))$ and Orthogonal Polynomials in Discrete Indeterminate*, J. Nonlinear Math. Phys. **8, 2** (2001), 1–27.
1026. Daniela Bertacchi, Fabio Zucca, *Classification on the Average of Random Walks* (2001), 32 pp..
1027. Peter B. Gilkey, Klaus Kirsten, Jeong Hyeong Park, Dmitri Vassilevich, *Asymptotics of the Heat Equation with 'Exotic' Boundary Conditions or with Time Dependent Coefficients*, Nucl. Phys. Proc. Suppl. **104** (2002), 63–70.
1028. Emil J. Straube, Marcel K. Sucheston, *Plurisubharmonic Defining Functions, Good Vector Fields, and Exactness of a Certain One Form* (2001), 11 pp..
1029. P. Fischer, D. Grumiller, W. Kummer, D.V. Vassilevich, *S–Matrix for s–Wave Gravitational Scattering*, Phys. Lett. B **521** (2001), 357–363.
1030. S.G. Dani, *On Conjugacy Classes of Closed Subgroups and Stabilizers of Borel Actions of Lie Groups* (2001), 24 pp..
1031. Jakub Duda, Libor Veselý, Luděk Zajíček, *On d.c. Functions and Mappings* (2001), 24 pp..
1032. Alexander Verbovetsky, *Remarks on two Approaches to the Horizontal Cohomology: Compatibility Complex and the Koszul–Tate Resolution*, Acta. Appl. Math., 8 pp. (to appear).
1033. E. Brian Davies, Graham M.L. Gladwell, Josef Leydold, Peter F. Stadler, *Discrete Nodal Domain Theorems* (2001), 11 pp..
1034. Manfred Einsiedler, Robert Mouat, Selim Tuncel, *When does a Submodule of $(R[x_1, \dots, x_k])^n$ Contain a Positive Element?* (2001), 17 pp..
1035. F. Herbut, *On Twin Observables in Entangled Mixed States*, appeared as part of "Hermitian Schmidt decomposition and twin observables in bipartite mixed states", J. Phys. A **35, 7** (2002), 1691–1708.
1036. F. Herbut, *Strong Twin Events in Mixed–State Entanglement*, appeared as part of "Hermitian Schmidt decomposition and twin observables in bipartite mixed states", J. Phys. A **35, 7** (2002), 1691–1708.
1037. Leonid Friedlander, *On the Spectrum of a Class of Second Order Periodic Elliptic Differential Operators* (2001), 7 pp..
1038. Leonid Friedlander, *On the Density of States of Periodic Media in the Large Coupling Limit* (2001), 21 pp..
1039. S. Fournais, *On the Total Magnetic Moment of Large Atoms in Strong Magnetic Fields* (2001), 11 pp..
1040. Julian Edward, *Existence of Resonances for the Laplacian on Waveguides* (2001), 22 pp..
1041. F. Herbut, *Is Quantum Decoherence Reality or Appearance?* (2001), 17 pp..
1042. László Erdős, Vitali Vougalter, *Pauli Operator and Aharonov Casher Theorem for Measure Valued Magnetic Fields* (2001), 28 pp..
1043. Manfred Einsiedler, Klaus Schmidt, *The Adjoint Action of an Expansive Algebraic Z^d–Action* (2001), 17 pp..
1044. Fernando Cardoso, Georgi Vodev, *Uniform Estimates of the Resolvent of the Laplace–Beltrami Operator on Infinite Volume Riemannian Manifolds with Cusps.II* (2001), 16 pp..
1045. N. Rozhkovskaya, *Family Algebras of Representations with Simple Spectrum* (2001), 12 pp..
1046. Michel Dubois–Violette, Andreas Kriegl, Yoshiaki Maeda, Peter W. Michor, *Smooth $*$–Algebras* (2001), 25 pp..
1047. Yurii A. Neretin, *Groups of Hierarchomorphisms of Trees and Related Hilbert Spaces* (2001), 22 pp..
1048. András Vasy, Xue–Ping Wang, *Smoothness and High Energy Asymptotics of the Spectral Shift Function in Many–Body Scattering* (2001), 30 pp..
1049. Alan Weinstein, *Linearization of Regular Proper Groupoids* (2001), 24 pp..
1050. S.G. Dani, Arnaldo Nogueira, *On Orbits of $SL(2, Z)_+$ and Values of Binary Quadratic Forms on Positive Integral Pairs* (2001), 18 pp..

1051. J. van den Berg, Harry Kesten, *Randomly Coalescing Random Walk in Dimension $\geq$ 3* (2001), 46 pp..
1052. Jan Dereziński, Vojkan Jakšić, *Return to Equilibrium for Pauli–Fierz Systems* (2001), 57 pp..
1053. Sam Northshield, *Cogrowth of Arbitrary Graphs* (2001), 12 pp..
1054. Nikita Sidorov, *Bijective and General Arithmetic Codings for Pisot Toral Automorphisms*, J. Dynam. Control Systems **7, no. 4** (2001), 447–472.
1055. H.J. Borchers, *Quantum Field Theory as Dynamical System* (2001), 19 pp..
1056. A. Alekseev, E. Meinrenken, C. Woodward, *Linearization of Poisson Actions and Singular Values of Matrix Products* (2001), 21 pp..
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Claude Alain Pillet (Université de Marseille): "Natural" Non-Equilibrium Steady States for finite Quantum Systems", 01.01.
E.G.D. Cohen (Rockefeller University): "Dynamical systems in statistical mechanics", 02.06.
Harald Posch (Univ. Wien): "Thermostated many-body systems", 02.06.
W.G. Hoover (Univ. of California): "SPAM Steady-State Shockwave Structure Simulations", 02.06.
Giovanni Gallavotti (Univ. di Roma): "Irreversibility and entropy production", 02.07.
G. Schneider (Univ. Bayreuth): "The stochastic Landau equation as an amplitude equation ", 02.07.
R. Livi (Univ. di Firenze): "Anomalous and Normal Heat Conduction in Lattices", 02.07.
A. Shirikyan (Herriot Watt University, Edinburgh): "A version of the Ruelle-Perron-Frobenius (RPF) theorem and applications", 02.08.
Christian Maes (KU Leuven): "Local fluctuation in the entropy poduction ", 02.08.
G. Gentile (Univ. di Roma): "The shape of the analyticity domain for the conjugating function of the standard map", 02.08.
L. Rondoni (Politecnico di Torino): "Equivalence of nonequilibrium ensembles and axiom C structures in 2-dimensional fluid mechanics", 02.08.
Alex Gottlieb (San Fernando Research, California): "Resampling from jackknife pseudovalues and the propagation of chaos", 02.09.
Luc Miller (Université de Paris): "Geometric conditions for controllability and boundary Wigner measures", 02.09.
R. Livi (Univ. di Firenze): "Emergence of chaotic behaviour in linearley stable systems ", 02.09.
Walter Thirring (Univ. Wien): "Gravitational collapse and Ergodicity in confinied gravitatioxal system: a discussion", 02.09.
W.G. Hoover (Univ. of California): "Quantum-thermostated hard disk ", 02.09.
Carl Dettmann (University of Bristol): "Chaos and Diffusion", 02.12.
M. Wojtkowski (University of Arizona): "Isoenergetic dynamics and Weyl connections", 02.12.
Sergio Ciliberto (ENS Lyon): "The pressure fluction of a turbulent wind verify the Gallavotti - Cohen fluctuation theorem", 02.12.
Alexis Vasseur (Université de Nice-Sophia-Antripolis): "Classical and Quantum Transport in Random media", 02.13.
Frederico Bonetto (Ecole Politecnique Palaiseau): "Properties of Stationary Nonequilibrium States in the Thermostatted Periodic Lorentz Gas with many Weakly Interacting Particles ", 02.13.
Herbert Spohn (TU München): "Statistical self-similarity of a nonequilibrium growth process ", 02.13.
Sergei Kuksin (Heriot Watt University Edinburgh): "New proof of the uniqueness of an invariant measure for a randomly forced PDE", 02.13.
Ciancarlo Liverani (Univ. di Roma): "Toward ergodic properties of weakly non-linear disordered chain ", 02.14.
Hailiang Li (SISSA, Trieste): "t.b.a", 02.14.
Henk von Beijeren (Utrecht University): "Lorentz gas Lyapunov exponents on strong fields", 02.14.
Nicolas Burq (Université Paris-Sud Orsay): "Smoothing effects for Schroedinger operators and resonances erators and resonances", 02.14.
S De Bievre (Univ. de Lille): "Motion of a classical particle in a vibration field: ohmic hehaviour", 02.14.
Francisco José Yndurain (Universidad Autonoma de Madrid): "Precision Determinations of α_s from Deep Inelastic Scattering", 02.15.
H. Posch (Univ. Wien): "Lyopumovmodels", 02.15.
Marco Pettini (Osservatorio di Astronomica di Firence): "Topology and Phase Transitions ", 02.15.
Markus Arndt (Univ. Wien): "Quantum Interferences of Fullerenes: Perfect de Broglie Coherence of hot Molecules", 02.15.
S. Tcheremchantsev (Universite de Orleans): "Gerneralized fractal dimensions of probability measures: definitions and basic properties", 02.15.
Davide Cassi (Università di Parma): "Random walks and physical models on graphs - an introduction ", 02.19.
Toshikazu Sunada (Tohoku University, Sendai): "RWs applied to the geometry of crystal lattices", 02.19.
Robert van den Berg (Centrum voor Wiskunde en Informatica, Amsterdam): "Hesitant coalescing RWs", 02.20.

Sergei Fedotov (Univ.): "Front propagation, random walks, and large deviation theory", 02.20.
Thomas Gilbert (Univ): "Entropy production and fractals", 02.20.
Balinth Toth (Technical University, Budapest): "Self-repelling RWs and deposition models ", 02.21.
Domokos Szasz (Alfred Renyi Institut, Budapest): "Statistical properties of the multidimensional Lorentz process ", 02.21.
Motoko Kotani (Tohoku University, Senai, Japan): "A central limit theorem for magnetic transition operators on a crystal lattice", 02.21.
Silke Rolles (Univ): "Reinforced RWs", 02.21.
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Fabio Zucca (Universitá degli studi, Milano): "Equidistribution of RWs on spheres", 02.22.
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Wolfgang Woess (Universität Graz): "Periodic oscillations of transition probabilities on the Sierpinski graph", 02.26.
Evgeny Verbitskiy (Eurandom, Eindhoven): "On the variational principle for the topological entropy of certain non-compact sets ", 02.27.
Frank Redig (Institut vor Theoretische Fysica): "Entropy production for interacting random walks ", 02.27.
Philippe Marchal (Ecole Normale Supérieure): "Loop-erased random walks and heaps of cycles ", 02.27.
Yuri Kifer (Hebrew University): "Dimension gap for continued fractions with random digits and related problems ", 02.27.
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Francesca Nardi (Eurandom, Eindhoven): "Metastability for the Ising model with a parallel dynamics ", 02.28.
Igor Pak (MIT): "Blind algorithms and Markov chains ", 02.28.
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Barry Hughes (University of Melbourne): "Some stochastic problems for the new millennium", 03.02.
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Anatole Vershik (Steklov Institute of Mathematics, St.Petersburg): "Lebesgue measure in infinite dimensional space and properties of Levy's gamma process", 03.08.
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Gian Michele Graf (ETH Hönggerberg): "Quantum pumps ", 03.29.
Thomas Hoffmann-Ostenhof (Univ. Wien): "Eigenvalues in symmetry subspaces ", 03.29.
Yassen Stanev (University of Rome "Tor Vergata"): "Anomalous Dimensions in N=4 SYM", 04.05.
Wolfgang Schmidt (University of Boulder): "Some questions of additive number theory", 04.30.
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Manfred Einsiedler (University of Vienna): "p-adic Rational Maps", 05.07.
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Wojciech Jaworski ( ): "Boundaries of random walks and SAT actions of locally compact groups ", 06.02.
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P Boalch (SISSA): "Stokes matrices and Poisson Lie groups", 06.20.
Russell Lyons (University): "Uniform spanning forests and the Geometry of random walks and groups", 06.20.
Sara Brofferio (University of Paris 6): "How a centred random walk on the affine group goes to infinity", 06.20.
Alexander Bufetov (University): "Markov operators and pointwise convergence of spherical averages for actions of free groups ", 06.21.
E. Meinrenken (Toronto): "TBA", 06.21.
P. Severa (IHES): "TBA", 06.21.
P. Xu (Penn State): "Stokes matrices and Poisson Lie groups", 06.21.
Richard Hall (Concordia University): "Convexity and spectral bounds for semi-relativistic Hamiltonians", 06.21.
Rita Solomyak (University): "Invariant measures for some equivalence relations", 06.21.
Shrikrishna G. Dani (Tata Institute of Fundamental Research): "TBA", 06.21.
T. Strobl (Jena): "Poisson Sigma Models with 3-Form", 06.21.
D. Roytenberg (Penn State): "On the structure of symplectic supermanifolds and Courant algebroids", 06.22.
J. Huebschmann (Lille): "Lie-Rinehart triples, quasi-Gerstenhaber and quasi-Batalin-Vilkovisky algebras", 06.22.
P. Bressler (Angers): "Polarized deformation quantization", 06.22.
Sam Northshields (SUNY, N.Y.): "Cogrowth of arbitrary graphs", 06.22.
T. Ratiu (Lausanne): "The optimal momentum map", 06.22.
Vince Moncrief (Yale University): "Einstein Spaces as Attractors for the Einstein Equations", 06.22.
Volodymir NEKRASHEVYCH (University): "Limit spaces of self-similar group actions", 06.22.
Jeff Steif (Chalmers University of Technology, Goeteburg): "Dynamical sensitivity of randomness", 06.25.
John Velling (Brooklyn College, New York): "Escape rates, growth rates and Hausdorff dimension - behaviour at infinity of hyperbolic manifolds", 06.25.
Riddhi Shah (University): "Levy's measures and self-decomposable measures on Lie groups", 06.25.
Pierre Mathieu (Université Marseille): "Log Sobolev and spectral gap inequalities for the knapsack problem", 06.26.
Raphael Voituriez (Universite Paris-Sud): "Random walks on the braid group B_3 and magnetic translations in hyperbolic geometry ", 06.26.
Steve Evans (University fo California): "Pinching and twisting Markov processes", 06.26.
Thierry Coulhon (Université de Cergy-Pontoise): "t.b.a ", 06.26.
Anna Erschler (Dyubina) (St. Petersburg Branch of Steklov Math. Institute): "Random walks on amenable groups and harmonic functions on the universal cover of a Riemannian manifold", 06.27.

Cornelia Vizman (West University of Timisoara, Romania): "Quantization of non-linear Grassmannians", 06.27.
Donald I. Cartwright (University of Sydney): "Isotropic random walks on buildings", 06.27.
G.F.R. Ellis (University of Cape): "Inflationary Dynamics and Horizons", 06.27.
Inkang Kim (Seoul National University): "Affine actions and Margulis invariant", 06.27.
Henk van Elst (Queen Mary, London): "Scale Invariant Dynamics for G-2 Cosmology", 06.28.
Laurent Bartholdi (Hebrew University): "t.b.a", 06.28.
Rostislav I. Grigorchuk (Steklov Institute of Mathematics): "On spectra of Markov operators on groups and graphs", 06.28.
Siu-Hung TANG (Chinese University, Hong Kong): "A Uniformization Theorem for Kähler Surfaces", 06.28.
Tatiana Nagnibeda (University of Stockholm): "Ergodic properties of boundary actions", 06.28.
Tullio Ceccherini-Silberstein (Université de Geneve): "t.b.a", 06.28.
Chris Hoffman (Stanford University): "Random walk on percolations clusters", 06.29.
Greg Lawler (Duke University): "Conformal invariance and continuum limits of two-dimensional systems", 06.29.
Stanislav Smirnov (KTH - Royal Institut of Technology, Stockholm): "Conformal invariance of critical percolation", 06.29.
Ben-Zion Rubshtein ( ): "On a class of one-sided Markov shifts", 07.02.
Mark Policot ( ): "Ergodicity of frame flows and their stable foloations ", 07.02.
Alan Rendall (MPI f. Gravitationsphysik, Golm): "Fuchsian Equations and Spacetime Singularities", 07.03.
David Fisher ( ): "Local rigidity of group actions on homogeneous manifolds ", 07.03.
Francois Ledrappier ( ): "Ergodic properties of some linear actions ", 07.03.
Ursula Hamenstädt ( ): "Ergodic properties of Gibbs measures on nilpotent covers ", 07.03.
Bernhard Krön ( ): "Green functions and asymptotics of transition probabilities on self-similar graphs ", 07.04.
Ilya Goldsheid ( ): "t.b.a", 07.04.
Johannes Sjostrand ( ): " Bohr–Sommerfeld condition for non-self-adjoint operators in dimension 2", 07.04.
Maher Zerzeri ( ): "Formule de trace locale pour les résonances dans le cas de l'opérateur de Schrödinger", 07.04.
Mouez Dimassi ( ): "Berry phase and semi-classical dynamics in magnetic Bloch bands ", 07.04.
Pawel Gora ( ): "Absolutely continuous invariant measures for random maps with position dependent probabilities ", 07.04.
Andras Telcs ( ): "On an almost new isoperimetric inequality", 07.05.
Christophe Pittet ( ): "On an inequality of Varopoulos for finitely generated groups and the question of its optimality ", 07.05.
Dimitri Petritis ( ): "Random walks on randomly oriented lattices", 07.05.
Franz Lehner ( ): "On the computation of spectra on free product groups ", 07.05.
Gregory Margulis ( ): "Recurrence properties of random walks on locally symmetric spaces ", 07.05.
Luchezar Stoyanov ( ): "Spectrum of the Ruelle operator and zeta functions for the billiard flow in the exterior of several convex domains", 07.05.
Reza Tavakol (QMW, London): "Aspects of approximately flat Cosmologies", 07.05.
Vesselin Petkov ( ): "Dynamical zeta function associated to the billiard flow ", 07.05.
Alex Eskin ( ): "t.b.a", 07.06.
Alex Furman ( ): "Entropy and cocycle growth along random walks ", 07.06.
Fabio Martinelli ( ): "Asymmetric simple exclusion and interfaces of the quantum XXZ model", 07.06.
Gunther Uhlmann ( ): "On determining a potential from partial Cauchy data ", 07.06.
07 06 Irene Hueter ( ): "Mean square displacement of self-avoiding walk in all dimensions "
Lars Anderson (Royal Institute of Technology, Stockholm): "BKL and Gowdy Cosmologies", 07.06.
Maciej Zworski (University of California, Berkeley): "Quantum Monodramy and semiclassical trace formulae", 07.06.
P.C. Aichelburg (University of Vienna): "Episodic CSS in Critical Collapse", 07.09.
Dieter Brill (University of Maryland): "Cosmology in 2+1 gravity", 07.12.
I.M. Sigal (University of Toronto): "Resonances for nonlinear systems or positive temperatures ", 07.12.
A. Komech (University of Moscow): "On attractors of nonlinear Hamiltonian wave equations", 07.17.
A. Vasseur (Université de Nice): "Quantum transport in random media", 07.17.
P.A. Markowich (University of Vienna): "Microlocal numerical analysis of Schroediger type equations ", 07.17.
J.M. Delort (Université de Paris-Nord): "Global existence for NLS with small Cauchy data", 07.18.
N. Tzvetkov (University Paris XI): "NLS on compact manifolds: Improved Strichartz estimates for specific geometries ", 07.18.
Patrick Gerard (Université de Paris Sud): "NLS on compact manifolds: General Strichartz estimates", 07.18.
Y. Lvov (Rensselaer Pol. Institute): "Weak Turbulence Theory: development and novel applications", 07.18.
H.P. Stimming (Universität Wien): "The Schroedinger-Poisson-Xalpha model", 07.19.
L. Rhyzik (University of Chicago): "Time reversal of waves", 07.19.
N.J. Mauser (Universität Wien): "From Dirac-Maxwell to incompressible Euler: limits", 07.19.
P. Miller (University of Michigan): "Semiclassical Focussing NLS", 07.19.
B. Walther (Kalmar, Sweden): "Review of some results for maximal oscillatory integrals", 07.20.
C. Sparber (Universität Wien): "Wigner functions vs WKB methods", 07.20.
A. Bellouquid (Université d'Evry): "Kinetics models; existence and hydrodymamical limit ", 07.23.

M. Goldshtein (University of Toronto): "Trace of the monodromy density of states and localization", 07.23.
V. Imaikin: "Soliton-like asymptotics of weak wave-particle interaction ", 07.23.
C. Schmeiser (TU Wien): "Burgers-Poisson: A nonlinear dispersive model problem", 07.24.
K. Zhang (Jilin and Vienna): "Hydrodynamic and Quantum-Hydrodynamic Models", 07.24.
Arthur Fischer (University of California): "The Reduction of Einstein's Equations in Higher Dimensions", 07.25.
Michael Anderson (S.U.N.Y. at Stony Brook): "Relations between vaccuum evolution of space-times and geometrization of 3-manifolds", 07.25.
Norbert Mauser (Universität Wien): "Wigner transform techniques for NLS", 08.01.
Wilhelm Schlag (Princeton University): "Harmonic Analysis and PDEs", 08.01.
Beverly Berger (Oakland University): "Exploring Mathematical Cosmology with Computer Simulations", 08.02.
Norbert Mauser (Universität Wien): "Wigner transform techniques for NLS", 08.02.
Wilhelm Schlag (Princeton University): "Harmonic Analysis and PDEs", 08.02.
Philippe Bechouche (Universität Wien): "NLS in a crystal: Wigner-Bloch series", 08.03.
Wilhelm Schlag (Princeton University): "Harmonic Analysis and PDEs", 08.03.
Frank Merle (Cergy-Pontoise): "Blow-up for NLS and critical GKdV equation: existence and description", 08.06.
Wilhelm Schlag (Princeton University): "Harmonic Analysis and PDEs ", 08.06.
Frank Merle (Cergy-Pontoise): "Blow-up for NLS and critical GKdV equation: existence and description", 08.07.
Hans Ringström (Max-Planck-Institut für Gravitationsphysik, Golm): "Gowdy vacuum space-times - detailed asymptotics for an open set of initial data", 08.07.
Norbert Mauser (Universität Wien): "Wigner transform techniques for NLS", 08.07.
Frank Merle (Cergy-Pontoise): "Blow-up for NLS and critical GKdV equation: existence and description", 08.08.
Norbert Mauser (Universität Wien): "Wigner transform techniques for NLS", 08.08.
Frank Merle (Cergy-Pontoise): "Blow-up for NLS and critical GKdV equation: existence and description", 08.09.
István Rácz (MTA-KFKI, Research Institute for Particle and Nuclear Physics, Budapest): "On rigidity of cosmological spacetimes with a compact cauchy horizon", 08.09.
Philippe Bechouche (Universität Wien): "NLS in a crystal: Wigner-Bloch series", 08.09.
Frank Merle (Cergy-Pontoise): "Blow-up for NLS and critical GKdV equation: existence and description", 08.10.
Philippe Bechouche (Universität Wien): "NLS in a crystal: Wigner-Bloch series", 08.10.
Alain Connes ( ): "Non-commutative differential geometry, I ", 09.04.
A. Schwarz (University of California): "Noncommutative Supergeometry and Quantization I", 09.04.
Alain Connes ( ): "Non-commutative differential geometry, II. Cyclic cohomology ", 09.05.
A. Polishchuk (Boston University): "A_infinity structures on elliptic curves", 09.05.
Alain Connes ( ): "Non-commutative differential geometry, III. Noncommutative manifolds ", 09.06.
E. Vinberg (Moscow State Univesity): "The dual horospherical Radon transform for Polynomials", 09.06.
P. Michor (Universität Wien): "The generalized Cayley map from an algebraic group to its Lie-Algebra", 09.06.
V. Popov (Moscow State Technical University): "Automorphism groups of finite dimensional simple algebras", 09.06.
Albert Schwarz ( ): "Noncommutative supergeometry and quantization ", 09.07.
J. Pawelczyk (Warsaw University): "A matrix model for branes on S based on quantum group symmetries", 09.07.
M. Wodzicki (University of California): "Traces I", 09.10.
M. Wodzicki (University of California): "Traces II", 09.10.
F. Lizzi (University of Napoli): "Geometry of the Gauge Algebra in Non-Commutative Yang-Mills Theory", 09.11.
N. Nekrasov (IHES): "Non-Commutative Gauge Theories and D-Branes I", 09.11.
G. Landi (University of Trieste): "Non-Commutative 4-Spheres and Instanton Bundles I", 09.12.
L. Dabrowski (SISSA): "Non-Commutative 4-Spheres and Instanton bundles II", 09.12.
N. Nekrasov (IHES): "Non-Commutative Gauge Theories and D-Branes III", 09.12.
A. Konechny (Lawrence Berkeley National Laboratory): "Moduli Spaces of BPS Configurations on Non – Commutative Tori", 09.13.
N. Nekrasov (IHES): "Non-Commutative Gauge Theories and D-Branes III", 09.13.
A. Recknagel (King's College, London): "Introduction to the boundary CFT approach to non-commutative world-volumes", 09.14.
A. ROSLY (ITEP, Moscow): "On topological sectors in higher dimensional sigma models", 09.14.
A. Rosly (ITEP, Moscow): "t.b.a", 09.14.
Paolo Aschieri (L.M.U., München): "On duality and noncommutative magnetic monopoles", 09.17.
C. Hull (Physics Department, QMW): "Conformal invariance and gravitational duality ", 09.18.
Harald Grosse (University of Vienna): "Regularization and Renormalization of Quantum Field Theory from Noncommutative Geometry", 09.18.

Jose M. Figueroa-O'Farrill (University of Edinburgh): "Geometry and Supersymmetry", 09.18.
Mike Keane (CWI, Amsterdam): "Random Walks and Spontaneous Emergence of Opinions", 09.18.
Wolfgang Reiter (Bundesministerium für Bildung, Wissenschaft und Kultur): "The Genesis of the Erwin Schrödinger Institute", 09.18.
L. Cornalba (ENS LPT-Paris): "On the structure of the nonabelian Born-Infeld action I", 09.19.
L. Cornalba (ENS LPT-Paris): "On the structure of the nonabelian Born-Infeld action II", 09.19.
C. Schweigert (LPTHE, Paris): "Conformally invariant boundary conditions and Frobenius algebras", 09.20.
C. Schweigert (LPTHE, Paris): "D-branes and conformally invariant boundary conditions", 09.20.
C. Schweigert (LPTHE, Paris): "Boundaries, D-branes and singularities", 09.21.
V. Schomerus (Universität Hamburg): "t.b.a", 09.21.
E. Scheidegger (Max-Planck-Institut für Gravitationsphysik, Golm): "t.b.a", 09.24.
B. Durhuus (University of Copenhagen): "Some mathematical results on noncommutative scalar solitons ", 09.25.
Y. Kitazawa (High Energy A. (KEK), Japan): "Wilson lines in noncommutative gauge theory, I ", 09.25.
L. Positselsky (Max-Planck-Institut für Mathematik, Bonn): "Duality of quadratic algebras ", 09.26.
Y. Kitazawa (High Energy A. (KEK), Japan): "Wilson lines in noncommutative gauge theory, II ", 09.26.
M. Herbst ('): "Star products from open strings in curved background", 09.27.
V. Kazakov (Ecole Normal Supérieur, Paris): "t.b.a", 09.27.
José Figueroa O'Farrill (University of Edinburgh): "A geometric approach to D-branes in Lie groups", 09.28.
A. Klemm (Humboldt Universität Berlin): "Open and closed string mirror symmetry I ", 10.01.
A. Klemm (Humboldt Universität Berlin): "Open and closed string mirror symmetry II ", 10.01.
R. Tatar (Humboldt Universität Berlin): "Geometric transitions and strong coupling results in field theory I ", 10.02.
T. Friedrich (Humboldt Universität Berlin): "Connections with torsion form in string theory ", 10.02.
I. Agricola (Humboldt Universität Berlin): "Homogeneous models in string theory and Kostant's cubic Dirac operator ", 10.03.
R. Tatar (Humboldt Univeristät Berlin): "Geometric transitions and strong coupling results in field theory II ", 10.03.
R. Tatar (Humboldt Universität Berlin): "Geometric transitions and strong coupling results in field theory III ", 10.04.
J. Simon (Weizmann Institute, Israel): "Worldvolume approach to string theory I ", 10.08.
J. Simon (Weizmann Institute, Israel): "Worldvolume approach to string theory II ", 10.09.
W. Ruan (University of Illinois at Chicago): "t.b.a", 10.10.
A. Kapustin (Institute for Advanced Study, Princeton): "Homological mirror symmetry and A-branes I ", 10.11.
A. Kapustin (Institute for Advanced Study, Princeton): "Homological mirror symmetry and A-branes II ", 10.12.
Wei-Dong Ruan (University of Illinois at Chicago): "Lagrangian torus fibration of Calabi-Yau manifolds and mirror symmetry I ", 10.15.
Wei-Dong Ruan (University of Illinois at Chicago): "Lagrangian torus fibration of Calabi-Yau manifolds and mirror symmetry II ", 10.16.
G. Thompson (I.C.T.P., Trieste): "An overview of Rozansky-Witten invariants for 3-manifolds I ", 10.17.
G. Thompson (I.C.T.P., Trieste): "An overview of Rozansky-Witten invariants for 3-manifolds II ", 10.18.
B. Fiol (Rutgers University Piscataway, NJ): "Stability and BPS branes ", 10.19.
D. Saltman (University of Texas at Austin, USA): "Invariants of symmetric and orthogonal groups of degree 8", 10.22.
D. Snow (University of Notre Dame, USA): "The role of exotic affine spaces in the classification of homogeneous affine varieties", 10.22.
N. Gordeev (Pedagogical University, Russia): "Branch locus of quotients of finite group actions", 10.22.
A. Gottlieb (Pauli Institute): "On the derivation of time dependent Hartree-Fock by weak coupling limit from the N Schroedinger equation", 10.23.
A. Parshin (Steklov Institute, Russia): "The Krichever correspondence for algebraic varieties", 10.23.
B. Ducomet (CEA Bruyeres): "Simplified models of quantum fluids in nuclear physics", 10.23.
C. Bardos (Paris 6): "Derivation of Schroedinger-Poisson by weak coupling limit from the N Schroedinger equation", 10.23.
C. Procesi (University Rome-1, Italy): "Diagonal harmonics", 10.23.
E. Scheidegger (Albert-Einstein-Institut, Golm): "D4-branes in toric Calabi-Yau hypersurfaces ", 10.23.
F. Zak (CEMI, Russia): "Orders and classes of projective varieties", 10.23.
H. Skarke (University of Oxford): "D-brane monodromy on non-compact Calabi-Yau spaces ", 10.23.
S. Ukai (Yokohama Nat. Univ.): "Nonlinear boundary layers of the Boltmann equation", 10.23.
X. Blanc (ENPC Paris): "t.b.a", 10.23.
B. de Wit (Utrecht University Princetonplein): "From supergravity theory to M-theory ", 10.24.
C. De Concini (University Rome-1, Italy): "On semigroups associated to irreducible representations of algebraic groups", 10.24.
H. Nicolai (Albert-Einstein-Institut, Golm): "Gauged maximal supergravities in three dimensions ", 10.24.
J. Landsberg (Georgia Institute of Technology, USA): "Deligne dimension and decomposition formulas from a geometric perspective", 10.24.

J. Malek (Univ. Prague): "Limits for Fluids with Pressure and Shear Dependent Viscosities", 10.24.
M. Kiessling (Rutgers University): "Microscopic foundations of relativistic kinetic theory", 10.24.
V. Popov (Moscow Technical University MGIEM, Russia): "Self-dual algebraic varieties, Lie algebras, and symmetric spaces", 10.24.
Y. Brenier (Univ. Nice): "Nonrelativistic/quasineutral limits from Vlasov-Maxwell to (magneto)hydrodynamic equations", 10.24.
B. de Wit (Utrecht University Princetonplein): "From supergravty theory to M-theory II", 10.25.
C. Ciliberto (University Rome-2, Italy): "Varieties with one apparent double point", 10.25.
H. Nicolai (Albert-Einstein-Institut, Golm): "BKL dynamics and hyperbolic Kac-Moody algebras ", 10.25.
L. Manivel (Institute Fourier / Grenoble, France): "The singularities of Schubert varieties", 10.25.
S. Mukai (Nagoya University, Japan): "Minimal counterexample to Hilbert's 14th problem", 10.25.
E. Tevelev (Moscow Independent University, Russia): "Rank stratification of the tangent space of G/P", 10.26.
J.-M. Hwang (KIAS, South Korea): "Automorphism groups of the spaces of lines on projective manifolds with Picard number 1", 10.26.
N. Mok (University of Hong-Kong, Hong-Kong): "Holomorphic vector fields and deformation rigidity", 10.26.
Anatoly Vershik (St. Petersburg State University): "Universal Urysohn space and classification of measurable functions", 10.29.
B. Fiol (Rutgers University Piscataway): "Geometric unification of dualities ", 10.29.
C. Gomez (Universidad Autonoma de Madrid): "Monopoles, K-theory and M-theory ", 10.30.
K. Narain (I.C.T.P., Triest): "Heterotic-like little string theories ", 10.30.
K. Wendland (University of North Carolina): "Aspects of N=(4,4) SCFT on K3, I: orbifold CFTs ", 10.31.
M. Blau (I.C.T.P., Triest): "Instantons, the information metric, and the AdS/CFT correspondence I ", 10.31.
K. Wendland (University of North Carolina): "Aspects of N=(4,4) SCFT on K3, II: mirror symmetry on Kummer type K3 surfaces", 11.01.
M. Blau (I.C.T.P., Triest): "Instantons, the information metric, and the AdS/CFT correspondence II ", 11.01.
Cesar Gomez (Universidad Autonoma, Madrid): "Monopoles, K-theory and M-theroy", 11.02.
F. Belgun (Humboldt Universität, Berlin): "Sasakian and normal CR structures on 3-manifolds ", 11.02.
Bernhard Krön (ESI): "End compactifications in non-locally finite graphs ", 11.05.
R. Hernández (Université de Neuchatel): "Wrapped branes and holonomy ", 11.05.
H. Baum (Humboldt Universität, Berlin): "Conformally invariant spinor field equations and special geometric structures ", 11.06.
I. Kath (Humboldt Universität, Berlin): "Parallel spinors on doubly extended Lie groups ", 11.07.
S. Stanciu (Universiteit Utrecht, The Netherlands): "D-branes in Lie groups ", 11.08.
Franz Hofbauer (University of Vienna): "Fractal Dimension for One-Dimensional Dynamical Systems", 11.12.
J Azcarraga (Universidad de Valencia, Spain): "Superspace cohomology, extended superspaces and the geometry of superbranes ", 11.12.
D. Calderbank (University of Edinburgh, United Kingdom): "On self-dual Einstein metrics", 11.13.
I. Bandos (Universidad de Valencia, Spain): "On selfconsistent description of the coupled system of supergravity and superbrane sources I ", 11.13.
I. Bandos (Universidad de Valencia, Spain): "On selfconsistent description of the coupled system of supergravity and superbrane sources II", 11.14.
N. Kim (Albert-Einstein-Institut, Germany): "Branes wrapped on supersymmetric cycles and related geometry ", 11.14.
B. Bakalov (): "On the Lego-Teichmüller game", 11.15.
B. Kim (POSTECH, South Korea): "Equivariant Mirrors and Virasoro Conjecture for Flag Manifolds", 11.15.
U. Bruzzo (S.I.S.S.A., Italy): "A-B dualities and a Fourier-Mukai transform in a real setting", 11.15.
M. Abou-Zeid (I.H.E.S., France): "Comments on symmetries and conservation laws in non-commutative field theory", 11.16.
Walter Schachermayer (Technical University of Vienna): "The relative entropy of probability measures and its relation with portfolio optimization under exponential utility ", 11.19.
Walter Schachermayer (Technical University Vienna): "The relative entropy of probability measures and its relation with portfolio optimization under exponential utility", 11.19.
Kazuo Aoki (Kyoto University): "Dynamics of Rarefied Gas Flows: Asymptotic and Numerical Analyses of the Boltzmann Equations", 11.28.
Alexander Gorbulsky (St. Petersburg): "Scaling entropy of stochastic filtrations", 11.29.
J. Gracia-Bondia (Univ. Complutense, Madrid): "Can the Epstein-Glaser Method of Renormalization be improved?", 11.30.
Weizhu Bao (National University of Singapure): "Numerical Solution of Nonlinear Schrödinger Equations", 11.30.
Vladimir L. Popov (University of Moscow, Steklov-Institute & ESI): "Modern Developments in Invariant Theory", 12.04.
Pavel Nikitin (St. Petersburg): "Hausdorff dimension of the DeRham model", 12.05.
Piotr Bizon (University of Cracow): "Similarities of singularities for semilinear wave equations", 12.06.
G. Rein (WPI Vienna): "The Vlasov-Poisson and Vlasov-Einstein system: mathematics and astrophysics ", 12.10.
N. Masmoudi (Courant Institute and Paris IX): "Asymptotic analysis of the Klein Gordon-Maxwell system ", 12.11.

P. Bechouche (WPI Vienna and Univ. Granada): "(Semi)nonrelativistic limits of the Dirac equation ", 12.11.
S. Selberg (WPI Vienna): "Analysis of the Klein-Gordon-Maxwell system: the Klainerman-Macheddon machinery ", 12.11.
Alexandre Komech (Moscow State University & Univ. Mexico City): "On global attraction to Schrödinger's eigenstates in a nonlinear Klein-Gordon equation ", 12.12.
Valery Imaikin (WPI Vienna): "On weak interaction of fields and classical particles ", 12.12.
Alan Rendall (MPI Potsdam): "The nonrelativistic limit of the Einstein-Vlasov system ", 12.13.
Yann Brenier (CNRS Nice and Paris IV): "Maxwell, Born-Infeld, and minimal surfaces ", 12.13.
Hakan Andreasson (Chalmers Gotenborg): "On spherically symmetric weak solutions to the Einstein matter equations ", 12.14.
Marjolaine Puel (Paris VI): "From Schrödinger-Poisson and Vlasov-Maxwell to incompressible Euler and electron MHD: the modulated energy method ", 12.14.

List of all visitors in the year 2000

Abdallah, Ben, Naotel, Université Paul Sabatie, 11.25-12.02, MGM,
Abou-Zeid, Mohab, Imperial College of Science, Technology and Medicine, 11.12-11.18, BFG,
Abrikosov, Alexei A., Inst. for Theoretical and Experimental Physics, ITEP, 09.24-09.28, YNG,
Adam, Christoph, Universität Karlsruhe, Institut für Theoretische Physik, 09.14-09.29, BFG,
Agricola, Ilka, Humboldt-Universität zu Berlin, Institut für Reine Mathematik, 10.01-10.11, MI,
Alazard, Thomas, ENS Lyon, 07.25-08.11, MGM,
Alekseev, Anton, University of Uppsala, Institute of Theoretical Physics, 05.16-07.02, SF,
Alexandrova, Ivana, University of Berkeley, 06.16-07.16, PVZ,
Alexopoulos, Georgios, Université de Paris-Sud, 07.01-07.11, KSW,
Alili, Smail, University Cergy-Pontoise, Department of Mathematics, 02.18-02.25, KSW,
Anderson, Michael, Suny Stony brook, Department of Mathematics, 07.17-07.30, WAM,
Andersson, Lars, University of Miami, Department of Mathematics, 06.20-07.11, WAM, 07.29-08.15, WAM,
Andréasson, Hakan, Deptartment of Mathematics, Chalmers, 12.14-12.16, MGM,
Antonini, Christophe, Université de Cergy-Pontoise, 07.25-08.10, MGM,
Aoki, Kazuo, Kyoto University, Department of Aeronautics and Astronautics, 11.25-11.28, MGM,
Arkincheev, Valerii, Burgat Science Centre of RAS, 07.03-07.14, KSW,
Arnold, Anton, TU-Berlin MA 6-2, 03.16-03.21, MGM,
Aschieri, Paolo, L.M.U., 09.13-09.25, BFG,
Azcárraga, José, Universidad de Valencia, Spain, 11.11-11.18, BFG,
Babillot, Martine, Orleans University (MAPMO), 06.20-06.22, KSW,
Bakalov, Bojko, University of California, 11.06-12.05, TOD, 1
Balázs, Márton, Mathematical Institute, TU, 02.19-03.02, KSW,
Bandos, Igor, Kharkov Institute of Physics & Technology, Theoretical Physics, 11.11-11.18, BFG,
Bao, Weizhu, Nat. Univ. Singapure, Dpt. Computational Science, 05.07-06.11, 06.17-06.27, 11.26-11.31, MGM,
Bardos, Claude, University of Paris, 02.07-02.11, MGM, 10.20-10.25, MGM,
Barlow, Martin T., University of British Columbia, 06.10-07.06, KSW,
Bartholdi, Laurent, U.C. Berkeley, Mathematic Department, 06.25-07.07, KSW,
Baumgartner, Udo, Johann Wolfgang Goethe Univsersiät, 06.24-07.08, KSW, 1
Baum, Helga, Humboldt Universität Berlin, Institut für Mathematik, 10.31-11.09, BFG,
Beiglböck, Wolf, Universität Heidelberg, Institut für Angewandte Mathematik, 02.12-05.03, THY, 2
Beijeren, Henk van, Utrecht University, Institute for Theoretical Physics, 02.05-02.18, PGS,
Belgun, Florin, Humboldt Universität zu Berlin, Mathematisches Institut, 10.28-11.04, BFG,
Bellouquid, Abdelghani, Université d'Evry, 07.17-08.10, MGM,
Benamou, Jean-David, INRIA, Domaine de Voluceau, 11.22-11.25, MGM,
Berger, Beverly, Oakland University, Dept. of Physics, 07.24-08.15, WAM,
Bernabei, Maria Simonetta, Universität Bonn, Institut für Angewandte Mathematik, 02.19-03.02, KSW, 1
Bertacchi, Daniela, Technical University of Graz, Institut für Mathematik, 02.18-02.24, KSW, 07.01-07.13, KSW,
Bhattacharya, Siddhartha, Tata Institute, 11.20-31.12, SCH, 2002 01 01-2002 05 17, SCH, 13
Biler, Poitr, University of Wroclaw, Mathematical Institute, SM, 03.07-03.16, MGM, 11.14-11.23, MGM, 1
Bizoń, Piotr, Jagiellonian University, Institute of Physics, 07.02-08.15, WAM, 12.04-12.09, WAM,
Blachere, Sébastien, Unviersité Paul Sabatier, 06.24-07.11, KSW,
Blanc, Xavier, CERMICS, ENPC, 10.21-10.24, MGM,
Blau, Matthias, 09.03-09.09, BFG, 09.17-09.23, BFG, 10.12-11.18, BFG,
Boalch, Philip, SISSA, 06.17-06.23, AM,
Bonetto, Federico, Rutgers University, Math. Department, 02.11-02.14, PGS,
Borchers, Hans-Jürgen, Universität Göttingen, Inst. für Theoretische Physik, 05.01-05.26, YNG,
Brenier, Yann, Laboratoire Diuedonné, 10.22-10.25, MGM, 12.10-12.16, MGM,
Brenner, Eliot, Yale University, Department of Mathematics, 06.18-07.14, KSW,
Bressler, Paul, 06.17-06.24, AM,
Breuillard, Emmanuel, Yale University, Mathematic Department, 06.20-06.30, KSW,

Brill, Dieter, University of Maryland, Department of Physics, 07.07-07.20, WAM,
Broadhurst, David, Open University, Dep. of Physics, 04.02-04.08, SFT,
Brofferio, Sara, University of Paris 6, 02.18-03.03, KSW, 06.18-07.07, KSW, 1
Bruneau, Vincent, M.A.B., University of Bordeaux 1, 05.21-05.27, PVZ, 07.26-07.31, PVZ,
Bruni, Marco, University of Portsmouth, School of Computer science and Mathematics, 07.03-07.09, WAM,
Bruzzo, Udo, SISSA, 11.12-11.18, BFG,
Buchholz, Detlev, Universität Hamburg, Institut für Theoretische Physik II, THI, 04.28-YNG,
Bufetov, Alexander, Princeton Yale University, Department of Mathematics, 06.18-07.15, KSW, 1
Buonsante, Pierfrancesco, University of Parma, Dipart. Di Fisica, 02.19-03.02, KSW,
Burger, Marc, ETH Zürich, Forschungsinstitut für Mathematik, 07.02-07.13, KSW,
Burioni, Raffaella, Universitá di Parma, Dipartimento di Fisica, 02.19-03.01, KSW, 1
Burq, Nicolas, Université Paris-Sud Orsay Mathematiques, 02.11-02.16, MGM, 05.21-05.27, PVZ,
Buslaev, Vladimir, University of St. Petersburg, Dept. of Mathematics, 05.20-05.31, PVZ,
Calderbank, David, EPSRC, Department of Mathematic and Statistic, 11.09-11.17, BFG,
Cale, Timothy, Rensselaer Polytechnique Institute, 07.12-07.22, MGM, 1
Carles, Rémi, Antenne de Bretagne de L'ens Cachan, Campus de Ker Lann, 02.05-02.17, MGM,
Carmona, Angeles, UPC, Departamento de Matemática Aplicada III, 06.29-07.11, KSW, 1
Carrillo, Jose A., Universidad de Granada, Dpt. de Matematica Aplicada, 09.23-09.28, MGM,
Cartwright, Donald, University of Sydney, School of Mathematics & Statistics, 06.24-07.08, KSW,
Cassi, Davide, Universitá die Fisica, Dipartimento di Fisica, 02.19-03.02, KSW,
Ceccherini-Silberstein, Tullio, Universitá del Sannio, 06.25-07.06, KSW, ,
Choguet-Bruhat, Yvonne, University Paris VI, 06.15-06.29, WAM,
Ciliberto, Ciro, Universita di Roma, 10.24-10.28, PPK,
Ciliberto, Sergio, Ecole-Normale Superieure de Lyon, 02.11-02.16, PGS,
Cohen, E.G.D., The Rockefeller University, 02.04-02.16, PGS,
Combescure, Monique, CNRS, Laboratoire de Physique Théorique, 05.20-05.25, PVZ,
Connes, Alain, College de France, 09.04-09.07, BFG,
Contedini, Marco, Universitá degli Studi Di Parma, 02.18-03.02, KSW, 1
Cornalba, Lorenzo, ENS LPT-Paris, 09.06-09.23, BFG,
Coulhon, Thierry, Université de Cergy-Pontoise, Départment de Mathé matique, 06.26-07.06, KSW,
Cuny, Christophe, University of Rennes, 06.25-07.06, KSW,
Cvitanović, Predrag, Georgia Institute of Technology, School of Physics, 05.27-06.04, PVZ,
Dabrowski, Ludwik, SISSA, AFG, 09.04-09.15, BFG,
Dani, Shrikrishna G., Tata Institute of Fundamental Research, 03.22-08.31, SF,
De Bievre, Stephan, USTL-UFR de Math., 02.13-02.18, PGS,
De Concini, Corrado, Università di Roma "La Sapienza", 10.23-10.28, PPK1,
Delort, Jean-Marc, Université de Paris-Nord, 07.17-07.24, MGM,
De Los Reyes, Juan Carlos, Universität Graz, Institut für Mathematik, 11.27-12.01, MGM,
Den Hollander, Frank, Eurandom, 02.20-03.02, KSW,
Derezinski, Jan, University of Warsawa, Dpt. Mathem. Methods in Physics, 04.13-04.21, 06.04-06.16, PVZ,
Dettmann, Carl, University of Bristol, Dept. of Mathematics, 02.09-02.17, PGS,
Devchand, Chand, Universität Bonn, 11.12-11.19, BFG,
De Wijn, Astrid, Universiteit Utrecht, Instituut voor Theoretische Fysica, 02.05-02.18, PGS,
De Wit, Bernard, Inst. Theor. Physics, 10.23-11.01, BFG,
Dimassi, Mouez, Université de Paris 13, 06.25-07.09, PVZ,
Doi, Shin-ichi, University of Tskukuba, Institute of Mathematics, 05.20-06.03, PVZ,
Dolgopyat, Dmitry, Pennsylvania State University, 02.19-03.08, KSW,
Dubrovin, Boris, SISSA, 06.17-06.19, AM,
Duchin, Moon, University of Chicago, Department of Mathematics, 07.03-07.15, KSW,
Ducomet, Bernard, Commissariat á l'Energie Atomique, Department de Physique Théorique, 10.22-10.25, MGM,
Dudnikova, Tatiana, Elektrostal Polytechnical Institute, Mathematics Department, 07.23-07.31, MGM,
Durhuus, Bergfinnur, University of Copenhagen, Math. Institue, 09.23-09.28, BFG,
Eckhardt, Bruno, Philipps Univeristät - Marburg, 06.25-06.29, PVZ,
Edward, Julian, Florida International University, Department of Mathematics, 05.17-05.29, PVZ,
Ellis, George, University of Cape Town, 06.26-06.30, 07.06-07.11, WAM,
Elst, Henk van, Queen Mary, University of London, Astronomy Unit, 06.16-07.13, WAM,
Erchler, Anna, St. Petersburg Branch of Steklov Math. Institute, 06.16-07.01, KSW,
Erdős, László, School of Mathematics, 01.09-01.26, YNG,
Eskin, Alex, University of Chicago, 07.04-07.09, KSW,
Evans, Steven Neil, University of California, Department of Statistics, 06.25-07.07, KSW,
Fagiolo, Gianlorenzo, Universitá di Roma "La Sapienza", 02.05-02.10, PGS,
Fedotov, Serguei, UMIST, 02.19-02.26, KSW,
Fellner, Klemens, TU-Wien, Institut für Angewandte und Num. Mathematik, 02.06-02.28, MGM,
Fermanian, Clotilde, Université Cergy Pontoise, 02.05-02.11, MGM,
Field, Timothy R., DERA Malvern, 06.25-07.06, KSW, 1
Figueroa-O'Farrill, José M., University of Edinburgh, Dpt. of Mathematics & Statistics, 09.18-11.17, BFG,
Filipuk, Galina, Belarussian State University, 07.03-07.17, KSW,

Fiol, Bartomeu, Weizmann Institute of Science, 10.16-10.31, BFG,
Fischer, Arthur, University of California, Department of Mathematics, 07.16-07.30, WAM,
Fisher, David, Yale University, 07.02-07.16, KSW,
Fock, Vladimir, Institute for Theoretic and, Experimental Physics, 06.11-06.25, AM,
Forster, Christina, University of Vienna, 02.05-02.09, PGS, PGS,
Fournaisalekseev, Soren, Århus University, Mathematic Institut, H02.01-07.31, YNG, 18
Friedlander, Leonid, University of Arizona, Dept. of Mathematics, 05.21-06.22, MI,
Friedrich, Helmut, Max-Planck-Institut für Gravitationsphysik, 07.17-08.04, WAM,
Friedrich, Thomas, Humboldt Universität Berlin, Fachbereich Mathematik, 10.01-10.11, MI,
Fuchs, Jürgen, Karlstads Universität, 09.18-10.02, BFG, 10.11-10.26, BFG,
Furman, Alex, University of Illinois at Chicago, Mathematics Department, 06.26-07.08, KSW,
Gabetta, Ester, Universita di Pavia, 02.03-02.11, MGM,
Gabrielli, Davide, Universita DellÁquila, Department of Mathematics, 01.05-01.07, MGM, 10.01-10.13, MGM,
Gallagher, Isabelle, CNRS, Université Paris-Sud Orsay, Dépt. de Mathématiques, 02.05-02.11, MGM,
Gallavotti, Giovanni, Universitá di Roma 1, Dipartimento di Fisica, 02.05-02.16, PGS, 02.05-02.18, PGS,
Gallo, Clément, ENS Cachan, 07.25-08.10, MGM,
Gamburd, Alexander, MSRI, 07.07-07.15, KSW,
Gaspard, Pierre, Université Libre de Bruxelles, Nonlinear Phenomena & Complex Systems, S05.21-05.27, PVZ,
Gawedzki, Krzysztof, IHES, 06.11-06.25, YNG,
Gentile, Guido, Università di Roma, Dipartimento di Matematica, 02.05-02.16, PGS,
Gerard, Christian, Ecole Polytechnique, 03.25-03.30, PVZ,
Gérard, Patrick, Université de Paris Sud, 02.05-02.17, MGM, 07.17-07.22, MGM,
Gilbert, Thomas, Weizmann Institute of Science, Chemical Physics Department, 02.18-03.04, KSW,
Gil, Omar, Universitat Autonoma de Madrid, 06.27-07.08, MGM,
Ginzburg, Victor, UC Santa Cruz, Dept. of Mathematics, 06.14-06.22, AM, 06.26-06.26, AM,
Gobbert, Matthias K., University of Maryland, Department of Mathematics and Statistics, 06.26-07.27, MGM,
Goldsheid, Ilia, University of London, Queen Mary, 06.28-07.07, KSW,
Goldshtein, Michael, University of Toronto, Department of Mathematic, 07.19-08.08, MGM,
Golse, Francois, University Paris 7, 10.23-10.25, MGM,
Gomez, Cesar, Universidad Autonoma de Madrid, Instituto de Fisica, 10.28-11.01, BFG,
Gora, Pawel, Concordia University, 07.03-07.09, KSW, 7.000, -
Gorboulski, Alexandre, St. Petersburg brunch of Steklov Institute, of Mathematics, 11.24-11.30, MGM,
Gordeev, Nikolai, Russian State Pedagogical Universty, 10.01-10.31, PPK1,
Gorski, Alexander, ITEP, 06.12-06.30, AM,
Gottlieb, Alex, San Fernando Research, 02.03-02.28, 04.21-05.08, MGM,
Goudon, Thierry, Université Nice Sophia Antipolis, 02.06-02.17, MGM, 10.21-10.26, MGM,
Gover, Rod A., University of Auckland, Department of Mathematics, 09.02-09.14, CAP,
Gracia-Bondia, José M., Universität Bielefeld, Bibos Fakultät der Physik, 11.28-12.06, YNG,
Graf, Gian Michele, ETH Zürich, Theoretische Physik, 03.29-03.30, PVZ, 05.09-05.10, YNG,
Grigorctchouk, Rostislav, Steklov Institute of Mathematics, 06.28-07.10, KSW,
Guillot, Jean-Claude, Université Paris-Nord, Departement de Mathématiques, 10.21-10.26, MGM,
Guivarch, Yves, Université de Rennes 1, 06.19-07.13, KSW,
Gutkin, Eugene, University of Southern California, 07.02-07.29, KSW,
Gyi, Myo Thein, Universität Wien, Institut für Mathematik, 02.24-02.26, MGM, 09.23-09.29, MGM,
Hajac, Piotr, Universität München, Mathematisches Institut, 09.03-09.08, YNG,
Hall, Richard, Concordia University, Dept. Mathematics and Statistics, 06.19-06.30, LMS,
Hänsch, Theodor W., Max Planck-Institut f. Quantenoptik, 03.28-03.29, YNG,
Hassell, Andrew, Australian National University, 05.16-06.09, PVZ,
Hausmann, Jean-Claude, Mathematiques-Université, 06.10-06.15, AM,
Helffer, Bernard, Université Paris-Sud, Department de Mathematiqués, 01.12-01.15, YNG,
Herbst, Ira, University of Virginia, Methematics Department, Kerchof Hall, 06.04-06.16, PVZ,
Hernández, Rafael, Université de Nevchatel, Institut de Physique, 10.29-11.08, BFG,
Hitrik, Michael, University Berkeley, Department of Mathematics, 05.21-05.26, 07.02-07.21, PVZ,
Hochberg, Kenneth, Bar-Ilan University & College of, Judea and Samaria, 06.19-06.28, KSW, 1
Hoffman, Chris, University of Washington, Dept. of Matematics, 06.24-07.04, KSW,
Hoover, Bill, University of California, Dep. of Applied Science, 02.05-02.16, PGS,
Huebschmann, Johannes, Université de Sciences & Techn. de Lille, UFR Mathematiques, 06.20-06.23, AM,
Hueter, Irene, University of Florida, Department of Mathematics, 06.25-07.07, KSW, 1
Hughes, Barry, University of Melbourne, Department of Mathematics and Statistics, 02.16-03.16, KSW,
Hull, Christopher, Physics Department, 09.11-09.21, BFG, 11.05-11.09, BFG,
Huybrechts, Daniel, Universität Köln, Mathematisches Institut, 09.18-09.26, BFG,
Hwang, Jun-Muk, 10.21-10.27, PPK1,
Ikawa, Mitsuru, Kyoto University, Faculty of Sciences, Department of Mathematics, 04.17-06.30, PVZ, 4
Ilieva-Litova, Nevena Petrova, Bulgarian Academy of Sciences, Institute for Nuclear Research and Nuclear Energy, 01.01-06.30, THI, 09.17-12.31, THI, 4
Iozzi, Alessandra, ETH Zürich, FIM, 07.01-2001 07 14, KSW,
Isenberg, James, University of Oregon, Dept. of Mathematics, 07.24-08.16, WAM,

Isozaki, Hiroshi, Tokyo metropolitan University, 05.21-05.28, PVZ,
Ivrii, Victor, University of Toronto, Department of Mathematics, 05.20-06.04, PVZ,
Jabin, Emmanuel, Ecole Normale Sepérieure, 07.26-08.04, MGM,
Jaksic, Vojkan, McGil University, 06.09-06.16, PVZ, 07.15-07.30, PVZ, 07.15-07.30, PVZ,
Jaworski, Wojciech, Carleton University, School of Mathematics and Statistics, 06.25-07.07, PVZ,
Ji, Lizhen, University of Michigan, Department of Mathematics, 05.23-06.02, PVZ, 07.15-07.28, PVZ, 2002 01 28-2002 02 02, JS,
Jin, Shi, University of Wisconsin-Madison, Department of Mathematic, 05.17-05.23, MGM,
Ju, Qiangchang, Bejing, Institute of Mathematics, 10.11-10.28, MGM,
Kaimanovich, Vadim, CNRS, 02.18-03.05, KSW, 06.18-07.16, KSW,
Kamber, Franz W., University of Ilinois, Department of Mathematics, 06.15-07.17, MI,
Kamvissis, Spyros, National Technical University, 11.24-12.31, MGM, 2002 01 01-2002 02 15, MGM,
Karch, Grzegorz, Uniwersytet Wroclawski, Instytut Matematycznu, 04.29-05.08, MGM, 11.14-11.23, MGM, 1
Karlsson, Anders, ETH Zürich, Department of Mathematics, 06.17-06.30, KSW,
Kath, Ines, MPI fuer Mathematik, 11.01-11.08, BFG,
Katok, Anatoly, Pennsylvania State University, Dept. of Mathematics, 07.09-07.14, KSW,
Kay, Bernard S., University of York, Dept. of Mathematics, 04.26-04.30, YNG,
Kazakov, Vladimir, Ecole Normale Superieure, 09.27-10.02, BFG,
Keane, Michael, Centrum voor Wiskunde en Informatica, 02.20-03.18, 06.09-07.05, KSW, 09.16-09.20, BFG,
Keraani, Sahbi, Université Paris Sud, 02.05-02.17, MGM, 07.25-08.11, MGM,
Kiessling, Michael, Rutgers University, Department of Mathematics, 10.24-10.25, MGM,
Kifer, Yuri, Hebrew University, Institute of Mathematics, 02.26-03.17, KSW,
Kim, Bumsig, University of California, 11.12-11.17, BFG,
Kim, Inkang, Seoul National University, Mathematical Department, 06.24-06.30, KSW,
Kim, Nakwoo, Max-Planck-Institut für Gravitationsphysik, 11.12-11.18, BFG,
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Kitazawa, Yoshihisa, High Energy A. (KEK), Institute of Particle and Nuclear Physics, 09.20-09.28, BFG,
Klemm, Albrecht, Humboldt-Universität Berlin, 09.18-10.05, BFG,
Klyachko, Alexander, Bilkent University, 01.03-01.31, MI,
Kochubei, Anatoly, National Academy of Sciences of Ukraine, Institute of Mathematics, 07.10-07.16, KSW,
Komech, Alexander, Moscow State University, Department of Mech.-Math., 06.25-07.31, 12.11-12.15, MGM,
Konechny, Anatoly, Lawrence Berkeley National Laboratory, Theoretical Physics group, 09.02-09.21, BFG,
Kopylova, Elena, Vladimir State University, 07.04-08.31, MGM,
Koranyi, Adam, H.H. Lehman College, Mathematics Department, 07.09-07.14, KSW,
Korotyaev, Evgeni, Humboldt Univeristät, Institut für Mathematik, 05.21-05.26, PVZ,
Kostant, Bertram, MIT, Dept. of Math., 06.13-06.24, AM,
Kosztolowicz, Tadeusz, Holly Cross Academy, Institute of Physics, 02.18-03.03, KSW, 1
Kotani, Motoko, Tohoku University, Mathematical Institute, 02.18-03.02, KSW,
Kozakov, Dmitriy, MIPT, Moscow Institute of Physics and Technology, 02.20-03.02, KSW, 1
Kravchenko, Olga, Université Lyon I, 06.11-06.25, AM,
Kreimer, Dirk, Universität Mainz, 04.03-04.11, SFT,
Krön, Bernhard, TU Graz, Institut für Mathematik C, 02.19-03.02, KSW, 06.25-07.06, KSW, 1
Krupchyk, Katsiaryna, Belarussian State University, 07.03-07.17, KSW,
Kuksin, Sergei, Heriot-Watt University, 02.11-02.16, PGS,
Lagoutiére, Frédéric, Unviersité de Paris VII, 07.10-08.11, MGM,
Landi, Giovanni, University of Trieste, Department of Mathematical Sciences, 09.11-09.22, BFG,
Landsberg, Joseph M., Georgia Techn. University, 10.22-10.26, PPK1,
Laptev, Ari, Royal Institute of Technology, 02.08-02.15, YNG, 03.25-03.30, PVZ, 06.24-06.26, PVZ,
Laurent, Celine, Université de Cergy-Pontoise, 07.25-08.10, MGM,
Lawler, Gregory, Duke University, 06.20-07.09, KSW,
Lebeau, Gilles, Ecole Polytechnique, Centre de Mathematiques, 05.02-05.10, PVZ,
Lebedev, Dimitriy, ITEP, 06.18-06.24, AM,
Ledrappier, François, Ecole Polytechnique, CMAT, 06.26-07.08, KSW,
Lehner, Franz, TU Graz, 07.02-07.05, KSW,
Leites, Dimitri, Department of mathematics, Stockholm University, 04.12-04.20, SFT,
Leitner, Felipe, Humboldt Universität, Mathematisches Institut, 11.05-11.10, BFG,
Le Prince, Vincent, Université Rennes 1, 06.17-07.01, KSW,
Lieb, Elliott, University of Princetion, 03.16-03.20, YNG,
Lieb, Ingo, Universität Bonn, Mathematisches Institut, 09.17-09.22, HU,
Li, Hailiang, SISSA, 02.04-02.19, SM, 1, 07.17-08.11, MGM,
Liverani, Carlangelo, Universitá di Roma " Tor Vergata ", 02.13-02.18, PGS,
Livi, Roberto, Universitá di Firenze, Dipartimento di Fisica, 02.06-02.09, PGS,
Lizzi, Fedele, University of Napoli, Physics Department, 09.03-09.21, BFG,
Losik, Mark V., Saratov State University, Department of Mathematics, 10.31-12.11, MI,
Lu, Jiang-Hua, University of Arizona, 06.19-06.23, AM,
Lvov, Yuri, Reusselaer Pol. Institute, 07.12-07.24, MGM,
Lyons, Russell, Georgia Tech, School of Mathematics, 06.19-07.15, KSW,

Maartens, Roy, Portsmouth University, School of Science, 07.03-07.10, WAM,
MacGibbon, Brenda, Université du Québec á Montreal, Département de Mathématique, 06.23-07.02, KSW, 1
Maes, Christian, KU Leuven, Instituut voor Theoretische Fysica, 02.08-02.09, PGS,
Mahalov, Alex, Arizona State University, Department of Mathematics, 05.30-06.05, MGM,
Malek, Josef, Charles University, 10.23-10.24, MGM,
Manivel, Laurent, Université Grenoble, Institut Fourier, UMR 5582, 10.22-10.27, PPK1,
Marchal, Philippe, DMA, Ecole Normale Supérieure, 02.17-03.04, KSW, 1
Margulis, Grigoriy, Yale University, 07.03-07.10, KSW,
Martinelli, Fabio, Universita di Roma, 07.05-07.10, KSW,
Martinez, André, Universitá di Bologna, 05.22-05.27, PVZ,
Masmoudi, Nader, Universitë de Paris-Dauphine, 10.21-10.25, MGM, 12.09-12.13, MGM,
Mathieu, Pierre, Université de Provence, 06.26-07.11, KSW,
Meinrenken, Eckhard, Univ.of Toronto, 06.18-06.23, AM,
Melin, Anders, Lund Inst. of Technology, Dept. of Math., 06.08-06.15, PVZ,
Melrose, Richard, Mass. Inst. Technology, 03.26-03.30, PVZ,
Merkl, Franz, Eurandom, 02.17-03.04, KSW, 1
Merle, Frank, Université de Cergy, 08.04-08.14, MGM,
Miller, Luc, Université Paris 10 - Nanterre, 02.05-02.17, MGM,
Miller, Peter D., University of Michigan, Department of Mathematics, 07.18-08.01, MGM,
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Molchanov, Stanislav, UNCC, 07.02-07.16, KSW,
Moller, Jacob Schach, Université Paris-Sud, Departement de Mathematique, 05.21-05.31, PVZ,
Monastyrsky, Michael, Institute of Theoretical and Experimental Physics, 02.19-03.07, 06.24-07.06, KSW,
Moncrief, Vincent, Yale University, Physics Department, 06.15-08.16, WAM,
Morija, Hajime, Tokyo Science University, 01.01-02.28, NAR, 5
Moulin, Simon, Ecole Normale Supérieure de Lyon, 07.25-08.08, MGM,
Muchnik, Roman, Yale University, Department of Mathematics, 06.15-06.30, KSW,
Mukai, Shigeru, RIMS, Kyoto University, 10.21-10.27, PPK1,
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Narain, Kumar, I.C.T.P., 10.29-11.05, BFG,
Narasimhan, M.S., SISSA, 10.23-11.03, BFG,
Nardi, Francesca Romana, Eurandom, Technical University Eindhoven, 02.16-03.03, KSW, 1
Natanzon, Sergei, Independent Univerity of Moscow, 11.02-11.17, BFG,
Nechaev, Serguei, LPTMS, Lab. Phys. Theor. Mod. Stat., 02.22-03.05, KSW,
Nedelec, Laurence, Université Paris 13, 06.28-07.11, PVZ,
Nekrashevych, Volodymyr, Kyiv University, Mech. Math. Faculty, Ukraine, 06.20-07.01, KSW,
Nekrasov, Nikita, IHES, Le Bois-Marie, 09.02-09.16, BFG,
Neretin, Yurii A., ITEP (Institute of Theoretical and, Experimental Physics) Math. Physics Group, 05.03-06.29, SF, 11.05-12.31, SF, 2002 01 01-2002 02 28, SF,
Nicolai, Hermann, Max-Planck-Institut für Gravitationsphysik, 10.23-10.29, BFG,
Nicolas, Jean-Philippe, Bordeaux 1 University, Dept. of Mathematics, 06.19-06.26, PVZ,
Nikitine, Pavel, PDMI, St. Petersburg Department of Math. Institute, 12.01-12.06, SFV,
Nikolov, Nikolay Mitov, Institute for Nuclear Researvh and Nuclear Energy, 03.14-04.04, SFT,
Nogueira, Arnaldo, Institut de Mathématiques de Luminy, 06.22-07.02, SFD, 07.02-07.12, KSW,
Northsield, Sam, SUNY, Department of Mathematics, 06.17-06.29, KSW,
Pak, Igor, MIT, 02.18-03.03, KSW,
Pallard, Christophe, ENS, DMA, Department de Mathematique et Applications, 12.10-12.15, MGM,
Parnovski, Leonid, University College London, 05.20-05.27, PVZ,
Parshin, Alexey, Steklov Mathematical Institute, 10.19-10.25, PPK1,
Pawelczyk, Jacek, Institute of Theoretical Physics, 09.04-09.12, BFG,
Petkov, Vesselin, University of Bordeaux I, Department of Mathematics, 03.25-03.31, 05.19-06.01, PVZ, 07.01-07.31, PVZ,
Petrina, Dmitri, Ukraian Academy of Sciences, Institute of Mathematics, 06.11-06.25, THY, 1
Petritis, Dimitri, Université de Rennes, Institut de Recherche Mathématique, 06.28-07.06, KSW,
Pettini, Marco, Osservatorio Astrofisico di Arcetri, 02.16-02.17, PGS,
Pillet, Claude-Alain, CPT-CNRS, Luminy, 02.06-02.11, PGS,
Pilot, Mathieu, Ecole Normale Superieure, 02.04-02.09, MGM,
Pittet, Christophe, Université P. Sabatier, Labo. E. Picard, 06.25-07.06, KSW, 1
Planchon, Fabrice, Université Pierre et Marie Curie, Laboratoire d'Analyse Numerique, 08.01-08.10, MGM,
Polishchuk, Alexander, Boston University, Dept. of Mathematics, 09.03-09.08, BFG,
Pollicott, Mark, University of Manchester, Department of Mathematics, 06.27-07.05, KSW,
Poncet, Raphael, ENS-Lyon, 07.25-08.10, MGM,
Popov, Georgi, University of Montes, 05.20-06.01, PVZ,
Popov, Vladimir L., Moscow State Technical University MGIEM, Dept. of Math., 01.01-01.05, SF, 6.658, 20,

Popov, Vladimir L., Moscow State Technical University, MGIEM, Dept. of Mathematics, 07.19-12.31, SF,
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Poupaud, Frédéric, Laboratoire Diendonné-UMR, 6621 de CNRS, 02.06-02.11, MGM,
Poznansky, Tal, Yale University, 06.08-06.30, KSW,
Pravica, David William, East Canadian University, Department of Mathematics, 05.29-06.07, PVZ,
Procesi, Claudio, Universitá di Roma "La Sapienza", 10.23-10.26, PPK1,
Rácz, István, MTA-KFKI, Research Institute for Particle and Nuclear Physics, 07.31-08.15, WAM,
Raghunathan, Madabusi Santanam, Tata Institute of Fundamental Research, 05.21-05.30, SCH,
Rai, Jagdish, Indian Institute of Technology, Department of Physics, 07.25-08.14, MGM,
Rai, Suranjana, Raitech, 07.25-08.14, MGM,
Raja, Robinson Edward, Indian Statistical Institute, 06.18-07.02, SFD, 07.02-07.13, KSW,
Ramagge, Jacqui, The University of Newcastle, 07.01-07.06, KSW,
Ramond, Thierry, Université Paris-Sud, Department de Mathematiques, 05.18-05.26, PVZ,
Raphael, Pierre, Université de Cergy, 07.31-08.10, MGM,
Rascle, Michel, University of Nice, Department of Mathematics, 10.20-10.23, MGM,
Rasulova, Mukhaya, Institute of Nuclear Physics, Uzbekistan Academy of Science, 06.22-07.10, MGM,
Ratiu, Tudor S., Ecole Polytechnique Federalede Lausanne, 06.21-06.24, AM,
Recknagel, Andreas, King's College, Department of Mathematics, 09.04-09.17, BFG,
Redig, Frank, Technische Universitet Eindhoven, 02.25-03.04, KSW,
Reinbacher, Iris, TU Graz, 06.18-07.13, KSW, 2
Rein, Gerhard, Universität München, Mathematisches Institut, 01.08-01.21, MGM, 03.11-03.16, MGM, 03.21-03.29, MGM, 04.25-05.02, MGM, 06.19-06.30, MGM,
Renardy, Michael, Verginia Tech, Department of Mathematics, 06.21-06.26, MGM,
Renardy, Yuriko, Verginia Tech, Department of Mathematics, 06.21-06.26, MGM,
Rendall, Alan, Max-Planck-Institut für Astrophysik, 06.27-07.12, WAM, 12.13-12.16, MGM,
Revelle, David, Cornell University, Department of Mathematics, 06.25-07.12, KSW,
Révész, Pál, TU Wien, 02.18-03.04, KSW, 1
Rindler, Wolfgang, University of Texas at Dallas, 07.11-07.14, WAM,
Ringström, Hans, Max-Planck-Institut für Gravitationsphysik, 07.25-08.10, WAM,
Robert, Didier, University of Nantes, Department of Mathematics, 05.21-06.01, PVZ,
Roberts, John, Elias, Universitá di Roma " Tor Vergata ", Dipartimento di Matematica, 04.27-04.30, YNG,
Rolles, Silke, Eurandom, 02.17-03.04, KSW, 1
Rondoni, Lamberto, Politecnico di Torino, Inst. Matematica, 02.05-02.17, PGS,
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Roytenberg, Dmitry, Penn State University, 06.12-06.24, AM,
Ruan, Wei-Dong, University of Illinois at Chicago, Department of Mathematics, 10.05-10.19, BFG,
Rubshtein, Ben Zion, Ben-Gurion University of the Negev, 07.02-07.08, KSW,
Ryzhik, Leonid, University of Chicago, Department of Mathematics, 07.16-07.25, MGM,
Salmhofer, Manfred, Universität Leipzig, 04.27-04.30, YNG,
Saloff-Coste, Laurent, Cornell University, Malott Hall, 06.28-07.11, KSW,
Saltman, David J., University of Texas, Department of Mathematics, 01.01-01.01, PPK, 10.21-10.27, PPK1,
Samtleben, Henning, Utrecht University, Spinoza Institute, 11.10-11.17, BFG,
Sandberg, Mattias, KTH, Mathematics Department, 07.02-07.10, WAM,
Scheck, Florian, Johannes Gutenberg-Universität, Institut für Physik, 04.26-04.29, YNG,
Scheidegger, Emanuel, Max-Planck-Institut für Gravitationsphysik, Albert-Einstein-Institut, 09.11-09.29, BFG,
Schlag, Wilhelm, Princeton University, Dept. of Mathematics, 07.17-08.08, MGM,
Schmidt, Wolfgang, University of Colorado, 04.04-06.11, SCH,
Schneider, Guido, Universität Bayreuth, Mathematisches Institut, 02.05-02.09, PGS,
Schomerus, Volker, MPI für Gravitationsphysik, 09.19-09.26, BFG,
Schwarz, Albert, University of California at Davis, 09.01-10.02, BFG,
Schweigert, Christoph, LPTHE, 09.18-09.28, BFG,
Schwimmer, Adam, Weizmann Institute, Physics Dept., 05.10-05.20, KGT,
Selberg, Sigmund, Johns Hopkins University, 03.22-04.10, MGM, 07.26-08.10, MGM,
Semenov-Tian-Shansky, Michael, Université de Bourgogne, 06.18-06.24, AM,
Semmelmann, Uwe, Universität München, Mathematisches Institut, 10.30-11.05, BFG,
Sharp, Richard, University of Manchester, Dept. of Mathematics, 06.23-07.08, KSW, 1
Shirikyan, Armen, Heriot-Watt University, Department of Mathematics, 02.05-02.11, PGS,
Sibold, Klaus, Institute für Teoretische Physik, Universität Leipzig, 03.14-03.18, KGT,
Sidorov, Nikita, University of Manchester, UMIST, Institute of Science and Technology, 07.02-07.13, KSW,
Sigal, Israel Michael, University of Toronto, Dept. of Mathematics, 07.10-07.26, PVZ,
Sjöstrand, Johannes, Ecole Polytechnique, Centre de Mathématiques, 07.02-07.14, PVZ,
Skarke, Harald, University of Oxford, Mathematical Institute, 10.23-11.02, BFG,
Skibsted, Erik, Aarhus Universitet, Institut for Matematishe Fag, 03.22-03.28, PVZ,
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Smirnova-Nagnibeda, Tatiana, Royal Institute of Technology Stockholm, Dpt. Mathematics, 06.25-07.12, KSW,

Smirnov, Stanislav, KTH - Royal Institut of Technology, Department of Mathematics, 06.29-07.01, KSW,
Smorodinsky, Meir, Tel Aviv University, 06.19-06.26, KSW,
Snow, Dennis, University of Notre Dame, Department of Mathematics, 10.22-10.25, PPK1,
Soler, Simón Joan, The Weizmann Institute of Science, Department of Particle Physics, 09.26-10.10, BFG,
Solomyak, Rita, University of Washington, 06.19-06.29, KSW,
Sparano, Giovanni, Universitá di Salerno, 12.07-12.15, MI,
Spence, William, Queen Mary University of London, Department of Physics, 11.05-11.11, BFG,
Spohn, Herbert, TU München, 02.12-02.18, PGS,
Stanev, Yassen, Bulgarian Academy of Sciences, Inst. Nuclear Research & Nuclear Energy, 03.27-04.07, SFT,
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Steif, Jeffrey, Chalmers University of Technology, 06.22-06.30, KSW,
Stout, Edgar Lee, University of Washington, 05.28-06.03, HU,
Stoyanov, Latchezar N., University of Western Australia, 06.11-07.09, PVZ,
Strauss, Walter A., Brown University, Department of Mathematics, 10.21-10.24, MGM,
Strobl, Thomas, TPI Jena, 06.18-06.23, AM,
Sunada, Toshikaz, Tohuku University, Mathematical Institute, 02.18-03.04, KSW, 1
Suominen, Kalle-Antti, University of Turku, ZEZ,
Szász, Domokos, Hungarian Academy of Sciences, Institute of Mathematics, 02.21-02.27, 06.18-06.23, KSW,
Tang, Shaoqiang, Universität Konstan, FB Math. u. Stat, 07.18-07.22, MGM,
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Tanimoto, Masayuki, Yale University, Dept. of Physics, 07.24-08.12, WAM,
Tatar, Radu Livili, Humboldt Universität Berlin, Institut für Physik, 09.29-10.08, BFG,
Tavakol, Reza, Queen Mary, University of London, 06.26-07.10, WAM,
Taylor, John C., Mc Gill University, 06.23-07.02, KSW, 1
Tcheremchantsev, Serguei, University of Orléans, 02.12-02.16, PGS,
Tchervov, Aexandre, University d'Angers, ITEP, Moscow, 06.19-06.20, AM,
Telcs, András, IMC, Graduate School of Business, 02.21-02.23, 07.05, KSW,
Tevelev, Evgueni, Moscow Independent University, 10.02-10.30, PPK1,
Theisen, Stefan, Albert-Gustav-Institut, 05.10-05.21, KGT,
Todorov, Ivan, Bulgarian Academy of Sciences, Inst. Nuclear Research & Nuclear Energy, 02.01-05.31, SF, 11.01-12.31, SF,
Toscani, Giuseppe, Universita di Pavia, Dipartimento di Matematica, 05.20-05.22, MGM, 09.28-09.30, MGM,
Toth, Balint, Technical University of Budapest, Institute for Mathematics, 02.20-03.02, KSW,
Tzvetkov, Nikolay, University Paris XI, 07.17-07.24, MGM,
Uggla, Claes, Karlstad University, 06.25-07.12, WAM, 18.000,
Uhlmann, Armin, Universität Leipzig, Institut für Theoretische Physik, 12.05-12.11, YNG,
Uhlmann, Gunther, University of Washington, 03.27-04.01, 07.04-07.10, PVZ,
Ukai, Seiji, Yokohama National University, Department of Applied Mathematics, 10.21-10.23, MGM,
Van den Berg, Jacob, 02.20-03.21, KSW, 06.17-06.22, KSW,
van den Berg, Michiel, School of Mathematics, University of Bristol, 09.30-10.06, YNG,
Vanninathan, Muthusamy, Tata Institute of Fundamental Research, TIFR Centre, 05.30-06.12, MGM,
Varjú, Tamaś, Technical University Budapest, 06.18-06.29, KSW,
Vasseur, Alexis, Université de Nice-Sophia-Antripolis, 02.06-02.16, MGM, 07.17-07.25, MGM,
Vassilevich, Dmitri, Leipzig University, 04.17-05.11, YNG,
Vasy, Andras, MIT, Department of Mathematic, 02.17-07.16, PVZ,
Velling, John A., Brooklyn College, Department of Mathematics, 06.23-06.29, KSW,
Verbitskiy, Eugeny, Eurandom, Technical University of Eindhoven, 02.18-03.02, KSW, 1
Vershik, Anatoly, Mathematical Institute of Russian Academy of Sciences, 03.01-03.15, 10.16-12.15, SF,
Vezzani, Alessandro, INFM, Universitá di Parma, Dipartimento di Fisics, 02.19-03.02, KSW,
Vilasi, Gaetano, Universitá di Salerno, Dipartimento di Fisiche "E.R. Caianiello", 12.05-12.15, MI, 1
Vinberg, Ernest, Moscow State Univesity, 08.28-09.08, MI,
Vitale, Patrizia, Universitá di Salerno, 12.07-12.15, MI,
Vizman, Cornelia, West University of Timisoara, Insitute of Mathematics, 06.02-06.30, MI,
Vodev, Gueorgui, University of Nantes, Department of Mathematics, 05.20-06.03, PVZ,
Voituriez, Raphael, Université Paris XI, 06.24-06.30, KSW,
Ševera, Pavol, Faculty of Mathematics and Physics, Department of Theoretical Physics, 06.11-06.22, AM,
Wainwright, John, University of Waterloo, Department of Applied Mathematics, 06.22-07.13, WAM,
Waldram, Daniel, Queen Mary Univ. London, 10.23-11.01, BFG,
Walther, Björn, Royal Institute of Technology, Department of Mathematics, 07.02-08.10, MGM,
Wang, Lan, Scientific Research Civ., 07.16-07.28, PVZ, 1
Wang, Xue P., Université de Nantes, Department of Mathematics, 05.19-05.26, PVZ,
Wasserman, Arthur, University of Michigan, 07.03-07.06, WAM,
Weaver, Marsha, ULB, 07.17-07.31, WAM,
Weinstein, Alan, University of California, 06.20-06.24, AM,
Willis, George, University of Newcastle, 06.29-07.23, KSW,
Wodzicki, Mariusz, University of California, Department of Mathematics, 08.03-10.01, MI,
Woess, Wolfgang, TU Graz, 02.19-03.02, KSW, 1

Wojtkowski, Maciej P., University of Arizona, Dept. of Mathematics, 02.04-02.17, PGS,
Wolansky, Gershon, Technion Israel, Institute of Technology, 03.11-03.15, MGM,
Wunsch, Jared, SUNY at Stony Brook, Department of Mathematics, 05.20-06.02, PVZ,
Yafaev, Dimitri, University of Rennes-1, IRMAR Department of Mathematics, 03.26-04.07, PVZ,
Yajima, Kenji, University of Tokyo, Department of Mathematical Sciences, 05.20-05.25, PVZ,
Yndurain, Francisco J., Universidad Autonoma de Madrid, 02.11-02.17, LMS,
Zelditch, Steve, Johns Hopkins University, Dept. of Math., 05.21-06.20, PVZ,
Zenk, Heribert, Johannes Gutenberg Universität Mainz, 08.30-09.01, YNG,
Zerner, Martin, Technion, Department of Electrical Engineering, 02.17-03.04, KSW,
Zerzeri, Maher, University Paris-Nord, LAGA, Institut Galileé, 06.20-07.06, PVZ,
Zorich, Anton, IRMAR, University of Rennes 1, Campus de Beaulieu, 07.04-07.13, KSW,
Zubelli, Jorge Passamani, I.M.P.A, 05.29-06.02, MGM,
Zucca, Fabio, Dipartimento di Matematica, "F. Enriques", 02.18-02.24, KSW, 07.01-07.13, KSW,
Zuk, Andrzej, CNRS, UMPA, Charge de Recherche, 06.25-07.05, KSW,
Zworski, Maciej, University of California, Department of Mathematics, 05.21-07.16, PVZ,

Activities in electronic information and communication

by Peter W. Michor

The yearly meeting of the 'committee on electronic information and communication (CEIC)' of the International Mathematical Union took place in Princeton, October 7-9, 2000. See the report below. The next meeting of CEIC will be at Vancouver, in February 2002.

Minutes. Fourth Meeting of the Committee on Electronic Information and Communication (CEIC) of the International Mathematical Union held at the IAS Princeton, May 12–14, slightly shortened 2001

Membership and Participation Peter Michor (Austria), Jonathan Borwein (Canada), John Ewing (USA), Martin Groetschel (Germany), Wilfrid Hodges (UK), David Morrison (USA), Kapil Paranjape (India), Alf van der Poorten (Australia), Alexei Zhizhchenko (Russia). By invitation: Roland Schwaenzl (Germany). Did not attend: Jonas Gomes (Brazil), Qing Zhou (China). [Jacob Palis, President of the IMU, attended a substantial portion of the Committee's meeting].

The CEIC met on Saturday, May 12 (commencing at 10:00) and through Sunday, May 13. It held a joint meeting with the Executive Committee of the IMU on Monday morning, May 14 following which there was a further short meeting to recall tasks accepted by members (concluding at 12:30).

Meeting of the Committee. Agenda, Minutes of the previous meeting.

Technical Matters and Reports Martin Groetschel spoke on 'Math-Net: The Current State of the Art'. Remarks on the internationalization of Math-Net included: In UK there is Math-Gate. Brazil has not been a sucess. *Persona Mathematica* will be further developed in India, as proposed by Kapil Paranjape. The MPRESS mirror in EMIS is often down. Domain-names should be transfered from W. Dalitz to the IMU.

arXiv and preprint servers in other sciences Pub-Med Central in the medical sciences is going online. Science server will become freely accessible with a moving wall of 6 months. Commercial preprint servers: Elsevier server.

EMIS and EMS Normal growth is being experienced; there are now 51 freely accessible journals, 24 mirrors in Europe, 18 elsewhere. EULER (full online version of Jahrbuch der Mathematik, most important papers scanned) is part of EMIS.

Collaboration between preprint servers Here the CEIC should become active. Proposal (Michor, not serious): That Greg Kuperberg be asked to put his Front of the arXiv under a secondary homepage, and that ZIB offers to migrate its preprint archive into the arXiv.

Activities of AMS John Ewing did not want to repeat the items from his report at the previous meeting, and consequently limited his remarks to updating the committee on the STIX project (to create a complete set of fonts to accompany the large number of mathematical glyphs added to unicode). This is a project sponsored jointly by six publishers (mainly scientific societies).

Activities of CMS/SMC Jon Borwein reported that the Society has some 1200-1500 members. All 4 publications are now digital. The Society, and the three institutes PIMS, Fields Institute, and CRM, will all install secondary homepages.

Activities of LMS Wilfrid Hodges reported that he is no longer closely involved with the London Mathematical Society, but he obtained the following report from the LMS Publications Secretary (Chris Lance, 9 May 2001): "All our print journals are available online. We have acquired a DOI prefix for the LMS, and are moving towards using CrossRef (in cooperation with our publishing partners CUP, IOP and Turpion). Our electronic journal, the LMS JCM, maintains high academic standards, but does not receive as many good papers as it would like. For the years 2000 and 2001, it is only available to paying subscribers. A subscription to the LMS Proceedings includes one to the JCM. Other than these bundled subscriptions, the JCM has only attracted a few individual subscriptions, and scarcely any library subscriptions. For this reason, the LMS Council recently decided that as from 2002 the JCM should again be made freely available. If and when the size of the journal increases substantially from its present level, we intend to reintroduce a subscription system. At present, we do not have any plans for further electronic journals."

UNESCO/ICSU Conference "Electronic publishing in science" Alf van der Poorten reported briefly on the meeting held in Paris, February 20–23, emphasising the importance of mathematics being represented at general scientific meetings.

Copyright issues A draft of an Executive Summary, to accompany the Copyright checklist, had been prepared. A revised version was agreed after a lively discussion. The Committee acknowledged its indebtedness to Wilfrid Hodges and thanked him for his outstanding contribution to its work. Both the Executive Summary and the checklist may be found at `http://www.maths.qmul.ac.uk/ wilfrid/copyright.html`.

Standards Roland Schwaenzl made a presentation 'Some Remarks about MathML'. It was agreed that the CEIC should produce an article on standards in electronic communications, on MahtML, pdf, TeX, SGML, Unicode, ..., reviewing the present state of play. A group was formed of Jon Borwein, Alf van der Poorten (chair), Roland Schwaenzl, and David Morrison, also Patrick Ion should be contacted.

Call to mathematicians with homepages Following a brief presentation by Alf van der Poorten on 'Storing mathematics electronically; notes for the uneducated', Peter Michor produced the notion that mathematicians be urged to consider scanning their older publications and then to put them online, for fair use only, and for the benefit of developing countries. A suitable 'Call to mathematicians' was then formulated.

In discussion of what has been done, Dave Morrison mentioned that he has all papers online already (`http://www2.math.duke.edu/publications/drm`); it was suggested that Juergen Moser's collected works could be done in this way.

It was resolved that a webpage with technical advice for several operating systems should be prepared: see for example `http:/www.mat.univie.ac.at/ michor/howto.html`.

Resolutions suitable for presentation to the EC were formulated.

World Directory of Mathematicians It was agreed that for 2002 there was no alternative to preparing a print directory, as in the past. Looking to the future, members of the Committee noted that privacy laws may well inhibit the highly desirable alternative of maintaining a publicly accessible electronic list of mathematicians.

Miscellaneous The Committee discussed a suggestion by the European Physical Society to sign a formal agreement concerning Math-Net. It came to the view that such a proposal was inappropriate at this level and should be politely rejected in favour of offers of local and regional cooperation on a less formal basis.

Meeting with the Executive Committee. The following reports were given: How CEIC functions (Peter Michor). Review of "how we stand with respect to our "terms of reference" (Martin Groetschel). arXiv and standards (David Morrison). MPRESS and Metadata (Roland Schwaenzl). EMIS (Peter Michor). 'Personal collected works' (Alf van der Poorten); Here, after suitable amendments, the 'Call to mathematicians' was accepted by the EC.

Copyright checklist (Wilfrid Hodges). The executive summary was accapted by the EC with the proviso that it be amended by adding a suitable introduction. It was suggested that that it be arranged that the Copyright Checklist somehow, some time, be presented to the ICSU.

Math-Net (Martin Groetschel, Jon Borwein) The world directory (John Ewing)

ICM 2002 Members of the EC recommended there being a CEIC afternoon in Beijing 2002 and presentation at GA 5. It was accordingly agreed that the CEIC organize an afternoon at

ICM2002 (Beijing) on electronic communication and information and that on behalf of the IMU it organize a similar such session at ICIAM2003 (Sydney).

Future of the CEIC. It was remarked that the CEIC should have finite lifetime and that, in particular arrangements should be made for an orderly and gradual change in its membership. [In subsequent discussion Peter Michor indicated his wish to withdraw as Chair of the Committee in 2002, and his intention to recommend that Jon Borwein take over that task].

The copyright checklist has later been published in the "Notices of the AMS", and in the "Internationale Mathematische Nachrichten (Mitteilungsblatt der Österreichischen Mathematischen Gesellschaft"), among others.