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Cover picture: Joel Lebowitz's invitation letter to the statistical mechanics meeting in November, 1962. See the article by M. K-H. Kiessling in this issue.

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Contents

One, two, three, and still counting: Joel Lebowitz's unparalleled series of biannual statistical mechanics meetings

by MICHAEL K.-H. KIESSLING (Rutgers)

Last December, after a pandemic-forced three-year interruption, the long-running Rutgers tradition of biannual Statistical Mechanics Meetings was revived with its 123rd installment, organized by its founder, Joel L. Lebowitz. To be accurate, though, the series of meetings did not start at Rutgers. The first one was held in the Spring of 1959 at the Stevens Institute of Technology in Hoboken, New Jersey. Later that year Joel moved to Yeshiva University in New York City, where the next several meetings took place. The location of these meetings moved to Rutgers, The State University of New Jersey, New Brunswick Campus, when Joel became the George W. Hill Professor of Mathematics and Physics there in 1977.

To accomplish such a long and successful run of biannual meetings requires a confluence of many traits, of which we can name but a few: passion, determination, planning and organizing skills, seemingly unlimited energy, a welcoming and caring personality, an outstanding reputation in the community based on one's own mathematical and scientific contributions. One also has to have some robust health and longevity genes, otherwise one may not even be able to attend each and every one of the meetings, not to speak of organizing them. If Joel Lebowitz were not living proof that the intersection of this set of requirements is not the empty set, one would have to be skeptical (to put it mildly) whether anyone could possibly pull off such a feat.

Joel not only did it, on top of it he did it almost single-handedly! Indeed, with the exception of two Rutgers meetings Joel has been their chief organizer, and for the vast majority of meetings he has been putting the events together as the sole organizer. There was a brief period, 1963–1964, when Elliott Lieb was at Yeshiva University, too, and Joel had annointed him as co-chair for the organization of the Yeshiva meetings, "but Joel was always in charge, of course," Elliott wrote me. Also the very special 100th meeting that took place at Rutgers in December 2008, co-sponsored by DIMACS, had a co-organizer, namely Peter Winkler from Dartmouth College. Incidentally, several attendees who took photos at the 100th meeting made them publically available, featured on Joel Lebowitz's Rutgers website; I've grabbed a few of these and reproduced them further below. Back to the organization of the meetings. The two exceptional Rutgers meetings mentioned above were the ones celebrating Joel's 60th and 70th birthdays, on which occasions Joel had agreed to leave it to an organizing committee consisting of some of his (former)[1] Ph.D. students or postdocs, respectively colleagues, to put it together. The organizing committee for the meeting celebrating Joel's 60th birthday, which took place in May 1990, consisted of Michael Aizenman, at that time at Courant Institute, plus Shelly Goldstein and Gene Speer from Rutgers. The committee for the 70th birthday meeting, which took place in May 2000, officially consisted of Frank Alexander from Los Alamos National

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[1] My late Rutgers colleague Israel M. Gel'fand used to say: "It makes no sense to speak of 'my former son,' and similarly it makes no sense to speak of 'my former student.'" Yet, to avoid creating the false impression that the responsibility for organizing an important Statistical Mechanics Meeting was unfairly put on the shoulders of some Ph.D. students, or postdocs, that still had to establish themselves in the academic world, I decided to add 'former' in parentheses.

Lab., and myself. Unofficially, Michael Aizenman, by then long since at Princeton University, played an important advisory role for us two junior people, but insisted to stay in the background unmentioned; I hope that Michael will forgive me when I take this opportunity to gratefully acknowledge his treasured advice. A very important role in the organization was also played by Oliver Penrose, whose friendship with Joel goes back to the time when both were postdocs of Lars Onsager at Yale. Oliver agreed to be the master of ceremonies for the birthday banquet, and he did a spectacular job; he also helped us immensely with his input into the preparation of the ceremony. Needless to emphasize, even when such an organizing committee was in charge, Joel would not just relax and sit back to wait and see what happens. In particular, the organization of the human rights session was always under his purview. Moreover, it is not exactly easy to keep some surprises hidden from Joel when you prepare an event in which Joel himself is the main subject of attention, and you have to do it right under Joel's nose; more on that below.

Except for these few exceptional occasions, Joel was the sole organizer of the statistical mechanics meetings. I clearly remember that when co-organizing the meeting for Joel's 70th birthday, for about half a year I spent most of my active time doing just that. I cannot even imagine doing something like this twice a year, and year after year after year, as Joel has for more then 60 years by now, and in addition fulfill my teaching obligations, carry out my research projects, both alone and with many collaborators, advise many Ph.D. students, several of them moving on to have stellar scientific careers of their own, be the mentor to many postdocs, and for several decades also manage the flagship *Journal of Statistical Physics* as its sole editor-in-chief, among many other things, such as traveling the world and having a life! How Joel did it, and still does it, is a mystery to me.

Of course, the meetings didn't start in their current format, and even Joel after the first meeting in 1959 could not have anticipated that he had started what would become an unrivaled series of scientific events. The first Statistical Mechanics Meeting, Joel told me, was a one-day event, inspired by a similar meeting on General Relativity that had been organized by two of his colleagues at the Stevens Institute, who, like Joel, had studied toward their Ph.D.s under the guidance of Peter Bergmann, one of Albert Einstein's last assistants, who naturally would supervise theses in GR. Fortunately for the mathematical physics and particularly statistical mechanics communities, by the time Joel became his student Professor Bergmann's interests had drifted towards statistical mechanics. And so Joel gathered about a dozen like-minded people, some from Stevens, a group from Bell Labs where he had collaborations with Harry Frisch and Howard Reiss, and another group from NYU, where Joel had contacts through Jerry Percus.

Since the meeting went well, Joel decided to continue such gatherings after moving to Yeshiva University soon after. People were invited by postcard a month ahead of time. The situation in the mid 1960s, as Elliott Lieb wrote me, was thus: "It was low key but spontaneous. No program. People just got up and spoke whenever they felt they had something to contribute. No 5 minute talks really. We had lunch in the Yeshiva cafeteria. There were 2 factions, as I recall. One wanted wine for lunch, and the other wanted whiskey." More on that last remark later.

Everyone who wanted to give a talk was allowed to — a principle dear to Joel's heart and thus still a sacred principle of the Statistical Mechanics Meetings at Rutgers these days. By 1967 there were two dozen speakers, on average speaking for 15 minutes each within a six-hour time window for the talks, still fitting for a one-day event. Yet the meetings grew in popularity, and Joel told me that to uphold the principle that everyone who wants to speak about their research will be given the opportunity to speak about their research, he had to assign people "short talks" and "very short talks." But by the mid 1970s the popularity of the meetings had grown so much that so many people wanted to give a presentation that a one-day time frame would have been blown even if everyone would have been restricted to merely a 5 minute slot only. To save the sacred principle the equidistribution rule had to be sacrificed. Joel, ever creative, invented the Yeshiva Meeting "IQ," a.k.a. the "Intensity Quotient," asking participants ahead of time to tell him the intensity of their desire to give a talk. Those with the lowest (Yeshiva Meeting) IQ were assigned one-minute slots, just enough to get up and announce what they actually would have liked to talk about. Others were given three-minute slots, and so on. Oliver Penrose wrote me: "The talk I was most impressed with in all that time was by Persi Diaconis, full of surprises. I also recall those sessions where each speaker was given only 3 minutes. It always took me 2 minutes to get used to the speaker's accent, so that there was only 1 minute left to try and understand what the speaker was getting at. But Joel did not have this difficulty — he always understood perfectly from the start." Joel soon after decided to expand the format to a two-day event, one day with invited talks only on rigorous results, the second day with the usual format. This was the format of the meetings when they transferred to Rutgers.

"Things got more organized when Joel moved to Rutgers and the number of attendees increased.", Elliott Lieb wrote me. In the past 30+ years every meeting has been a three-day event, basically structured like this: Sundays are invited talks only, cocktails in the evening followed by a concert, followed by a banquet dinner in celebration of the birthday(s), or achievements, of some eminent member(s) of the statistical mechanics community; Mondays start with contributed five-minute talks, followed by invited talks, then a session on human rights, and the afternoon session with invited talks is again followed by cocktails and a dinner in the evening, sometimes followed by further presentations celebrating the achievements of the honorees of the conference, or by some round table discussion; Tuesdays again feature contributed five-minute talks and longer invited talks, and the meeting ends by mid afternoon. Of course, on every day there are coffee breaks and a lunch break. Joel would use a hand bell to corral the participants back to the auditorium when the breaks are over. This is their format I am familiar with.

When a meeting was over, the bell was always put into a storage place together with other equipment needed for the next meeting. At the end of one of the Rutgers meetings the old bell had mysteriously vanished, possibly now displayed somewhere else as a trophy. Joel now has a new bell, which he puts to good use.

Joel Lebowitz with his hand bell.

There is still alcohol served at the meetings, but not anymore at lunch, only at the cocktail break before a concert, and at the Sunday and Monday dinners. After becoming Joel's colleague at Rutgers I for a while assisted him organizing the supplies. I had found a local liquor store with a manager willing to negotiate, and the fact that Joel's meetings kept occurring twice a year, year after year, helped immensely. I explained that at the meetings we study matter in bulk, and that we needed booze in bulk for the dinners, and that he would have a recurrent customer to count on if he made me a good price. And so we got better quality for less money, which helped with the tight budget for the meetings. The orders had to be picked up at the liquor store, and I remember schlepping those loads to Joel's office where the caterers that Joel had hired would pick them up. The orders consisted mostly of Italian white and red wines, some regular and some light types of beer, and always also one or two bottles of gin (no more whiskey). Eventually the Rutgers administration insisted that Joel had to use their own caterers, and order alcohol (wine and beer only) through them, and that's the way it has been since.

I remember that my first participation in one of these meetings was in December 1989, after I had just become a postdoc at the Courant Institute, NYU. Horng-Tzer Yau, who at the time was a Courant Instructor, was giving me, Marco Isopi, and a third young stat-mech afficionado (unfortunately, I don't remember who that was) a ride from Manhattan to New Brunswick, NJ, in the morning, and back late in the evening. That, in my memory, was the first time I met Joel Lebowitz. Already the next meeting, in May 1990, was very special, celebrating Joel's 60th birthday. In my memory this is the only Rutgers meeting where the Sunday part did not happen in one of the Rutgers buildings but in the ball room of the Hyatt Hotel of New Brunswick, NJ. It was quite a gathering that Michael Aizenman, Shelly Goldstein, and Gene Speer had put together. For a young postdoc like me it was exciting to attend a meeting that featured such a who's-who of famous mathematical physicists, and to listen to their high-powered presentations. Also fascinating were their personal reminiscences about the previous 30 years of legendary statistical mechanics meetings. The Sunday of that meeting was also the day I first met Elliott Lieb; I was introduced to Elliott by Detlef Dürr, who I knew for many years already from attending his lectures when I was a student at Ruhr-University Bochum.

Although my own personal reminiscences are inevitably limited to events that took place at the Rutgers meetings in the 30+ years since, I always enjoyed also the part dedicated to the celebration of a birthday or simply the accomplishments of some distinguished member of the statistical mechanics community, with all the fine speeches that look back in time. In particular, the 100th meeting in 2008 was full of such special talks. A nice anecdote was relayed by the chemist David Chandler from Berkeley, who told the story that at his first statistical mechanics meeting very early in his career the auditorium was very crowded, he was squeezed sitting between two other attendees, one an elderly gentleman who kept falling asleep, resting his head on David's shoulder. David did not find this amusing — until he realized which honor was bestowed upon him: the elderly gentleman was eventually called upon by Joel to deliver his presentation, and he turned out to be the great chemist Lars Onsager, one of David's heroes! David sadly passed away in 2017, but Joel confirmed that I remember the story correctly.

A moving presentation that I vividly remember was the personal retrospective on Freeman Dyson, delivered by Andrew Lenard at the 90th meeting that was held in celebration of Freeman's 80th birthday. He recalled the time when he was a young postdoc at the Institute for Advanced Study in Princeton and told the story of the celebrated Dyson–Lenard proof about the stability of matter in quantum mechanics to a rapt audience.

From left to right: Larry Shepp, Freeman Dyson, and Michael Fisher at the 100th SMM.

Among the invited technical talks, I remember in particular those of the late Michael E. Fisher, whose talks were sometimes more theoretical and sometimes more mathematical. Listening to Michael's presentations always felt like attending a master class. He always had spectacularly well prepared transparencies, and later beamer slides. He always projected his voice in a manner few speakers are able to. The late Freeman Dyson is the only other person

I remember who would give similarly booming presentations at Joel's meetings. For many, many years, Michael Fisher and Freeman Dyson would be regulars at Joel's meetings. Their departure has left big voids.

Also Jürg Fröhlich's handwritten transparencies were always exceptional, showing impeccable penmanship. Incidentally, I recall that at a meeting celebrating the achievements of John Cardy, Jürg Fröhlich, and Tom Spencer, one of the speakers (I don't remember who, though) remarked that Jürg gave the shortest five-minute talk he ever witnessed. According to that story Jürg used his five-minute slot simply to get up from his seat and to announce that he and Tom Spencer had proved the existence of the Kosterlitz-Thouless phase transition, then returned to his seat. Great achievements need not more advertising! Since I was not present at that meeting I asked Joel whether this was perhaps scheduled as one of the one-minute talks based on the intensity quotient of the speaker. Joel replied that he doesn't recall this particular event, but noted it must have happened at one of the Rutgers meetings, and that he no longer used the IQ criterion when scheduling short talks at Rutgers. I asked Jürg whether he remembers this event, and he wrote back to me that this may well be what happened, but that he doesn't recall the details, closing his reply fittingly with "Se non è vero, è ben trovato."

Most speakers in the five-minute sessions don't have such spectacular results to announce, about problems so well-known that everyone understands what they are talking about when just claiming they solved the so-and-so problem. To explain what the problem is that you've been working on, and to convey the result you've obtained, and to do so in such a short time span, is challenging. Jennifer Tour-Chayes mastered this challenge spectacularly by giving a most impressive high-speed five-minute presentation. I've never seen anything like this before or after. She stated, verbally and in writing on the black board, a non-trivial theorem, then proceeded to give its complete proof, filling several black boards, all written legibly, and truly within the five-minute time limit.

Yet a person who delivers a five-minute presentation for the first time is often surprised by how quickly the clock is running out — a limit Joel strictly enforces. Once the role of the enforcer was conferred upon me. Right after the Sunday banquet in celebration of David Ruelle and Yakov Sinai, Joel's wife Ann had tripped, and while trying to hold on to something she badly injured her wrist. Since Ann needed medical attention, Joel could not come in on Monday morning to preside over the five-minute talks, so he asked me to take over for him. I admit that I was a bit nervous, but the speakers all were disciplined and didn't give me trouble on the few occasions that I had to cut them off when their five minutes were up. I do remember, though, how startled Alexander Soshnikov was when this happened to him.

As already mentioned, the one time that I was significantly involved in the organization of a meeting was for Joel's 70th birthday. What good is a birthday party without some surprise guests? So Joel, who was involved in setting up the seating plan for the tables at the banquet dinner, was told by us to mark two seats at his table as "surprise guests," whose identity would be revealed at the start of the banquet. He was truly surprised, and perplexed, when at the start of the banquet a young couple, postdocs who he did not know, took the seats of the two surprise guests. Oliver and I were so pleased to see how well they played along; we could tell that Joel had no idea what was going on. Here is Oliver Penrose's recollection of the moment when he delivered the real surprise

"In 2000 the spring conference coincided with the celebration of Joel's 70 birthday. I had the honour to be the master of ceremonies at a big party that evening. Towards 10 pm, when some of the guests were begining to think the party was nearly finished, I was able to announce "Joel, your surprise guests have arrived" and who should emerge from their place of conceal-ment in the next room but Detlef Dürr and his daughter, who had prepared a special musical entertainment and had come all the way from Europe to present it. It was the highlight of the evening.

Tragically, Detlef died in January, 2021."

There are many fine memories of happy events, remarkable talks, and spectacular results presented at Joel's statistical mechanics meetings, but they also leave you with a heavy heart. Many of the stallwarts of the statistical mechanics meetings are no longer around. Some I never met, but in addition to those already mentioned, also Jerry Percus, George Stell, Leo Kadanoff, Pierre Hohenberg, and Maria Conceição (Sao) Carvalho are sorely missed.

At the 100th SMM. In the front row, from right to left, are Elliott Lieb, Joel Lebowitz, Stanislav Smirnov, A. Toom, and Jerry Percus. I am caught on camera sipping my coffee in the second row. Sitting next to me on my left is Sao Carvalho.

Jerry was one of the attendees of the first meeting that happened at Stevens, and for almost 60 years a regular at the Yeshiva and then the Rutgers meetings. I had been Jerry's postdoc at my second stint at Courant in 1993. After I joined the Rutgers mathematics faculty in 1995 and moved into a house nearby, Jerry would always stay with us for the time of the meetings. Jerry needed very little sleep, so after a Sunday banquet and a Monday dinner, we often talked way past midnight in my living room before Jerry retired to our guest room. Before 7am Jerry

would rise again and soon after be ready to go whereas I felt I was sleepwalking. I tried to wake myself up by drinking large quantities of the coffee offered at Joel's meeting.

The other side of the auditorium. In the first row Michael Fisher is seen confronting the speaker either with a comment or question. Julia Yeomans in the third row listens intensely.

It can hardly be overstated how important these statistical mechanics meetings have been, and continue to be, for the exchange of ideas and information among its varied crowd of participants from mathematical or theoretical physics, chemistry, material science, and more and more also from some of the life sciences. The meetings are never monolithic in their format, featuring an interesting mix of talks covering mathematically rigorous as well as experimental results, computer simulations, and also non-rigorous but always carefully argued theoretical works. Even though Joel may be the only person who is able to follow each and every talk, there is always something new to learn for everyone who comes to the meetings with an open mind. There are always several talks about rigorous results that may be closer to the heart of a mathematical physicist, yet it is hard to imagine a mathematical physicist working on problems in statistical mechanics who would not get awed in a talk by the great experimental physicist Harry Swinney, for instance.

Joel's meetings have been invaluable also to graduate students and postdocs working on problems in statistical mechanics as a venue to introduce themselves and their results to the larger community, but equally important to learn about many interesting problems that fall into the purview of statistical mechanics, and to meet the senior people of the community in person.

One more time, here is Oliver Penrose:

"Around 10 years ago, when we were approaching the one hundredth in Joel's series of statistical mechanics meetings, I asked him whether he was thinking of stopping when he reached number 100. His reply was that he thought 120 was a better number, since this number has significance in the Old Testament. But, though it may be a more auspicious number than 100, even 120 was not good enough for Joel. Last December the 123d meeting in the series took place, and the titles of the talks show that the inventiveness and variety which Joel so successfully encouraged is still there in abundance."

To be sure, Joel already announced the 124th meeting for Spring 2023. May Joel stay healthy and pursue his passion for many more years to come!

The 34th International Colloquium on Group Theoretical Methods in Physics

by MICHEL RAUSCH DE TRAUBENBERG (Strasbourg)

The International Colloquium on Group Theoretical Methods in Physics (ICGTMP) is a conference series which covers the most important topics of symmetry relevant to the interplay between modern physics and mathematics.

Indeed, it was in 1972 that a group of enthusiasts, under the leadership of Henri Bacry, in Marseille, and Aloysio Janner, in Nijmegen, initiated a series of annual meetings, held alternatively in their two institutions, and intended to provide a common forum for scientists interested in group-theoretical methods. After the first four meetings, the Colloquium acquired an international standing, and since then it has been organized in many countries around the world. Since 1990, the ICGTMP has been biannual. The year 2022 also marks the 50th year of this conference series.

The 34th International Colloquium on Group Theoretical Methods in Physics (or Group 34) took place at Strasbourg University from the 18th July to the 22nd July 2022. Since group 34 is an important colloquium, all physics and mathematics institutes of Strasbourg, l'Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), l'Institut Pluridisciplinaire Hubert CURIEN (IPHC), l'Institut Charles Sadron (ICS), and l'Institut de Recherche Mathématique Avancée (IRMA), were involved in its organization.

Initially, most participants of the ICGTMP belonged to either one of two important communities: solid state specialists, elementary particle theorists and phenomenologists on the one hand, and on the other hand, mathematicians interested in applying newly-discovered group and algebraic structures. Since then, the ICGTMP has become a traditional conference series which covers a wide variety of important topics related to symmetry relevant in mathematics and physics. The Colloquium is a meeting point for scientists who work at modelling physical phenomena through mathematical and numerical methods based on geometry and symmetry. It is among the oldest conference series devoted to geometry and physics. Over the years, the ICGTMP has been further broadened and diversified due to the successful applications of geometric and algebraic methods in life sciences and other areas.

The ICGTMP brings together preeminent international researchers, often from a different background but with "group theoretical or algebraic methods" as common ground. The Colloquium is the ideal forum for researchers to acquire knowledge or get ideas from other domains, and then apply them to their own domain.

The Standing Committee of the ICGTMP is an international body which, for the sake of continuity and uniformity, oversees and manages the organization of the ICGTMP series. It puts equal importance on the need for physicists to approach physical problems using novel mathematical settings and on the need for mathematicians to construct their new mathematical frameworks with reference to physical systems. Important information concerning the ICGTMP are centralised in https://icgtmp.blogs.uva.es/.

Strasbourg is located in the centre of Europe and Strasbourg University has long experience organizing conferences. In this respect the colloquium was a great success, with more than 140

participants from 24 different countries from Europe, North and South America, Asia, Australia and Africa. It is particularly remarkable that all continents were represented, this is a sign of the relevance of this scientific topic and of the world-wide esteem that the Colloquium is held by our colleagues. This success was made possible, in particular, by the grants of National and International Institutions as *e.g.* the International Association of Mathematical Physics (IAMP).

The scientific program of Group 34 was particularly rich. For more details one can see the website of the conference https://indico.in2p3.fr/event/23498/. This conference is also the first conference of the series with a hybrid character. All plenary and parallel sessions were transmitted online, and about 20 participants attended virtually to the conference, two plenary lectures and seventeen parallel sessions were available online. The proceedings of the conference will be published by the SciPost platform: https://scipost.org/SciPostPhysProc.202209001.

Plenary lectures: Twelve plenary lectures chosen in order to represent the diversity of the thematic of the conference:

1. Guillaume Bossard (École Polytechnique, France): *Kac-Moody Exceptional field theory*.
2. Claudia Maria Chanu (Torino, Italy): *Geometry of regular and not regular separation: the example of the bi-Helmoltz equation*.
3. Charles Dunkl (University of Virginia, USA): *The Harmonic Oscillator, Enhancements and Applications*.
4. Terry Gannon (University of Alberta, Canada): *What comes after Cappelli-Itzykson-Zuber's A-D-E?*
5. Jean-Pierre Gazeau (APC, Université Paris Cité): *Dark matter as a QCD effect in an Anti de Sitter background (Cosmogonic implications of de Sitter, Anti de Sitter and Poincaré symmetries)*.
6. Kristina Launey (Louisiana State University, USA): *Emergent symmetries in nuclei: Probing physics beyond the standard model*.
7. Florian Loebbert (Bonn , Germany): *Integrability for Feynman Integrals*.
8. Alessio Marrani (University of Murcia, Spain): *Jordan meets Freudenthal : a black hole exceptional story*.
9. Erik Panzer (Oxford University) Weyl medalist: *Cosmic Galois group and ϕ^4 theory*.
10. Nicolai Reshetikhin (YMSC Tsinghua University) Weyl-Wigner Award: *Two dimensional QCD revisited again*.
11. Hubert Saleur (CEA, France): *Global symmetry and conformal bootstrap in the two-dimensional O(n) model*.
12. Walter van Suijlekom (Radboud University Netherlands): *Noncommutative spaces at finite resolution*.

Memorial talks: Four memorial talks were held to honor the renowned colleagues Kurt Bernardo Wolf, Tchavdar Palev, David J Rowe, Jiri Patera, and Pavel Winternitz, who sadly passed away.

Parallel sessions: Eighty parallel sessions were organized on the following very different subjects:

1. Representation theory
2. Symmetries in integrable systems
3. Symmetries in differential, difference and nonlinear equations
4. Infinite dimensional symmetries and supersymmetries
5. PT-symmetries, dynamical symmetries and superintegrability
6. Loop algebras, W-algebras, polynomial algebras
7. Q-algebras and groups, q-special functions
8. Superstrings, cosmology and quantum gravity
9. Conformal field theory
10. Foundations of quantum physics
11. Symmetries in particle physics
12. Noncommutative field theories
13. Symmetries in molecular, atomic and nuclear physics
14. Quantum optics, coherent states and quantum information
15. Condensed matter and statistical physics
16. Symmetries in biophysics, chemical physics and natural science

Poster sessions: Three poster sessions.

Award ceremonies: Two award ceremonies were organized during the conference.

The Wigner-Weyl Award recognizes and awards outstanding contributions through group theoretical and representation methods. A Selection Committee, chaired by Efim Zelmanov awarded the 2022 Wigner-Weyl Award to Nikolai Reshetikhin for his seminal contributions to representation theory of quantum groups, integrable systems and their applications in statistical mechanics and quantum field theory.

The purpose of the Weyl Prize is to provide recognition for young scientists who have performed original work of significant scientific quality in the area of understanding physics through symmetries. A Selection Committee, chaired by María Antonia Lledó awarded the 2020/22 Hermann Weyl prize to Erik Panzer for his pioneering achievements in the calculation of amplitudes in gauge theories, for developing new mathematical structures that exploit the language of symmetries, and for his contribution to the description of important physical phenomena present in nature.

The two laudatio speeches in honor of, respectively, N. Reshetikhin and E. Panzer were held in the splendid and prestigious frame of the historical building of Strasbourg City Hall.

50th anniversary of the ICGTMP: Since 2022 marks the 50th year that this Colloquium this milestone has been celebrated during two special ceremonies.

The first special ceremony corresponds to one lecture in French for a large audience by J. M. Lévy-Leblond. The conference has been recorded and the video is accessible on the website of the conference https://indico.in2p3.fr/event/23498/attachments/72209/103208/48365-la-conference-de-l-m-levy-leblond-professeur-emerite-universite-cote-dazur-france_480-2.mp4.

The second special ceremony is hosted by J. M. Lévy-Leblond and G. Goldin and corresponds to an evening conference for the participants of the Colloquium.

Group Theory lectures: The 50th anniversary of the colloquium has also been celebrated by a special session devoted to lectures of group theory:

1. General introduction on Group Theory
2. Applications of group theory to particle physics
3. Applications of group theory to condensed matter physics

These lectures were mainly devoted to students of Strasbourg University (PhD students as well as 1st and 2nd year Master students), with the aim of promoting active participation of the new generation. No prerequisite was needed to attend these lectures.

Scientific Program 2024

SRS
SwissMAP Research
Station in Les Diablerets

Winter school in mathematical physics
January 7-12
A. Alekseev (UNIGE), A. Cattaneo (UZH),
G. Felder (ETH Zurich), M. Podkopaeva (IHES),
T. Strobl (U. Lyon 1), A. Szenes (UNIGE).

Quantum topology biennial: focus on representation theory
January 14-19
A. Beliakova (UZH), O. Kivinen (EPF Lausanne),
A. Lachowska (EPF Lausanne), Y. Qi (U. Virginia),
L-H. Robert (U. Clermont-Auvergne).

Conformal field theory 3 ways: integrable, probabilistic, and supersymmetric
January 21-26
F. Del Monte (U. Montreal), H. Desiraju (U. Sydney),
A. Grassi (CERN & UNIGE), V. Vargas (UNIGE).

Workshop on the enumerative geometry of the Hilbert scheme of points
January 28 - February 2
G. Bérczi (U. Aarhus), A. Szenes (UNIGE).

Phase mixing, kinetic theory and fluid mechanics
February 4-9
M. Coti Zelati (Imperial College London),
M. Iacobelli (ETH Zurich).

Quantum metrology in many-body open systems
February 11-16
N. Brunner (UNIGE), G. Haack (UNIGE),
P. Lipka-Bartosik (UNIGE), M. Mehboudi (UNIGE),
M. Perarnau-Llobet (UNIGE), P. Sekatski (UNIGE).

Workshop in mathematical physics 2024
February 18-23
A. Logunov (UNIGE), S. Smirnov (UNIGE).

Quantum information
February 25 - March 1
M. Christandl (U. Copenhagen),
R. Renner (ETH Zurich).

Advanced lectures in physics in Switzerland
May 12-17
R. Baumgartner (UNIGE), A. Florio (Brookhaven NL),
V. Pellizzani (UNIBE), D. Youmans (U. Heidelberg).

Gravitational physics and its mathematical analysis
June 2-7
P. Hintz (ETH Zurich), C. Kehle (ETH Zurich),
G. Moschidis (EPF Lausanne).

Birational geometry and dynamics
June 30 - July 5
F. Bernasconi (EPF Lausanne), J. Blanc (UNIBAS),
A. Bot (UNIBAS), Z. Patakfalvi (EPF Lausanne),
J. Schneider (EPF Lausanne),
E. Yasinsky (Ecole Polytechnique).

Quantum key distribution summer school
August 18-23
R. Renner (ETH Zurich), M. Sandfuchs (ETH Zurich),
R. Wolf (ETH Zurich).

Topologically recursive behaviors
August 25-30
D. Lewanski (U. Trieste), N. Orantin (UNIGE).

Matrix x IMAGINARY
August 31 - September 4
S. Fiorelli (UNIGE), C. Lawrence (MoMath),
A.D. Matt (IMAGINARY), E. Raphael (UNIGE).

Quantization in representation theory, derived algebraic geometry, and gauge theory
September 15-20
A. Appel (U. Parma), L. Bossinger (UNAM México),
G. Felder (ETH Zurich), M. Porta (U. Strasbourg),
F. Sala (U. Pisa), O. Schiffmann (U. Paris-Saclay).

12th International conference on the Exact Renormalization Group 2024 (ERG 2024)
September 22-27
L. Classen (MPI Stuttgart), N. Defenu (ETH Zurich),
F. Rennecke (JLU Giessen), L. Zambelli (INFN-Bologna).

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contact@swissmaprs.ch

UNIVERSITÉ DE GENÈVE   **ETH** *zürich*   Swiss National Science Foundation   SwissMAP
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Time's Arrow

Scientific anniversaries

1923, Eddington published *The Mathematical Theory of Relativity*.

March, 1948, Schwinger and Feynman introduced quantum electrodynamics at the Pocono Conference.

Awards and honors

The 2023 Wolf Prize has been awarded to Ingrid Daubechies.

Forthcoming personal celebrations

5-7 July, 2023: Random Matrices from Quantum Chaos to the Riemann Zeta Function: A Celebration in Honour of Jon Keating's 60th Birthday.

Lost luminaries

George Hagedorn, 10 March 2023.

Christopher King, 15 March, 2023.

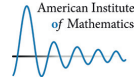Readers are encouraged to send items for "Time's Arrow" to bulletin@iamp.org.

Award Deadlines

Nominations for the new Elias M. Stein Prize for New Perspectives in Analysis are open and will close on 30 June.
See https://community.ams.org/prizes-awards/paview.cgi?parent_id=54 for more details.

Nominations for the 2024 Heineman Prize are due by 1 June, 2023.
See https://www.aps.org/programs/honors/prizes/heineman.cfm for more details.

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University of **BRISTOL**
School of Mathematics

A Celebration in Honour of Jon Keating's 60th Birthday

Random Matrices from Quantum Chaos to the Riemann Zeta Function

A three-day conference to celebrate the 60th birthday of Jon Keating. The meeting will showcase recent results in the areas of mathematics to which Jon Keating has contributed and will feature mathematicians working at the interface of quantum chaos, analytic number theory, probability and random matrix theory.

Organisers: Emma Bailey (CUNY), Tamara Grava (Bristol and SISSA), Francesco Mezzadri (Bristol), Nina Snaith (Bristol) and Brian Winn (Loughborough)

**University of Bristol
5 – 7 July 2023**

Speakers:

Louis-Pierre Arguin CUNY

Emma Bailey CUNY

Michael Berry Bristol

Brian Conrey AIM

Neil O'Connell UCD

Alexandra Florea UC Irvine

Yan Fyodorov KCL

Alice Guionnet Lyon/CNRS

Alexander Its IUPUI

Jens Marklof Bristol

Zeev Rudnick Tel Aviv

Peter Sarnak Princeton/IAS

Nick Simm Sussex

Kannan Soundararajan Stanford

Public Lecture:
5 July 2023, 5-6 pm
Persi Diaconis Stanford

Photo: Chrystal Cherniwchan

Please contact
heilbronn-coordinator@bristol.ac.uk
for further information, or visit heilbronn.ac.uk/events

Funding is available to support a limited number of UK-based PhD students and Early Career Researchers. Support for US-based Early Career Researchers might be available pending approval. We also welcome applications for caring costs.

Scan me to register

News from the IAMP Executive Committee

New individual members

IAMP welcomes the following new members

1. PROFESSOR ADAM SAWICKI, Center for Theoretical Physics, Polish Academy of Sciences,

2. DOCTOR CAMBYSE ROUZÉ, Technical University of Munich,

3. PROFESSOR GIUSEPPE GAETA, Università degli Studi di Milano,

4. DOCTOR SASCHA LILL, Università degli Studi di Milano,

5. DOCTOR FAEZEH KHODABANDEHLOU, KU Leuven, Belgium

6. DOCTOR ELI HAWKINS, The University of York, UK ,

7. DOCTOR ATSUSHI HIGUCHI, The University of York, UK,

8. DOCTOR SAMUEL CRAWFORD, The University of York, UK,

9. DOCTOR MARIA STELLA ADAMO, University of Tokyo, Japan

10. MARRIUM CHUGHTAI, New Milton, UK,

11. PROFESSOR CHIHIRO MATSUI, University of Tokyo, Japan,

12. PROFESSOR JULIE ROWLETT, Chalmers University, Gothenburg, Sweden.

Recent conference announcements

Puglia Summer Trimester 2023

April 17-July 10, 2023, at University of Bari, Italy.

Great Lakes Mathematical Physics Meeting

June 9-11, 2023, at Oberlin College, Ohio USA.

Contemporary Analysis and its Applications

June 19-23, 2023, at Portoroz, Slovenia.

Correlations in Mathematical Quantum Mechanics

June 21-23, 2023, at Copenhagen University, Denmark.

Hausdorff School: Recent Advances in Quantum and Statistical Mechanics

June 26-30, 2023, at the Hausdorff Center for Mathematics, Bonn, Germany.

The XII. International Symposium on Quantum Theory and Symmetries (QTS12)

July 24 - July 28, 2023, at Czech Technical University in Prague, Czech Republic.

Current Topics in Mathematical Physics

July 31 - August 4, 2023, at Faculty of Physics, University of Warsaw, Poland.

VIASM-IAMP Summer School in Mathematical Physics

August 1-5, 2023, at Quy Nhon University Quy Nhon, Vietnam.

Finite Dimensional Integrable Systems in Geometry and Mathematical Physics (FDIS 2023)

August 7-11, 2023, at University of Antwerp in Belgium.

For an updated list of academic job announcements in mathematical physics and related fields visit

http://www.iamp.org/page.php?page=page_positions

Michael Loss (IAMP Secretary)

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