

IAMP News Bulletin

October 2020



International Association of Mathematical Physics

International Association of Mathematical Physics News Bulletin, October 2020

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Cover picture: A view of Lake Geneva, taken by E. Harrell. Geneva is the site of ICMP 2021.



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News Bulletin (International Association of Mathematical Physics)

Silver linings in the pandemic cloud

by EVANS HARRELL (Atlanta)



These are trying times for mathematical physicists, with threats to our health and stressful changes in our career options, workplaces, and homes. Most of us have seen conferences and research travel collapse this year and we have come to expect that items we used to rely on are often not available when we want them. Deadlines pass. (The alert reader may notice that this issue of the *News Bulletin* is shorter than usual.)

Really, though, we can be grateful to find ourselves better off than most during the pandemic. Our work moves online much more smoothly than even that of other scientists with data to collect and laboratories to manage. Professional societies including AMS, APS, and EMS have provided useful information and good resources for researchers, available on their websites. Rather than canceling, some conferences in our area managed to shift online even at the height of the global lockdown. For instance, although the Central Sectional Meeting of the American Mathematical Society in April was canceled, the special session on spectral theory simply shifted online, and did so successfully enough to spawn an ongoing weekly online seminar. Online seminars like the One World Seminar announced in the July issue of the *News Bulletin* are proliferating, and entire conferences are being organized as on-line events. A recent case in point was Ari Laptev's very well organized 70th Birthday Conference, globally hosted by the University of Stuttgart.

Ari Laptev's 70th birthday conference

August 12 - 13, 2020

The conference is transmitted via Zoom

Speakers:

R. Benguria (Santiago)
M. Esteban (Paris)
R. Frank (Caltech, LMU)
E.H. Lieb (Princeton)
B. Simon (Caltech)
S. Smirnov (Geneva)
S.T. Yau (Harvard)

Organizers:

Pavel Exner (CAS & CTU, Prague)
Rupert Frank (Caltech & LMU Munich)
Fritz Gesztesy (Baylor University, Waco)
Helge Holden (NTNU, Trondheim)
Timo Weidl (University of Stuttgart)

Host of the conference:

NTNU Norwegian University of Science and
Technology, Trondheim, Norway

For registration see:

[https://www.iadm.uni-stuttgart.de/
ari-laptevs-70th-birthday-conference/](https://www.iadm.uni-stuttgart.de/ari-laptevs-70th-birthday-conference/)



Congratulations, Ari!

While we may miss the camaraderie to be found at in-person meetings and seminars, online talks have some distinct advantages: They draw on a much larger pool of speakers than any given departmental seminar could aspire to, and the audience is also wider. Online seminars have been a particular boon

to researchers in developing countries, who can participate just as conveniently as mathematicians and physicists in major universities in rich nations. In that respect, the pandemic has brought the research community closer together. The fact that videorecording of talks is being widely accepted is further adding to the resources at the command of students and scholars alike.

As online research seminars and conferences become the norm, how do you find out about them? You may receive sporadic announcements from organizers of in listservs or check organizations such as the AMS for listings, and of course, “Google is your friend,” but the information is a bit scattered and in many cases you will not find out about a meeting without being in the loop already. The most comprehensive listing in mathematics, physics, and some other sciences of which we are aware is researchseminars.org. It is good, but not complete - at the time of this writing an internet search turned up many mathematical physics seminars that are not listed there, typically departmental seminars that have opened to the world but which have evidently not actively sought more participants.

Educational activities have on the whole been more impacted than research in mathematical physics, but some of the same silver linings are to be found, as many academics have been generous in openly sharing materials they have produced. For those whose educational activities extend beyond the universities, institutions like the [National Museum of Mathematics](https://www.math.museum) and the [Julia Robinson Mathematics Festival](https://www.juliarobinsonmathfestival.org) have actively moved online, and are wonderful resources for recreational and educational mathematics.

Even when the pandemic is behind us at some uncertain date in the future, mathematical physics is unlikely to operate exactly as it did a year or more ago. The *News Bulletin* is here to be a resource to help IAMP members adapt. We encourage readers to submit contributions describing how you have coped and opportunities you have encountered, and we welcome suggestions as to how this publication can be of service.

Evans Harrell
Editor

XX International Congress on Mathematical Physics Geneva, August 2-7, 2021

The International Congress on Mathematical Physics (ICMP) is the most important conference of the International Association of Mathematical Physics (IAMP). In 2021 the Congress will be held in Geneva, 2-7 August, 2021, at the International Conference Centre (CICG). The organizational aspects of the Congress are handled by the Swiss National Center of Competence in Research SwissMAP (The Mathematics of Physics); see <https://www.nccr-swissmap.ch>.

The organization of the Congress is well under way. The list of plenary and thematic session speakers, together with other useful information, can already be found at the Congress webpage <https://www.icmp2021.com>. As usual, the Congress will be preceded by the Young Researcher Symposium (YRS) that will be held at the University of Geneva, July 29-31, 2021.

Registration for YRS and ICMP, application for financial help for junior participants, and abstract submission (deadline February 15, 2021) will open soon (early November) and will be accessible through the Congress webpage.

Because of the uncertainty related to the COVID 19 pandemic, we are currently planning to hold YRS and ICMP in physical presence (complying with the Swiss Federal Office of Public Health safety rules at the time of the event) and also to stream talks for participants that are unable to travel to Geneva. For this reason, we will offer two separate registration options, one for full on-site participation and one for remote participation with a reduced fee. At any time, participants will be able to upgrade to on-site participation or to downgrade to remote participation, at essentially no additional cost. We very much hope that by next summer the situation will improve so that we will be able to welcome many of you in Geneva!

Switzerland and Geneva are proud to host the world of mathematical physics in 2021. The success of the Congress will be a further testament to the strength and vitality of our community. On the behalf of the IAMP, we would like to invite all the members of the IAMP to attend the ICMP 2021!

Anton Alekseev (University of Geneva)

Benjamin Schlein (University of Zurich)

Chairs of the Local Organizing Committee

Anton Alekseev wins 2020 ESI Medal

The Medal of the Erwin Schrödinger Institute for Mathematics and Physics

The *Medal of the Erwin Schrödinger International Institute for Mathematics and Physics*, or ESI-Medal, awarded in 2020 for the first time, has been created to recognize outstanding achievements in any area of mathematics or physics, including contributions at the interface of the two fields.

The ESI-Medal is awarded annually and emphasis is generally given to recent achievements not older than ten years. There is no age limitation for the recipient and ordinarily the ESI-Medal is awarded to one person.

The recipient of the ESI-Medal receives a medal, a certificate and a monetary award of 4,000 Euro.

Nominations for the ESI-Medal can be made by organizers of ESI Thematic Programmes taking place in the year following the nomination deadline, former members of the Scientific Advisory Board (SAB) of the ESI, former recipients of the ESI-Medal, former Directors of the ESI and the President of the ESI Association. The recipient is selected by the Scientific Advisory Board of the ESI.

ESI Medal 2020

The Medal of the Erwin Schrödinger Institute for Mathematics and Physics for the year 2020 has been awarded to Anton Alekseev from the University of Geneva.

Prof. Alekseev is honored for his recent outstanding contributions to mathematics, in particular for the discovery of the link between the Grothendieck-Teichmüller group and the long-standing Kashiwara-Vergne problem in Lie theory, for the program of tropicalization of Poisson structures, and for the proof of the Goldman-Turaev formality in 2-dimensional topology. His work unites brilliant intuition, deep knowledge, and remarkable technical skills.

The award ceremony took place on September 24, 2020, at the Erwin Schrödinger Institute.



Anton Alekseev

Anton Alekseev studied at the Leningrad State University and was trained at the Steklov Mathematical Institute in St. Petersburg, where he obtained his PhD in Mathematical Physics in 1991. After research positions in Zurich and Uppsala, he became full professor for mathematics at the University of Geneva in 2001.

Alekseev has worked on a wide range of topics in mathematical physics and pure mathematics including algebra and geometry, as well as mechanics and field theory. He has made seminal contributions in these disciplines, and often his work uncovers connections and unexpected links between them.

His works on the Kashiwara-Vergne conjecture on the structure of the Baker-Campbell-Hausdorff formula in Lie theory are groundbreaking. With E. Meinrenken he obtained a proof in 2006, and in further works with C. Torossian and others he uncovered surprising relations of this algebraic problem to the theory of Drinfeld associators and later also to the topology of 2-dimensional surfaces.

Webpage of Prof. Alekseev: <https://www.unige.ch/math/en/people/alekseev>

Photograph of Anton Alekseev ©NCCR SwissMAP

Invitation to the ceremony reprinted with permission from the Erwin Schrödinger Institute

ESI MEDAL 2020 · AWARD CEREMONY



ESI



universität
wien

SEPTEMBER 24, 2020

AT THE ESI, BOLTZMANN LECTURE HALL



Erwin Schrödinger International
Institute for Mathematics and Physics

Boltzmannngasse 9
1090 Vienna / Austria
www.esi.ac.at

ESI Medal 2020

Award Ceremony on September 24, 2020
at the ESI, Boltzmann Lecture Hall

The Medal of the Erwin Schrödinger International Institute for Mathematics and Physics, or ESI Medal, awarded in 2020 for the first time, has been created to recognize outstanding achievements in any area of mathematics or physics, including contributions at the interface of the two fields.

Prof. Anton Alekseev, University of Geneva, receives the first ESI Medal for his outstanding contributions to mathematics. In particular for the discovery of the link between the Grothendieck-Teichmüller group and the long-standing Kashiwara-Vergne problem in Lie theory, for the program of tropicalization of Poisson structures, and for the proof of the Goldman-Turaev formality in 2-dimensional topology. His work unites brilliant intuition, deep knowledge, and remarkable technical skills.

14:00 Welcome

Prof. Christoph Dellago
ESI Director, University of Vienna

14:05 Laudatio

Prof. Thomas Strobl
University of Lyon 1

14:45 Break

15:00 Award—ESI Medal

Prof. Christoph Dellago
ESI Director, University of Vienna

15:15 Award Lecture

Prof. Anton Alekseev
University of Geneva

16:00 Closing

Prof. Christoph Dellago
ESI Director, University of Vienna

ESI MEDAL 2020 • AWARD CEREMONY

Letter to the Editor

From: Norbert Euler, outgoing Editor-in-Chief of the *Journal of Nonlinear Mathematical Physics*.

I hereby wish to inform the mathematical physics community of my resignation as Editor-in-Chief of the *Journal of Nonlinear Mathematical Physics*, which I submitted to the president/owner of Atlantis Press, Zeger Karssen, on 30 September 2020. The entire Editorial Board has also since resigned. My resignation is in protest to the policies of Atlantis Press, in particular the policy that requires all authors who wish to publish in this journal to pay a compulsory article processing fee (750 euros) that was introduced against my will on the 1st of September 2020. Unfortunately I am legally bound by a contract with Atlantis Press to continue to serve as Editor-in-Chief until 30 March 2021.

Feel free to contact me if you have any questions: Euler199@gmail.com.

Editorial Board Members

(all resigned between 30 September to 3 October 2020):

Norbert Euler - Jinan University, Guangzhou, China, Editor-in-Chief

Denis Blackmore - New Jersey Institute of Technology, USA

Maciej Blaszk - A. Mickiewicz University, Poland

Francesco Calogero - University of Rome "La Sapienza", Italy

Adrian Constantin - University of Vienna, Austria

Robert Conte - Ecole normale supérieure de Paris-Saclay, France.

Vladimir Dorodnitsyn - Keldysh Institute of Applied Mathematics of Russian Academy of Science, Russia

Pilar Estevez - University of Salamanca, Spain

Eugene V. Ferapontov - Loughborough University, UK

Athanasios S. Fokas - University of Cambridge, UK

Laszlo Feher - University of Szeged and Wigner RCP, Hungary

Giuseppe Gaeta - University of Milan & SMRI, Italy

Basil Grammaticos - University of Paris VII, France
Jarmo Hietarinta - University of Turku, Finland
Helge Holden - Norwegian University of Science and Technology, Norway
Andrew N W Hone - University of Kent, UK
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Nalini Joshi - University of Sydney, Australia
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Arthemy V. Kiselev - University of Groningen, The Netherlands
Boris Konopelchenko - Universita di Lecce, Italy
Dimitry Leites - Stockholm University, Sweden, and NYU AD
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Paolo Maria Santini - University of Roma "La Sapienza", Italy
Wolfgang K. Schief - The University of New South Wales, Australia
Yuri B. Suris - Technische Universitaet Berlin, Germany
Alexander P. Veselov - Loughborough University, UK
Da-jun Zhang - Shanghai University, China

Reminder to vote by October 31

Dear IAMP Member,

This is a reminder for the ongoing election of the new IAMP Executive Committee. If you have already voted, you can ignore this message. For everybody else, please be reminded that the deadline for casting your vote is

October 31, 2020, 24:00 (CET).

Voting instructions follow below. Please read them carefully.

With best regards,

Robert Seiringer, IAMP President
Benjamin Schlein, IAMP Secretary
Simone Warzel, IAMP Treasurer

VOTING INSTRUCTIONS

1. You are eligible to vote if you are ordinary (O) or lifetime (L) member; the system will not allow you to cast your vote if you are not O or L. If you think you have erroneously been put in the wrong category, please send an email to iamp@ma.tum.de explaining your situation.
2. Go to the webpage
<https://edu3.zfw.etc.tu-bs.de/iamp>
and login with your username and password.
3. Your username is your last (family) name (without umlauts and other special characters, case insensitive). In case of some common family names, the correct login name is Familyname-Firstinitial e.g. Horng-Tzer Yau will have login name Yau-H. If you have problem with finding your login name, contact iamp@ma.tum.de.
4. Your password is the one you generated yourself when registered. For older members, their old 10 digit MemberID is still valid (unless they changed it). Those members who have forgotten it, can click on "Forgot login". The system will send you an automatically generated password (not your MemberID) to your email account on our record (this is the same address to which this message was sent). If you do not receive the new password soon after clicking on "Forgot Login" then the e-mail address recorded in the iamp database may be out of date. So, contact iamp@ma.tum.de in this case.
5. Click on "Election Process", you will see IAMP Ballot 2020. Click on "Election".

-
6. You will see, in alphabetical order, the 24 candidates that have been nominated by the current Executive Committee and their research area.

In order to ensure that many different subfields of Mathematical Physics will be represented in the next EC, the current EC has grouped the 24 recommended candidates into the four research areas:

Area 1: Equilibrium and non-equilibrium statistical mechanics, quantum many-body theory and condensed matter physics.

Area 2: Quantum field theory, string theory and quantum gravity, integrable systems.

Area 3: PDEs, general relativity, dynamical systems.

Area 4: Quantum mechanics and spectral theory, quantum information, probability and random structures.

We suggest to spread your vote over the different areas, and recommend that you vote for at most 3 candidates from each area.

You can also find links to the candidate's webpages. You can tick the box next to the name of the candidate if you wish to elect him/her. At the bottom of the page you may add new nominees if you wish (click on "add nominee", then the system allows you to search by last name/first name for eligible members). Note that by adding a new nominee you have not yet voted for this person. This additionally requires that you tick the box next to the name - just as for the 24 candidates nominated by the EC. Recall that only members in good standing who are willing to serve can become members of the EC. Eight members of the current Executive Committee (Jan Dereziński, Alessandro Giuliani, Bernard Helffer, Vojkan Jaksic, Mathieu Lewin, Benjamin Schlein, Robert Seiringer, Simone Warzel) are not eligible because they have reached the two-term limit.

If you add a new nominee, then the ticks you previously placed in other boxes will be removed by the program, you have to tick them again. It is therefore advisable first to add new nominees if you wish and only after that tick the boxes (sorry for this inconvenience of the program).

7. You have to cast not more than 12 votes altogether. You can vote for less than 12 candidates, but not for more.
8. At the end of the selection, click on "Vote" at the bottom of the page. This is your final and irrevocable step, we will not be able to invalidate your vote any more. Before you click on "Vote", you can go back and change your votes, new nominees etc. but after clicking "Vote", your vote is final. So before you click on "Vote" check again your boxes.
9. The deadline for casting your vote is October 31, 2020, 24:00 (CET).

News from the IAMP Executive Committee

New individual members

IAMP welcomes the following new members

1. PROF. ZHENGWEI LIU, Tsinghua University, Beijing, China.
2. PROF. GERARDO MORSELLA, Tor Vergata University, Roma, Italy.
3. DR. LEA BOSSMANN, IST Austria, Klosterneuburg, Austria.
4. PROF. VOLKER BETZ, TU Darmstadt, Germany.
5. PROF. MAX LEIN, Tohoku University, Japan.

Recent conference announcements

Challenges and Recent Advances in Mathematical Physics

Jan. 20-22, 2021. University of Bristol, online conference.

Open positions

PhD Fellowships at Charles University

The Institute of Theoretical Physics, Charles University in Prague, offers a number of PhD fellowships for the next academic year; for the proposed topics and funding information see the pages

<https://www.mff.cuni.cz/en/physicsphd/fl/program-overview>

<https://www.mff.cuni.cz/en/physicsphd/fl/phd-projects-funding>

For more information on these positions and for an updated list of academic job announcements in mathematical physics and related fields visit

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

Benjamin Schlein (IAMP Secretary)

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