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On the cover: The Valencia Airport (VLC) started with the Airport Act of 1927. It was formally opened in March 1933 and the first scheduled flight, on the Madrid-Valencia route, was September 1, 1934. Located at coordinates 39.4894°N, 0.4817°W, the current passenger terminal was opened to the public in 1983.



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The ICIAM newsletter was created to express the interests of our membership and partner organizations and the views expressed in this newsletter are those of the authors and do not necessarily represent those of ICIAM or the Editorial team. We welcome articles and letters from members and associations, announcing events, on-site reports from events and industry news. www.iciam.org
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2018 Board Meeting

The next ICIAM Board meeting will be held in Philadelphia, Pennsylvania, USA on May 12th, 2018, at 8:30am, at the Club Quarters Hotel - Philadelphia. The Board meeting will be preceded by a two-day workshop on industrial and applied mathematics at Drexel University (drexel.edu/coas/academics/departmentscenters/mathematics) on May 10–11, 2018 (details and length still to be confirmed). The workshop will be hosted by SIAM and Drexel University. Those of you willing to present a talk at this workshop are invited to visit the meeting page (www.siam.org/meetings/iciam18/index.php) and submit a title and abstract via an online abstract submission site.

Registration to the workshop and the Board meeting through this google form (goo.gl/forms/BhRYcc5z5H31ftXv1). Please contact Annie Imperatrice, (imperatrice@siam.org), if you have difficulty accessing or filling out either form. If you have any other questions please email secretary@iciam.org

Hotels

A limited number of rooms have been reserved, at the Club Quarters Hotel - Philadelphia for ICIAM Delegates and Workshop participants with special prices during the period May 9th–May 12th, 2018. The hotel will be the location of the Board meeting. It is well connected by subway/bus to the workshop venue and is about a 30 minute walk from the workshop venue. Rooms will be allocated on a first come first served basis. The cut-off date for reserving a room in the block is April 9, 2018. Please reserve your room by using one of the following methods:

- Reserve a room online by clicking this link (<https://gc.synxis.com/rez.aspx?Hotel=58313&Chain=14601&arrive=5/9/2018&depart=5/13/2018&adult=1&child=0&group=ICIAM18>)
- Email Club Quarters Hotel Member Services at memberservices@clubquarters.com

- Call Club Quarters Hotel Member Services at (1)203-905-2100

If you choose to email or call Member Services, please reference the group code: ICIAM18. Complete hotel information can be found at: www.siam.org/meetings/iciam18/hotel.php

Visa Information

International attendees at conferences in the US may already be aware that there have been changes to the visa program for scientific visitors, which affect even people from visa waiver countries. The site sites.nationalacademies.org/PGA/biso/visas/index.htm, maintained by The National Academies, provides guidance on obtaining the necessary documents. As of January 12, 2009, a valid ESTA approval is required for all Visa Waiver Program (VWP) to travel to the United States. Please visit travel.state.gov/content/visas/english/business.html for additional information and procedures regarding the visa waiver program as maintained by the US Department of State.

Letter of Invitation

Presenters and delegates in need of a Letter of Invitation to assist in the visa application process, please fill out the Letter of Invitation Request Form link to www.siam.org/meetings/letter_form.php. In the field for “Name of Conference,” enter “2018 ICIAM Board Meeting” If you are presenting, please enter the “Title of your Presentation.” If you are not presenting, enter “Delegate” and the organization you are representing in that field. Please allow three to four weeks for processing and delivery. Question can be sent to meetings@siam.org, but please mention the “2018 ICIAM Board Meeting” in the subject line.

Subscribing to the ICIAM Newsletter

The ICIAM Newsletter appears quarterly, in electronic form, in January, April, July and October. Issues are posted on the ICIAM website at iciam.org/dianoia. If you would like to be notified by e-mail when a new

issue is available, please subscribe to the Newsletter. There is no charge for subscriptions. To subscribe or unsubscribe, visit the website given above.

The Olga Taussky-Todd Lecture at ICIAM 2019

The International Council for Industrial and Applied Mathematics has selected Professor Françoise Marie Louise Tisseur of the School of Mathematics, University of Manchester, to deliver the Olga Taussky-Todd Lecture at the International Congress on Industrial and Applied Mathematics, ICIAM 2019, in Valencia, Spain. This Congress is the most important international event in applied and industrial mathematics, held once every four years under the auspices of the International Council for Industrial and Applied Mathematics.

Françoise Tisseur is a numerical analyst specializing in numerical linear algebra. Her contributions cover a whole range of topics from theoretical analysis, perturbation theory, numerical methods, and software development, to real-world applications. She is at the forefront of research on the theory and numerical solution of nonlinear eigenvalue problems, in particular polynomial eigenvalue problems. These problems arise in a wide variety of science and engineering applications, such as the dynamic analysis of mechanical systems (where the eigenvalues represent vibrational frequencies), the linear stability of flows in mechanics, and electronic band structure calculations for photonic crystals.

Françoise has made major contributions in the analysis, perturbation theory, and numerical solution of polynomial eigenvalue problems, an emerging topic when she began working on it. Her work marks the first analysis showing that the usual approach to solve these problems is very often not the best from the point of view of numerical stability. She has made major contributions to a fundamental open problem in the field, the derivation of a method that works directly on the polynomial eigenvalue problems. An important step towards solving this problem was the development of a new class of transformations allowing one to treat the problem directly with numerical techniques.

Pervading much of Françoise's work is the theme of exploiting structure in matrix problems. She has devoted a major effort to developing tools for analyzing structured problems, deriving new or improved algorithms that exploit structure, and carrying out error analysis to reveal the numerical properties of structure-exploiting algorithms, to enable comparison and improvement.

More recently, she adopted a tool from pure mathematics, tropical algebras. In the tropical setting, when combined with a valuation map, roots of polynomials, eigenvalues and singular values of matrices, and matrix factorizations offer order of magnitude approximations to the corresponding objects in the usual algebra. What makes tropical algebra a useful tool for numerical linear algebra is that these tropical analogues are usually cheaper to compute than those in the conventional alge-

bra. They can then be used in the design of preprocessing steps to improve the numerical behaviour of algorithms such as convergence and stability.

Professor Tisseur studied at the University of St.-Etienne, completing her Ph.D. in Numerical Analysis at the University of St.-Etienne in 1997. Following a postdoctoral position at the University of Tennessee she moved to the University of Manchester, where she is now Professor of Numerical Analysis and Director of the Manchester Institute for Mathematical Sciences.



Awards and Honors

Tisseur's work has garnered her many honors, among them the 2010 Whitehead Prize of the London Mathematics Society, the 2012 Adams Prize of the University of Cambridge, and a Royal Society Wolfson Research Merit Award. She is a Fellow of the Society for Industrial and Applied Mathematics.

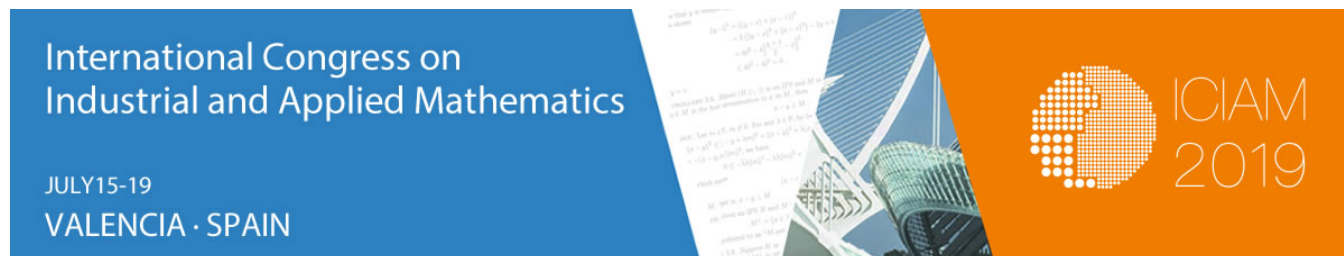
The Olga Taussky-Todd Lecture

The Olga Taussky-Todd Lecture is one of the invited lectures at the International Congress on Industrial and Applied Mathematics. This honour is conferred on a "woman who has made outstanding contributions in applied mathematics and/or scientific computation." The lecture is named in tribute to the memory of Olga Taussky-Todd, whose scientific legacy is in both theoretical and applied mathematics, and whose work exemplifies the qualities to be recognized. The Olga Taussky-Todd Lecture series was inaugurated in 2007 with a lecture by Pauline van den Driessche at ICIAM 2007 in Zurich. The lecturers since then have been Beatrice Pelloni (Vancouver, 2011), Éva Tardos (Beijing, 2015) and Françoise Tisseur (Valencia, 2019).

The Olga Taussky-Todd Lecture for ICIAM 2019

Lecturers are selected by a committee established by the ICIAM President, with advice from the Association for Women in Mathematics and European Women in Mathematics. Nominations are solicited from the mathematical sciences community. The Committee for the 2019 Lecture consisted of

- Barbara Lee Keyfitz, The Ohio State University, USA (Chair)
- Raymond Chan, The Chinese University of Hong Kong, Hong Kong
- Sofia C. Ohlede, University College London, UK
- Ruben D. Spies, Instituto de Matemática Aplicada del Litoral, Argentina
- Anna Karin Tornberg, KTH, Stockholm, Sweden



ICIAM 2019 Newsletter Announcement

Dear Colleagues,

We are pleased to announce that the next International Congress on Industrial and Applied Mathematics (ICIAM 2019) will be held in Valencia, Spain, on 15th–19th July 2019. Please visit www.iciam2019.com for information about the congress, including the list of invited **speakers**.

We cordially invite you to **signup** for our Newsletter, which will keep you fully updated on ICIAM 2019-Valencia.

We look forward to welcoming you to Valencia in 2019!

ICIAM 2019 Organizing Committee

ICIAM Announcements

2018 Officers' meeting in Prague

On March 8–9 the ICIAM Officers met in Prague for the Spring officers' meeting. The location was a very nice villa from the end of the 19th century, which is the property of the Czech Academy of Sciences. During the two days the Officers discussed current affairs, but above all, they prepared the Board meeting that will take place in Philadelphia on May 12th. This past year the ICIAM prize committees have been working to choose those who will receive the ICIAM prizes in Valencia in 2019. The functioning of those committees has shown that some changes would be desirable in the rules that are followed by them. The Officers had long discussions about which changes to make and a new set of rules will be presented to the Board for discussion.

The Officers wish to thank Zdeněk Strakoš and Miro

Rozložník for kindly organizing the meeting and the Institute of Physics and Mathematics of Charles University and The Czech Academy of Sciences for the hospitality.



New International Organisation for Science

by TOM MITSUI

International Science Council, the new international organisation for science, is going to start officially this coming July. This is the biggest outcome of the 32nd General Assembly (GA) of ICSU (International Council for Science) and the Joint Meeting (JM) of ICSU and ISSC (International Social Science Council), which were held in Taipei, Taiwan from the 23rd to 26th of October, 2017 and were hosted at the Academy of Sciences located in Taipei (AST). At these meetings a historical decision was made to merge the two organizations into one. As the reader of *Dianoia* knows, ICIAM is a scientific associate member of ICSU, so this merger affects our membership as well. Since I attended the both meetings in Taipei, I'll try to explain the merger process and its possible impact upon us.

Indeed the merger plan had been discussed at ICSU and ISSC for a considerably long time. The extraordinary GA of ICSU in October of 2016 in Oslo had decided to start the merger plan with ISSC and to set up two working groups jointly organized with ISSC for a more concrete plan for the merger. They were the Strategic Working Group (SWG) and the Transition Task Force (TTF), both consisted of representatives from ICSU and ISSC. Therefore, the 32nd GA and JM focused their discussion on the reports submitted by SWG and TTF.

The SWG's report entitled 'Advancing science as a global public good' states the following

The vision of the Council (the new organization) is to advance science as a global public good. Scientific knowledge, data and expertise must be universally accessible and its benefits universally shared. The practice of science must be inclusive and equitable, also in opportunities for scientific education and capacity development.

According to the vision, it raises five objectives to act as a global voice for science. Of course, I believe they are not different from the present vision and missions of ICSU, but rather make them broadened by extending members of the new organization. During the course of discussion at both meetings, many questions and opinions were expressed by the participants. Some of them were:

- What is the merit of the merger? Can it be more than 'one plus one'?
- Can the new organization be a unique one? Does it attract attention of outside people?
- Will the merger increase the visibility of science?

After active discussions at both meetings, in the morning of the first day of the Joint Meeting the report was approved and reflected the action plan of ISC.

TTF submitted three reports:

- ♠ Draft Statutes and Rules of Procedure
- ♠ Proposal for the development of a new dues structure
- ♠ Legal mechanism, including draft Merger Treaty

Since the merger is quite significant, extensive discussions were held at both meetings. For the draft of the first 'Draft Statutes and...', many modifications were proposed by the delegates. A few of them were eventually supported through a vote, hence the draft was basically approved. As a result, the new organization has a General Assembly as its highest authority, a Governing Board consisting of Officers and ten ordinary members and six Officers (the President, two Vice-Presidents, the President-Elect, the Treasurer, and the Secretary). The membership of the ISC has three categories: Member Unions and Associations, Member Organizations, and Affiliated Members. This is in fact a parallel shift of that of the present ICSU. Therefore, ICIAM will automatically be an affiliated member of ISC. The dues structure of ISC reflects the membership structure. In the first period of ISC (from 2018 to 2021) all members of ICSU and ISSC will continue to pay the dues that they had agreed to pay in 2017. This means no drastic change will happen in the finances of the ISC at its start.

The legal merger process is more complicated. Both ICSU and ISSC, which are registered in France, are non-governmental associations under the 1901 French Law on associations. TTF proposed and the JM approved one of the two possible means, which is called the merger-absorption process by the law. This is the absorption of the legal entity 'ISSC' by the legal entity 'ICSU.' Hence, a two-stage mechanism was prepared for a six-month procedure. When the merger plan was agreed upon by the two bodies, the first phase would start the Merger Treaty and decide the Date of Merger. Then, the date and place of the 2018 founding General Assembly and, according to the new Statutes and Rules of Procedure, the Election process for establishing a new Governing Board would start. After an extensive discussion JM approved the proposed mechanism unanimously in the morning session of the second day.

At the last morning session of the second day of the JM, a separate ballot for approval of the merger was started for ICSU and ISSC members. Since ICIAM is a Scientific Associate, we do not vote. However, the voting

result, which was announced at the beginning of the afternoon session, showed that among ISSC members 90% voted for yes and 10% for no, while ICSU members 97.6% for yes and 2.3% for no. Consequently the merger was finally approved by both bodies. I particularly noted that all the union members of ICSU voted for yes.

Then the discussion about the name of the new organization started. TTF prepared three potential names in advance. They were 'International Science Council', 'Science International,' and 'World Science Council.' Since no opinion was expressed to support 'Science International,' a ballot was proposed to select among the other two and was approved. The ballot, which was carried out according to the new rule reported that the name '**International Science Council**' obtained 56.01% support and became the new organization's title.

Executive Directors of ICSU and ISSC jointly proposed '**Roadmap towards implementation and launch of the new organization,**' the coming tasks of both organizations for the merger, are as follows:

1. finalise the legal implementations,
2. organise the founding GA,
3. manage the process of election of a Governing Board,
4. develop a branding and communications strategy for the new Council,
5. finalise and implement the new headquarters structure,
6. manage internal and external communications and outreach activities.

They were approved. At the last session, the JM selected the venue of the founding GA among two candidate places, Paris and Tokyo. Paris obtained the majority of the ballot and the GA and it was decided that the GA will be held there in the beginning of July 2018.

Henceforth, we are looking forward to the realization of the International Science Council as the new broadened international organization for science. Here are some of my own views and opinions. We should increase our commitment to the ISC to strengthen mathematics and its application to the whole science and scientists community. We also must pay attention to communicate to scientists in other disciplines through the new organization. The key will be a tight cooperation with IMU. To this end, we will seek to become a 'Member Union or Association' of the organization. From a financial point of view, the annual dues look like they will be manageable for us, assuming that we want to be a 'Band D' member. The problem will be to obtain support from other members. The adopted Statutes and Rules of Procedure state that adequate support for the application is required from at least 12 members, including at least three Member Unions or Associations and three Member Organizations. This is not so easy and IMU's support is crucial for our purpose.

Taketomo (Tom) Mitsui and now serving ICIAM as is Professor Emeritus of Nagoya University, Nagoya, Japan. He received his doctoral degree from Kyoto University and has been engaged with several universities, the last one was Doshisha University, Kyoto, Japan. His main research interest is numerical analysis of ordinary differential equations and related topics. He is a Fellow of Japan Society for industrial and Applied Mathematics, Officer at large.



A View of Applied Mathematics in Mexico

by JORGE X. VELASCO-HERNANDEZ

For several years now, the applied mathematics community in Mexico has been very active establishing and consolidating research groups in various institutes and universities in the country. This effort led by the major research institutions existing in Mexico (the National Autonomous University of Mexico (UNAM), the Center of Research and Advanced Studies (CINVESTAV), the Center for Research in Mathematics (CIMAT), Metropolitan Autonomous University (UAM) as well as several other State Universities has been enthusiastically supported by the mathematics community in the country.

The Mexican Mathematical Society (SMM) has been a central and very important actor in this effort. The

SMM is a national organization dedicated to the promotion and support of the mathematical sciences in general, that has had, along the years, an important and remarkable role in attracting bright young people to our profession through the co-sponsorship of publications at all levels (general public, students of all levels, and researchers), co-organization of activities, and providing financial aid to students at the undergraduate and graduate levels to attend the many mathematics related activities that are organized every year in the country. SMM mainly depends on federal resources to function and has an academic as well as social mission with the very important objective since its foundation in 1942, of taking the love and ap-

preciation of mathematics and mathematical thinking to the young at all levels of education.

This impulse to applied mathematics in the country has been aided by international initiatives too. Recently the Casa Matemática Oaxaca, a joint enterprise between Mexico, Canada, and the United States associated to the Banff International Research Station, started activities in the country bringing with it many researchers, ranging from junior faculty to the most famous and respected leaders in the different areas of mathematics, to Mexico through the organization of several workshops and research activities including applied mathematics. The topics covered in these activities include mathematical physics, earth sciences, cancer research, mathematical biology, computer science, and many others, establishing within the Mexican mathematical community an important substrate where they can grow and develop research lines and consolidate already mature and established research groups.

The founding of the Casa Matemática Oaxaca was fortunately coincident with another program lead by CONACyT (National Council for Science and Technology), the major federal institution dedicated to the promotion, support and development of science and technology in the country, that has positively affected the applied mathematical sciences. This program is the Cátedras para Jóvenes Investigadores (Professorships for Young Researchers). This program was instituted in 2014 and has had as a main objective since, to open positions to PhD graduates from the different graduate programs in the country and to repatriate young Mexican researchers who have graduated abroad, offering them the opportunity to work in Mexico commissioned in universities and research institutions. This program provides them with job security, a competitive salary and support for the development of their research lines. This program encompasses all areas of basic science and technology, in particular applied mathematics. Mexican institutions and universities have been able to reinforce their highly trained human resources in, for example, topological data analysis, biomathematics, optimization, industrial mathematics, among others thanks to this program.

This sudden growth and impulse is intimately tied to the genuine interest by CONACyT, UNAM, CINVESTAV, CIMAT, and the other leading institutions in mathematical sciences to cultivate and increase the opportunities in applied mathematics since they constitute the necessary substrate for the consolidation of a national program in technological innovation centered on the technological and economic needs of the country. The global economic situation, the fall in oil prices, and other economic factors have made it imperative to invest in the formation of applied mathematicians.

One of the latest efforts that is considered an important step necessary to further applied mathematics ac-

tivity in the country is to renew and make a reality the idea, that has been around for several years now, to firmly establish an activity group within the Society for Industrial and Applied Mathematics (SIAM) that could function as another reinforcer, center, and promoter of applied mathematics in the country. A large proportion of the people that do applied mathematics in Mexico have had their higher education in universities in the United States and given the prominent and international standing of SIAM, it is a natural and strategic initiative that can only result in both the benefit of the Mexican applied mathematics community and the broadening of the impact of SIAM as a promoter and leader in the field. Dr. Gerardo Hernández-Dueñas, a member of the Multidisciplinary Node in Applied Mathematics (one of the newest applied mathematics groups formally recognized at the Institute of Mathematics at UNAM) is leading the organization of MexSIAM, the acronym used to designate this idea.

Dr. Hernandez, a young PDE numerical analyst (University of Michigan, 2012), firmly believes that the Mexican applied mathematics community is more than ripe to retake the initiative and participate in a collegial and institutional manner with SIAM. MexSIAM was started in 2000 by a group of pioneers lead by Humberto Madrid, Pablo Barrera, David Romero, and Zeferino Parada. The main years of activity of MexSIAM were 2001–2003 counting always Barbara Keyfitz as an enthusiastic and active counterpart in the USA. In 2018 the initiative is being organized by Dr. Hernandez who with the help of a new generation of Mexican applied mathematicians and support from many of the original proponents plans to use the strengths of MexSIAM as a way of establishing a network of SIAM members both in Mexico, the USA, and other countries, for the organization of meetings, conferences, workshops and summer schools to join the several initiatives already underway in the area of applied mathematics in the country. This is a time ripe for the flourishing of applied mathematical sciences in Mexico. A new generation of applied mathematicians is taking the lead in this endeavour and we can only hope for a bright future and a healthy growth of applied mathematics as the force behind the technological development of our country.

Jorge Xicotencatl Velasco-Hernandez is Titular Researcher C at the Institute of Mathematics UNAM. He has a PhD from the Claremont Graduate School, and works in Mathematical Biology. He is a past-president of the Mexican Mathematical Society.



Looking Back

 by CHRISTIANE ROUSSEAU

The following article by Christiane Rousseau appeared in the January 2018 issue of the Electronic IMU Newsletter. We think it might be of interest to ICIAM members because it describes many activities of the IMU and ICSU, and programs in which ICIAM was and is involved. It speaks eloquently to the value of international collaboration.

I am now in my eighth (and last year) on the Executive Committee of the IMU. The mission of the IMU is to promote international collaboration in mathematical sciences. For the past eight years I have had the opportunity to contribute to this mission, and to experience first-hand how international collaboration in mathematics can make a difference.

The IMU endorsed the Mathematics of Planet Earth 2013 (MPE2013) initiative, which led to a collaboration highlighting the role of mathematical sciences in the study of our planet. The IMU is one scientific union inside the former International Council of Science (the former acronym ICSU came from "International Council of Scientific Unions"). At their General Assembly in Taipei (Taiwan) on October 22–23, 2017, the International Council of Science (ICSU) and the International Social Science Council (ISSC) voted to merge into the new International Science Council (ISC). In view of the urgency of limiting the global changes in climate and adapting to them, the new ISC will promote interdisciplinary collaboration in addressing planetary issues, and will also present a unified voice of science to the decision makers, the media, and the public.

The membership of IMU inside the International Science Council allows opportunities to collaborate with other unions. In 2013 and 2017, IMU co-organized with other unions networking capacity building workshops for young researchers. The 2013 workshop, "Mathematics of climate change, related hazards and risks," jointly with IUGG, IUTAM, and ICIAM, targeted Latin America, and the 2017 workshop "Global change impact and infectious species," jointly with IUBS and ICIAM, brought together young researchers from 17 different African countries. The ISC (former ICSU) grant program allowed the launch of the project "A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure it, How to Reduce it?" It is led by IMU through its Committee for Women in Mathematics (CWM) during the years 2017–2019.

Collaboration with UNESCO is also important to the IMU. On March 5 2013, IMU hosted the "Mathematics

of Planet Earth Day" at UNESCO and IMU is presently working on having UNESCO declare March 14 the International Day of Mathematics (IDM). This initiative raises enthusiasm, and is supported by many countries, and by ICMI, CWM, the African Mathematical Union (AMU), and ICIAM. The project is to promote the organization of outreach activities around the world on each March 14, potentially but not necessarily related to a chosen theme of the year. Material related to the theme will be available on the web, thus allowing countries to enlarge the spectrum of their traditional outreach activities.

I have been very privileged to represent IMU on all these committees and to make the case of the relevance of mathematical sciences in the mission of the International Science Council. The collaboration with other unions has been very fruitful and IMU and its sister unions inside ISC are looking forward to even greater collaboration in the future. For instance, the International Union of Pure and Applied Physics (IUPAP) is leading the project of an International Year of Basic Science for Development, and IMU has a natural role to play if the project moves forward.

During my years on the EC, I was also able to observe the development of mathematics in Africa, in particular when I represented IMU at the Next Einstein Forum in Dakar in March 2016. There I could feel that Africa is moving forward in developing science and mathematics education and research. In my opinion, the time has come for Africa to play an increased role in IMU in the years ahead.

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Christiane Rousseau has her PhD from the University of Montreal, where she is now a professor. She was President of the Canadian Mathematical Society from 2002 to 2004. Since 2011, she has been on the Executive Committee of the International Mathematical Union and she was vice-president for 2011–2014. As Director of the Centre de Recherches Mathématiques in 2013, she initiated "Mathematics of Planet Earth 2013," which

became a UNESCO International Year. Throughout her career, she has combined research, in dynamical systems, with leadership in outreach activities.



Report on the Gender Gap Regional Workshop NTNU

by A. NOVICK-COHEN, K. SAKO & G. YAN

The Gender-Gap in Science Regional Workshop NTNU took place November 7–8, 2017 at the National Taiwan Normal University in Taipei, Taiwan. ICIAM was represented by A. Novick-Cohen (Technion, Israel), K. Sako (NEC, Japan), and G. Yan (Chinese Academy of Sciences, China). Participants came from Taiwan (15), India (4), Japan (4), Australia (3), China (2), Israel (2), Thailand (2), France (1), Korea (1), Malaysia (1), Nepal (1), and USA (1). In all there were 36 female and 1 male attendees, representing a wide spectrum of international unions and councils, including ICIAM (3), the International Mathematics Union (IMU, 4), the Association for Computing Machinery (ACM, 1), the International Union of Pure and Applied Chemistry (IUPAC, 4), the International Union of Pure and Applied Physics (IUPAP, 3), International Astronomical Union (IAU, 2), the International Union of Biological Sciences (IUBS, 2), and more. This meeting was the first of three regional workshops which took place following an initial meeting in Paris (June 1–3, 2017) at the UNESCO Headquarters and the Institute Henry Poincaré (IHP) and prior to a second meeting to take place in Paris (June 11–12, 2018); a final conference is scheduled for 2019 in Trieste. For updates and further details see icsugendergapinscience.org

The goal of the workshop was formulated as “A global approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure it, How to reduce it?” Various specific tasks were addressed. This included aiding in the preparation of a questionnaire which is slated to reach 15K–45K respondents at various stages of STEM careers. The goal is to identify gender problems and obstacles within the STEM system, to establish a database which will allow policy recommendations and clarification of best practices. The attendees divided into five groups which discussed and commented on a preliminary version of the questionnaire which had been prepared by Dr. Rachel Ivie, Director of the Statistical Research Center (SRC) at the American Institute of Physics (AIP). The emphasis was on trying to make the questionnaire as succinct as possible, to facilitate response, while endeavouring to see that a wide spectrum of issues related to gender gap were addressed, and that no important issues had been overlooked. The questionnaire has since received additional reviews at the 2nd Regional Workshop (Bogotá, Colombia, Nov 22–24, 2017) and the 3rd Regional Workshop (Muizenberg, South Africa, Dec 1–2, 2017).

In addition to working on the questionnaire, there were 18 presentations by attendees at the meeting. Topics discussed included unconscious biases, perception and



K. Sako, A. Novick-Cohen & G. Yan.

experience of discrimination, micro-aggression, barriers and obstructions, the role of self-confidence, counselling and mentorship in overcoming pipeline leakage on the path towards STEM careers. Many statistics were presented. Many initiatives implemented in various countries were outlined.

Part of the emphasis and excitement of the meeting was in the gathering together of women from a wide range of backgrounds and disciplines, all working in STEM fields in their respective countries. Through the efforts of Mei-Hung Chiu (IUPAC, NTNU) and her student, Hong-ming Liaw, a booklet was assembled containing short biographies of the participants and abstracts from the presentations. The meeting had somewhat of a different flavor than your typical math meeting, in that the emphasis was not on a particular scientific direction or field, but rather on the structure of the mathematics and scientific community as a whole.

While trying to identify and solve all gender-gap issues seems admirable and ambitious though definitely somewhat amorphous, perhaps the take-away message is that the meeting itself engendered support, with the differences between Nepal, France, and everywhere else seeming relatively minor.

A. Novick-Cohen was born in NYC, moved to Israel in 1971; BSc in Math-Physics from the Hebrew University, MSc and PhD in Applied Math from the Weizmann Institute; on the mathematics faculty of the Technion in

Haifa, working as an applied mathematician on problems related to wetting, phase transitions, geometric motions, and asymptotic methods, with emphasis fourth order degenerate parabolic equations and systems.

Note added in press: the survey will go live on May 1. It can be found at the Gender Gap Project's website icsugendergapinscience.org/work-packages/global-survey



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Abel Prize 2018 Press Release:

Robert P. Langlands receives the Abel Prize

The Norwegian Academy of Science and Letters has decided to award the Abel Prize for 2018 to Robert P. Langlands of the Institute for Advanced Study, Princeton, USA “for his visionary program connecting representation theory to number theory.”

Robert P. Langlands has been awarded the Abel Prize for his work dating back to January 1967. He was then a 30-year-old associate professor at Princeton, working during the Christmas break. He wrote a 17-page letter to the great French mathematician André Weil, aged 60, outlining some of his new mathematical insights.

“If you are willing to read it as pure speculation I would appreciate that,” he wrote. “If not - I am sure you have a waste basket handy.”

Fortunately, the letter did not end up in a waste basket. His letter introduced a theory that created a completely new way of thinking about mathematics: it suggested deep links between two areas, number theory and harmonic analysis, which had previously been considered as unrelated.

Robert P. Langlands will receive the Abel Prize for his work from His Majesty King Harald V at an award ceremony in Oslo on 22 May. Langlands’ insights were so radical and so rich that the mechanisms he suggested to bridge these mathematical fields led to a project named the Langlands program. The program has enlisted hundreds of the world’s best mathematicians over the last fifty years. No other project in modern mathematics has as wide a scope, has produced so many deep results, and has so many people working on it. Its depth and breadth have grown and the Langlands program is now frequently described as a grand unified theory of mathematics.

The President of the Norwegian Academy of Science and Letters, Ole M. Sejersted, announced the winner of the 2018 Abel Prize at the Academy in Oslo today, 20 March.

Biography

Robert P. Langlands was born in New Westminster, British Columbia, in 1936. He graduated from the University of British Columbia with an undergraduate degree in 1957 and an MSc in 1958, and from Yale University with a PhD in 1960. He has held faculty positions at Princeton University and Yale University, and is currently a Professor at the Institute for Advanced Study in Princeton, New Jersey. He has won several awards as recognition of his outstanding contributions to the theory of automorphic forms.

Awards and Recognitions

- The Shaw Prize in Mathematical Sciences
- The Nemmers Prize in Mathematics
- The Wolf Prize in Mathematics (jointly with Sir Andrew Wiles)
- The Leroy P. Steele Prize
- The Grande Médaille d’Or of the French Academy of Sciences
- The inaugural National Academy of Sciences Award in Mathematics
- The Common Wealth Award
- The American Mathematical Society’s Cole Prize



ABEL
PRISEN

The Abel Prize

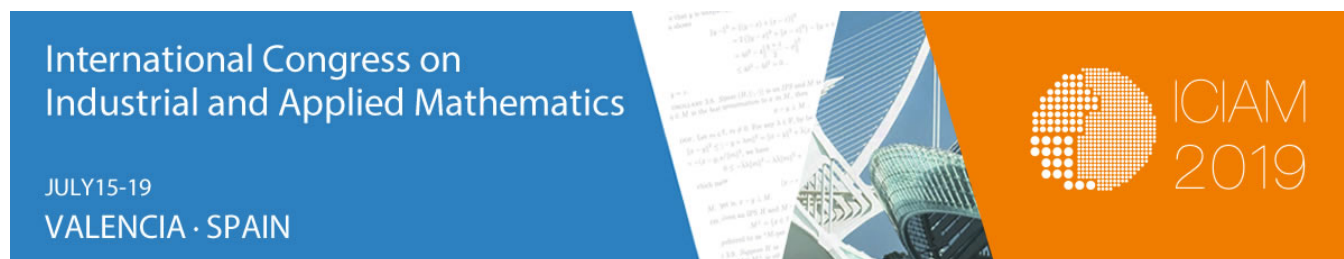
The Abel Prize is awarded by the Norwegian Academy of Science and Letters to one or more outstanding mathematicians. The choice of laureate is based on the recommendations of the Abel Committee, which is composed of five internationally recognized mathematicians.

The members of the current committee are: John Rognes (chair), Marie-France Vignéras, Ben J. Green, Irene Fonseca, and Alice Chang.

The Abel Prize is administered by the Norwegian Academy of Science and Letters on behalf of the Ministry of Education and Research, and has been awarded since 2003. The prize is worth NOK 6 million.

Niels Henrik Abel (1802–1829) was a Norwegian mathematician. In spite of his short life, he made significant contributions to a variety of mathematical fields.

For more information about the laureate, his achievements and the Abel Prize, please consult the Abel Prize website www.abelprize.no



On the Way to ICIAM 2019 - Spring 2018 Update

ICIAM 2019 congress (Valencia, Spain, 15th–19th July, 2019) is only one year and three months away.

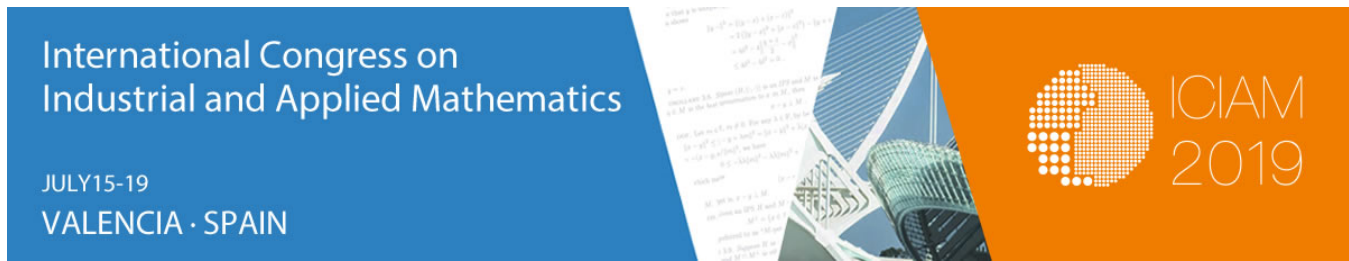
During the last months there has been a lot of activity in the organization of the congress. In this report, we briefly collect some updated information about ICIAM 2019:

- The **call for Minisymposia** has already been launched. Detailed information about it, including guidelines for preparing a proposal, is available at the congress website www.iciam2019.com. The deadline to submit minisymposium proposals is November 5th, 2018.
- Proposals for **Satellite and Embedded Meetings** should be submitted by October 1st, 2018. The current list of ICIAM 2019 Satellite Events is as follows:
 - EHF2018, XVIII Jacques Louis Lions Spanish-French School on Numerical Simulation in Physics and Engineering, June 25–29 2018, Las Palmas de Gran Canaria, Spain.
 - AGACSE 2018, 7th Conference on Applied Geometric Algebras in Computer Science and Engineering, July 23–27 2018, Campinas, Brazil.
 - Second Spain-Brazil Joint Meeting of Mathematical Societies, December 11–14 2018, Cádiz, Spain.
 - CIMPA Research School “Data Science for Engineering and Technology,” June 25–July 5 2019, Tunis, Tunisia.

- ECMI 2019 / VI Iberian Modeling Week, July 7–12 2019, Seville, Spain.
- ICCF 2019, International Conference on Computational Finance, July 8–12 2019, A Coruña, Spain.
- SciCADE 2019, International Conference on Scientific Computation and Differential Equations, July 22–26, 2019, Innsbruck, Austria.
- Some important forthcoming dates to keep in mind:
 - **Contributed Papers and Posters:** submissions open on July 1st, 2018.
 - **Financial Aid for Participants from Developing Countries:** applications open on July 22nd, 2018.
- Information about ICIAM 2019 is posted constantly at www.iciam2019.com and all the updates are listed in the “ICIAM 2019 News” section. However, the best way to follow the announcements, news and deadlines concerning ICIAM 2019, is to sign-up for e-alerts at the congress website.
- Since February 20th, two e-Newsletters have been distributed among those who signed up for e-alerts at the congress website.
- ICIAM 2019 has a Twitter account. Follow ICIAM 2019 news at @ICIAM2019.

We will continue our organizing work to make ICIAM 2019-Valencia a great scientific event.

We look forward to welcoming you to Valencia!



ICIAM 2019 Valencia: Call for Minisymposia

The organizers of ICIAM 2019-Valencia Congress are pleased to launch the call for Minisymposia.

A minisymposium consists of four, 25-minute presentations, with an additional five minutes for discussion after each presentation. Multiple part minisymposia may be submitted, but will be subject to careful review by the organizing committee before acceptance. Preference will be given to minisymposia that list all speakers and talk titles. Prospective minisymposium organizers are asked to submit a proposal consisting of a title, a description (not to exceed 100 words), and a list of speakers and titles of their presentations.

It is recommended that a minisymposium organizer makes the first presentation. Each minisymposium speaker should submit a 75-word abstract. The organizing committee will referee minisymposium proposals. The number of minisymposia may be limited to retain an acceptable level of parallelism in the conference sessions.

To ensure balance, ICIAM prefers that a single individual not be the organizer of more than one minisymposium. In addition, ICIAM discourages minisymposia in which most of the speakers come from the same organization or if all co-authors on the papers being presented in a minisymposium are from the same organization.

Participants are limited to presenting two talks at most during ICIAM in order to maximize the opportunity for all participants to speak. If you are invited to speak in more than one minisymposium, we suggest you use the opportunity to nominate a colleague or student to speak about your work.

Guidelines for preparing a minisymposium proposal are available at www.iciam2019.com

Topics list

- Applied Mathematics for Industry and Engineering
- Astronomy, Astrophysics and Geophysics
- Biology, Medicine and other Natural Sciences
- Chemistry, Chemical Engineering
- Computational Geometry

- Computer Science
- Control and Systems Theory
- Discrete Mathematics
- Dynamical Systems and Nonlinear Analysis
- Education
- Finance and Management Science
- Fluids, Physics and Statistical Mechanics
- Information, Communication, Signals
- Linear Algebra and Geometry
- Materials Science and Solid Mechanics
- Mathematics and Computer Science
- Numerical Analysis
- Optimization and Operations Research
- Ordinary Differential Equations
- Partial Differential Equations
- Probability and Statistics
- Real and Complex Analysis
- Simulation and Modeling
- Social Science
- Other Mathematical Topics and their Applications

Deadlines

Deadlines are midnight Central Europe Time Zone

- Closing date for the submission of proposals: November 05, 2018.
- Notification of final decisions: November, 2018.
- Submission due of accepted minisymposia abstracts: from November, 2018 until March, 2019.

Acceptance Notification

March 2019: All submitting authors will be notified by email.

May 2019: Schedule available.

If you want to follow the announcements, news and deadlines concerning the ICIAM 2019 congress, please sign-up at www.iciam2019.com

ASAMACI: Technical Report of the Scientific Meeting

by DOMINGO A. TARZIA

The Sixth Argentinean Congress of Applied, Computational and Industrial Mathematics (VI MACI 2017) took place in the campus of the National University of Patagonia San Juan Bosco (UNPSJB), from May 2 through May 5, 2017. This congress was dedicated to the memory of Dr. Eduardo Serrano.

In order to successfully carry out the congress, grants were provided by the Argentine National Council of Scientific and Technological Research (CONICET), the Argentine National Agency for Promotion of Science and Technology (ANPCyT), the Society for Industrial and Applied Mathematics (SIAM), and the International Council for Industrial and Applied Mathematics (ICIAM).

The VI MACI 2017 congress was organized by:

1. **ASAMACI - Argentine Association of Applied, Computational and Industrial Mathematics**, non-profit scientific institution created in Santa Fe City on October 31st, 2008, with juridical personality granted since 2009 (asamaci.org.ar).
2. **AR-SIAM, Argentine Section of SIAM**. AR-SIAM was approved by SIAM in July, 2006, and began its operations in January, 2007 (www.siam.org/sections/argentina).
3. At a local level, this scientific meeting was organized by the **National University of the Patagonia San Juan Bosco (UNPSJB)**.

The Scientific Committee of the VI MACI 2017 Congress was comprised of:

- Pablo Jacovkis (UNTREF-UBA, Argentina);
- Pablo Lotito (PLADEMA-UNCPBA, Argentina);
- Cristina Maciel (UNS, Argentina);
- Pablo Rodriguez (ICMC-USP, Brazil);
- Horacio G. Rotstein (NJIT, USA);
- Diana Rubio (UNSAM, Argentina);
- Gabriel Soto (UNPSJB, Argentina);
- Rubén D. Spies (IMAL CONICET-UNL, Argentina);
- Domingo A. Tarzia (CONICET-UA, Argentina).

The local Organizing Committee of the VI MACI 2017 Congress was comprised of:

- Paola Bonfilii (UNPSJB, Argentina);
- Nicolás Costa (UNPSJB, Argentina);
- Bernardo Marques (UNPSJB, Argentina);
- María de Gracia Mendonça (UNPSJB, Argentina);
- Hugo Montani (UNPA, Argentina);

- Cintia Negrette (UNPSJB, Argentina);
- Pablo Rodriguez (ICMC-USP, Brazil);
- Horacio G. Rotstein (NJIT, USA);
- Gabriel Soto (UNPSJB, Argentina), Coordinator;
- Graciela Sottosanto (UNaCo, Argentina);
- Sebastian Vidal (UNPSJB, Argentina);
- Nelson Villagra (UNPSJB, Argentina).

The event was sponsored by: National University of Comahue, National University of Southern Patagonia, the Senate of the Argentine Republic, and the Argentine Association of Computational Mechanics (AMCA). Additional support was provided by the following companies: YPF, Banco Patagonia, Banco Credicoop, Petrosar, ETAP, Club Neptuno, Anafer, Bivalvia, Austral Hotel, Hotel Comodoro, and Geoambiente.

The main objectives of the congress were:

- To contribute to the development of original mathematical methods and techniques motivated by (among others) scientific, technological, industrial, engineering, economic, and social problems.
- To promote research leading to original methods and applications of mathematics.
- To provide a convenient environment for interchanging information and ideas among scientists, technologists, engineers, and other professionals, involving the application and development of mathematical methods and techniques.
- To encourage the training of human resources, awakening and enhancing the interest of professionals, research fellows, Ph.D. students and young researchers in the techniques of applied mathematics, emphasizing their great importance through many practical applications.
- To disseminate all subjects related to applied mathematics and its relevance as a significant area of knowledge to advanced students of the different sciences, including mathematics, computer science, physics, economy, biology, chemistry, and engineering, in order to contribute to the transfer of mathematical knowledge to other sectors, including industry and companies.

The congress was addressed to researchers, professionals, graduate and undergraduate students of mathematics, physics, chemistry, biology and related sciences: economy, finances and engineering, who are interested in the development of mathematical methods motivated by other areas of knowledge and general mathematical applications.

The scientific congress VI MACI 2017 was organized as follows:

1. A total of 160 peer-reviewed scientific communications distributed in 22 scientific sessions were accepted.
2. The proceeding of the congress contains the publication of 148 contributed communications.
3. Delivering of three courses oriented to advanced undergraduate students and graduate students.
4. Offering of eight plenary talks.

The scientific sessions were:

1. Biomathematics, chaired by Mercedes Pérez Millán and Silvia Menchón
2. Mathematical Economy, chaired by Alejandro Neme
3. Differential Equations and Applications, chaired by Mariano de Leo and Juan Pablo Agnelli
4. Quantitative Finances, chaired by Manuel Maurette and Rodolfo Oviedo
5. Foundations of Numerical Methods and Applications, chaired by Ignacio Ojea and Adriana Pernich
6. Operations Research and Applications, chaired by Guillermo Durán and Javier Marengo
7. Industrial Mathematics and Applications, chaired by Adrián Will and Jorge Gotay
8. Computational Mechanics, chaired by Victorio Sonzogni and Martín Pucheta
9. Interdisciplinary Mathematical Models, chaired by Pablo Jacovkis and Rodrigo Castro
10. Optimization: Theory and Applications, chaired by Cristina Maciel and Laura Schuverdt
11. Probability, chaired by Beatriz Marron
12. Problems of Free Boundary and Applications, chaired by Claudia Lederman and Adriana Briozzo
13. Inverse Problems and Applications, chaired by Karina Temperini and María Inés Troparevsky
14. Mathematical Problems in Continuum Mechanics, chaired by Sergio Preidikman and Sergio Elaskar
15. Signal and Image Processing, chaired by Eduardo Serrano and Liliana Castro
16. Dynamic Systems, chaired by Guillermo La Mura and Ricardo Sánchez Peña
17. Theory of Optimal Control and Applications, chaired by Laura Aragone and Pablo Lotito
18. Heat and Mass Transfer, chaired by Eduardo Santillan Marcus and Graciela Morales
19. Computer Vision, chaired by Lucas Lo Vercio and Mariana del Fresno
20. High Performance Computing, chaired by Juan Pablo D'Amato and Pablo R. Rinaldi
21. Posters prepared by undergraduate students, chaired by Marcela Fabio and Marcela Morvidone
22. Posters prepared by graduate students, chaired by Marcela Fabio and Marcela Morvidone

Also, a Minisymposium on “Mathematical modeling of random structures and complex systems” took place, coordinated by Pablo Rodriguez. The judges of the Poster Competition were Dr. Pablo Jacovkis, Dr. Alejandra Figliola, and Dr. Pablo Rodriguez. Delivering three four-hour courses, in charge of specialists in the respective subjects, were:

- Horacio G. Rotstein (New Jersey Institute of Technology, USA), “Modeling and dynamics of neural systems.”
- Pablo Rodriguez (Universidade de São Paulo, Brazil), “Discrete probabilistic models and applications.”
- Graciela SottoSanto (Universidad Nacional del Comahue, Argentina), “An introduction to multi-objective optimization.”



Offering eight plenary talks, in charge of specialists in the respective subjects, were:

- John A. Burns (Interdisciplinary Center for Applied Mathematics - Virginia Tech, USA), “Modeling and Approximation for Control and Optimization of Thermal Fluid Systems.”
- Alicia Dickenstein (Universidad de Buenos Aires, Argentina), “Modern methods for the study of biochemical reaction networks.”
- Avner Friedman (Ohio State University, USA), “Free boundary problems arising in biology.”
- Lorenzo Fusi (Università degli Studi di Firenze, Italy), “Modeling the peristaltic flow of a Bingham fluid.”
- Rolf Jelstch (ICMC, San Carlos, Brazil and ETH Zürich, Switzerland), “Uncertainty quantification for two-phase flow in porous media.”
- Francisco Louzada (Universidade de São Paulo, Brazil), “Mathematical science innovation and transfer of technology in Brazil.”
- Hans Othmer (University of Minnesota, USA), “From crawlers to swimmers - Mathematical and computational problems in cell motility.”

- Fabio Rosso (Università degli Studi di Firenze, Italy), “The mathematical paradoxes for the flow of a viscoplastic film in complex geometries.”

The organizers received 180 proposals/applications for the Congress. After a peer-review process 160 were accepted, many of them in revised versions, to be presented and published in the proceedings. Four presentations corresponded to posters (three sent by graduate students, one sent by an undergraduate student).

The number of participants was 163 (144 from Argentina and 19 from abroad). The participants from abroad were 3 from Brazil, 4 from Chile, 2 from Colombia, 4 from USA, 3 from Spain, 2 from Italy and 1 from Switzerland. In total, 57 participants were students (7 undergraduates, 47 graduates coming from Argentinean universities and 3 graduates coming from foreign universities).

The accepted proposals were published in the series MACI, Volume 6 (2017), ISSN 2314-3282, edited

by Gabriel Soto and Nicolás Costa. The total number of pages is 588 corresponding to the 148 papers orally presented. See: asamaci.org.ar/institucional/publicaciones-2

Domingo A. Tarzia is a retired researcher at CONICET (Argentina) and works at the Austral University as a research secretary from 2018. He has a Magister, PhD and Habilitation from Pierre-et-Marie-Curie University (Univ. Paris VI), France, and works in partial differential equations (particularly on moving and free boundary problems, and Stefan-like problems), variational inequalities and optimal con-

trol problems. He was the President of ASAMACI from May 2011 to May 2017.



Summary of recent DCS workshop - ISIAM

The ICIAM Developing Countries Fellowship Support Fund granted ICIAM Fellowships to this conference in early 2018. The following is a summary of the conference report.

International Conference in Conjunction with 14th Biennial Conference of the Indian Society of Industrial and Applied Mathematics (ISIAM) 2–4 Feb, 2018 at GNDU, Amritsar.

Pammy Manchanda,
Head, Department of Mathematics,
Guru Nanak Dev University, Amritsar,
Secretary,
ISIAM and Organizing Secretary of the Meeting

This International Conference was organized during the 2nd – 4th February 2018 at Guru Nanak Dev University, Amritsar. There were nine invited speakers from overseas, and an equal number of speakers from India. Themes of the conference included mathematical modeling, wavelets and their applications, partial differential equations, inverse problems, and harmonic analysis. The 200 delegates also participated in three symposia on computational linguistics, optimization and control of hyperbolic balance laws, and partial differential equations (in

honor of K.R. Sreenivasan). ICIAM funding supplied fellowships (to cover registration and local hospitality) to 43 young research scholars and teachers from all over India.



The proceedings of the conference will be published by Springer Nature.

About ICIAM

The International Council for Industrial and Applied Mathematics (ICIAM) is a worldwide organization for professional applied mathematics societies. Its members are national and regional societies dedicated to applied and industrial mathematics, and other societies with a significant interest in industrial or applied mathematics. ICIAM is governed by a Board comprising representatives of its member societies. Programs run by ICIAM, and the By-Laws of the organization, can be found on the ICIAM website, www.iciam.org.

The Full Members and their representatives

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CAIMS-SCMAI (Canadian Applied and Industrial Mathematics Society, Société Canadienne de Mathématiques Appliquées et Industrielles): Raymond Spiteri

CSCM (Chinese Society for Computational Mathematics): Xuejun Xu

CSIAM (China Society for Industrial and Applied Mathematics): Pingwen Zhang and Guiying Yan

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ISIAM (Indian Society of Industrial and Applied Mathematics): Abul Hasan Siddiqi and Pammy Manchanda

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KSIAM (Korean Society for Industrial and Applied Mathematics): Chang Ock Lee

MOS (Mathematical Optimization Society): Karen Aardal

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NMF (Norwegian Mathematical Society): Elena Celledoni

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RSME (Real Sociedad Matemática Española): Mercedes Siles Molina

SingMS (Singapore Mathematical Society): San Ling

SMF (Société Mathématique de France): Marc Peigne

SMG-SMS (Schweizerische Mathematische Gesellschaft - Société Mathématique Suisse - Swiss Mathematical Society): Jean-Paul Berrut

SMM (Sociedad Matemática Mexicana): Jorge X. Velasco-Hernandez

SPM (Sociedade Portuguesa de Matemática): Fernando Pestaña da Costa

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