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On the cover: The former riverbed of the Túria river, the Jardines del Túria traverses nine kilometres of green space in the heart of Valencia. Located at coordinates $39.4671°\text{N}, 0.3890°\text{W}$, the region is a cultural hub of the city and covered by a total of 18 bridges.

ICIAM

The ICIAM Dianoia
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Vol. 6, No. 1, Jan 2018

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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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ICIAM Announcements

ICIAM Activities

The prize committees and the OTT lecture committee started their work this fall. The results will be announced in September, 2018.

The ICIAM Officers had their usual fall meeting by telephone; October 1 marked the beginning of Ya-xiang Yuan's term as President-Elect, and the end of Barbara Keyfitz's term as Past President. This issue of Dianoia contains a brief interview with Ya-xiang, as well as a description of a meeting between Maria Esteban and Ya-xiang in Beijing.

Activities of the Gender Gap Project

In May, ICIAM formally made the commitment to support this ambitious project, initiated by several ICSU members. There were three workshops this fall, in Taiwan, South America, and Africa. We will have reports in a future issue of Dianoia.

ICSU Activities

This fall the two unions, ICSU and ISSC (the International Social Sciences Council) had a joint meeting and voted overwhelmingly to merge. The ICSU website www.icsu.org has more details about the meeting and the vote. We will have an article on the timeline for completing the merger and on the implications for ICIAM's membership in a future issue.

Announcing the 2018 ICIAM Workshop and Board Meeting

The ICIAM Board meeting will take place on Saturday, May 12th in Philadelphia, Pennsylvania, the home of SIAM. The Board meeting will be preceded on May 10 and 11 with a workshop, which Drexel University has agreed to host. ICIAM Board members will be invited to talk at the workshop. Details on hotels and workshop logistics will be sent out in a few weeks to representatives of ICIAM member societies.

Math for the Digital Factory

Math for the Digital Factory: University of Limerick: March 21 – 22, 2018

The Math for the Digital Factory workshop will feature talks from national and international leaders in industry, academia, and a public panel discussion. The event will promote the use of mathematical modeling as an underlying discipline for promoting the development of new and innovative production technologies. This workshop will facilitate discussions regarding implementing expertise in mathematical and statistical modeling to enhance the Irish manufacturing sector and encourage collaboration within the international research community. Math for the Digital Factory will highlight the importance of developing an in-depth understanding of the underlying physical mechanics of manufacturing processes and maximizing manufacturing data.

Speakers include:

- Chris Decubber - European Factories of the Future Research Association (EFFRA)
- Louise Clune - Rusal Aughinish Alumina
- Johan Carlson - Fraunhofer Chalmers Centre for Industrial Mathematics
- Barry O'Sullivan - Insight Centre for Data Analytics
- Simone Göttlich - University of Mannheim
- Luca Formaggia - MOX, Polytechnico Milano
- Alfred Schmidt - Bremen University

There will be a public panel discussion on the value of mathematics to the manufacturing industry. The public event will highlight the opportunities and rewards of working in the manufacturing sector as a fulfilling and rewarding career.

Registration and further information available here ulsites.ul.ie/macsi/math-digital-factory This event is organised by MACSI, University of Limerick, Limerick, Weierstrass Institute for Applied Analytics and Stochastics, Berlin, Fraunhofer Institute for Industrial Mathematics and COST Action Mi Net.

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.

Welcome To Ya-xiang Yuan

by Barbara Keyfitz

Ya-xiang Yuan has made outstanding achievements in applied mathematics, especially, in nonlinear optimization. He is now the President of the Chinese Mathematical Society, and one of the vice presidents of the China Association for Science and Technology. From 1999 to 2006, he was one of the vice presidents of the Academy of Mathematics and Systems Science of the Chinese Academy of Sciences, and the director of the Institute of Computational Mathematics and Scientific/Engineering Computing of the Chinese Academy of Sciences from 1995 to 2006, and the director of the State Key Laboratory of Scientific and Engineering Computing of China from 1996 to 2005. He has devoted himself to the development of industrial and applied mathematics in China.

Professor Yuan has made important contributions to the development of industrial and applied mathematics over the course of many years. As one of the ICIAM2015 SPC Members, he also made outstanding contributions to the success of ICIAM2015. We strongly believe that he will play an important leadership role in promoting the development of industrial and applied mathematics.

In May, Ya-xiang Yuan was elected to be the next president-elect of ICIAM, a position he assumed on October 1, 2017. As a way to introduce Ya-xiang to the members of ICIAM, Barbara Keyfitz asked him to comment on a few aspects of his career, and his thoughts about ICIAM. The interview that follows gives his answers to these questions.

Q: You are currently the President of the Chinese Mathematical Society. Can you say a few things about what that effort is like? Are there many activities? Do you play a role in the day-to-day business of the society, or is there a permanent staff to take care of that? Do you think that being president of ICIAM will involve significantly different responsibilities?

A: As the President of the Chinese Mathematical Society (CMS), I am in charge of all the activities of the Society for the period of my term (2016–2019). CMS has many activities, most of them can be classified into three categories.

The most important activities of the CMS are conferences and journals. Every year, CMS organizes its annual meeting, which normally has about 600 participants. CMS has nine sub-societies, each of them also organizes their annual meetings or biennial meetings. For example, this year's annual meeting of the Chinese Computational Mathematics Society, which is one of the sub-societies of the CMS, attracted more than 1000 participants. The CMS also organizes many international mathematical conferences. One particular example is the 2002 International Congress of Mathematicians which had over 5000 participants from all over the world. In April this year, the CMS held the International Conference on Partial Differential Equations - Silkroad Mathematics Center Series International Conferences. The Silkroad Mathematics Center was established by the CMS to promote academic changes amongst mathematicians on the silkroad. Two months ago, the CMS hosted the first BRICS mathematics conference, which aims to promote collaborations and exchanges of mathematicians from Brazil, Russia, India, China, and South Africa. Next year, jointly with the American Mathematical Society, the CMS will organize the China-US Mathematics Conference in Shanghai. About publications, the CMS edits the Society's newslet-

ter and nine academic journals, including *Acta Mathematica Sinica*, and *Acta Mathematicae Applicatae Sinica*.

The second type of activities of the CMS are awards and prizes. The CMS has three major awards: Hua Loo-Keng Mathematics Award, Shiing-Shen Chern Mathematics Award, and Zhong Jia-Qing Mathematics Prize. The Hua Loo-Keng Mathematics Award is awarded once every two years to Chinese mathematicians who have made outstanding contributions in the field of mathematics. Each time no more than two people are awarded. The Shiing-Shen Chern Mathematics Award is awarded to outstanding young Chinese mathematicians under the age of 50. Again, each time no more than two people are awarded. The Zhong Jia-Qing Mathematics Prizes are given to outstanding graduate students majoring in mathematics. In addition to its own awards and prizes, the CMS can recommend its members for national awards and prizes. The CMS also nominates its members as candidates for Fellows of the Chinese Academy of Sciences.

The Chinese Mathematical Society organizes various mathematics competitions, including the National College Students Mathematical Competition, the Chinese Mathematical Olympiad, and the Chinese Women's Mathematical Olympiad. Each year, CMS organizes the National High School Mathematics League and the National Junior High School Mathematics Winter Camp, in order to select the Chinese team for competing in the International Mathematical Olympiad.

I do not play a role in the day-to-day business of the Society as the CMS has a secretariate which consists of three permanent staff members, one deputy secretary, and two other secretaries. At the moment, I am not quite sure what kind of responsibilities I will have as president of ICIAM, but I guess they will be significantly different from those as the President of the CMS.

Q: You've been active in ICIAM for some time — I remember that you helped prepare the Chinese bid for ICIAM2015. Have you observed changes in the Council, and do you imagine it continuing to change in the future? In what directions? What would you like to see happen within ICIAM or in the way it is perceived from the outside?

A: Yes, I have been active in ICIAM for a long time. Actually I have attended almost all the previous ICIAM conferences. I was a plenary lecture at ICIAM in 1999 at Edinburgh and I have attended many previous ICIAM board meetings representing CSIAM (1999–2008) and CMS (2016–now). I served on the Scientific Program Committee of two ICIAMs in 2007 and ICIAM 2015. I was one of the key persons on the team that made the successful bid for ICIAM-2015.

Over the past twenty years, I have observed that there are great changes in the Council and the running of ICIAM. The ICIAM conferences are getting larger and larger, both the impact and influence of the ICIAM conferences are increasing, and member societies of ICIAM are also steadily increasing. The procedure for selecting plenary speakers of the ICIAM conference has also changed. I hope that ICIAM will continue to improve, and that it will be more visible in the scientific community.

I would like to see that ICIAM make its conferences more influential, by selecting outstanding plenary speakers, organizing interesting mini-symposiums, including high-level embedded meetings, and providing excellent public lectures. I hope that the popularity of ICIAM prizes will be increased, memberships of ICIAM will continue to increase, activities of ICIAM will be extended, the collaborations between ICIAM and IMU will be strengthened, and the council of ICIAM will play a more important role in promoting collaborations between industry and the academy, and in promoting the development of industrial and applied mathematics in developing countries. And I hope that ICIAM will become an active member of the Science Union which will be soon established after the merging of ICSU and ISSU. I will explore the possibility of increasing the revenue of ICIAM, and investigate the feasibility of establishing a permanent secretariat office of ICIAM. In this aspect, I think the successful experience of IMU can be a good example for ICIAM.

Q: What are some of your feelings about the new job? What are you looking forward to most? Do you think you will enjoy the travel, the adventure of adapting to different styles of doing industrial and applied math, the differing sensitivities of ICIAM's members? The need for diplomacy in dealing with issues that will arise?

A: I am a bit anxious and at the same time excited to be a new officer of ICIAM. I look forward to learning from other officers of ICIAM about how to contribute the running of the Council. I know that there will be lots of difficult and unexpected issues to deal with at the Council, but I am sure that I will enjoy my new position with ICIAM. I am very delighted to see that the current officers of ICIAM are very friendly and helpful, and I have confidence that we will collaborate pleasantly.

Barbara Lee Keyfitz is the Dr. Charles Saltzer Professor of Mathematics at the Ohio State University. She has a PhD from New York University, and works in partial differential equations. She is the Past-President of ICIAM.

CSIAM-JSIAM-KSIAM-ECMI meeting held in Qingdao, China

by Xiao-lin Zhang, CSIAM secretary

On the afternoon of October 14, 2017, a multi-lateral meeting was held in Huanghai Hotel, Qingdao, China among four ICIAM members, CSIAM (China), JSIAM (Japan), KSIAM (Korea), and ECMI (European Consortium for Mathematics in Industry). The four societies introduced the development of industrial and applied mathematics in their respective countries/region, and discussed measures to enhance multi-lateral communication and cooperation. The meeting was a part of the 15th CSIAM annual meeting, which was held in Qingdao on October 12–15, 2017.

The participants included Ping-wen Zhang (President of CSIAM), Hiroshi Kokubu (board member of JSIAM), Eunok Jung (President of KSIAM), Dietmar Hoemberg (President of ECMI), as well as the four societies' vice-presidents for international exchange. Ya-xiang Yuan (ICIAM President-Elect) and officers from the National Natural Science Foundation of China also attended the meeting. The meeting was chaired by Ping-wen Zhang.

Ping-wen Zhang first extended a warm welcome to the foreign delegates for their visit to the CSIAM annual meeting. He mentioned that the meeting was of great importance for mutual understanding and future collaboration.

The four societies introduced their respective history, main tasks, and future plans in turn. Then, the participants discussed how to strengthen multi-lateral cooperation, and reached the following consensus:

- CSIAM, JSIAM and KSIAM jointly hold a special session each year, which is organized by the three societies in turn. The session could be an embedded meeting in the society's annual meeting. The time and venue of the session will be determined by the international exchange committees of the three societies.

- When the above cooperation is established, a fourth country/region could join them to hold a special session.

- Each society could link other societies' websites to its own website, and publish other societies' important information in its publicity materials such as newsletters.

- Each society could organize a post-doc international exchange program.

- Each society could invite other societies' leaders, scholars, and students to attend its annual meetings and other academic conferences for the exchange of research achievements and to better expand knowledge on each society's programs and research areas.

Ya-xiang Yuan then addressed the potentially successful prospects for the continued cooperation for the four societies, to promote academic exchange and exchanges within the industrial community. He also suggested the four societies have more contact with ICIAM.

The multi-lateral meeting plays a significant role in boosting the exchange and cooperation on industrial and applied mathematics among various countries, and marks a new beginning for the CSIAM's international exchange.

ICIAM Conference Support for Applied and Industrial Mathematics in Developing Countries

CALL FOR APPLICATIONS

ICIAM has a small budget (up to USD 10,500 per year) that is available to help organizers of conferences, workshops and research schools to include additional delegates from developing countries. Organizers of meetings, who wish to take advantage of this support, are encouraged to apply by sending an e-mail to the ICIAM Secretary (secretary@iciam.org). The level of support is USD 3,500 per conference, to be used to provide ICIAM Fellowships to selected participants from developing countries.

Applications may be submitted at any time. There are two rolling deadlines per year (30 April and 31 October); the ICIAM Officers decide on which applications to support within a month of each deadline. To allow for orderly budgeting and planning, proposals should be submitted no later than the year before the event. Preference is given to events held in developing countries, and applicants should indicate how they plan to use the fellowship funds. Full details can be found on the ICIAM website, at www.iciam.org

An Encounter of Presidents in Beijing

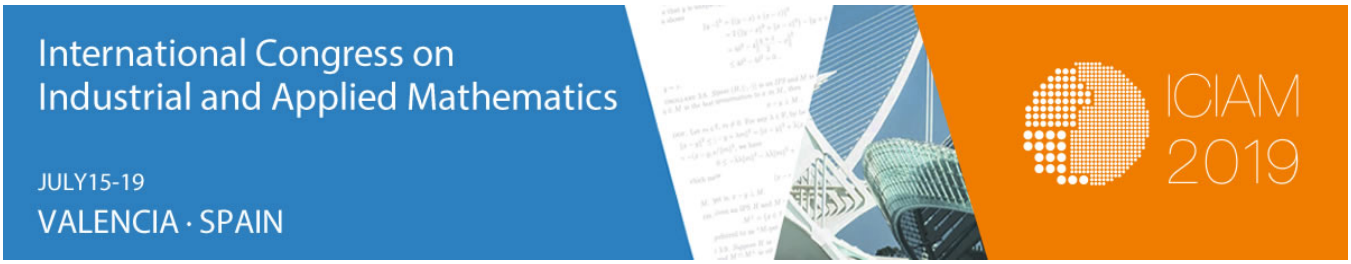
by Maria J. Esteban

Beginning of November I was supposed to spend some days in Beijing, in order to participate in the evaluation of the School of Mathematics and the BICMR Center of Peking University. Beijing being the city of residence of Ya-xiang Yuan, the President-Elect of ICIAM, that gave me the idea that we could arrange a meeting there, in order to discuss ICIAM business, and above all to discuss with Ya-xiang about how ICIAM functions. He

was elected at the last Board meeting, in May, but since that point we had not had an Officers' meeting and I thought that a discussion about the functioning of ICIAM would be very useful for the future: how do we, ICIAM Officers, organize our work and the decision making; how do we use the website to store and deal with old and current documents; how do we communicate with member societies; which are the topics that have to be dealt with at a given period of the year; etc, etc. We spent a number of hours discussing all this, and I found that meeting very interesting, and certainly useful, since during Officers' and Board meetings we have a tight schedule and there is not much time for a calm and relaxed discussion about our goals and procedures.

The day after our meeting, Ya-xiang proposed to take me to visit an old village in the mountains, in the outskirts of Beijing. That was a very welcome invitation, since it allowed me to see beautiful places and relax ahead of the next days' intensive work at Peking University. The picture below is a souvenir of that nice excursion, for which I thank Ya-xiang very much. ICIAM is a very nice community where we make friends and where links between people and countries are strengthened. And these two days were one of those moments when bonds are woven and friendships are born.

Maria J. Esteban is a research director at CNRS and works at the University Paris-Dauphine. Her research themes include the study of nonlinear partial differential equations, especially by variational methods; relativistic and nonrelativistic quantum mechanics, with applications to quantum chemistry; fluid-structure interactions, etc. Until recently she was the President of SMAI (Société de Mathématiques Appliquées et Industrielles) and currently is the Chair of the Applied Mathematics Committee of the EMS.



Announcement of the List of Invited Speakers for the ICIAM 2019 Congress

by Maria J. Esteban

Dear colleagues,

It is my pleasure to announce the list of invited speakers for the ICIAM 2019 congress, that will take place in Valencia from July 15th to July 19th, 2019 (see below).

In the name of ICIAM I would like to congratulate and thank Alfio Quarteroni, the chair of the Scientific Program committee, and all its members, for the excellent work they have done to create this list. All along their work, and following the advice of the Board of ICIAM, they have tried to maintain a good balance concerning gender, geographic regions, mathematical fields, and academic versus industrial speakers.

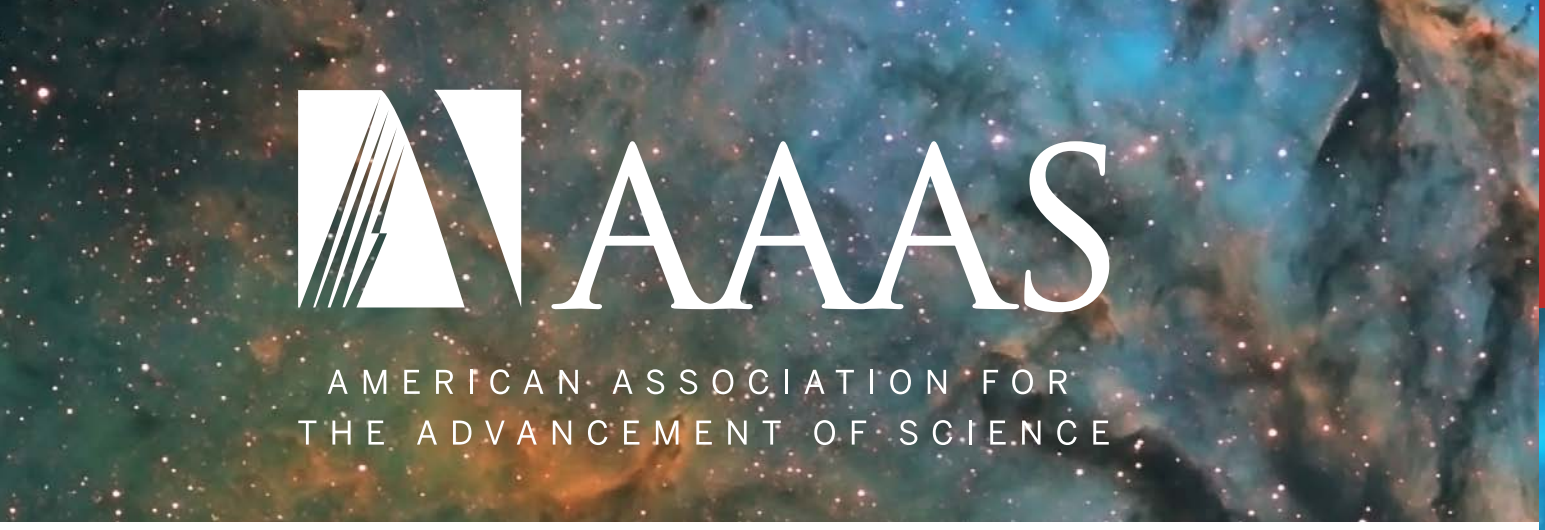
I am sure that this list excellent of invited speakers will be a reason for many people wanting to attend the congress. Internet address of the congress site: iciam2019.org

Invited Speakers

Prof. Marsha J. Berger (Courant Institute, NYU, New York, USA)
Prof. Alfredo Bermúdez de Castro (Universidad of Santiago de Compostela, Spain)
Prof. Peter Bühlmann (ETH Zurich, Switzerland)
Prof. Carlos Conca (Universidad de Chile, Santiago, Chile)
Prof. Wolfgang Dahmen (University of South Carolina, Columbia, USA)
Prof. Hans De Sterck (Monash University, Melbourne, Australia)
Prof. Leah Edelstein-Keshet (University of British Columbia, Vancouver, Canada)
Prof. Isabelle Gallagher (École Normale Supérieure, Paris, France)
Prof. Omar Ghattas (University of Texas at Austin, USA)
Prof. Donald Goldfarb (Columbia University, New York, USA)
Dr. Thomas A. Grandine (The Boeing Company, USA)
Prof. Nicholas J. Higham (University of Manchester, UK)
Prof. Yunqing Huang (Xiangtan University, China)
Prof. Kristin Lauter (University of Washington, USA)
Dr. Claude Le Bris (École des Ponts & Chaussées and Inria, Paris, France)
Prof. Ruo Li (Peking University, China)
Prof. Sylvia Serfaty (Courant Institute, NYU, New York, USA)
Prof. James Sethian (University of California at Berkeley, USA)
Prof. Panagiotis E. Souganidis (University of Chicago, USA)
Prof. Hiroshi Suito (Tohoku University, Sendai, Japan)
Prof. Eitan Tadmor (University of Maryland, College Park, USA)
Prof. Anna-Karin Tornberg (KTH Royal Institute of Technology, Stockholm, Sweden)
Prof. Marcelo Viana (IMPA, Rio de Janeiro, Brazil)
Prof. Xiao-Ping Wang (Hong Kong University of Science and Technology, China)
Prof. J.A.C. Weideman (Stellenbosch University, South Africa)
Prof. Karen Willcox (MIT, Cambridge, USA)
Dr. Laura Winter (IBM Research, Singapore)

The AAAS Statement on Scientific Freedom and Responsibility

In Fall 2017 the American Association for the Advancement of Science issued a brief statement, in the form of a poster. AAAS is a large membership organization (about 150,000 individual members, most from the US, spanning all areas of science and medicine). This statement was composed by AAAS's Committee on Scientific Freedom and Responsibility. As it may serve as a useful reminder to the world science community of the principles under which we work, we publish it in this issue.



AAAS

AMERICAN ASSOCIATION FOR
THE ADVANCEMENT OF SCIENCE

Statement on

Scientific Freedom & Responsibility

SCIENTIFIC FREEDOM AND SCIENTIFIC RESPONSIBILITY are essential to the advancement of human knowledge for the benefit of all. Scientific freedom is the freedom to engage in scientific inquiry, pursue and apply knowledge, and communicate openly. This freedom is inextricably linked to and must be exercised in accordance with scientific responsibility. Scientific responsibility is the duty to conduct and apply science with integrity, in the interest of humanity, in a spirit of stewardship for the environment, and with respect for human rights.

AAAS.ORG

Mathesia, the Land of Opportunities for Math Specialists

by Francesca Gatti

Nowadays, mathematics can provide useful applications in several industrial fields: mathematics can be used to increase the quality of products as well as make more competitive products; to support decision making; to increase the efficiency of industrial processes; to help research in order to devise new cures for ailments. In other words, as proven by many successful experiences in every business sector, applied mathematics and mathematicians can help industry by providing solutions to its demands and needs for innovation.

The past two decades have seen unprecedented gains in data storage, processing, and transmission. Such an abundance of information requires new and sophisticated mathematical tools. Companies will need to develop talent in rapidly emerging areas such as data science, prescriptive analytics, and modeling. The Boston Consulting Group estimates that big data and advanced analytics could unlock more than $1 trillion in value annually by 2020.[1]

Unfortunately, it is often difficult to create a virtuous match between industries and the academic world, as business needs and public research may move in different directions.

Here is where Mathesia can make a difference. Mathesia is the first crowd-sourcing platform dedicated to applied math. It is specifically designed to match entrepreneurs with a business need with the math scientists who can solve the specific problem. On Mathesia any company can get a high-profile, tailored solution from the right specialist any time the need arises, whereas math scientists have the opportunity to apply their knowledge and skills to real-world problems and get rewarded for it. Companies will hire mathematicians only when they need them; mathematical scientists can select the projects they are interested in, get rewarded according to their own quotes, and work on several projects at a time. It is a win-win approach that helps fill the gap between the world of academia with its skilled talents and that of enterprise that need to match demanding innovation needs with cost optimization.

There are two main players on Mathesia: Brainies: specialists in every branch of math sciences: modeling, simulation and optimization, statistics and data science, and Pitchers: companies searching for innovative solutions in any aspect of their business: finance, process and product improvement, logistics, resource optimization, and the like. Both Brainies and Pitchers subscribe to Mathesia for free.

Pitchers launch their challenges on the platform, creating projects where they describe their need. The platform helps identify the scientists with the right skills among the subscribed specialists. At any given time Brainies can select the projects they want to work on and offer to provide a solution for a fee. A project usually receives several quotes, among which the Pitcher selects the one that suits them best.

Mathesia's main asset is its community of scientists: high-profile, specialized talents for top quality results. In order to maintain and grow its community of math wizards Mathesia applies the principles of fair-play, openness and equal opportunities. All scientists can apply to any project; they are free to quote their offer as they please; scientists are rewarded solely according to merit, as the winner selection is done by the Pitcher who owns the project.

Mathesia is a startup company founded as the result of a long-standing collaboration between Moxoff, a spin-off of the Politecnico of Milan, focused on applied mathematics, and Yottacle, a hi-tech company specialized in the design and development of innovative mobile and web applications. Mathesia is sponsored by SIMAI (Società Italiana per la Matematica Applicata e Industriale), the Italian Society for Applied and Industrial Mathematics and it is open to top level mathematicians from all over the world.

Registration as a Mathesia Brainy is free of charge, and it gives scientists the opportunity to work on the projects, become part of the community and showcase innovative ideas and tools ready for the business world. As of today the Mathesia community counts thousands of highly qualified math scientists from more than 50 countries. About 70% of them are professors, PhD or post-doc students in math sciences; another 25% is made up by professional consultants; the remaining 5% are graduate or undergraduate students.

During its first months of operation more than 25 projects have already been posted on Mathesia, with an average budget of over 20,000 euros each. Among the companies that decided to entrust Mathesia with some of their business challenges are Nolan, Whirpool, Siemens, and Assicurazioni Generali. In particular:

- Nolan Group, leader in motorcycle helmets manufacturing, has improved its logistics and service-dealer cost thanks to a solution devised by Mathesia experts.

- Whirpool has run a challenge for product optimiza-

[1] "The Value of Our Digital Identity," *BCG report*, November 2012.

tion. They required a fast-parametric software designed to evaluate heat sink performance.

- Siemens VAI Metals Technologies challenged the Mathesia Community to find models to reduce the plant stoppage and the tool stock.
- Assicurazioni Generali, one of the biggest players in the global insurance and financial product market, aimed to assess the best methodology and the most promising exogenous variables to build a prediction model for pricing strategies.

Mathesia has an Italian heart but it has already built international bridges: Polish scientists working on Italian projects, multinational enterprises selecting Spanish startups, American Brainies giving solutions to Japanese Pitchers.

Mathesia's plan for the immediate future is to further expand its international network of scientists to serve a growing market of companies from all over the world. Along with the core business growth Mathesia will also open new opportunities to the community of Brainies, such as showcasing their innovation ideas and tools that may satisfy the needs of current and new Pitchers. By strengthening the ties between academia and enterprise, offering high quality talent and promoting the values of diversity, openness and fair-play Mathesia aims to become the center of excellence of applied mathematics of the third millennium.

Francesca Gatti is the Communications officer of Mathesia since 2015. She has a MSc in Applied Mathematics and in Science Communication. She has 5+ years' experience in communication of science and technology working in SME, scientific research institutes, museums, and publishing companies.

IMU Committee for Women in Mathematics: Funding Call 2018

IMU Committee for Women in Mathematics (CWM) invites proposals for funding of up to €3000 for activities or initiatives taking place in 2018, aimed at either:

a) Establishing or supporting networks for women in mathematics, preferably at the continental or regional level, and with priority given to networks in developing or emerging countries. Help could include, for example, funding meetings, travel for individuals for consultation purposes, or advice and support in creating websites. Please note that CWM will not normally fund activities taking place in the same or nearby location as one it has already funded in 2015, 2016, or 2017 (see www.mathunion.org/cwm for the list).

b) Organizing a mathematical school open to all with all women speakers and mainly women organisers. This type of mathematical school, which should include a significant proportion of time devoted to background and introductory material, can be a very effective way of showcasing the contributions of women mathematicians and creating an opportunity for female students to be in touch with women leaders, without excluding male students. Expenses covered by CWM could include, for example, costs for speakers, women organisers, or for women participants.

c) Other ideas for researching and/or addressing issues encountered by women in mathematics may also be considered.

Proposers should write a short account (no more than two pages) explaining the nature of their activity and how it fulfills one of the above aims, as well as indications on how the CWM money would be spent and other funding which may be available. There will be only one call for applications regarding activities in 2018 with deadline **15 December, 2017.**

Applications should be sent to
applications-for-cwm@mathunion.org

Successful applications will be informed no later than 31 January, 2018. Depending on demand, successful applications may not be funded in full. Successful applicants will be asked to send a short report of the activity with details of how the budget was spent before the end of 2018.

IMU-CWM committee
www.mathunion.org/cwm
September 2017

ICIAM

Full members:

ANZIAM Australia and New Zealand Industrial and Applied Mathematics
ASAMACI Asociación Argentina de Matemática Aplicada Computacional e Industrial
CAIMS•SCMAI Canadian Applied and Industrial Mathematics Society – Société Canadienne de Mathématiques Appliquées et Industrielles
CSCM Chinese Society for Computational Mathematics – 中国计算数学学会
CSIAM China Society for Industrial and Applied Mathematics – 中国工业与应用数学学会
ECMI European Consortium for Mathematics in Industry
ESMTB European Society for Mathematical and Theoretical Biology
GAMM Gesellschaft für Angewandte Mathematik und Mechanik
IMA The Institute of Mathematics and its Applications
ISIAM Indian Society of Industrial and Applied Mathematics
JSIAM The Japan Society for Industrial and Applied Mathematics – 日本応用数理学会
KSIAM The Korean Society for Industrial and Applied Mathematics – 한국산업응용수학회
MOS Mathematical Optimization Society
ROMAI Societatea Română de Matematică Aplicată şi Industrială
SBMAC Sociedade Brasileira de Matemática Aplicada e Computacional
SEMA Sociedad Española de Matemática Aplicada
SIAM Society for Industrial and Applied Mathematics
SIMAI Società Italiana di Matematica Applicata e Industriale
SMAI Société de Mathématiques Appliquées et Industrielles
SPMAC Sociedad Peruana de Matemática Aplicada y Computacional
VSAM Vietnamese Society for Applications of Mathematics – Hội ứng dụng Toán học Việt Nam

Associate members:

AIRO Associazione Italiana Ricerca Operativa
AMS American Mathematical Society
AWM Association for Women in Mathematics
ChinaMS Chinese Mathematical Society – 中国数学会
CMS–SMC Canadian Mathematical Society – Société Canadienne de Mathématiques
CzechMS Česká matematická společnost
DMF Dansk Mathematisk Forening
DMV Deutsche Mathematiker Vereinigung
EMS European Mathematical Society
ENBIS European Network for Business and Industrial Statistics
FMS–SMY–FMF Finnish Mathematical Society – Suomen matemaattinen yhdistys – Finlands matematiska förening
IMS Institute of Mathematical Statistics
IMU Israel Mathematical Union
KMS Korean Mathematical Society – 대한수학회
LMS London Mathematical Society
MSJ Mathematical Society of Japan – 日本数学会
NMF Norsk matematisk forening

The International Council for Industrial and Applied Mathematics (ICIAM)

ICIAM: Worldwide organisation for professional applied mathematics societies, and for other societies with a significant interest in industrial or applied mathematics.

The Council works to advance the applications of mathematics in all parts of the world.

The ICIAM Congresses, held every 4 years, are run under the auspices of the Council.

The aims of the council are to

- promote industrial and applied mathematics globally;
- promote interactions between member societies;
- promote the goals of these member societies;
- and coordinate planning for periodic international meetings on industrial and applied mathematics.

ICIAM is a Scientific Associate Society of ICSU and a Scientific partner of CIMPA

In 2017 ICIAM has 21 full members and 27 associate members, on five continents. Members pay annual dues and vote at the annual Board Meeting.

Congresses: Paris (1987), Washington DC (1991), Hamburg (1995), Edinburgh (1999), Sydney (2003), Zürich (2007), Vancouver (2011), and Beijing (2015). *The ninth congress will be held in Valencia (2019), and the tenth in Tokyo (2023).*

Other Activities:

- Developing Countries Support (awarded to scientific conferences for fellowships)
- Reports: “Citation Statistics” (with IMU and IMS); “Educational Interfaces between Mathematics and

Governance Non-profit Corporation (US).
Executive:
President Maria J Esteban (France) 2015-2019

OMG Osterreichische Mathematische Gesellschaft
PTM Polskie Towarzystwo Matematyczne
RSME Real Sociedad Matemática Española
SingMS Singapore Mathematical Society
SMF Société Mathématique de France
SMG–SMS Schweizerische Mathematische Gesellschaft – Société Mathématique Suisse – Swiss Mathematical Society
SMM La Sociedad Matemática Mexicana
SPM Sociedade Portuguesa de Matemática
SvMS Svenska Matematikersamfundet
UMI Unione Matematica Italiana

http://www.iciam.org/

Industry" (EIMI), Springer book with ICMI
- Gender Gap Project (with ICSU members)

Prizes ICIAM awards five prizes (Collatz, Lagrange, Maxwell, Pioneer, Su Buchin) at each International Congress. They are sponsored by member societies. ICIAM also sponsors the **Olga Taussky Todd Lecture.**

Newsletter ICIAM publishes a quarterly on-line newsletter, **DIANOIA** with news of the Council, member societies, and applied mathematics

President-Elect Ya-xiang Yuan (China) 2017-2019
Secretary Sven Leyffer (USA)
Treasurer Jose A Cuminato (Brazil)
Officers-at-Large Volker Mehrmann (Germany) membership
Taketomo Mitsui (Japan) – ICSU representative

Website: **http://www.iciam.org**

The Board and Officers of ICIAM, May 2017

European School on Mathematical Modeling, Numerical Analysis and Scientific Computing, March 4 – 10, 2018, Kácov, Czech Republic

The second European School on Mathematical Modeling, Numerical Analysis and Scientific Computing (ESSAM-MASC) will be held in Kácov, Czech Republic during May 27 – June 1, 2018. European Mathematical Society (EMS) summer schools in applied mathematics (ESSAM) in Kácov is a series organized yearly under the auspices of the European Mathematical Society and Faculty of Mathematics and Physics, Charles University in Prague (MFF UK). It includes two biennial schools, one with a focus on mathematical modeling, numerical analysis, and scientific computing (MASC), and the other focusing on mathematical fluid mechanics (MAFF), taking place in alternating years. The schools are organized as an activity of the Nečas Center for Mathematical Modeling (ncmm.karlin.mff.cuni.cz).

The aim is to promote the interconnection of mathematical modeling, analysis, and computational methods used in solving complex (real-world) problems. The lectures will be prepared with a broad multidisciplinary audience in mind, and at each school a broad scope, ranging from modeling to scientific computing, will be covered. Usually four main speakers deliver a series of three/four lectures. Ample time within the school is allocated for the promotion of informal scientific discussions among the participants. The speakers of the ESSAM-MASC 2018 school are:

- Roland Becker (Université de Pau et des Pays de l'Adour, France)
- Eduard Feireisl (Institute of Mathematics AS CR, Czech Republic)
- Nicholas J. Higham (The University of Manchester, UK)
- Françoise Tisseur (The University of Manchester, UK)

Location

The school takes place in the beautiful countryside of "Posazavi" ("near the Sázava river") region, in Sporthotel Kácov (www.sport-hotel.cz) (60 kilometers south-east of Prague). There are good facilities and conditions for sporting activities, such as hiking, swimming in the hotel pool, playing volleyball, basketball, tennis, and/or football. Mini-golfists and lovers of petanque, cricket, softball or table tennis will be satisfied too. The Wednesday afternoon program includes a trip to the Castle Zruč nad Sázavou in Posázaví region as well as an excursion to the Hubertus brewery in Kácov. The transportation from Prague to Kácov and back is a part of the conference service.

Registration

The conference fee of 11 000 CZK (420 EUR) which covers full board (breakfast, lunch, dinner, 2 coffee breaks per day), conference materials, and accommodation in a double room. The deadline for the registration is April 1, 2018. May you wish to express your interest or ask for any further information please send a message to essam.masc@karlin.mff.cuni.cz. The full registration will be open in November 2017. Financial support covering the conference fee is available for students, early career participants, and participants with limited resources. The applications for support together with a short curriculum vitae should be sent to the conference email by April 1, 2018.

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ESGI-128 Limerick

Mathematicians from all over the world, ranging from Canada and New Zealand to Japan and Mongolia, gathered in Limerick to solve problems faced by Irish Industries at the 128th European Study Group with Industry in June 2017. Over the course of 5 days approximately 100 mathematical scientists worked on a wide variety of problems presented by Irish companies, from modeling what happens to a car during a crash in order to tackle insurance fraud to how microwaves measure water content in the raw material that produces alumina.

The European Study Groups with Industry (ESGI) programme is an innovative and collaborative way of tackling real world-problems faced by leading industries. The ESGI event has established itself as one of the largest industry and academia collaborative efforts in the world, having first been launched in 1968 at the University of Oxford. The first Irish event was hosted by the Mathematics Applications Consortium for Science and Industry (MACSI) at the University of Limerick back in 2008.

Two of the problems studied at this year's event are discussed in more detail on the European Consortium for Mathematics in Industry blog (ecmiindmath.org/2017/06/26/a-blog-on-esgi-128).

Dr Sinéad Burke, Manager at MACSI, said "the problems presented by the companies at the ESGI events aren't ones that we generally think of as mathematics problems. For example, questions like how to make a great cup of coffee or how to optimise the supply from blood donations to hospitals, but maths has a great way of revealing hidden simplicity to give clever solutions to difficult problems."

This unique mechanism enables SMEs and multinational companies to make use of the problem-solving skills available in universities, and provides an opportunity to showcase the capability of Ireland on a global stage. MACSI Co-Director Professor James Gleeson said that, "For the last 10 years MACSI has led the way in demonstrating the importance of applied mathematical modeling to the Irish knowledge economy. We have worked with over 30 companies from SME's to multinationals, and semi state bodies, and our projects have resulted in increased competitiveness for many Irish companies. To give just one example, a problem initiated at a previous study group by Rusal Aughinish Alumina (a bauxite refinery based in Limerick) grew into a year-long consultancy project with MACSI researchers, Professor Stephen O'Brien, and Drs Vincent Cregan, and William Lee. That project resulted in a 200 per cent increase in the accuracy of prediction of product quality, enhancing the overall efficiency, and decision-making of the Rusal plant. In recognition, the project was recently awarded the 2017 Knowledge Transfer Ireland Consultancy Award."

This year's problem from Rusal Aughinish Alumina

investigated accurately predicting the moisture content of incoming bauxite. The group who worked on the problem consisted of professors, lecturers, postdoctoral, and postgraduate researchers from academic institutions around the world including; University of Ontario Institute of Technology (Canada), University of Limerick (Ireland), University of Oxford (UK), CSIRO(Perth, Australia), University of Portsmouth (UK), and Victoria University of Wellington, (New Zealand).

As well as solving real-world problems, the ESGI events are a fantastic way to train students with relevant skills that are in high demand by industry and fostering new international academic collaborations. This event has received support from Science Foundation Ireland and a number of the smaller companies participating have availed of Enterprise Ireland's Innovation Voucher Programme.

MACSI works with companies throughout the year using cutting-edge mathematical and statistical modeling techniques to develop insights and provide innovative solutions. The results lead to increases in productivity and reduced costs, which can ultimately enhance competitiveness for the industrial partners.

The next Irish study group will be hosted by University College Dublin in the summer of 2018 (www.ucd.ie).

10th Elgersburg School on Mathematical Systems Theory Elgersburg (Germany) March 4 – 10, 2018

The organizers have the pleasure to announce the "10th Elgersburg School on Mathematical Systems Theory." The school consists of two courses:

Time-delay systems: Lyapunov functionals and matrices

by

Professor Vladimir L. Kharitonov
(St. Petersburg State University, Russia)

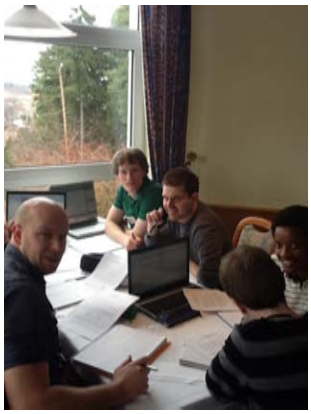
Input-to-state stability and interconnected systems

by

Professor Sergey Dashkovskiy
(University of Würzburg, Germany)

Program

There will be 90 minute lectures on both courses each day, example sheets to be worked on in the afternoon, and example classes in the evening.



Addressees

The school is addressed to postgraduate students or postdocs, either in mathematics or engineering, very good graduate students are also welcome. We would be grateful if you could pass on this information to any potential candidates.

Location

The workshop takes place in the "Hotel Am Wald" in Elgersburg (Thuringia).

The cost for the hotel including full board (evening March 4–8, 2018) per person is 520 € for a single room and 420 € for a double room per person. The location has a capacity for 40 students.

Registration

Due to the limited number of places there will be an application procedure for participation at the school. Applicants are asked to provide their CV and a letter of reference from their supervisor. The deadline for applications is November 30, 2017. The organizers will then rank the applications according to excellence and suitability.

Scholarships

A limited number of scholarships will be available. These scholarships will in general cover the full travel and lodging expenses. Because of the restricted number of such scholarships, we ask that students preferentially use funds available at their home institutions.

Further information

Please visit the website

www.tu-ilmenau.de/de/math/forschung/tagungen/elgersburg-schools/elgersburg-school-2018

ICIAM 2019: Academic Calendar

Minisymposia
Submissions open on: Sun. March 04, 2018
Notification of early decisions: Mon. July 30, 2018
Closing date for the submission of proposals: Mon. November 05, 2018
Notification of final decisions: Mon. November 19, 2018
Submission due of accepted minisymposium abstracts: Mon. March 04, 2019

Contributed Papers
Submissions open on: Sun. July 01, 2018
Notification of early decisions: Mon. October 01, 2018
Closing date for submissions: Mon. January 7, 2019
Notification of decisions: Mon. February 04, 2019

Posters
Submissions open on: Sun. July 01, 2018
Closing date for submissions: Mon. April 1, 2019
Notification of decision: Mon. May 6, 2019

Satellite Conferences
Submissions open on: Sun. 18 June 2017
Closing date for submissions: Mon. October 1, 2018
Notification of decision: within one month of submission

Embedded Conferences
Submissions open on: Sun. December 03, 2017
Closing date for submissions: Mon. October 1, 2018
Notification of decision: within one month of submission
Submission due of accepted embedded meeting abstract: Mon. March 04, 2019

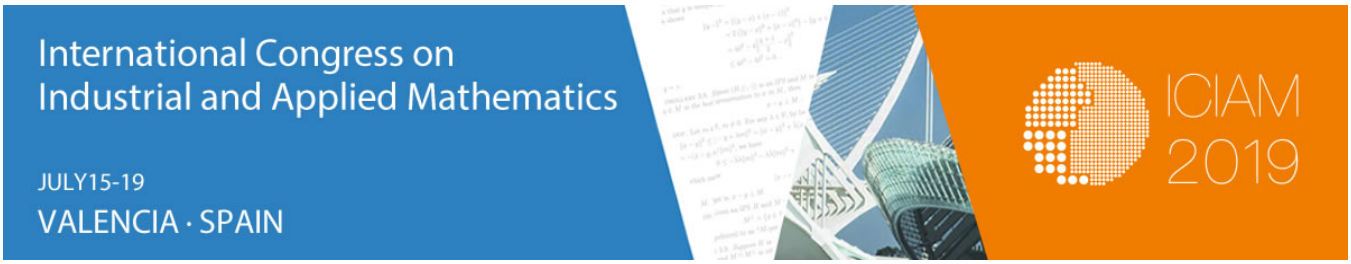
Conference Registration
Early bird registration: Sun. November 11, 2018 – Mon. March 04, 2019
Regular registration: Tue. March 05 – Mon. May 20, 2019
Late & On-site registration (only for non-paper-presenting participants): Tue. May 21 – Mon. July 15, 2019

Accommodation
Hotel registration opens: Sun. December 02, 2018
Hotel registration closes: Sun. June 09, 2019

Program
Block program online: Mon. November 06, 2017
Final program online: Mon. May 06, 2019

Financial Aid for Participants from Developing Countries
Applications open: Sun. July 22, 2018
Closing date for applications: Mon. February 25, 2019
Notification of early decisions: Mon. March 18, 2019
Notification of final decisions: Mon. April 01, 2019

ICIAM 2019 Congress
Mon. July 15 – Fri. July 19, 2019



ICIAM 2019: Call for Proposals of Satellite Meetings

The organizers of ICIAM 2019 - Valencia Congress are pleased to launch the call for satellite meetings. A satellite meeting takes place within a few weeks of ICIAM 2019 on a topic of interest to ICIAM attendees in a location that makes it convenient for ICIAM participants to combine the events into a single trip. Satellite meetings have no official connection to ICIAM beyond a cross listing on the ICIAM 2019 webpage.
Satellite meetings are organized and run by independent organizations or groups. ICIAM does not provide any financial or other support for satellite meetings.
If you are interested in organizing a satellite meeting, please contact Mari Paz Calvo, chair of the Satellite & Embedded Meetings Committee, at maripaz@mac.uva.es as soon as possible with the following information:

- A brief description of the event, including its full and short names, and the venue and dates of celebration.
- Chairperson of the Local Organizing Committee of the satellite event, who will be the liaison person between the organizers of the proposed satellite meeting and the organizers of ICIAM 2019.
- The url of the web page of the satellite event (if available).

Feel free to contact us with tentative information for meetings that are not fully planned. This information may be useful to others planning related meetings. A notification of acceptance/rejection will be sent to the contributors within one month after submission.

Important Dates:
Submissions open on: Sun. 18 June 2017
Closing date for submissions: Mon. October 1, 2018
Notification of decision: within one month of submission

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

ANZIAM (Australia and New Zealand Industrial and Applied Mathematics): Ian H. Sloan and Michael Plank

ASAMACI (Asociación Argentina de Matemática Aplicada Computacional e Industrial): Rubén Daniel Spies

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 Xiao-Shan Gao

ECMI (European Consortium for Mathematics in Industry): Michael Günther

ESMTB (European Society for Mathematical and Theoretical Biology): Andrea De Gaetano

GAMM (Gesellschaft für Angewandte Mathematik und Mechanik): Peter Benner and Sergio Conti

IMA (Institute of Mathematics and its Applications): Iain S. Duff and David Abrahams

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

JSIAM (Japan Society for Industrial and Applied Mathematics): Hiroshi Kokubu and Kenichi Maruna

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

MOS (Mathematical Optimization Society): Karen Aardal

ROMAI (Societatea Română de Matematică Aplicată și Industrială): Costica Morosanu

SBMAC (Sociedade Brasileira de Matemática Aplicada e Computacional): Paulo Fernando de Arruda Mancera

SEMA (Sociedad Española de Matematica Aplicada): Rosa Donat

SIAM (Society for Industrial and Applied Mathematics): Nicholas Higham and Cynthia Phillips

SIMAI (Società Italiana di Matematica Applicata e Industriale): Luca Formaggia and Giovanni Russo

SMAI (Société de Mathématiques Appliquées et Industrielles): Fatiha Alabau-Boussouira and Thierry Horsin

SPMAC (Sociedad Peruana de Matemática Aplicada y Computacional): Obidio Rubio Mercedes

VSAM (Vietnamese Society for Applications of Mathematics): Lê Hùng Són

The Associate Members and their representatives

AIRO (Associazione Italiana di Ricerca Operativa): Anna Sciomachen

AMS (American Mathematical Society): Catherine Roberts

AWM (Association for Women in Mathematics): Barbara Keyfitz

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PTM (Polskie Towarzystwo Matematyczne (Polish Mathematical Society)): Łukasz Stettner

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

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

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UMI (Unione Matematica Italiana): Adriana Garroni

The current Officers of ICIAM

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