

The Spanish Society for Applied Mathematics and ICIAM 2019 – Valencia

Rosa Donat (Universitat de València), President of the Sociedad Española de Matemática Aplicada

I would like to thank the editors of the EMS Newsletter, and especially Fernando Pestana da Costa, for the opportunity to make this presentation on the Spanish Society for Applied Mathematics (or Sociedad Española de Matemática Aplicada in Spanish, with acronym SeMA) in this very special year in which we will be the host society of ICIAM 2019, <https://iciam2019.com>, the ninth edition in the series of ICIAM congresses.

SeMA was created in 1991, following the success and continuity of the Spanish Congresses of Differential Equations and their Applications (CEDYA) that began in 1978. It was legally founded on February 25, 1993, but there are documents reporting a meeting in 1988 of a set of about twenty mathematicians, representing most of the Spanish research groups in Applied Mathematics that, led by Professor Antonio Valle, decided that the XI edition of CEDYA, to be held in Málaga

in 1989, would also be entitled “First Congress of Applied Mathematics” (I CMA). It was later, during the celebration of the XII CEDYA–II CMA at the Universidad de Oviedo in 1991, that more than a hundred mathematicians supported, by registering as members, the creation of SeMA as a society aiming to integrate researchers interested in applied mathematics living or working in Spain.



Professor Antonio Valle.

The mission envisioned for SeMA in its early years was to contribute in a coordinated manner to the development of mathematics in connection with its applications and the need to solve real-world problems in science and industry. The underlying motivation was the quantitative deep change that occurred in the preceding decade in the application of mathematical techniques and methodologies, due to the rapid development of scientific computing as a new emerging field.

During the last 25 years, SeMA has become a mature society, while contributing to the advancement of applied mathematics within the Spanish community. Nowadays the society has close to 500 individual members, some of them living or working outside of Spain, and around 50 institutional ones. Today the activity of SeMA is based upon the consideration that mathematical modelling, analysis, numerical simulation, and control techniques are essential tools to understand and solve many chal-

lenging problems appearing in physics, chemistry, engineering, biomedical sciences, geosciences, economics, or finance, among others.

Its Executive Council is composed of 11 members: the president, a vice-president, the secretary general, the treasurer and 7 members elected for a period of three years and renewable for a second term. The president is elected for a period of two years, renewable for a second term. The Executive Council decides on all important matters concerning the society and meets at least once a year. The General Assembly of the society is open to all members of SeMA and meets once every year to approve the budget and discuss other matters.

SeMA holds cooperation agreements and reciprocity membership with many mathematical societies. In Spain, RSME – Royal Spanish Society of Mathematics, SCM – Catalan Society of Mathematics, SEIO – Spanish Society of Statistics and Operational Research, as well as the AMS and SIAM in the USA, SIMAI in Italy, SMAI in France, and GAMM in Germany. In addition, SeMA is a corporate member of several international mathematical organizations, such as the European Community on Computational Methods in Applied Sciences (ECCOMAS), the International Council for Industrial and Applied Mathematics (ICIAM), the International Mathematical Union (IMU, through the Spanish CEMAT, that is, the Comité Español de Matemáticas), and the Centre International de Mathématiques Pures et Appliquées (CIMPA). SeMA is a full member of the European Mathematical Society (EMS).

There are two special scientific events in our society. The CEDYA/CMA congresses, held every two years, have consolidated themselves as a focal meeting point for applied mathematicians in Spain. The week-long meetings include plenary talks by international experts, special minisymposia, contributed lectures, and poster sessions. The latest edition, <http://www.cedya2017.org>, was held in Cartagena in 2017. In alternate years, and in collaboration with the French SMAI, the society sponsors the Spanish-French Jacques-Louis Lions schools for graduate students. These schools are addressed to young researchers, specially pre- and post-doctoral applied mathematicians and engineers, as well as to industrial technicians interested in learning state-of-the-art numerical simulation techniques that may be useful in their field. The latest school was held in Las Palmas de Gran Canaria (<http://ehf2018.iusiani.ulpgc.es>).

In addition, the society has strived to consolidate its scientific publications. The scientific part of the



Boletín de la Sociedad Española de Matemática Aplicada, has become a peer-reviewed international scientific journal: the *SeMA Journal*, published by Springer since 2010. It contains articles and review papers written in English on high-level achievements in applied mathematics, covering theoretical as well as numerical results and also their practical applications. In order to promote

the publication of high-quality scientific papers and reviews in applied mathematics, SeMA sponsors yearly the SeMA Journal Best Paper Award.



The cooperation SEMA-SIMAI Springer Series of advanced textbooks and research monographs deserves special mention. Launched in 2013, the series enjoys a very successful acceptance in the international applied mathematics community, and its impact is well above average. There are 18 volumes already published, and a few more are in

production or waiting for final approval. Modelling and simulation are very much appreciated in our series, as we understand that they must be at the core of the mission of mathematics reaching out to society.

Our society also seeks to recognise the scientific contributions of young researchers by sponsoring the SeMA Prize to Young Researchers, established in 1998 and awarded annually to a young researcher under 34. This award was renamed the *SeMA–Antonio Valle Prize to Young Researchers* in 2013, in recognition of the efforts dedicated by Professor Antonio Valle, first president of SeMA, to the promotion of young researchers in the field of applied mathematics.

A special mention also goes to the collaboration between SeMA, SIMAI, SMAI, and SBMAC (the Brazilian society for applied mathematics), who presently fund the Lagrange Prize, created on the initiative of the first three societies and first awarded at the ICIAM 1999 congress. The prize was established to provide international recognition to individual mathematicians who have made an exceptional contribution to applied mathematics throughout their careers. The recipient of the 2019 Lagrange Prize is G. Papanicolaou ‘for his brilliant use of mathematics to solve important problems in science and engineering; in particular, problems involving inhomogeneity, wave propagation, random media, diffusion, scattering, focusing, imaging, and finance’ (<http://www.iciam.org/iciam-prizes-2019>). The prize will be awarded at the opening ceremony of the ICIAM 2019 congress, on July 15, 2019.

As a full member of the International Council for Industrial and Applied Mathematics (ICIAM), SeMA was invited by ICIAM in 2011 to prepare a bid to host ICIAM 2019, the ninth ICIAM congress. After an inter-

national competition between several Spanish cities, Valencia was chosen as the venue for the conference in the SeMA bid, which had the support of the entire mathematical community in Spain as well as most of the ICIAM member societies in the Mediterranean area and many societies in Latin America and northern and equatorial Africa. Dr. Alfio Quarteroni, agreed to be the Chairman of the SPC (Scientific Committee Panel) and His Majesty King Felipe VI of Spain agreed to chair the Honour Committee of the conference, a fact of enormous importance for the social relevance of the event in the media. SeMA’s bid was finally selected by the ICIAM Board in its 2013 meeting in Beijing, in fair competition with the bids presented by Amsterdam and Brazil. Since then, the society has been actively involved in the preparation of this large congress that will take place in Valencia, from July 15 to 19, 2019.

Organising ICIAM 2019 is certainly generating a qualitative, and hopefully also a quantitative, leap in the relations between mathematics and industry in our territory, and it has undoubtedly helped to raise the national assessment of applied mathematics, and the international liaison role of Spain between Europe, Latin America, and Africa.

There are many features that make an ICIAM conference a special event. The 27 plenary lectures do, of course, stand out: the speakers appointed by the SPC are researchers of global excellence with a variety of gender, thematic, and geographical origins. In addition, ICIAM2019-Valencia will have five additional talks corresponding to the five ICIAM awards (<http://www.iciam.org/iciam-prizes-2019>), as well as two special lectures: the Olga Taussky-Todd and the Outreach Public lecture. Information on all the distinguished speakers at ICIAM 2019 can be found at <https://iciam2019.com/index.php/scientific-program/>.

As a new feature, ICIAM 2019 will hold a specific ‘Industry Day’, a mathematical and technology-transfer-oriented activity with a selection of speakers from industry, with a broad representation of the different sectors, whose target audience will be mainly the industrial attendees, but that is also addressed to the academic sector and open to the society in general.

ICIAM 2019 has, moreover, a special ‘sub-venues’ program. The Spanish cities of Bilbao, A Coruña, Málaga, Santiago de Compostela, Sevilla, and Zaragoza organise a dedicated program of satellite events, which reflect the commitment of the Spanish mathematical community with the success of the conference. The global Satellite Events Programme of ICIAM 2019 includes 30 events.

As of January 2019, ICIAM 2019 has already attracted more than 3500 talks. The call for minisymposia ended on December 5th (326 thematic minisymposia and 22 industrial minisymposia have been accepted). The contributed talks and posters submission periods end on January 21 and April 1, respectively.

SeMA and the organising committee of ICIAM 2019 have elaborated a Financial Aid Program for developing countries and young researchers (<https://>

iciam2019.org/index.php/information-for-delegates/financial-support) that will provide funds for around 250 scholarships. Banco Santander deserves special recognition for sponsoring 150 grants for young students from all over the world. As usual, the ICIAM council helps to provide support for around 20 scholarships for developing countries. SeMA has contributed to the Financial Aid Program of ICIAM 2019 by implementing a crowdfunding program (P2B) addressed to Spanish institutions, which will provide funding for around 50 scholarships.

An ICIAM conference is a truly special event for the host society, but also for its immediate neighbourhood.

We invite all EMS members to join this thrilling journey across industrial and applied mathematics and to make ICIAM-2019-Valencia a great event of exceptional scientific quality.



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New journals published by the European Mathematical Society

European Mathematical Society Publishing House
Seminar for Applied Mathematics
ETH-Zentrum SEW A21, CH-8092 Zürich, Switzerland
subscriptions@ems-ph.org / www.ems-ph.org



ISSN print 2415-6302
ISSN online 2415-6310
2019. Vol. 3. 4 issues
Approx. 400 pages.
17.0 x 24.0 cm
Price of subscription:
198 € online only /
238 € print+online

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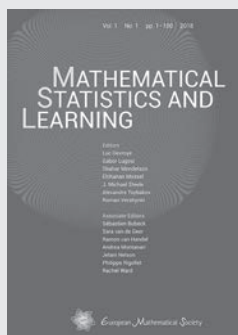
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ISSN print 2520-2316
ISSN online 2520-2324
2019. Vol. 2. 4 issues
Approx. 400 pages.
17.0 x 24.0 cm
Price of subscription:
198 € online only /
238 € print+online

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