

The 11th International ISAAC Congress was held 14–18 August 2017 at Linnæus University, Växjö, Sweden. The congress continued the successful series of biennial meetings previously held in USA (1997), Japan (1999), Germany (2001), Canada (2003), Italy (2005), Turkey (2007), UK (2009), Russia (2011), Poland (2013) and P. R. China (2015). The total number of participants of the Congress was 304 coming from 43 countries, including the special guests and the Organising Committee from Växjö. There were 12 plenary speakers. Totally, the Congress had 17 sessions spanned over 5 working days. One afternoon was assigned to excursions. The Congress was sponsored by academic institutions, local municipality and host university. One of the features of the Congress was the invitation of applied subjects like electric engineering and mathematics in biology. The 11th International ISAAC Congress was an important scientific event during which mathematicians from different parts of the world had an opportunity to present new results and ideas. It was also a great possibility for young mathematicians to contact experts in a variety of fields.

The atmosphere during the Congress was warm and friendly. The social events concerned especially banquet at Glass country (Glasriket) and excursions with a steam boat on the largest lake near Växjö.

It is a well-established tradition within the community to award one or several outstanding young researchers during the ISAAC Congress. The ISAAC award of the 11th International ISAAC Congress was presented to *Tuomas Hytönen* (University of Helsinki, Finland)

for his strong contributions to harmonic analysis, geometric analysis, functional analysis and singular integral operators. Though he is a young scientist, he has already achieved several results of high quality, published in top journals. One of his major achievements is the proof of the A2 conjecture for Calderón-Zygmund operators, published in *Ann. of Math.* 2012. He was also an invited speaker at ICM 2014.

At the ISAAC board meeting during the Congress, several decisions of fundamental importance for the organization were taken:

- (1) Professor Michael Reissig of Freiberg University of Mining and Technology, Germany, was elected as the new ISAAC president, Professor Joachim Toft at Linnæus University, Sweden as the vice-president, and Professor Irene Sabadini at Politecnico di Milano, Italy as the new secretary and treasurer. Professor Reissig succeeded Professor Luigi Rodino of Turin University, Italy, who finished his 4-year service, and Professor Sabadini succeeded Professor Heinrich Begehr, Freie Universität Berlin, Germany. The board expressed their gratitude for all efforts and contributions for ISAAC performed by Professors Heinrich Begehr and Luigi Rodino during the passed years.
- (2) The decisions from the board meeting at the 10th ISAAC Congress in Macao, China, concerning organizations of accounts were renewed. At the same time it was decided that a reregistration of ISAAC

should be performed. (The decisions were implemented shortly after the Congress.)

- (3) The decision from the board meeting at the 9th ISAAC Congress in Krakow, Poland, on modernizing the home page was renewed. (The decision was implemented shortly after the Congress.)
- (4) The venue for the following 12th International ISAAC Congress in 2019 was decided to be at the University of Aveiro, Portugal.

The plenary lectures given at the Congress appear not here but in the independent volume:

L. Rodino, J. Toft (Eds.) *Mathematical Analysis and Applications - Plenary Lectures, ISAAC 2017, Växjö, Sweden* Springer Proceedings in Mathematics & Statistics, Springer, to appear 2018 or 2019.

The present volume contains the texts of a selection of talks delivered at the Congress. As in the previous years, some of the sessions or interest groups decided to publish independently their own volumes of proceedings and are therefore excluded from the present collection. The work of the Congress was spread over the following sessions:

- *Applications of dynamical systems theory in biology*, organized by Torsten Lindström, Amira Asta, Lucia Tamburino
- *Approximation theory and special functions*, organized by Oktay Duman, Esra Erkus-Duman
- *Complex analysis and convex optimization and their applications in wave physics*, organized by Sven Nordebo, Yevhen Ivanenko
- *Complex and functional analytic methods for differential equations*, organized by Heinrich Begehr, Okay Celebi, J.Y. Du
- *Complex-analytic and Wiener-Hopf methods in the applied sciences*, organized by Gennady Mishuris, Sergei Rogosin
- *Special interest group: IGCVPPT, Complex variables and potential theory*, organized by Tahir Aliyev Azeroglu, Anatoly Golberg, Massimo Lanza de Cristoforis, Sergiy Plaksa
- *Fixed point theory and its applications*, organized by Erdal Karapinar
- *Special interest group: IGPDE, Harmonic analysis and partial differential equations*, organized by Michael Ruzhansky, Jens Wirth
- *Special interest group: IGPDE, Nonlinear PDE*, organized by Vladimir Georgiev, Tohru Ozawa
- *P-adic analysis*, organized by Alain Escassut, Andrei Khrennikov, Karl-Olof Lindahl
- *Special interest group: IGPDO, Pseudo-differential operators*, organized by Shahla Molahajloo, Patrik Wahlberg, M. W. Wong
- *Special interest group: IGCQA, Quaternionic and Clifford analysis*, organized by Swanhild Bernstein, Uwe Kähler, Irene Sabadini, Franciscus Sommen

- *Special interest group: IGPDE, Recent progress in evolution equations*, organized by Marcello D’Abbicco, Marcelo Rempel Ebert, Michael Reissig
- *Special interest group: IGGF, Generalized functions and applications*, organized by Michael Kunzinger, Michael Oberguggenberger, Stevan Pilipović
- *Theory and applications of boundary-domain integral and pseudo-differential operators*, organized by Sergey E. Mikhailov, David Natroshvili
- *Wavelet theory and its related topics*, organized by Keiko Fujita, Akira Morimoto
- *Contributed talks*, organized by Jonas Fransson, Joachim Toft

We thank the organisers of all the sessions of the Congress for their work. They spent an enormous amount of time inviting participants, arranging their sessions, providing chairmen and creating a familiar and workshop-like atmosphere within their meetings. The session organisers were also responsible for collecting contributions to this proceedings volume and for the refereeing process of the papers. Finally we would like to thank Dr. Elmira Nabizadeh for all her unselfish efforts on this volume as well as during the Congress.

Växjö, Sweden, October 2018:

Karl-Olof Lindahl

Växjö, Sweden, October 2018:

Torsten Lindström

Turin, Italy, October 2018

Luigi Rodino

Växjö, Sweden, October 2018:

Joachim Toft

Växjö, Sweden, October 2018:

Patrik Wahlberg