ISAAC - Newsletter December

Message of the President

Dear ISAAC members,

We are arriving at the end of this year, a year which saw a lot of changes. While COVID-19 seems to be changing to a standard illness travel restrictions are being lifted and conferences are becoming again in presential form. After all this time this allows us to meet friends and colleagues at the lectures and coffee breaks and not just on a sterile computer screen. It is interesting to notice how fast this change is happening. One only has to take a look into this newsletter to see how many conferences are back to being presential. Not to mention those (several) conferences which were postponed for 2 years. Even better, presential conferences in places like Morocco (Marrakech) are possible again from next year on. Nevertheless, also online conferences are continuing and this for a good reason. In the newsletter you have the report on the ***International Conference: Multidisciplinary Aspects in Mathematics and its Applications (ICMAM 2022)***, a conference whose organization was only possible due the unceasing work of young mathematicians like Duvan Cardona. Further, only in an online format it was possible to give young mathematicians and students from Latin America the chance to listen to talks by Terence Tao, Michael Ruzhansky, Simon Donaldson, and Carlos Kenig. This possibility to get young researchers into early contact with high-level research is something which will change the way Mathematics is done in many countries in the future.

We can also see that although the Covid-19 pandemic lasted for a long time the activities of the SIGs inside ISAAC never really stopped as you can observe from their work's presentation here.

For the next year I as president of ISAAC can only wish all the best to all members and hope that their wishes are coming true. I am also looking forward to see many of you at the next ISAAC congress in Ribeirão Preto in Brasil. It is the first time an ISAAC congress will be held in South America and I am sure we will have a wonderful time.

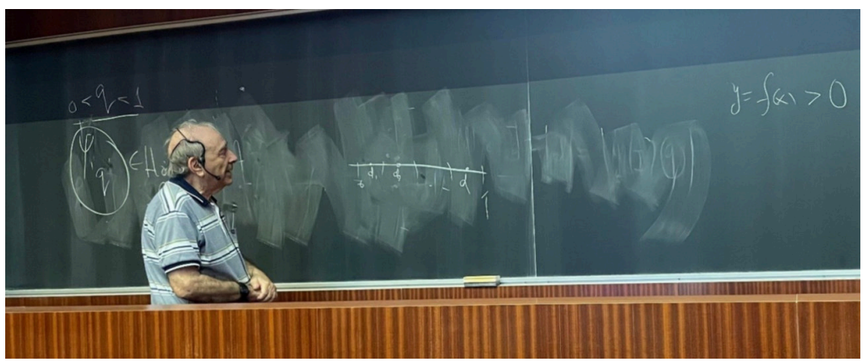
My best wishes of a Merry Christmas and a Happy New and Successful Year 2023.

Uwe Kähler
President of ISAAC

The 44th Summer Symposium in Real Analysis /The Two Rivers Symposium

After having hcountry at the conference: thanks to our Polish colleagues for their always friendly presence at our Symposia!ad to cancel the 2020 Summer Symposium in Real Analysis due to the global Covid-19 pandemic, it was decided to hold its 44th edition in Paris and Orsay, France, from June, 20, to June, 24, 2022. Many countries were represented (Italy, the United States of America, Brazil, Czech Republic, Belgium, France, Spain, the United Kingdom, Ukraine...), and Poland seems to have been the most-represented country at the conference: thanks to our Polish colleagues for their always friendly presence at our Symposia!

The Symposium included an hour-long inaugural talk by J. Mawhin (Louvain-la-Neuve, Belgium), four hour-long plenary talks by A. Olevskii (Tel Aviv, Israel), this year Gibson lecturer M. Pramanik (Vancouver, Canada), Z. Buczolich (Budapest, Hungary) and G. David (Orsay, France). The Symposium also hosted Monday June, 20th harmonic analysis seminar delivered by M. Maiuriello (Caserta, Italy).



On Wednesday afternoon, we all enjoyed a boat tour on the Seine, through Paris' most famous monuments...

On Thursday night, the usual Conference Dinner was the occasion of awarding the two 44th edition Andy's to Professors Ali Alikhani and Jean Mawhin. Congratulations to them!

Last but not least, the 44th Symposium was a success thanks to the (usual) friendly and productive atmosphere created by its participants and their wonderful lectures - to all of them, present physically, virtually, or in thought, a huge thank you! And our thanks to Martina for the pictures!

Conference on Harmonic Analysis and related topics

The conference "Harmonic Analysis and related topics" took place on May 25-29, 2020 at Centre de Recerca Matemàtica (CRM) in Barcelona. The goals of this conference were two-fold: to celebrate the life-long mathematical achievements of Michael Lacey and to present and explore the latest developments in the field of harmonic analysis and related areas.

Jsaac INTERNATIONAL SOCIETY FOR ANALYSIS ITS APPLICATIONS AND COMPUTATION

The conference brought together the leading experts working in the fields of Fourier Analysis, Approximation Theory, and PDEs as well as many young researchers and doctoral students. Activities included time for discussions and collaborations, and a poster session. Christoph Thiele delivered a Clay Lecture in the program of this conference. The list of speakers included Alex Iosevich (University of Rochester), Amalia Culiuc (Amherst College), Andrei Lerner (Bar-Ilan University), Ben Krause (California Institute of Technology), Betsy Stovall (University of Wisconsin-Madison), Brett Wick (Washington University St. Louis), Christoph Thiele (HCM Bonn), Francesco Di Plinio (Washington University St. Louis), Jill Pipher (Brown University), Lillian Pierce (Duke University), Tuomas Hytönen (University of Helsinki), Eugenia Malinnikova (Stanford Mathematics), Svitlana Mayboroda (University of Minnesota), Mariusz Mirek (Rutgers University), Luz Roncal (Basque Center for Applied Mathematics), Vladimir Temlyakov (University of South Carolina), and Yumeng Ou (Baruch CUNY).

International Conference: Multidisciplinary Aspects in Mathematics and its Applications (ICMAM 2022)

Jointly organised by Universidad de Pamplona (Colombia), Universidad de Sao Paulo (Brazil), Freie Universität Berlin (Germany), and Ghent Analysis & PDE Centre, UGent, Belgium, this conference seeks to contribute to the development of mathematical research in Latin America and the Caribbean, stimulate its visibility and promote exchange between mathematicians of the region and from other parts of the world. It counted among the plenary speakers Terence Tao (UCLA, USA), Michael Ruzhansky (Ghent University, Belgium, and Queen Mary University of London, UK), Tatiana Toro (University of Washington, USA, and Vice President of the International Mathematical Union), Simon Donaldson (Imperial College London, UK), Carlos Kenig (University of Chicago, USA, and President of the International Mathematical Union).

For many participants it provide the chance to come into contact with these mathematicians for the first time. At the conference the Colombian Mathematician José Raúl Quintero, 2011 National Mathematics Award, Colombian Mathematical Society (Universidad del Valle, Cali-Colombia) was honored.

YouTube links :

- Day 1: https://www.youtube.com/watch?v=HJeUklF7R6w&t=13185s
- Day 2, (Part I): https://youtu.be/UuHJ0oJFBlM
- Day 2, (Part II): https://youtu.be/dTrFxEXkAP0
- Day 3: https://www.youtube.com/watch?v=vwZ64axdAyQ&t=15590s
- Day 4: https://www.youtube.com/watch?v=UgnMur-YKbs&t=4s

Conference on Noncommutative Analysis and PDEs

The conference on Noncommutative Analysis and PDEs took place at Hardy Room, De Morgan House, London Mathematical Society, on 29-30 November 2022, jointly organized by the Ghent Analysis & PDE center and Queen Mary University London.

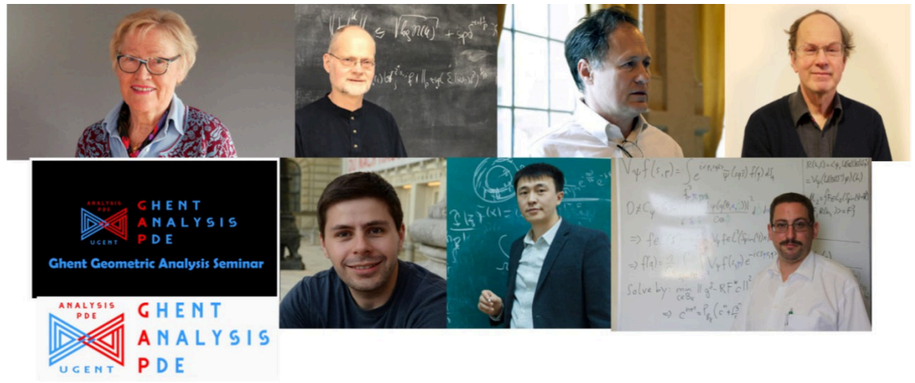
The aim of the workshop was to exchange the recent progress and ideas in the field of noncommutative analysis in PDEs. The workshop will be of interest to all noncommutative analysts, as well as to mathematicians working in related areas of analysis (commutative, spectral, harmonic, non-harmonic) and partial differential equations.

Activities of the Ghent Analysis & PDE Center

Ghent Geometric Analysis Seminar

The Ghent Geometric Analysis seminar is dedicated to studying the modern techniques of elliptic and subelliptic partial differential equations (PDEs) that are used to establish new results in differential geometry and differential topology. We are planning to invite several of the leaders in the fields of microlocal analysis, geometric analysis, and harmonic analysis abroad.

In view of the recent activities and investigations undertaken by the members of the Ghent Analysis and PDE center and the works in the interplay of geometric analysis and harmonic analysis of our group, our seminar also will be a scenario for presenting the recent developments in the field and their applications to other branches in mathematics.



The 2022 list of speakers includes Andreas Seeger, Victor Nistor, Johannes Sjostrand, Jonathan Rohleder, Durvudkhan Suragan, Uwe Kähler, and Gerd Grubb.

Visit the website of our new Ghent Geometric Analysis Seminar at
https://analysis-pde.org/seminars/ghent-on-geometric-analysis/

Visit also the website of the seminar to be informed of the scheduled intensive mini-courses about geometric analysis.

Ghent Methusalem Junior Seminar

The Ghent Methusalem Junior Seminar is run by PhD students and postdocs. It provides an ideal opportunity for young researchers in mathematics to share their ideas and to learn about new trends in a wide range of fields. Targeting a mainly (though not exclusively) young audience has meant for the organizers to ensure a relaxed atmosphere and to encourage the audience to engage in stimulating discussions with the speakers, ideally leading to new collaborations.

The seminar currently takes place every Tuesday at 4.30 PM (CET) on ZOOM. For more information about our activity and about past and future talks, please visit the dedicated webpage:
https://analysis-pde.org/ghent-methusalem-junior-seminar/

If you would like to give a talk or to invite someone to give a talk, please contact:
Duvan Cardona Sanchez, Ghent University, (Duvan.CardonaSanchez@UGent.be), Serena Federico, Università di Bologna, (serena.federico2@unibo.it), Vishvesh Kumar, Ghent University, (Vishvesh.Kumar@UGent.be), David Rottensteiner, Ghent University, (David.Rottensteiner@UGent.be), Bolys Sabitbek, Queen Mary University of London, (b.sabitbek@qmul.ac.uk).

Ghent Methusalem Colloquium

The Ghent Methusalem Colloquium is intended for a broad audience of PhD students, postdocs and professors at the Ghent Analysis & PDE Center and beyond. The series includes colloquia from visiting and invited guests. Visit the website of our new Ghent Methusalem Colloquium at
https://analysis-pde.org/ghent-methusalem-colloquium

The Ghent Methusalem Junior Seminar and the Ghent Methusalem Colloquium are supported by FWO Odysseus 1 Project: Analysis and Partial Differential Equations, and by the Ghent University Methusalem Programme “Analysis & PDE”.

Summer School “Singularities in Science and Engineering”

The Summer School “Singularities in Science and Engineering” took place at the Ghent Analysis & PDE Center, Ghent University, from 22-31 August 2022.

The main objective of the school is to significantly enrich student's knowledge in both well-known and very new mathematical tools for modelling and treating strong singularities in evolutionary systems of equations which arise in modelling physical phenomena. The aim of the school is also to bring together experts in both theory and applications, to initiate and deepen the cooperation between different fields on important concrete problems, using latest theoretical developments in the field.

Lecturers include Maria Alessandra Ragusa (University of Catania, Italy), Bojan Prangoski (Cyril and Methodius University in Skopje, Macedonia), Iakovos Androulidakis (University of Athens, Greece), Ingo Witt (University of Göttingen, Germany), Ljubica Oparnica (University of Novi Sad, Serbia), Mihalis Kolountzakis (University of Crete, Greece), Sanja Konjik (University of Novi Sad, Serbia), Shavkat Alimov (National University of Uzbekistan, Uzbekistan), Stevan Pilipovic (University of Novi Sad, Serbia), Virginia Kiryakova (Institute of Mathematics and Informatics, Bulgaria), Yuri Luchko (Berlin University of Applied Sciences and Technology, Germany).

On the official website of the summer school
https://analysis-pde.org/summer-school-singularities-in-science-and-engineering/
you can find all the lecture notes/slides along with the recording videos of each speaker.

Activities of the SIG "Generalized Functions"

The International Conference on Generalized Functions GF2022 took place at the Faculty of Mathematics of the University of Vienna from September 19 to 23, 2022. This bi-annual event is the main forum for exchanging ideas and keeping up with scientific progress in the generalized functions community at large. The meeting continued a series of international conferences on generalized functions with a long tradition of gathering researchers working in all branches of the field. The most recent conferences were held in Ghent (Belgium 2020), Novi Sad (Serbia, 2018), Dubrovnik (Croatia, 2016), Southampton (United Kingdom, 2014), Martinique (France, 2011) and Vienna (Austria, 2009). Its latest installment GF2022 featured a broad coverage of research on generalized functions and their applications in and interactions with other areas of mathematics and mathematical physics. Topics covered in the conference included Distributions, ultradistributions, hyperfunctions and algebras of generalized functions, linear and non-linear PDE, stochastic analysis, Pseudodifferential operators and microlocal analysis, Harmonic analysis, time-frequency analysis and function spaces, among others.

For many participants, this was the first in-person meeting since the beginning of the pandemic, providing a long-missed opportunity for refreshing personal contacts, which made the conference particularly memorable.

Activities of the "OTHA group"

The International scientific conference "OTHA-2022: Modern Methods, Problems, and Applications of Operator Theory and Harmonic Analysis XII" held on August 21-26 at the Southern Federal University. It was dedicated to the 80th birthday of Professor Nikolai Karapetiants (1942-2005). N. K. Karapetiants's scientific results have gained wide international recognition. He was a guest speaker at conferences in Russia, Armenia, Belarus, Germany, Mexico, and Portugal. The author of more than 100 scientific papers and two monographs, he obtained several fundamental results in the theory of integral equations, in the theory of Fredholm operators and functional spaces. One of the sessions of the conference was also dedicated to the memory of Professor Mikhail Dragilev. This year (2022) marks the 100th anniversary of the birth of M. Dragilev, a former professor at the Department of Theory of Functions and Functional Analysis of SFedU. Professor M. Dragilev was the first who obtained characterization of infinite-dimensional locally convex spaces with absolute and only absolute bases, and he was also a pioneer in solving singularity problem with exact equivalence of unconditional basis in topological vector space. The conference "OTHA-2022" in 2021 was given a status of a satellite conference of the International Congress of Mathematicians (ICM 2022).
The OTHA-2022 attracted leading experts from different regions of Russia as well as from Portugal, Belarus, UAE, Mexico, Georgia, Spain, Syria, and other countries. The program included reports by invited experts, as well as presentations by 15 young scientists in the conference sessions. There was also an opportunity for young scientists to present their future theses and to discuss the possibility of defending them in the Doctoral Council of the Southern Federal University. Plenary lecturers of the conference: Alexey Karapetyants (Russia/Rostov-on-Don), Samko Stefan (Portugal), Mirotin Adolf (Belarus), Andrey Muravnik (Russia/Moscow), Roland Duduchava (Georgia), Carlos Perez (Spain), Tatiana Suslina (Russia/St.Petersburg), Alexander Soldatov (Russia/Moscow), Anton Savin (Russia/Moscow), Khouri Suheil (UAE), Anatoly Antonevich (Belarus), Vladimir Rabinovich (Mexico), Maria Skopina (Russia/St.Petersburg), Natalia Bondarenko (Russia/Samara), Andrey Faminsky (Russia/Moscow), Yuri Gliklikh (Russia/Voronezh), Ilolov Mamadsho (Tajikistan), Kusraeva Zalina (Russia/Vladikavkaz). The lectures were recorded and uploaded on the conference channel in YouTube (see https://otha.sfedu.ru/).

Workshop OTHA Spring 2022

It has already become a tradition that in addition to the main OTHA conference, the OTHA satellite workshops are held twice a year, in spring and winter; they are called OTHA-Spring and OTHA-Fall workshops. The OTHA Spring 2022 held on April 25-28, 2022, at Southern Federal University. The OTHA Fall 2022 is coming soon, it is scheduled in Sochi, December 19-22, 2022.
All information about the OTHA conferences and workshops are here **https://otha.sfedu.ru/**

1) The direct submission in the Journal of Mathematical Sciences (Series A)

(the Journal of Mathematical Sciences is included into ISAAC related journals)

The idea of creating a separate direct submissions section within the Journal of Mathematical Sciences, having the status of a standard independent scientific journal, was discussed over a year ago and realized in 2021. At the plenary opening of the 13th ISAAC Congress (August 2–August 6, 2021, Ghent, Belgium) Dr. Thomas Hempfling, Editorial Director, Mathematics Birkhäuser, announced the launch of the project and offered to Doctor of Sciences, Professor Alexey Karapetyants to be the Editor-in-Chief. At the plenary session of OTHA-2021 conference Clemens Heine (on the photo), Executive Editor, Applied Mathematics / Computer Sciences, Birkhäuser, spoke about the agreements we had reached and gave a detailed presentation of his vision of the journal development, which was being supported by all project participants.
The stage of forming the Editorial Board (see the photo below) passed quickly, and by the end of October 2021 we were ready to start the process, having agreed on the positions and policies of the new journal.

As of today, there are 6 issues, 10 articles in each. Among the authors are from more than 25 countries, including Russia, Israel, Belarus, Iran, Tunisia, Turkey, Germany, Finland, Morocco, Mexico, UAE, USA, Great Britain, Ethiopia, Georgia, Spain, Japan, Portugal, China, Algeria, Argentina, Brazil, Kazakhstan, Uzbekistan, India. The average duration of article publication from submission to publication (in case the article is accepted) is not more than 6 months.
As a part of the related editorial activities, we can mention the Special Issues that appeared within the Journal of Mathematical Sciences and as well as in JFAA within the OTHA – JFAA group activity.

2) Special Issues that appeared

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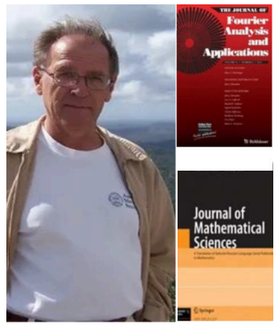
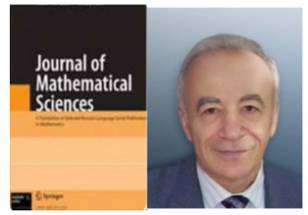


A special issue of the Journal of Fourier Analysis and Applications (JFAA) devoted to the 80th anniversary of Prof. Stefan Samko. Guest editors: A.Karapetyants, V.Kravchenko, and E. Liflyand

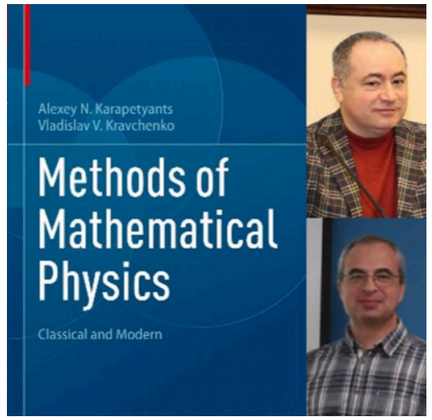
Special issue of the Journal of Mathematical Sciences (JMS) devoted to the 80th anniversary of Porf. Stefan Samko. Guest editors: A.Almeida, Z.Kusrayeva and H. Rafeiro.



A special issue of the Journal of Mathematical Sciences (JMS) dedicated to the 80th birthday of Professor Nikolai Karapetiants (1942-2005).

3) The book "Methods of Mathematical Physics: Classical and Modern" by A. Karapetyants and V. Kravchenko

The book Methods of Mathematical Physics: Classical and Modern by Alexey Karapetyants and Vladislav Kravchenko was published by Birkhäuser (Springer Nature) in November 2022. This book contains detailed lectures on the equations of mathematical physics, covering both classical topics and modern advances. The book is suitable for students of mathematical physics and can simultaneously serve as a textbook for a regular course on the equations of mathematical physics as well as for more advanced study on selected topics.



Alexey Karapetyants has for many years been teaching a course on the equations of mathematical physics for students of SFedU, and in different years he has taught separate chapters for students of the University of Padua (Italy) and for graduate students of the University of Helsinki (Finland). Vladislav Kravchenko has taught separate chapters for graduate students of the scientific center CINVESTAV (Mexico) and .is also one of the leading experts in mathematical methods for solving direct and inverse spectral problems. In general, this book was the result of joint work within the framework of the Program of Development of the Regional Scientific and Educational Mathematical Center of SFedU.

14th International ISAAC Congress

University of São Paulo, Campus Ribeirão Preto (Brazil)

July 17-21, 2023

The ISAAC board, the Local Organizing Committee and the Department of Computing and Mathematics of the University of São Paulo (USP), Campus Ribeirão Preto (Brazil), are pleased to invite you to the 14th International ISAAC Congress to be held from July 17-21, 2023. It is expected to be an in-person meeting.

The ***14th International ISAAC congress*** continues the successful series of meetings previously held in Delaware, USA (1997), Fukuoka, Japan (1999), Berlin, Germany (2001), Toronto, Canada (2003), Catania, Italy (2005), Ankara, Turkey (2007), London, UK (2009), Moscow, Russia (2011), Krakow, Poland (2013), Macao, China (2015), Växjö, Sweden (2017), Aveiro, Portugal (2019), and Ghent, Belgium (2021).

Confirmed plenary speakers

- Rafael Benguria, Pontificia Universidad Catolica de Chile, Chile
- Jose A. Carrillo, Universtiy of Oxford, UK ´
- Loukas Grafakos, University of Missouri, USA
- Irena Lasiecka, Univeristy of Virginia, USA
- Marius Mantoiu, Universidad de Chile, Chile
- Anna Laura Mazzucato, Penn State University, USA
- Monica Musso, University of Bath, UK
- Gustavo Ponce, University of California, Santa Barbara, USA
- Marcelo Viana, IMPA, Brazil

Local Organizing Committee

Prof. Alexandre Nolasco de Carvalho (USP)
Prof. Nikolai Vasilievich Chemetov (USP)
Prof. Marcelo Rempel Ebert (USP) Chair
Prof. Tiago Henrique Picon (USP)
Prof. Benito Frazao Pires (USP)
Prof. Paulo Leandro Dattori da Silva (USP)
Prof. Sergio Henrique Monari Soares (USP)

For further information please refer to the conference webpage: 14th ISAAC Congress

https://dcm.ffclrp.usp.br/isaac/

The iconic Teatro Pinguim

Call for ISAAC award

The ISAAC Award aims to distinguish young scientists of age below 40 at the time of the congress for particular merits in Analysis, its Applications and Computation. The list of previous prize winners can be found at

http://isaacmath.org/awards/

Candidates for the awards may be nominated especially by ISAAC board members and session organizers, but may also apply by themselves.

Nominations and applications should be sent before January 15, 2023 to:

U. Kähler
ISAAC President
e-mail: ukaehler@ua.pt

Up-coming conferences

21th Annual Workshop on Applications and Generalizations of Complex Analysis, 24-25 March, 2023, Aveiro.
http://sweet.ua.pt/pceres/Complex2023/Webpage/Workshop.html

25th European Intensive Course on Complex Analysis, its Generalizations and Applications, 27 March - 1 April, 2023, Aveiro
http://sweet.ua.pt/pceres/Complex2023/Webpage/EICourse.html

International Conference on Mathematical Methods in Physics, Marrakesh, Morocco, 24 - 28 April 2023.
https://icmmp23.com/

13th International Conference on Clifford Algebras and Their Applications in Mathematical Physics, Holon Institute of Technology (Israel), June 4-9, 2023.
https://sites.google.com/view/icca13-holon/ home

14th ISAAC Congress, University of São Paulo (USP), Campus Ribeirão Preto (Brazil), July 17 - 21, 2023.
https://dcm.ffclrp.usp.br/isaac/

New members

Anupam Gumber

Anupam Gumber got her Ph.D. in Mathematics at the Indian Institute of Technology Indore in 2017. She currently works at the Faculty of Mathematics, University of Vienna, Austria. Her research interests are in Applied Harmonic Analysis, Frame Theory, Approximation theory, Time frequency Analysis and Function spaces.

Ivan Beschastnyi

Ivan Beschastnyi made his Ph.D. in Mathematics at SISSA in 2018. After a Post-Doc at INRIA he is now a CIDMA fellow at University of Aveiro. His research interests are focused in various singular and low-regularity phenomena arising in sub-Riemannian geometry, control theory and quantum mechanics.

Ren Hu

Born in 1991 Ren Hu made his Ph.D. in Mathematics at Ghent University, Belgium, in 2021. Currently, he is a lecturer at Tianjin Sino-German University of Applied Sciences. His research interested are focussed on Clifford analysis and Integral Geometry.

Vita Leonessa

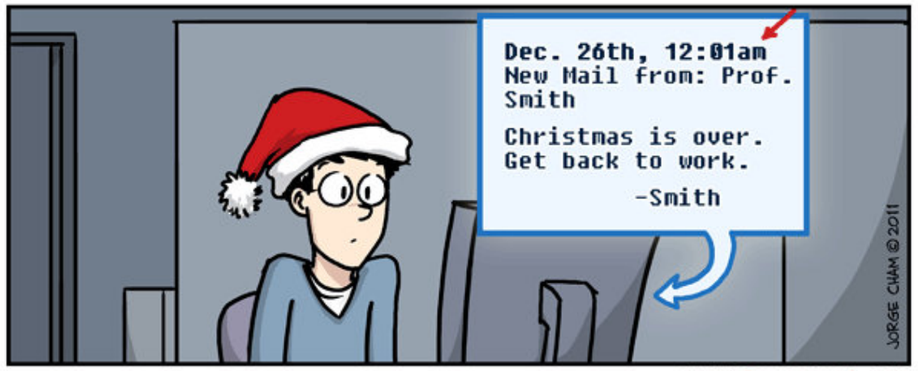
Born in 1978 Vita Leonessa made her Ph.D. in Mathematics at the University of Bari, Italy, in 2006. Since 2007 she has been working as an assistant professor at the Department of Mathematics, Computer Science and Economics of University of Basilicata, Italy. Her research interests are Potential Theory, Operator Theory, and Approximation Theory.

Yuta Wakasugi

Yuta Wakasugi got his Ph.D. Osaka University 2014. Currently, he is Associate Professor at Hiroshima University, His research interests are in Partial Differential Equations and Wave equations.

And in the spirit of the season...

...we conclude this newsletter.



To all a Merry Christmas and a Happy New Year